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Getting through: Children and youth post-disaster effective coping and adaptation
in the context of the Canterbury earthquakes of 2010-2012

A thesis presented in partial fulfilment of the requirements for the degree of
Doctor of Philosophy
in
Psychology
at Massey University, Wellington
Aotearoa/New Zealand

Maureen F. Mooney

2016

Abstract

The study aims to understand how children cope effectively with a disaster, and to identify resources and processes that promote effective coping and adaptation. The context is the 2010–2012 Canterbury earthquake disaster in New Zealand. This qualitative study explores coping strategies in forty-two children from three age groups: five, nine and fifteen year-olds (Time 1). It draws on data from semi-structured interviews with the children, their parents, teachers and principals of five schools in Canterbury. Two schools in Wellington, a region with similar seismic risk, served as a useful comparison group. All children were interviewed twenty months after the first earthquake (T1) during an ongoing aftershock sequence, and six selected children from Christchurch were interviewed again (Time Two), three years after the initial earthquake. Findings have identified multiple inter-connected coping strategies and multi-level resources in the children and in their immediate contexts; these were fundamental to their post-disaster adaptation. Children who coped effectively used a repertoire of diverse coping strategies adapted to challenges, and in a culturally appropriate and flexible manner. Coping strategies included: emotional regulation, problem-solving, positive reframing, helping others, seeking support, and “getting on”. Although emotional regulation was important in the immediate aftermath of an earthquake, children adapting positively used heterogeneous combinations of coping strategies and resources. Proximal others provided coping assistance through modelling and coaching. Intra and interpersonal resources, such as self-efficacy and supportive parental and teacher relationships that promoted children’s effective coping are identified and discussed. Children who coped effectively with the disaster appeared to have a larger coping repertoire and more practise in use than children in the Wellington comparison group, who were coping essentially with age appropriate challenges. By Time Two, all children in the cohort reported coping effectively, that they were stronger from their experience and had shifted their focus so that their coping skills were now employed for everyday challenges and for moving on with their lives, rather than focused on managing disaster events. Findings suggest that children can be coached to learn effective coping. Key recommendations are made for effective interventions for children and caregivers around children’s effective coping and adaptation, and avenues for future research are detailed.

Keywords: Disaster, children, effective coping, positive adaptation, family, school, community

Acknowledgements

This thesis would not have been possible without the willingness and courage of the children and adults who participated in this study. In a time of disaster, chaos, and pressure they took time to discuss how they were managing and trusted me with their stories. My thanks to each of you.

I would like to thank my supervision team: Doctor Ruth Tarrant, Professor Douglas Paton, Associate Professor Sarb Johal and Professor David Johnston for their mentoring, experience, and patience. Profound thanks.

It takes a university to produce a doctorate. I remain grateful and wish to sincerely thank the Joint Centre for Disaster Research for the support, insight, and a precious room of my own. My thanks extend to the many expert colleagues among them, Professor Mandy Morgan (enabling quality advisor), and Doctors Blake and Tuohy, who were generous with their time and knowledge. Integrated university resources from the library, IT and doctoral workshops provided valuable technical input and support that enabled this work. Finally, my gratitude to the university gardener who allowed me to cultivate my allotment in the interest of life balance.

To my dear friends who gave generously of time, knowledge and distraction, you were a lifeline. Finally, but certainly not least, my profound, heartfelt thanks to my dear sons and their families who, with encouragement, caring, and belief, assisted and lightened my months of study. My love to you all.

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Setting the Context

“Sweet are the uses of adversity
Which, like the toad, ugly and venomous,
Wears yet a precious jewel in his head.”

William Shakespeare, *As You Like It*

Chapter 1: Introduction

Yeah and, one time I was at her house, a really big earthquake happened and um, when it happened, we went under the table. And then Oma [grandmother] went and got a blanket and a plate – filled of yummy things and a pillow...it was scary, because everyth[everything] um her cupboard opened and everything fell out. (Ted, 5 years)

Aim and Context of the Study

Like Ted, millions of children around the world live through ‘scary’ disasters. In response to scary situations, when a person anticipates or experiences negative emotional arousal such as fear, coping behaviours are generated (Losoya, Eisenberg, & Fabes, 1998). The present study investigating children’s effective coping in recovering from a disaster, has chosen children and the phenomenon of effective coping processes for several reasons.

Children are a potentially vulnerable group and the impact of disasters and their varied consequences are stressful and possibly damaging for them during times when their development is ongoing. Accommodating the developmental trajectory also highlights the need to consider how development and experience interact not only during the damaging direct aftermath of a disaster, but also over the long-term, as the impacts of adversity can produce repercussions throughout childhood development and on into adult lives (Dich et al., 2015).

Nevertheless, it is important to acknowledge that, despite the experience of challenging circumstances, many children are capable of using strategies and resources to cope effectively and do demonstrate resilience processes in the face of adversity (e.g., Kronenberg et al., 2010; La Greca et al., 2013). Effective coping¹ occurs when children are able to respond adequately to adverse events that provoke stress. Responding adequately is demonstrated by the children’s capacities not being

¹ For glossary of terms discussed in the thesis see Appendix A.

overwhelmed, the employment of their coping strategies to address adverse situations and ongoing age appropriate functioning (Masten, 2011; Rutter, 2012).

Despite the importance of the topic, how children cope effectively with a disaster is an infrequently researched area (Pfefferbaum, Noffsinger, Wind, & Allen, 2014). The importance of increasing our understanding of how children cope effectively, derives from its ability to inform the nature of, and enhance the enduring efficacy of, interventions to assist children cope with, adapt to and develop in the context of their disaster experiences.

The context of the study, and the events that presented the children with challenging experiences, is the Canterbury, New Zealand earthquake disaster 2010-2012. This comprised two major earthquakes of (M_w) 7.1 in September 2010, and (M_w) 6.3 in February 2011, and included thousands of aftershocks (see Figure 1, adapted from Langdridge, GNS, 2014). The earthquakes and aftershock sequences produced significant physical, social, and economic impacts on the region (Potter, Becker, Johnston, & Rossiter, 2015).

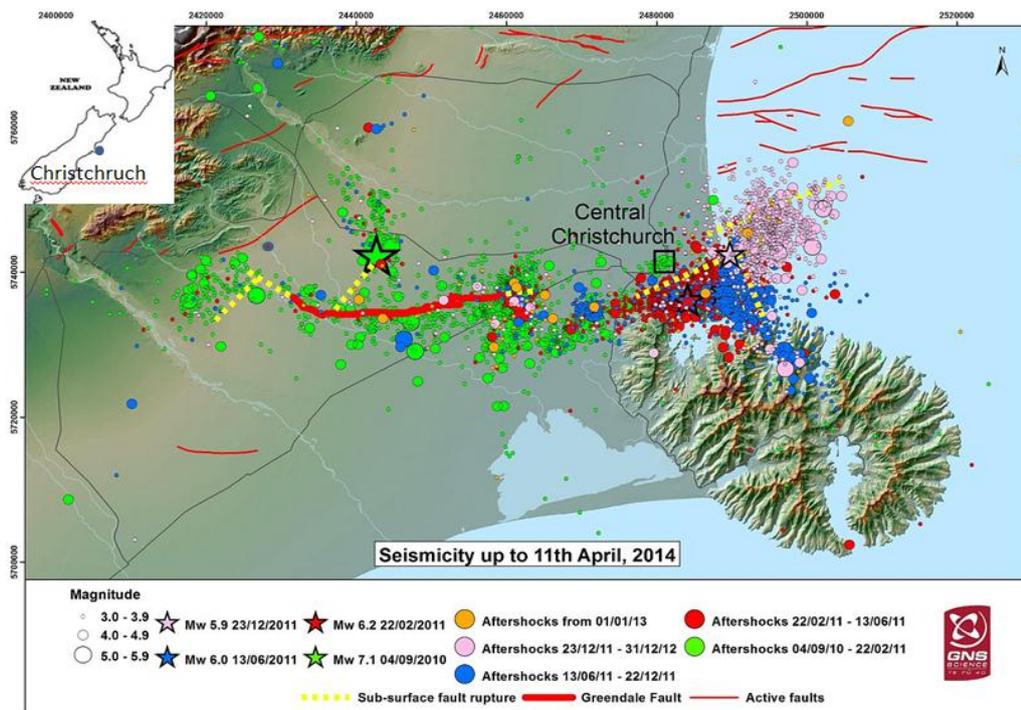


Figure 1. Location of earthquake and aftershock epicentres during Canterbury Earthquake sequence

Within Canterbury, the earthquakes severely damaged the city of Christchurch and surrounding suburbs. The Christchurch city earthquake (M_w 6.3), in February 2011, in which 185 people died and over seven thousand were injured, caused extreme vertical ground shaking of up to 2.2g recorded (Kaiser et al., 2012). The Christchurch children and their families repeatedly had to cope with earthquakes, a prolonged sequence of aftershocks² (Bannister & Gledhill, 2012), and the consequences in their longer term recovery process³.

The Research Approach

The present study focuses on how the children made sense of their changing world as they reacted and responded to these adverse events unfolding over time, and how their coping responses, and the resources within and around them promoted their capacity to adapt. The present study has chosen to give children a voice by adopting a qualitative approach, using a phenomenological methodology to investigate children's self-reported coping strategies. Minimal research examines how children cope with the ongoing challenges of an earthquake/aftershock situation that lasts over time. At the time of the printing of this document, to the researcher's knowledge, only eight known studies had asked children to share their subjective experience of living through a disaster (i.e., Freeman, Nairn, & Gollop, 2015; Jensen, Ellestad & Dyb, 2013; Mutch, 2013; Peek & Richardson, 2010; Pine, Tarrant, Lyons, & Leathem, 2015; Salloum & Lewis, 2010; Uttervall, Hultman, Ekerwald, Lindam & Lundin, 2014; Walker et al., 2012).

Additionally, as much disaster research focuses on trauma and negative adaptation, only a limited amount is known about the underlying coping processes that enable children to adapt adequately. The main emphasis in this study will be an investigation of children who appear to be coping and adapting effectively to the disaster and its consequences. Adequate or positive adaptation is understood in the

² Over 10,000 aftershocks were recorded between September 2010–December 2011, many over 5Mw on the Richter scale (Gibbs, Mutch, O'Connor, & MacDougall, 2013).

³ Although outside the period of data collection in this study, it is important to note that the earthquake sequence is ongoing. A M_w 5.7 earthquake occurred on the 14 February, 2016, affecting the Christchurch population in their continuing recovery process.

present study as successful performance on age-developmental tasks (Masten & Coatsworth, 1998) such as interpersonal competence, and behaviour at school.

A qualitative approach using thematic analysis of 106 interviews was adopted so as to understand the phenomenon of children's effective coping at a deep, contextually informed level. Interview data were obtained from children, their caregivers, teachers, and principals. One cohort was from Christchurch, and the second cohort was a comparison group from Wellington, New Zealand, who had not physically experienced the Canterbury earthquakes.

The results emerging from this study provide a rich description of children's contextualised coping with their disaster experiences. Coping is looked at temporally as data were collected at two points in time. Findings are expected to inform future interventions designed to both offer preventative strategies for children (in areas where the risk of disaster is ever-present), and provide avenues for supportive interventions during the period of recovery.

Myself in the Research

For transparency, the experiences that I, as the researcher bring to this study need to be briefly mentioned. My interest in the present research stems from my numerous years of instigating, monitoring and evaluating psychosocial programmes in the humanitarian and development domain, within multiple countries and cultures. Additionally, during my doctoral studies I have undertaken short missions to Pakistan, Ivory Coast, Zimbabwe and the Philippines for the evaluation of interventions, or training of delegates. These missions have allowed me to continue to have exchanges with populations affected by and coping with disasters.

My interest in understanding how children and youth cope with a disaster grew out of my involvement over many years with children, youth, and caregivers who were living through adversity. I had observed that children were rarely solicited for their views, and yet they had to cope with adverse situations of disaster and/or conflict. As a clinical psychologist, trained in France, I was able to discern that although a minority of the population appeared highly affected, the majority of children and

families seemed to cope adequately with adversity, even as they experienced stress and distress, provided they were given basic practical and psychosocial support.

From working in many cultures I was able to appreciate that coping and adaptation have a multitude of manifestations in diverse communities and societies, as these behaviours appear culturally influenced. For example what constitutes coping and adapting adequately may differ in the Ivory Coast compared with Palestine. It is therefore important for research to understand the cultural and environmental context in which coping and adaptation occurs.

In the field, the humanitarian response was often executed rapidly to respond to urgent needs and although programmes were evaluated each year, there was limited evidence informed research that could further our understanding of what support children needed as they recovered from crises. Thus, programmes aimed to support the children's and families' capacities to adapt well, but without thoroughly understanding the processes of how adults and children actually manage to adapt effectively. In late 2010, I returned to New Zealand on a sabbatical, leaving the Haiti earthquake situation to find that Christchurch was experiencing an earthquake disaster. I started working on the psychosocial needs of the Christchurch region, and then had the opportunity of studying how children in this context cope with and adapt to a disaster.

As a researcher, I am aware that the study participants need to be held separately from my past involvement in the field, and that the phenomenon of coping needs to be seen 'anew'. I am committed to understanding the phenomenon of the children's coping from the children's perspective. That is, to hear the distress but also identify the capacities of these children and caregivers as their world is shaken and radically changed.

The Thesis Structure

The present study contributes new knowledge of the effective coping strategies children use when experiencing a disaster. The study focuses particularly on how the children use specific strategies so that they are able to adapt well to their new circumstances and continue age appropriate functioning. This Chapter (Chapter 1)

introduces the aim of the study, places the research in the context of the Canterbury earthquake disaster, presents my background and interest as the researcher, and details the structure of the thesis.

Chapter 2 provides the background for the present study by discussing research on disasters and specifically children in disasters. Difficulties in undertaking disaster research are discussed before the literature that investigates children within disasters is summarised. The chapter gives an overview of different theoretical and conceptual approaches to studying children in disaster settings. Two domains of research pertinent to how children may cope are addressed: risk and resilience research, and coping research. The overview includes an examination of what is known about children's intrapersonal capacities and characteristics as well as the resources within the children's context that influence their coping and recovery pathways. Chapter 2 also highlights numerous gaps in present knowledge of processes underpinning children's effective coping and positive adaptation post-disaster. The Chapter ends with aims of the present study and the research questions.

Chapter 3 contains two sections. The first section presents the methodological approach chosen to best understand coping processes the children adopted; a phenomenological approach that favours access to the children's subjective experience from a psychological perspective (Giorgi, 2012). Additionally, specific aspects of research with children, as well as ethical issues are discussed. Section 2 details the method including the selection and sampling of participants, the rationale for selection of participants, and the protocol for the semi-structured interviews in both Time One and Time Two data collections. The chapter concludes with an account of the thematic analysis method employed in the study.

Findings are presented in Chapters 4 to 7 and illustrated with quotations from the data. Chapter 4 details coping strategies and intrapersonal capacities that children used in order to cope with the disaster and focuses particularly on coping processes that enabled the children to adapt effectively. Chapters 5 and 6 analyse which resources in the children's immediate social and community context enabled or inhibited their coping and adaptation: family and extended family in Chapter 5, and people and place in close community in Chapter 6. In Chapter 7, coping processes are analysed in a temporal framework from data taken at two time points 17 months

apart. Forty-two children were interviewed in Time One (T1) and six children from the T1 cohort were re-interviewed in Time Two (T2) to investigate how children's coping and adaptation might evolve over a post-disaster period.

The discussion and conclusion Chapter (Chapter 8) reviews key findings in the light of the study aim and research questions and discusses the implications both for future research and for the design of future interventions to support children and caregivers. Both strengths and limitations of the present study are outlined and addressed.

Chapter 2: Background

It was actually scarier than the first earthquake 'cause I know what happens but, it was just like it was scarier because we were in town, right by the museum—walls that fall. And when I lifted my head up there was smoke everywhere. (Kevin, 10 years, February earthquake 2011, Christchurch, New Zealand)

To put the present study in perspective and to highlight the significance of focusing on the children's experience of coping effectively with a disaster, this chapter commences with a discussion of disasters and specifically children in disasters. The chapter continues with a discussion of challenges in undertaking research in disaster contexts, and follows with a review of the literature focusing on how children cope with and adapt to disaster events.

Children within this study are defined according to the United Nations Convention on the Rights of the Child (UNCRC) as persons aged 18 and younger. The paradigm shift in disaster research from a focus on trauma and pathology, to research which investigates positive patterns of adaptation, is commented on. Findings from the various strands of research relevant to understanding children in disasters including developmental systems theory, ecological systems theory, risk and resilience, and coping research are discussed. Gaps in the literature are highlighted.

Disasters

Disasters, as potentially traumatic events (PTEs), represent “major disturbances of multiple interdependent systems” (Masten & Narayan, 2012, p. 250), which include disturbances in social, economic and community infrastructures, and can thus modify a person's life more than other forms of traumatic event (Bonanno, Brewin, Kaniasty, & La Greca, 2010). Numerous definitions of a disaster exist. The definition adopted in the present study is the following: “a potentially traumatic event that is collectively experienced, has an acute onset, and is time-delimited”

(McFarlane & Norris, 2006, p. 4). This definition highlights that disasters may, but do not always result in trauma, and that these events are experienced collectively in a community over a certain time period.

Worldwide, disasters are having a growing impact on people as a result of the increasing populations living in areas susceptible to natural hazards (IFRC World Disaster Report, 2010; 2012; 2014). As more people are clustered in hazardous conditions within urban settings, any lessons learnt from disaster research will thus have progressively greater significance. It is not only the unsustainable development in hazard-prone areas that increases disaster risk but the interaction of environmental, demographic and socio-economic contexts.

In 2014, 324 naturally triggered disasters were registered globally resulting in 140.8 million victims (Guha-Sapir, Hoyois, & Below, 2014), many of whom were children. With climate change these major adverse events are likely to continue to affect lives, livelihoods and communities (CRED, 2015). This potential increase includes possible increases in meteorological disasters and ocean plate tectonic activity (Diaz, 2006).

New Zealand, the context of the present study, is part of Oceania and lies along a plate boundary on the earth's surface, within the Pacific 'Ring of Fire,' where 90 per cent of the world's earthquakes occur (US Geological Survey, 2012; GeoNet, 2012). In 2012, in Oceania, due to diverse disaster events, the number of people killed was twice as high as the preceding decade's yearly average (IFRC World Disaster Report, 2013). Given the potential for vulnerability to disasters in this region, it is important that research examines the effects of such events and the elements that enable populations to recover and adapt.

Disasters and children.

Disasters, each year, affect and displace tens of millions of children, their families, and their communities. As early as 2001, disasters were affecting over 66 million children annually (Penrose & Takaki, 2006) and climate change impacts project this number to increase to as many as "175 million per year in the coming decade" [2011-2021] (Seballos, Tanner, Tarazona, & Gallegos, 2011, p. 12).

Earthquake disasters, such as the prolonged event of the present study, can have multiple negative effects on children. Earthquake disasters arrive with no warning, can cause major damage to personal and community infrastructures, as well as cause potentially high rates of injury (James, 2008; Margolin, Ramos, & Guran, 2010). This is in contrast to some disasters such as flooding or volcanic crises, where there can be some advance warning that allows families to regroup and evacuate.

Over recent years earthquake disasters have taken a saddening toll on children. For example, the 2008 Sichuan Province earthquake, in China, caused the deaths of more than 10,000 children, approximately 4,700 children were orphaned, and millions lost their homes or were unable to attend school (Margolin et al., 2010). The 2005 earthquake in North-Western Pakistan is estimated to have affected 2.2 million children (UN Office for the Co-ordination of Humanitarian Affairs, 2005). Deaths and injuries may be to children's families, as in the January 2010 earthquake in Haiti which caused 220,000 deaths, with 300, 000 injured in Port-au-Prince and the surrounding region alone (Gabielli, Gill, Koester, & Borntrager, 2010).

It is not just the death toll or physical injuries that affect children but also the disruption and distress to families who survive. For example, if the earthquake occurs during the day, as was the case in Canterbury, New Zealand for two of the four major earthquakes (Potter et al., 2015), children were probably at school and separated from parents. Both children and parents can experience anxiety from this separation until they know their family members are safe (McFarlane 1987; Masten & Obradovic, 2008).

Disasters negatively impact and disrupt multiple systems in the children's context that are important for them, including the micro-system of families, and exo-systems such as local community environments of school, neighbourhood playground, and sports and leisure centres (Bronfenbrenner, 1986b). When the many interdependent systems in which children live are disrupted, this constitutes sources of potential traumatic stress and can have an impact on children's future development (Masten & Osofsky, 2010).

Thus, disasters have multiple psychosocial repercussions, and represent particularly complex experiences. Survivors live through consequences which can erode quality of life and cause both stress and distress. Children, as a consequence of a disaster,

may experience changes in the nature and structure of families as well as challenges to their communities' capacities to sustain well-being (Bonanno et al., 2010; Paton & Johnston, 2006). Parents may be less available for caretaking and support as they may be pre-occupied by disaster consequences, or dealing with their own distress. Resources, such as community structures (e.g., functioning schools), are repeatedly solicited and can be overwhelmed or depleted (Gaffney, 2006; Masten & Obradovic, 2008).

Negative impacts may also be cumulative. For example, Usami et al., (2012) highlighted the cumulative impact that environmental damage, family loss and family stress had on children who experienced the 2011 Japanese earthquake, tsunami and nuclear disaster. Also, earthquake and aftershock sequences are repeated negative events over time and can accumulate negative experiences. Peek and Stough (2010) discuss the convergence of social and economic factors that affect vulnerability to risk: access to resources can be disrupted for long time periods, children and families can be re-located and jobs can be lost. Economic adjustments or loss of parents' employment and property can cause a potential strain on all resources (Cavallo & Noy, 2010), affecting families and community dynamics for years.

Children's routines are disrupted in many areas and over time (Margolin et al., 2010; Osofsky & Osofsky, 2013). The psychosocial effects of disasters for children and caregivers can last many years (Ghuman, Brackbill, Stellman, Farfel, & Cone, 2014⁴; Goenjian et al., 2011), especially in drawn-out disasters such as the earthquake aftershock sequences that continued in Christchurch, New Zealand during 2010-2012. Families may experience intense anxiety during each earthquake event which can additionally accumulate in prolonged anxiety centred on the economic consequences of rebuilding homes and keeping employment in damaged businesses (Lock et al., 2012). These secondary stressors stemming from the situation, in the months and years after the events, can influence psychological and social well-being (McFarlane, 1987; Weems & Overstreet, 2008).

⁴ Ghuman et al., 2014 found continuing psychosocial and mental health issues 10 years after the 9/11 New York attacks.

Despite long-term consequences, much of the intervention and support that is provided occurs in the direct aftermath of a disaster, and diminishes when psychosocial consequences are still continuing (Kaniasty & Norris, 1993; Morrissey & Reser, 2007; Norris, Friedman, & Watson, 2002b). The ongoing psychosocial consequences highlight the importance of extending studies as far as possible into the prolonged recovery and rebuilding phases, so as to understand how children and caregivers continue to cope with unfolding changing challenges.

Psychological Perspectives in Disaster Research

How children are viewed in disaster research.

Children are mostly viewed as a particularly vulnerable group in disasters, suggesting that children by their dependence on others are particularly susceptible to elements of risk and vulnerability (Osofsky & Osofsky, 2013). For example, children often rely on proximal adults to give meaning to disaster events, so are impacted not only by direct impact of a disaster but by vicarious experiences such as having close adults (e.g., parents and teachers) affected (Ronan et al., 2008).

Research initially focused more on risk factors than protective resources in a disaster context such as the negative implications from physical and psychological distress that can affect children's capacity to cope and adapt. Disaster research focused on traumatic reactions and linked children's negative mental health outcomes to the multi-dimensional loss and exposure associated with disaster experience (Norris et al., 2002b; Overstreet, Salloum, Burch, & West, 2011).

Yet, disaster impacts on children's lives are complex and a body of recent disaster research is more nuanced. This research suggests that to fully understand the consequences of children's experience requires articulating the constituent components of the complex experience, including understanding that the experience of living through a disaster is not processed uniformly by children. For example, researchers such as King, King, Foy, Keane, and Fairbank, (1999) note that prior exposure to a Potentially Traumatic Experience (PTE) is deemed a risk factor as it sensitises individuals to the new stressor, thus increasing the impact (Pratchett &

Yehuda, 2011). However, Masten and Narayan (2012) suggest prior exposure can either result in sensitisation (vulnerability) or inoculation (protection). Similarly, Weems et al., (2014) support this latter view in their recent examination of post-disaster trajectories, following experience of two hurricanes. They suggest that positive outcomes after a second disaster experience may be a result of living successfully through and surviving exposure to the initial disaster situation. Thus, children's reactions to disasters may be influenced by their experience of former adversity and how this experience was resolved.

Children's exposure and reactions are not homogenous, and this needs to be taken into consideration when children's psychological adjustment to disasters is studied. Children may be distressed by disasters but their reactions to them are diverse; not all children are overwhelmed by the experience (La Greca et al., 2013). Earthquake disasters, as any traumatic event, are mediated by numerous interconnecting factors such as severity and frequency, as well as the child's age and developmental status (Cicchetti & Rogosh, 2009). As most disaster research has focused on children's trauma and symptomology rather than on processes that enable children to respond adaptively to earthquake disasters, our understanding of how children respond and adapt well to disasters is incomplete.

Recent research on children's adaptation in disasters mirrors findings from adults. Findings acknowledge that most adults cope and recover from disasters if given basic support (Bonanno & Mancini, 2008; Eisenbruch, de Jong, & van de Put, 2004). Research suggests that the majority of children have adaptive outcomes (Kronenberg et al., 2010; La Greca et al., 2013). Osofsky and Osofsky (2013, p. 91), in their recent work on lessons learnt from the impact of disasters, specify that although exposure to disasters is negative for all children and families, "it is important to recognise that with protection and support" most children will cope with the experience.

So, despite the potential for disasters to provoke considerable distress it is important to note that recent literature (La Greca et al., 2013; Weems & Graham, 2014) suggests that most children eventually come through disasters without ongoing psychological sequelae. Many children do not have symptoms of psychopathology, and appear to recover over some months to be able to function at an age appropriate

level. Research suggests that children's symptoms of distress, although sometimes initially elevated (Godeau et al., 2005; Norris, et al., 2002b), do seem to attenuate over time (Chen & Wu, 2006; La Greca, Silverman, Vernberg, & Prinstein, 1996; Weems & Graham, 2014). Some children may even show stress resistance, or positive transformation (Kilmer & Gil-Rivas, 2010; Masten & Obradovic, 2008). La Greca and Silverman (2009) note that even amongst children who have experienced acute disaster distress, many recover within the first year after the event. This has been supported by Bonanno et al. (2010) in their summary of prospective studies where initial post-traumatic stress levels decline over time in most youth.

Yet, to date much of disaster research on children continues to focus on trauma rather than on understanding the processes that underlie positive adaptation. Disaster consequences persist over months and years and present children, whose social and intellectual capabilities are changing, with demands and challenges that change over this time. There are gaps in social science research in understanding how children make sense of, and respond adequately to disasters (Pfefferbaum et al., 2014). What is not yet known is what processes are used by those children who demonstrate adaptive outcomes, and what interventions and support are successful in enabling children to construct adaptive outcomes to disasters (Masten & Narayan, 2012; Masten, 2014).

Furthermore, research focusing on children in disasters has been limited, particularly in understanding "children's experiences in disasters, their unique vulnerabilities and their special capacities" (Peek, 2008, p. 3). Fothergill and Peek (2006, p. 99) state "that social science research on disasters has largely overlooked children", a view confirmed by other researchers (e.g., Gibbs, Mutch, O'Connor, & MacDougall, 2013). Bonanno et al. (2010, p. 34) also note that "children's distress is often overlooked by adults and future research should endeavour to assess children directly, not only through parent or teacher report". More knowledge is therefore needed, including data from children, that can ensure children receive adequate response and support (Osofsky & Osofsky, 2013), as well as to inform theoretical models that can influence future response efforts, which are more sensitive to children's needs and capacities. However, undertaking research in disasters is not without difficulties.

Challenges of disaster research.

Research within a disaster context is challenging. The following issues are in part responsible for the limited research on children and disasters. Ethical issues may dissuade researchers from intervening with persons who would possibly be affected anew (Masten & Narayan, 2012). The situation in the immediate aftermath of disasters is often chaotic, and responses providing basic needs may have to take precedence over data collection (Masten & Osofsky, 2010).

The timing of a disaster study should be influenced by the research questions but is often led by the possibility of contacting or accessing participants (Pfefferbaum et al., 2013). The affected population is often totally focused on dealing with the disaster. Within the ongoing disaster context populations may be mobile and migratory making it difficult to find participants, and to undertake repeated data collection (Bonanno et al., 2010).

Reviews of recent disaster research include discussion of methodological concerns. Most disaster research is cross-sectional rather than longitudinal (Masten & Osofsky, 2010; Pfefferbaum et al., 2013). Thus, most research extrapolates from findings taken from one time point. This may give an inaccurate picture of how children respond over time, and how adaptive trajectories are formed. Additionally, cross-sectional studies often measure within the first months post-event. This would not allow for information on recovery processes that span longer time periods, such as the attenuation in symptoms after one year, noted in some prospective studies (Chen & Wu, 2006) or the continued post-traumatic stress symptoms of a minority of children showing negative responses to the disaster (Goenjian et al., 2011; Weems et al., 2010).

Additionally, the research design of many studies is necessarily retrospective, due to funding issues and the unpredictability of many disaster events. Studies which rely on retrospective data have a limitation which can lead to lack of clarity in the findings. For example, retrospective research that does not have pre-disaster baseline data cannot clearly differentiate disaster-related health problems, whether physical or psychological, from pre-existing health problems. Nor can retrospective studies easily distinguish children who may be continuing to function at highly adaptive pre-disaster levels from children adapting well despite their disaster experience.

Differences in findings in retrospective studies, either positive or negative, may not be directly attributable to the disaster (Ford, Tennen, & Albert, 2007).

Masten & Narayan (2012) note that pre-disaster baseline data are seldom available and add that there are few studies with low-exposure comparison groups. Yelland et al. (2010), who used self-reports with adolescents following the Australian bushfires of 2005, suggest that multiple sources of information and repeated measures may produce more comprehensive findings. Studies using multiple sources and repeated measures are scarce.

A further limitation in retrospective studies is found in bias in memory. The use of self-reports in retrospective studies is common in research (Pfefferbaum et al., 2013). However, recall of past psychological states can be coloured by inaccuracies. Research has demonstrated that people have real difficulty in accurately recalling past states or attributes (Frazier & Berman, 2006), although research suggests that memory recall is more accurate for distressing events (Laland & Bonanno, 2011). As well, memory for disaster experiences has been shown to be biased by current levels of distress (Levine, Whalen, Henker, & Jamner, 2005). For example, if the person feels a high level of stress in their present situation they will remember specific stressful events and their experience of the disaster situation as being highly stressful.

Higher symptomatology scores may be due to how the self-survey is designed. For example, a focus on post-traumatic stress and distress rather than effective responses, may elicit more memories of stressful events. Also, Furr, Comer, Edmunds, and Kendall (2010) note in their meta-analytic study of post-traumatic stress in youth, that studies which rely on screeners and self-surveys are also apt to report higher PTS symptomatology, as overall diagnostic criteria are not evaluated as they may be in structured diagnostic interviews.

Further aspects of the disaster context challenge researchers. For example, most research is developed from convenience sampling so that wide-reaching epidemiological evidence is limited and results may not reflect those of the population as a whole. Becker-Blease, Turner, and Finkelhor (2010) conducted a rare epidemiological study of children in the USA so as to have an idea of possible incidence of PTEs within a population, and how this may impact on children. This

study suggests that the children exposed to disaster have increased risk for additional adversity such as socio-economic vulnerability, which may influence children's adaptation post-disaster. However, wide-reaching epidemiological evidence gathering has not been collected in most geographical regions in the world and so global understanding is lacking.

Bonanno et al. (2010) discuss several methodological limitations in much disaster research, such as small sample sizes which can lead to discrepancies in findings, or the arbitrary nature of cut-off points for disorders. They note that research investigating disaster-related post-traumatic stress disorder (PTSD) in children has great methodological variability. Citing the high proportions of PTSD (44.6%), reported by Godeau et al. (2005) after an industrial disaster in Toulouse, France, Bonanno et al. (2010, p. 4) attribute this elevated level to a "too liberal a cut-off point for PTSD". Thus difficulty in child research design is compounded by methodological variability, as well as gaps in the theory understanding childhood trauma and childhood psychopathology, including Acute Stress Disorder (ASD) or PTSD (Salmon & Bryant, 2000), and how stress disorder symptoms may evolve over time (La Greca, Silverman, Lai, & Jaccard, 2010).

The above challenges to undertaking research in disaster contexts have shaped the data available, and influenced the paucity of knowledge in several areas. Added to this, research on children has rarely incorporated their experiences or their participation (Peek, 2008). However, despite the limitations in disaster research, there is now a small bank of knowledge amassed on children and disasters (discussed in the following sections), which contributes to understanding patterns of adaptation, and supports planning and intervention. Masten and Narayan (2012) note that there has been progress in the quality and amount of the evidence base in recent years, even though gaps in knowledge persist.

Studying disasters' effects on children and how children adapt to them is particularly relevant for disaster research because disasters change the context within which children must develop and grow (Franks, 2011). The chapter will now focus on the overall state of research on children and disasters: firstly an examination of research focused on children's trauma associated with disasters, and secondly what is understood about children's positive adaptation.

Psychology research focusing on children's trauma from disasters.

Historically, psychology research concentrated on traumatisation resulting from disaster events (Adams & Boscarino, 2006; Masten, 2013). This focus is understandable when a minority of any population living through a disaster, both adults and children, will experience psychological harm and will therefore have real needs for support and possible professional care (Ozer, Best, Lipsy, & Weiss, 2008). Nevertheless, this research perspective resulted in most of the knowledge about how people cope, and the associated losses experienced, coming from those who showed extreme stress reactions or sought treatment; those whose lives were chronically disrupted by their reactions to the negative event (Brewin, Andrews, & Valentine, 2000).

Also, much clinical psychological research on the effects of severe psychological stress has focused on stress-related adult psychopathology (Adams & Boscarino, 2006; Brewin et al., 2000; Ozer et al., 2003). The body of research focused on children is limited. Research that has concentrated on the child population, such as that of Copeland, Keeler, Angold, and Costello (2007) concluded from their epidemiological longitudinal community study of potentially traumatic events (PTEs) and post-traumatic stress (PTS) that even though their cohort reported less PTEs than adults, there were higher rates of psychopathology from the cohort than in the general population. However, studies also point out that most criteria in the DSM-IV have been developed from adult PTSD literature and may therefore not accurately reveal responses to trauma in childhood (Alisic, 2011; Bonanno et al., 2010) and particularly as responses in childhood include developmental differences which affect how children interpret events and incorporate them into their evolving models.

Despite limitations in quantity and quality of research such as conceptual diagnostic issues (see above), research focused on vulnerability, trauma, and specifically on adversity and children does give insights into children's experience of disaster. Clinical research indicates that a minority of children directly exposed to a disaster will display extreme stress reactions such as post-traumatic stress symptoms, anxiety, or depression that can continue years after the event and contribute to

difficulties in their development (Furr et al., 2010; La Greca & Silverman, 2009; Yelland et al., 2010).

It is generally reported that greater exposure to a disaster, either in severity or cumulative exposure, is associated with more distress and poorer adjustment. This is known as the dose-response effect (Norris et al., 2002). Perceived life threat has been highly associated with children's PTSD reactions (La Greca et al., 2013). The post-disaster recovery period, where loss and disruption are stressors, can contribute to PTS (La Greca et al., 2010) and depressive symptoms (Lai, La Greca, Auslander, & Short, 2013). Children's distress may also manifest in physical symptoms. Prospective studies are few in disaster research, but the rare studies suggest that children may have increases in musculoskeletal problems, and the younger children increases in gastro-intestinal and sleep problems (Dirszwager, Keressens, & Yzermans, 2006) following a disaster experience.

Masten and Osofsky (2010) mention the importance of continuing adversities in the recovery context, as potentially increasing a traumatic experience. Osofsky and Osofsky (2013, p. 97) state a "potentially traumatic experience is often cumulative". Mental health symptoms of post-traumatic stress and related problems such as anxiety and depression are often linked to greater cumulative exposure (Masten & Obradovic, 2008). Disaster situations produce multiple stressors for children and these can continue over time such as the ongoing aftershock sequence of the present study. Research suggests that slow recovery disasters may cause developmental delays (Kronenberg et al., 2010), or have an impact on a child's normal developmental trajectory (Osofsky & Osofsky, 2013), as stress reactions may interfere with ongoing developmental tasks such as attainment of school achievement levels and establishment of peer relationships.

Trauma focused research has also looked at how childhood trauma can spread over a life span and may have links to health problems in later childhood or beyond (Greeson et al., 2014). MacFarlane and Van Hooff (2009), in a twenty year longitudinal study of the 1983 Australian bushfires, noted that the accumulation of PTEs during childhood may have a strong influence on the development of PTSD symptoms in adulthood. The spreading of adverse experiences over time, or from one level to another in children, or from one generation to another, is known

variously as negative snow-ball effects or developmental negative cascades (Masten & Cicchetti, 2010).

This spreading of adverse experiences takes place through numerous mediators⁵ and moderators, from genetic and neural mediators to relationships and community context elements (Masten & Narayan, 2012). In situations where there are recurring adverse experiences from frequent disasters (e.g., hurricanes, flooding), or multiple earthquakes then children may show negative effects from residual trauma (La Greca et al., 1996). However, Miller et al. (2012) point out there is little research on these children longitudinally to demonstrate this increased sensitivity. Masten & Narayan (2012) report mixed findings in their review, suggesting sensitisation but also inoculation effects for multiple PTE exposure. The subjective experience of a disaster may influence the outcome so that children experiencing a disaster as a generally affirmative experience may experience an inoculation effect, and vice versa (Weems & Graham, 2014).

Several longitudinal studies did find that PTS and pathology lasts over time in a minority of children (Goenjian et al., 2005; 2011; Weems et al., 2010). Yule, Perrin, and Smith (1999), in an overview of children's reactions to trauma, state that children's lesser PTS reactions may manifest in different ways such as separation anxiety, and psychosomatic symptoms. Trauma focused research is consistent in stating: that children who have multiple PTEs, or have manifest pre-event anxiety or depressive symptoms, have parents who exhibit PTSD, and who have little social support following a disaster, are more likely to show psychopathology post-event (Copeland et al., 2007; Weems et al., 2007).

Thus, the consequences of disaster for children depend for example in part on the event itself and the nature and duration of a given child's exposure. Such as, was the disaster one of repeated events or did the children lose family members? However, consequences are also influenced by the characteristics of the child and child's context, such as development level, personality characteristics, coping capacities, interpersonal support (discussed in later sections), and children's appraisal. Children are not passive victims of adversity; they influence their context. From the research

⁵ Mediating elements account for a relationship and moderating elements influence the strength of relationships between two variables.

focus on trauma, children who appraise challenging events negatively influence outcomes adversely. For example, in a prospective study of children experiencing physical injury, the younger children who “exaggerated their vulnerability” after the event, were thought to have higher risk for developing psychopathology (Bryant, Salmon, Sinclair, & Davidson, 2007, p. 2502).

Just as disasters are complex disruptions with inter-related elements, such as changes in social capital (e.g., children’s relationships) and community infrastructure, the distress that children may experience is influenced by multiple factors. For example, La Greca et al. (2013), in studying post-disaster trajectories of post-traumatic stress (PTS) in children, suggested that although children were affected by the degree of disaster-related exposure, this effect was influenced by other variables present in the children’s lives such as availability of social support. Both disaster exposure and available resources influence how the child appraises and copes with the disaster situation. Social and societal context, such as the presence of resources or vulnerabilities in the community and accessibility, influence how the child manages and responds (Pfefferbaum et al., 2014; Ungar, 2014). For example, poverty appears to exacerbate the negative effects of disasters (Cavallo & Noy, 2010; Eshel & Majdoob, 2014; Freeman et al., 2015).

Focusing on trauma and distress is an understandable approach in research as it has enabled the needs of children who are overwhelmed by disasters to be addressed, and has provided insight into which children may be the most vulnerable to serious traumatic reactions. However, concentrating on risk or vulnerability elements that contribute to children’s vulnerability in disasters fails to demonstrate just what children do to cope positively with the situation. For example, early resiliency research focused on risk and vulnerability and defined resilience as demonstrated by the absence of pathology, rather than highlighting diverse processes children employ to adapt positively (Southwick, Bonanno, Masten, Panter-Brick, & Yehuda, 2014).

Cicchetti (2013) states that it is as important to examine factors and mechanisms that promote positive adaptation as it is to investigate developmental trajectories towards negative adaptation and psychopathology, if we are to understand the processes underlying adaptive, resilient, or positive functioning in children. To understand effective coping and adaptive behaviour, it is necessary to explore the complex interplay of adaptation as it develops, including the interaction of multiple systems, from families to communities (Masten, 2013; Ungar, Ghazinour, & Richter, 2013).

Research needs to investigate how children cope effectively with disasters, as this can contribute to understanding positive adaptive processes and interventions of support for populations facing future disasters. This is particularly evident as the majority of children who are exposed to major stressors appear to follow adaptive pathways in their recovery process (Masten & Obradovic, 2008; Weems & Graham, 2014). Focusing on effective processes is supported by investigating perspectives from developmental systems theory and ecological theory that focuses on how children actually use their capacities, resources, and ways of coping within their multiple contexts to adapt positively to adversity. Also, in the last decades, resilience and coping research has started to examine positive adaptation in children.

Research focusing on children's positive adaptation.

With the advent of positive psychology (Seligman & Csikszentmihalyi, 2000), a paradigmatic shift in psychology research altered the emphasis from a largely pathology focused approach towards a framework of a salutogenic model (Antonovsky, 1996). The focus in this research was to understand how strengths and resources contribute to positive outcomes of developmental age appropriate functioning and well-being post-disaster (Bonanno, 2005; Masten & Obradovic, 2008).

The health-based framework of examining how children deal with disasters has led to a focus on how children, who demonstrate resilient or adaptive outcomes, process and cope with stressors in the disaster situation, and what personal and contextual elements may enable this process. Although limited in quantity, a body of research has started to examine the importance of assessing children's coping in disasters

(e.g., Jensen et al., 2013), and of understanding how some children's functioning is restored, or may even demonstrate positive change, following the struggle with adversity (Cryder, Kilmer, Tedeschi, & Calhoun, 2006; Meyerson, Grant, Carter, & Kilmer, 2011).

As the present study focuses on effective coping in a disaster, this chapter will now concentrate on what is known about positive adaptation in children. Effective coping in the research has been understood as children able to function at an age appropriate level despite adversity (Pfefferbaum et al., 2014). The following sections look first at conceptual perspectives influencing the research area, then how intrapersonal and interpersonal elements affect positive adaptation, and how resilience processes and coping have been investigated.

Conceptual perspectives.

Most of the research examining how children adapt well to adversity has emerged from several theoretical perspectives and strands of research. Four perspectives that have influenced understanding are acknowledged and discussed: developmental systems theory (DST); ecological systems theory; risk and resilience research, and coping research.

Developmental systems theory (DST).

DST (Gottlieb, 2007) highlights bi-directional influences that occur between the systems in individual development (see Figure 2) over four levels of analysis: genetic activity; neural activity; behaviour; and physical, social, cultural aspects of environment) (Gottlieb, 2007). Figure Two illustrates what Ford and Lerner (1992), describe as a theory that conceptualises how a person carries out transactions with their environment, and through that transaction how their biological, cognitive, behavioural, and environmental elements change or remain constant. How “systemic dynamics of individual-context relations provide the basis for behaviour and developmental change” (Lerner & Castellino, 2002, p. 124).

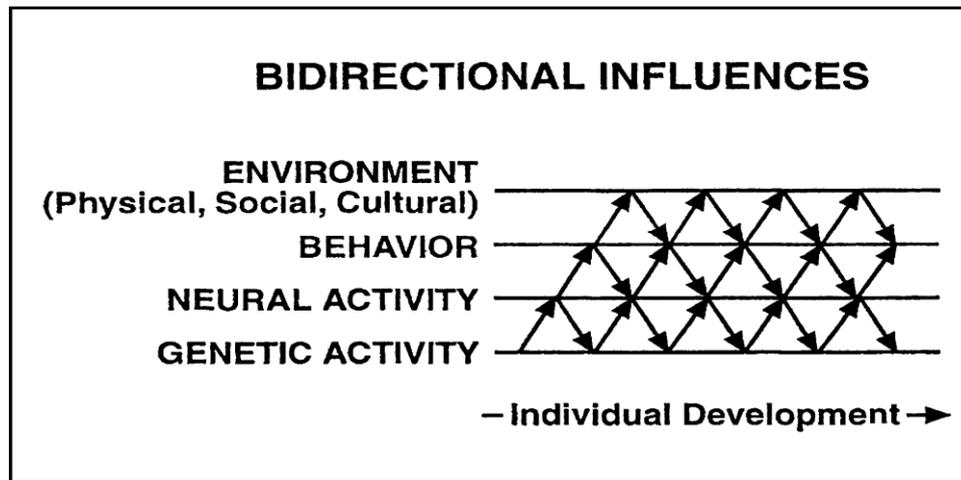


Figure 2. Developmental Systems Theory (DST) (Gottlieb, 2007)

DST situates children not in isolation but as influencing, and being influenced by their individual and environmental elements. This is seen within a post-disaster situation, where the exchanges children have with their context affect both the impact of the disaster and shape their capacity to adapt (Morris, Silk, Steinberg, Myers, & Robinson, 2007).

Ecological systems theory.

A second major perspective is Bronfenbrenner's ecological systems theory (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006; Tudge, Mokrova, Hatfield, & Karnik, 2009), which places the child as a living, bio-physical system nested within micro-systems of family and peer group; exo-systems of local community organisations such as the school; to the macro-system of town and societal values, culture and influences (see Figure 3, adapted from Bronfenbrenner & Morris 2006). Ecological systems theory evolved to transition from a focus on the child in the environment, to a focus on processes within those systems and interactions between systems such as the meso-system (Bronfenbrenner and Morris 2006), which refers to the relationship and bi-directional interactions between two or more settings. An example of this is the interactions between the child and micro-systems of family and peer group. Hoffman and Kruczek (2011, p. 1093) describe the meso-system as "the bidirectional influence successive layers of systems have on one another". Additionally, all processes are conceived as taking place over time: the chrono-

system. This is represented diagrammatically in Figure 3 developed for the present study.

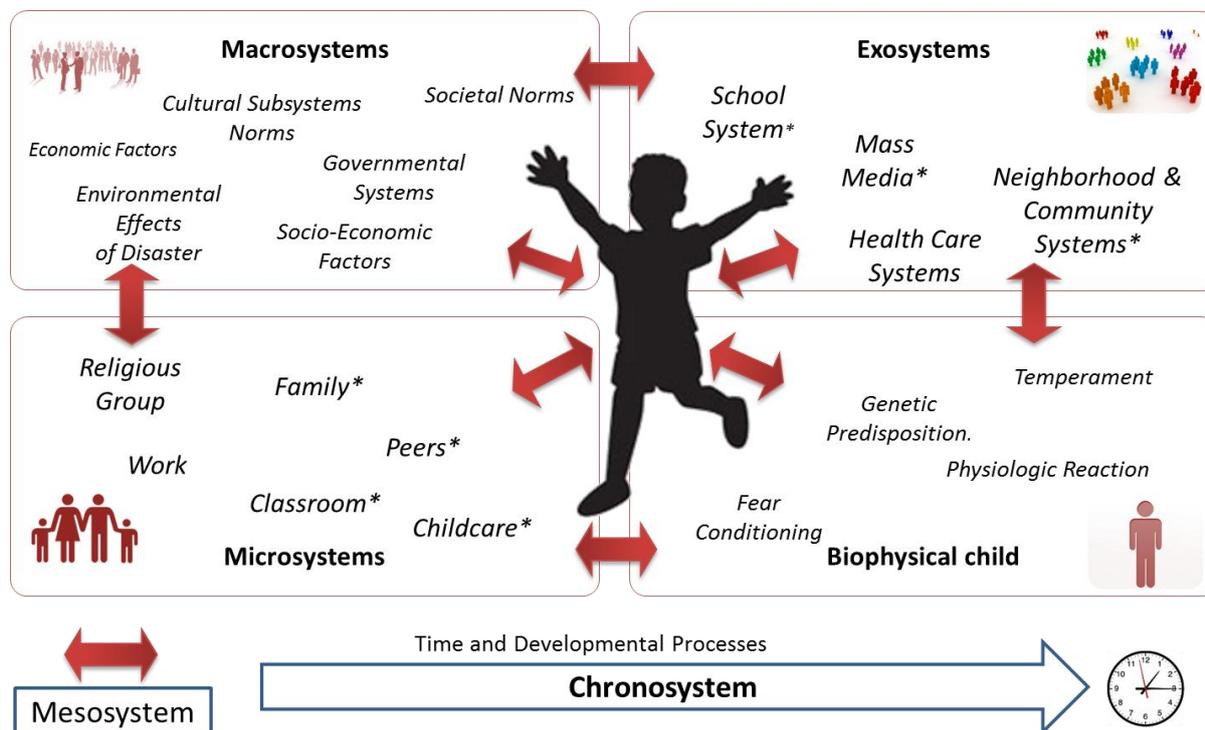


Figure 3. A bio-ecological model of the child's ecologies

Within this theoretical perspective, changes in the child are developmental processes in the life course, but also life transitions. A disaster can be a life transition affecting processes. Although “growth and development result from a continuous and complex interplay between heredity and environment” Mohr (2002, p. 73), a disaster is an adverse event or series of such events in the child’s environment that can disrupt or affect developmental processes. A child’s adaptation to disasters is understood as a dynamic process of multiple, interacting, systems that influence each other. This ecological perspective provides a framework from which to understand the inter-related functioning and complexity of the child in her or his environment.

Risk and resilience research.

A third influence on research focusing on how children adapt following adversity stems from risk and resilience research, which has emerged as a research concept from developmental systems theory and ecology systems theory cited above, as well

as from research in clinical and developmental psychopathology (Cicchetti, 2013). Research on adaptation and resilience incorporates development and has evolved over the last decades from a focus on examination of risk or protective factors, toward a focus on processes that enable the child to show resilience and cope well in the face of adversity. Recently this research framework has studied multi-level analysis of the processes of adaptation (Luthar, 2006; Masten, 2013) where children interact within multiple systems (see Figure 3).

Overall, children showing resilience have been described by Sroufe (1997, p. 256) as “facing adversity and nonetheless do[ing] well”. However, resilience research is still evolving towards understanding the complex interplay of developmental changes, capacities (intrapersonal resources), protective influences (interpersonal and socio-cultural resources), and ways of coping that influence children’s positive outcome from a disaster (see p. 43 this chapter for an overview of recent resilience research).

Coping research.

A final research perspective adopted in the present study emerges from coping research. Coping research has yet to conceptualise a developmental framework for children’s coping (Skinner & Zimmer-Gembeck, 2007), or to develop a model of children’s coping within disasters (Pfefferbaum et al., 2014). Coping research examines the ways or strategies used by persons to arrive at an adaptive outcome following a challenge. This research has been influenced by several theoretical perspectives and frameworks, such as attachment theory, self-regulation research, and resilience research. A review of relevant coping literature is discussed later in this chapter.

In sum, the above theoretical perspectives and research areas within disaster research focusing on children, provide the conceptual lens for understanding the child as a dynamic system within his or her context and will be used in the present study. However, the literature demonstrates parallel domains of research that, as yet, do not coalesce. Resilience research and coping research have yet to conceive of an integrated approach that provides an overall picture of how children adapt successfully following a disaster, or to explain the underlying processes that enable

that adaptation. Findings from the literature often tend to look at the child, conceived as separate from their context and systems, and to understand resources, coping processes, and resilience promoting factors separately, even though such factors tend to interact in a cumulative or additive manner (Grych, Hamby, & Banyard, 2015). There are limited studies that investigate how the complex, multi-level processes interact together (Pfefferbaum et al., 2014).

Recent studies in developmental disaster research note ongoing gaps in the literature. Disaster research often neglects the developmental processes in children that unfold even as a disaster occurs (Franks, 2011). Bonanno and Diminich (2013), and Masten and Narayan (2012) in their reviews, highlight that multi-dimensional data, from which to address this complex development framework perspective, are not yet available. Despite these limitations, there is an emergent quantity of research that endeavours to address the complexity of a child's experience and provides a body of information for further investigation.

The effort by researchers to identify elements that promote adaptive recovery following a disaster is a first step in understanding the processes that may explain and underlie the different reactions of children in their contexts. Important elements identified in adaptive recovery are the resources available to a child, either intrapersonal or interpersonal, and the children's capacities for resilience, demonstrated in children's adaptive ways of coping (Cyrulnik, 1999; Luthar, 2006; Masten, 2011).

Intra and interpersonal elements affecting positive adaptation.

Mediating elements,⁶ that is those that have a significant influence in enabling children to adapt well to disasters, often touch on children's intrapersonal resources and characteristics, and include disposition or psychological functioning (Noltemeyer & Bush, 2013). Also, interpersonal mediating elements found in the children's proximal relationships, which include family characteristics of parental support and functioning (Gil-Rivas & Kilmer, 2013; Miller et al., 2012), are found to influence adaptation. Additionally, community resources in the recovery

⁶ See glossary of terms Appendix A.

environment, such as social support, community capacities, and socio-economic variables are inter-dependently found to be influential (Pfefferbaum et al., 2013; 2014) in enabling positive adaptation. The elements that affect adaptation and coping have been examined in various domains of psychology literature. For example: resilience research (Masten & Obradovic, 2008); in positive psychology (Fredrickson, Tugade, Waugh, & Larkin, 2003); social psychology (Ungar, 2013), and in developmental research on coping (Zimmer-Gembeck & Skinner, 2011). These elements emerging from research are now discussed in some detail.

Intrapersonal resources and individual characteristics.

Intrapersonal resources.

It is of interest to examine intrapersonal resources that have been implicated over years of research as being important for positive adaptation, even while understanding that positive adaptation is probably a result of more complex processes of resilience and recovery. These resources have often been placed in clusters (e.g., capacities in self-efficacy and agency, or self-regulation skills). Similarly, specific personal resources such as social competence, high self-esteem, and internal locus of control, have been noted as resources and predictors of resilience (Cicchetti & Rogosch, 2009), and so contribute to positive adaptation.

However, when examining resources and competencies in adaptation to adversity, most of the research has been focused on adults. For example, perceptions of control and sense of mastery have been shown to be predictors of better outcomes in adults (Sumer, Karanci, Berument, & Gunes, 2005). Nevertheless, child focused research appears to reflect that of adult research (Pfefferbaum et al., 2014). Studies that focused on children's responses and intrapersonal competencies in disaster situations also found that positive recovery patterns were associated with perceived self-efficacy, positive coping strategies, problem-solving skills, and self-regulation (Kronenberg et al., 2010). Masten and Narayan (2012) mention personal capacities such as intelligence, cognitive flexibility, self-regulation skills, and self-efficacy as being linked to adjustment. These intrapersonal capacities may have moderating

effects in the face of challenges that disasters bring to children (Qouta, Punamaki, & Sarraj, 2008). Children's beliefs in their capacities may also have a protective effect (Cryder et al., 2006).

Research has attempted to understand how persons use these intrapersonal resources in the face of adversity such as disasters (Bonanno, 2004; Paton, Smith, & Violanti, 2000). Hobfoll (2002) examined individual and relationship resources, and how they interact in adaptation. In Hobfoll's Conservation of Resources (COR) theory (Hobfoll, 1989), stress occurs when capacities or resources are threatened and the individual activates a process of seeking or retaining them. COR theory also suggests that resources will come together and accumulate so that, for example, children with higher self-esteem may be more likely to appraise their self-efficacy as adequate.

Children's own capacities are affected by their developmental stage and may be limited and evolving as they develop. For example, a child may still be developing a sense that one can plan for one's future, or be able to understand events only in a concrete rather than abstract manner. They may be less aware of being able to have some control over life events due to their dependence on adults. The interdependence of children on close adults influences how these capacities evolve within the systems in a child's environment (Masten, 2007). The capacity of children to cognitively appraise an event in a way that can change the emotional response to the event is a skill that develops over children's early life (Rutter, 2006; 2013; Skinner & Zimmer-Gembeck, 2007) in interaction with proximal adults.

Children's cognitive capacities and competency increase with age so that normally, older children are more able to re-appraise challenges than very young children. However, increased cognitive understanding of disasters may mean exacerbated distress. Salmon and Bryant (2002) argue that children's developing memory capacities may significantly affect their response to adversity as they must use what they remember to make meaning of their experiences in the recovery process. Longitudinal studies are still necessary to understand developmental evolution in competencies and changes as they occur over time.

Recently, neurobiological and epigenetic factors that influence children's responses have been increasingly explored (e.g., Charney, 2004; Cicchetti, 2010; Obradovic & Boyce, 2009). Although this research is nascent it demonstrates that future research

needs to incorporate biological elements in understanding how children react to disasters, as certain children have been shown to be particularly susceptible to either negative (e.g., loss) or positive (e.g., supportive social network) environmental influences. Research has suggested that positive adaptation has both biological underpinnings and results from interactions with the children's intrapersonal capacities as well environmental resources (Boyce & Kobor, 2015).

Intrapersonal capacities should not be researched in isolation from each other or from the context, as capacities may have different effects depending upon interaction with external circumstances and appraisal of the capacity. For example, Kilmer and Gil-Rivas (2010) found that rumination, often associated with negative outcomes (Sprung & Harris, 2010), was also a predictor of post-traumatic growth and speculated that rumination may be a way of processing and making meaning of an experience so that it eventually becomes integrated into the child's life schema.

Similarly, research with children needs to consider that developmental areas may not be maturing at a parallel rate, which influences children's capacities to cope and adapt. For example, a child may have different levels of cognitive ability from that of their emotional regulation, both of which are implicated in coping processes. Bonanno and Mancini (2008) make the notable point that capacities and resources could best be viewed as only one of the many resilient factors that may affect how a child reacts to disaster.

Age and developmental level.

Children's intrapersonal resources implicated in their effective coping and adaptation are influenced by age and developmental level. Children can be impacted, and react to disasters differently depending on their developmental level and chronological age (Deering, 2000; Masten & Osofsky, 2010). As children have different cognitive, behavioural, and emotional capacities and needs (Peek, 2008) their developmental levels and functioning can bring unique appraisals and reactions to events such as earthquake disasters. For example, young children may initially have significant misconceptions about the causes of earthquakes (Narayan, 2004), or "mistakenly assume accountability for situations over which they have no control, and then blame themselves for not acting differently" (Margolin et al., 2010, p. 4).

Findings concerning developmental and age related reactions to disasters are mixed (Franks, 2011; Masten & Narayan, 2012). For example, Norris et al. (2002) suggest that children may show more impairment than adults after disasters, whereas Bonanno et al. (2010) and Bonanno and Diminich (2013) found opposing evidence in their reviews of the literature. Some studies have found weak or no effects for age (La Greca et al., 1996). Franks (2011) makes the point that it is necessary to see children's behaviours from the perspective of age-related characteristics rather than age *per se*. For example, children's reactions may reflect their developmental stage rather than be just adaptive or maladaptive.

Although research has summarised general developmental changes in children's cognitive ability to react, there is a scarcity of studies that focus on children's appraisals and subsequent ways of coping and resiliency processes in a disaster context. Perception of events has an influence on how children respond. Fivush, McDermott Sales, Goldberg, Bahrick, and Parker (2004) report that the way children appraise memory of negative events has an effect on how they recover, but that appraisal is also affected by developmental capacity. Studies that attempt to understand children's age and developmental level effects through appraisal, discuss how developmental level and age may influence how disasters are perceived and appraised. For example, in the aftermath of September 11, 2001 attacks, young children watching television reported thinking the attacks were happening again and again, and other children were watching repeatedly because they believed they would possibly see a different outcome (Gaffney, 2006).

Importantly, children do not live in isolation. Proximal adults influence how children perceive events. Young children especially may be affected by disaster as they are physically and psychologically limited in their ability to respond, and their experiences are often dependent on, and mediated by close adults. For example, younger children watch the reactions of adults (Deering, 2000) to appraise how dangerous the situation may be. Salmon and Bryant (2002) have noted that talk with adults can provide a context for interpreting events so younger children may be particularly dependent on close adults with whom to discuss events, and to aid them in organising their experiences and memories.

However, Masten and Osofsky (2010) state that the complex interplay of developmental age factors, exposure, and context make it difficult to specifically distinguish developmental and age related factors. Nevertheless, disasters that occur during childhood may come at turning points (age at which developmental changes typically take place) (Masten, 2001; Masten, 2006) in children's development and have a potentially greater impact, or may have limited effect due to the child's stage of development. For example, younger children, because of their cognitive development, may not yet appraise unusual events as PTEs, and may in consequence experience less stress (Franks, 2011).

Children's response to disaster is not just dependent on the event or their appraisal of the event but also on their capacity to respond. Franks (2011, p. 62) states that "danger appraisal, magical beliefs, emotion regulation, memory representations" are all areas where developmental change takes place. Compas, Connor-Smith, Saltzman, Thomsen, and Wadsworth (2001) note that a person considers potential harm from an event like a disaster, but also will assess their personal resources. Both the capacity to appraise threat and use intrapersonal resources is affected by the child's developmental age. For example, intrusive thoughts are not mentioned by very young children but this may be more a developmental age capacity rather than a lack of intrusive thoughts. Before the age of five to eight years, children do not realise the existence of thought in themselves and others, and so this aspect of post-disaster experience may not be articulated (Sprung & Harris, 2010). Before intrapersonal capacities that influence response and adaptation are discussed a further element of the children's characteristics, gender, is examined.

Gender.

Gender is frequently studied as a moderator which can influence resilience or risk to adversity. Furr et al. (2010) in their meta-analysis of youth note gender differences of greater distress and PTS symptoms observed in or reported by females. Similarly, La Greca et al. (2013) report that female gender was one factor predicting PTS in their previous studies following Hurricane Andrew. In their study on trajectories, girls were more likely to be in the recovering and chronically distressed trajectories compared to the resilient group. One explanation for this difference is that women

and girls may tend to subjectively experience greater initial threat during PTEs (Bonanno & Diminich, 2013).

Other studies have varied findings on gender. Tolin and Foa (2006) reviewed twenty-five years of sex differences in findings and found that women and girls did report more effects from PTEs. This may suggest that females experience PTEs as more frightening than males or are also more willing to admit difficulty than the male cohort. Laufer and Solomon (2009), in their study of children experiencing terrorist attacks in Israel, found that girls did indeed report more symptoms of PTSD and fear, but boys' symptoms were more severe. Similarly, Davidson and McEwen (2012) suggest that long-term effects of adversity in childhood have more impact on adult male health. Kronenberg et al. (2010) cite research that shows girls and boys respond with different symptomatology: girls with guilt and emotional reactions, and boys with increased behavioural and academic problems. Bonanno and Diminich (2013), like Pfefferbaum et al. (2014) highlight that gender differences in research are small, or assumed from modest results.

As well, in a recent national review of over six thousand children who had experienced trauma in the USA, gender did not show a robust moderating effect (Contractor et al., 2013). Enarson (2012) suggests that race and socio-economic status may confound gender factors in post-disaster situations. Also, gender may have more complex effects than differences in reactions. Gender may also differentially influence effects of interventions. For example, Betancourt and Khan (2008) reported that social support ameliorated the distress of Kuwaiti girls in the Gulf war but did not have a positive effect on the boys examined in the study.

As most of the above gender research was examining trauma, future research on gender and age would need to focus more on resilience processes, positive adaptation and developmentally effective functioning. This would allow examination of possible gender and age differences in positive reactions to adverse situations. Equally, both age and gender behaviour is influenced by the cultural context in which it takes place, and so understanding of these elements would need to include understanding of cultural influences (Ungar et al., 2013). When this is accomplished, there may be more clarity on gender effects in children's adaptive functioning.

Individual characteristics: disposition and psychological functioning.

A further research area examining intrapersonal elements that affect how a child copes with adversity has focused on dispositional or personality characteristics. Arguably disposition or personality traits are characteristics that persist over time (Roberts, Walton, & Viechtbauer, 2006). For example, conscientiousness and perseverance has been linked to effective problem-solving, and agreeableness to obtaining social support (Carver & Connor-Smith, 2010).

However, Bonanno & Mancini (2008) highlight that personality characteristics, and their effect on disaster response, are often over-estimated in some research. Personality characteristics may not be fixed, which is supported by an alternative view of personality development evolving over time. For example, it has been demonstrated that personality traits or variables, such as extraversion, show some malleability across the lifespan, and changes may be more pronounced during childhood (Carver & Connor-Smith, 2010).

Personality characteristics also develop within a context. Bonanno et al. (2010) describe the bi-directional relationship of disasters and personality; personality may influence disaster response but also, disasters may affect personality development. As well, personality factors are affected by the children's relationships. Obradovic and Boyce (2009) have shown that 'sensitive' children who show negative emotionality usually associated with risk, were not as vulnerable when matched with warm and sensitive parenting, and vice versa. This has been confirmed in research focused on inter-parental violence and childhood adaptation (Manning, Davies, & Cicchetti, 2014). This would suggest that caution should be taken with linking personality variables with effective coping, and resilient or positive adaptive outcomes.

Nevertheless, some personality characteristics have often been found to be linked to positive functioning and outcomes. In a prospective study following hurricane Katrina, there is some evidence that low levels of negative affectivity (Weems et al., 2007) in adolescents is equated with better outcomes. Also, Gupta and Bonanno (2010, p. 83) have found that adults who demonstrate self-enhancement—"a disposition to extremely positive self-evaluations", are more likely to have adaptive outcomes following PTEs. Gupta and Bonanno hypothesise that self-enhancement

may be a buffer against negative emotions and allow persons to have perceptions of self-efficacy and positive emotions. In children, where personality is still developing, these findings should be interpreted cautiously, even though studies show that characteristics supportive of resilience and positive adaptation appear in early childhood (Osofsky, Osofsky, Kronenberg, Brennan, & Cross Hansel, 2009).

Additionally, there are limitations to knowledge about individual characteristics in disaster research, which affects understanding of their influence. Firstly, much of the research on individual capacities, competencies and personality variables does not have pre-disaster data on functioning of the children for comparison, nor longitudinal studies of ongoing functioning post-disaster. Secondly, most knowledge of reactions in relation to adversity and eventual adaptation has emerged from research focused on trauma.

However, with the advent of positive psychology there has been a change in the lens through which research views processes of adaptation and adequate functioning. Positive psychology focuses on how persons cope and adapt in constructive ways, and what elements predict well-being (Seligman & Csikszentmihalyi, 2000). Evidence from numerous studies indicates that well-being is a multi-dimensional phenomenon that includes both hedonic (happiness) and eudemonic (life satisfaction) concepts such as meaning and self-realisation (Ryan & Deci, 2001). Recently research has examined well-being in children (Noble & McGrath, 2012). With children, well-being, both hedonic and eudonic, is intricately linked with ongoing developmental capacities and competencies, as well as positive adaptation (Pollard & Lee, 2003).

Although Bonanno and Diminich (2013) point to the scarcity of work that examines the salutary effects of positive emotions in children in relation to disaster research, positive emotion has been mentioned as a component of adequate adaptation following adverse situations such as chronic maltreatment (Cicchetti & Rogosch, 2009). Again, much research has centred on adults. Frederickson (2001), and Tugade and Frederickson (2004), in the Broaden and Build model, have demonstrated that the experience and expression of positive emotions promotes more effective coping with adversity, such as broadening the scope of attention and cognition towards producing patterns of thought that are flexible, open to information and efficient.

By improving the ways that persons cope with adversity, positive emotions may increase a person's psychological resources of optimism, and their seeking of social resources such as social support (Fredrickson, Tugade, Waugh, & Larkin, 2003). Frederickson argues that this upward spiral leads to feelings of well-being. Similarly, Scheier, Carver and Bridge (2001) have suggested that persons with dispositional optimism are more likely to hold positive expectations about the future, see positive outcomes to adverse situations, and employ effective coping strategies such as reframing and acceptance coping in uncontrollable situations. However, there is a scarcity of research that demonstrates how these characteristics operate in children facing a disaster.

In summary, research on intrapersonal elements has demonstrated that understanding how children cope with disasters must accommodate children's individual capacities and resources. However, children develop their dispositions within relationships with close others and within their local context. These relationships and context elements, discussed in the following section influence children's competencies and capacities (Miller et al., 2012), and are vital elements in influencing children's coping and adaptation. In fact, a later body of research gives more weight to family, school, and community factors in understanding children's reactions to disaster than to individual characteristics and capacities (Abramson, Park, Stehling-Ariza, & Redlener, 2010; Ungar, 2014).

Interpersonal elements

Children are dependent on, and interact in space and time, with the proximal systems operating in their social and physical environment: family, peers, teachers, the school place, neighbourhood, community centres, and parents' socio-economic situation. Coping and resilience research suggests that children experiencing a disaster employ their coping strategies and develop resiliency processes whilst interacting within these multiple proximal systems (La Greca, et al., 2013; Lack & Sullivan, 2008). Disasters "underscore the interdependence of individual, family, and community systems, as well as biological, physical, and ecological systems across levels" (Masten, 2013, p. 5). Children's capacities to adapt and cope with disasters are

affected by the context in which the development occurs (Mohr, 2002). Of primary importance in the children's context is their relationship with their parents.

Research has suggested that parents have a key role in modelling adaptive behaviour in preparing their children for disasters, and in protection and buffering during the events (Masten & Osofsky, 2010; Pfefferbaum et al., 2014). Several studies state that following disasters, children, especially younger children, look to their parents for cues of how to act (Franks, 2011). Osofsky and Osofsky (2013) in their review of lessons learnt concerning children, families, and disasters, emphasise the protective role of parents, especially for younger children.

How parents function before, during and after the disaster is recognised as a key influence on how a child responds (Ronan et al., 2008; Gil-Rivas & Kilmer, 2013). If the parents are distressed and overwhelmed, the children tend to have more problems responding in an adaptive manner. Margolin et al. (2010) in their study of earthquakes and children suggest that children of distressed parents exhibit more distress themselves. This has been confirmed by numerous studies (e.g., Chemtob et al., 2010; Costa, Weems, & Pina, 2009). Hafstad, Haavind, and Jensen (2012) offer a possible explanation, suggesting that parents who are themselves severely affected by the disaster are less available or able to provide optimal care and support to their children. Additionally, parents may not accurately access their children's trauma. Franks (2011) cites studies where parents have been found to overestimate their child's resilience and under-estimate trauma symptoms.

However, family contact is demonstrated as important in the immediate aftermath of disaster events. MacFarlane (1987) underlined the importance of family contact for children experiencing a disaster and the effect of separation in predicting post-traumatic symptoms. Fear of separation is often heightened in disaster situations where the dependent child's needs for security and protection are intensified (Jensen et al., 2013). Research suggests that how a child reacts to temporary separations that occur in disasters is mitigated by attachment style and has highlighted the importance of attachment relationships for children, as well as the functional capabilities of children's caregivers (Borelli et al., 2010). Fraley, Fazzari, Bonanno, and Dekel (2006), in a study of adult attachment and psychological adaptation, stated

that individuals who had secure attachment had fewer symptoms after the terrorist attacks of 2001 in New York.

Secure attachment is one factor that promotes self-regulation skills (i.e., attention, inhibitory control and emotional regulation) in children. These skills are associated with pro-social behaviour and a protective role in disaster experience (Masten, 2004; Masten & Osofsky, 2010; Pfefferbaum et al., 2014). Children who have a secure attachment style often have a belief that others are available and responsive when they are in need and may go to others for support (Osofsky & Chartrand, 2013).

Children's relationships are therefore possible resources and sources of support. If parents are important in how the child copes and adapts, they are not the only relationship of influence. In a large body of research (e.g., Davidson & Adams, 2013; Pujadas Botey & Kulig, 2013) family and social networks (peers, siblings and teachers) are proposed as mitigating the negative impact of adverse events like disasters.

It is important to link social support with the child's age; Kronenberg et al. (2010) suggest that younger children may have less access to social support (including reciprocity, mobility, number of networks) as they are more dependent and have not had the years or necessary skills to build up and use a social network to obtain support. This may be one factor in the importance of parents and family for younger children. Similarly, Cryder et al. (2006) found that older children often had larger social support systems (friends and family) outside of their immediate family, compared to younger children in their study. This was confirmed by La Greca et al. (2010) who underlined the buffering effect of peers for older children.

Social support has been one of the most consistently identified protective factors for children, when coping with disaster (Hoffman & Kruczek, 2011; La Greca et al., 1996; Osofsky et al., 2009). Luthar (2006, p. 780), in a review of research noted that "the capacity for resilience resides in relationships". For example, teachers and peers can provide multiple elements that can assist children to cope well: reassure them, provide information and "normalise" disaster reactions, as well as to help them resume normal roles and routines (La Greca & Silverman, 2009).

Considerable research supports the link between social support resources and positive adjustment following adversity (Kaniasty & Norris, 1993; Qouta et al., 2008). Pina et al. (2008, p. 570) found that social support (“perceived helpfulness of support from extra-familial sources e.g., teachers, friends, church members”) protected youth in post-Katrina from developing PTS. Similarly, research has highlighted teacher relationships as assisting in children’s recovery (Baum, Rotter, Reidler, & Brom, 2009; Masten & Obradovic, 2008). As well, Peek and Richardson (2010) in a qualitative study of displaced children post-Katrina confirm the positive effect of peer and teacher support in an adaptive recovery process as do Qouta et al. (2008) in an ongoing conflict situation in Gaza.

However, social support in the children’s context may need to be further explored as some research links a need for social support as being correlated with higher distress (van Wesel, Boeije, Alisic, & Drost, 2012). Also, there is limited research on the ways social support influences how children cope effectively with disasters and manage a positive adaptation (Overstreet et al., 2011). Furthermore, it is not only the children’s social relationships that can promote or hinder adaptation following a disaster. Neighbourhood and community functioning shape disaster outcomes.

Community structures and resources.

From a community psychology perspective, it is important to understand not just the child’s individual functioning, but also the reciprocal processes between the child and their environment in order to understand the “how” in the way children manage adaptive outcomes to disasters.

School institutions have been cited as positive elements in the children’s recovery environment and important for children’s adaptation. For example, schools can be the “gate-keepers to resources that nurture well-being” (Ungar et al., 2013, p. 351). Rutter (2013), when examining resilience within a clinical framework, placed some of the enabling elements within school structures. Rutter suggests that both the family and school situation allow the child to successfully take responsibility and cope with small challenges, which gives a child opportunities to build up autonomy and resilient processes in a non-threatening but mildly challenging environment. It is for this reason, as well as the positive effects of returning to routine and social

interaction, that findings on post-disaster recovery suggest that schools are rebuilt as soon as possible post-disaster (Osofsky & Osofsky, 2013).

Additionally, schools provide respite for parents who are usually under pressure in a post-disaster environment and they allow connections to competent adults: teachers and school staff and social interaction with peers. Child-nurturing institutions such as schools are able to scaffold and promote resiliency processes (Katsuhiko, 2013; Masten & Osofsky, 2010). For example, in New Zealand, earthquake drills for disaster preparedness are consistently practised in the child's school year (King & Tarrant, 2013). The drills may engender a perception of agency and self-efficacy in the children as well as be enabling in a disaster scenario.

However, children do not always experience school as a positive environment. Teachers may not be functioning adaptively or may be overwhelmed themselves by the disaster and consequences. Additionally, schools can be places of stress for children in ordinary circumstances with challenges in schoolwork and conflicts in relationships, such as bullying. Children may feel some anxiety about schoolwork and conflict in addition to distress from a chaotic post-disaster situation: a possible accumulation of stress. Nevertheless when children's anxieties about school are addressed, in post-disaster situations, the adaptive recovery level of the children appears to increase (Kronenberg et al., 2010).

The school is but one system in the children's ecological system (see Figure 3, p. 26) that is influential in enabling or inhibiting adaptation in the child. Community systems of neighbourhood, sports teams, social clubs, cultural groups, or leisure centres, all play a role (Ungar et al., 2013). Community structures can enable adaptive processes for children experiencing major adversities such as war and post-disaster recovery (Betancourt & Kahn, 2008; Panter-Brick & Eggerman, 2012). Norris, Stevens, Pfefferbaum, Wyche, and Pfefferbaum (2008) have investigated elements that aid community resilience in the context of disaster and the positive flow-on effect of community resilience to the local population. Norris and colleagues define community resilience as emerging from "a set of networked adaptive capacities" (p. 135). An example is seen in community beliefs and values which may positively influence collective efficacy in communities, particularly when communities were functioning effectively pre-disaster (Paton & Tang, 2009).

Limited research has examined how community resources may promote adaptation. Shin and Toohey (2003) highlight the influence of public community structures on the population's welfare, as well as the propensity of researchers to undervalue the effects of community influence and put more weight on the effects of individual dispositions. Within an ongoing disaster situation, organisational elements within a community can promote coping and resiliency around the consequences of a disaster (Paton, Bajek, Okada, & McIvor, 2010; Paton & Johnston, 2006), and wider community values can be important in promoting resiliency and adaptation (Kaniasty, 2012) in all persons within the community.

Cultural contexts and characteristics influence responses in both individuals and community groups facing adversity (Ungar, 2014). For example, daily practices and commonly held beliefs of a population influence, and are affected by, the individuals experiencing disaster (Liu & Mishna, 2012; Ungar et al., 2008) and having a positive cultural identity in a community may influence how children can access resources that enable adaptation (Ungar et al., 2013).

Like Ungar et al. (2013), Pooley and Cohen (2010) note that availability but also access to community resources are determinants in promoting positive functioning. Children, especially younger children, have been described as a group that has limited access to community resources (such as amenities in distal neighbourhoods) due to their dependence and lack of mobility within the community. Their caretakers may be intermediaries for access. Masten and Obradovic (2008) acknowledge the complexity of separating individual resources and capacities from family, peer, and neighbourhood and community functioning, in the processes that enable adaptation after disasters.

The above section discussing intrapersonal, interpersonal and community resources has given an overview of elements implicated in children's adaptation, but research also suggests that understanding adaptation is more than an accumulation of elements. Adaptation is the result of processes and interactions. The stability or ongoing chaos of systems within the ecological context of the child will reflect on the child's capacity to adapt (Overstreet et al., 2011). The following sections on resilience processes, post-disaster pathways, and coping processes examine research

that has endeavoured to understand the ‘how’ of children’s adaptation within these processes.

Processes in resilience.

Resilience has been a focus of a large section of research in an attempt to explain why some children continue to function well when facing adversity. Despite an initial emphasis on risk and vulnerability, studies with a resilience perspective now access positive as well as negative patterns of adaption after disasters, and endeavour to isolate what elements and conditions appear to promote or protect the capacity of children to do well in the face of adversity.

Many definitions of resilience exist in the literature (Norris et al., 2008). Resilience is described as both processes and an outcome following adversity. Resilience will be understood in the present study as the following: “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). In a disaster context, the capacity of resilience is thus understood as an ability to resist or recover (Norris et al., 2008) towards adequate functioning and development.

Children who adapt positively from a disaster are seen as dynamic systems with capacities to progress to adaptive functioning. Resilience is therefore also seen as an outcome, and yet includes processes enabling that outcome. These processes have been described as “a class of phenomena characterized by good outcomes in spite of serious threats to adaptation or development” (Masten, 2001, p. 228). This class of phenomena are not yet totally defined. Good outcomes or positive adaptation has been defined as the capacity of a person “to meet normal developmental milestones and culturally relevant expectations for competence” (Bonanno & Diminich, 2013, p. 380). Thus resilience and adaptation defined here are culturally specific.

Resilience is no longer understood as a fixed capacity or trait. Norris, Tracy and Galea (2009) have noted that resilience is better characterised as adaptability rather than a fixed construct within the individual. This would mean that a child is not always resilient and that resilience is more a capacity to withstand or recover through various processes, rather than to consistently resist all adversities that may occur.

Resilience then is often context specific so that the person-environment fit is influential in a given context. Thus a child may show resilience when faced with one type of PTE, but be overwhelmed by a different type of adverse event (Fergus & Zimmerman, 2005; Zolkoski & Bullock, 2012), particularly if factors underpinning resilience processes in the child's ecology such as supportive parenting vary (Benzies & Mychasiuk, 2009).

Culture influences resilience. Ungar et al. (2013, p. 350) elaborate contextual factors in a disaster environment as being "related to social class, social inclusion/exclusion, and gender" and cultural factors as "everyday practices and commonly held beliefs" that influence resilience processes and outcomes. They argue that resilience is not just the capacity of individuals to access resources (either intra or interpersonal) that uphold well-being, but their ability to experience the resources and subsequent resilience in a culturally meaningful way. Numerous other researchers (e.g., Betancourt, McBain, Newnham, & Brennan, 2013; Luthar, Cicchetti, & Becker, 2000) concur and emphasise that factors found in resilience are culturally based, locally understood, and therefore need to be examined within their context. Therefore, research into resilience factors operating post-disaster needs to take into consideration contextual and cultural factors, as what may be adaptive in one context may not be adaptive in another.

Recent resilience research examines the resiliency processes on multiple levels in the developing child. Cicchetti and Rogosch (2009) discuss how each successful adjustment of age salient challenges strengthens adaptive processes. In this way resilience as a psychological construct can be conceived of as a process or processes which are ongoing across the life span (Masten & Tellegen, 2012). Thus resilience can be understood as the outcome of a potentially cumulative effect of successful adaptive processes in multiple levels. Yet, processes that lead to positive adaptation post-disaster are less clearly delineated.

Nevertheless, certain elements are often found to influence the processes of adaptation that are associated with resilience. These elements can be internal to the child, such as capacities or characteristics, or external resources in the child's context, such as functioning schools. Haskett, Nears, Ward, & McPherson (2006, p. 801), in an overview of studies of maltreated children, discussed elements associated

with resilient functioning. Examples of such elements or capacities were cognitive ability and ego resiliency, which referred “to the children’s capacity to adjust their emotional and behavioural responses as a function of demand characteristics of a given situation”.

Research identified mediating and moderating variables and processes operating in the multiple levels of the child and the child’s environment as elements that promoted adaptation (Pfefferbaum et al., 2013; Masten & Osofsky, 2010). For example, research suggests that effective parenting is a mediating variable, having a definite effect on children’s skill at emotional regulation, and parenting behaviour that buffers the child from danger is a moderating variable in that it influences the impact adversity has when it occurs. When these elements were resources or attributes that had a positive effect across all risks, they were labelled promotive factors (Sameroff, 2000). An example of a promotive factor, which has systematically been mentioned in studies, is competent parenting; that is, ‘good enough parenting’ (Quota et al., 2008; Winnicott, 1965). Competent parenting is supportive and adapts to the children’s needs.

Protective factors, similar to moderating variables, are those elements operating at the time of adversity. These factors are dependent on function (e.g., parents as buffers for the child against the adverse event) (Osofsky & Osofsky, 2013) and context (e.g., immediate aftermath of an earthquake, or later in the recovery trajectory). Protective factors often have a special moderating effect when adversity is high. Pfefferbaum et al. (2013) who focus on protective factors mention maternal acceptance of children who had low negative emotionality during the September 9/11/2001 terrorist attacks as a protective factor. This acceptance and normalising of children’s reactions by caregivers was a positive element in permitting those children their specific responses to adversity.

From disaster research, a disaster then presents the child both to multiple risks but also to promotive/protective factors. The disaster situation is complex and the interplay of these factors and capacities occurs over many levels and contexts. Some personality dimensions may be consistently linked to resilience, such as secure attachment and self-regulation (Fraley et al., 2006), but others may function as a

vulnerability or protective influence depending upon the context (e.g., the age of the individual).

Understanding the influence of promotive and protective factors for underpinning resiliency processes is important as it can guide supportive interventions for children. For example, interventions can be designed to reduce parent-child separation during adversity (MacFarlane & Van Hooff, 2009), as separation has been cited as negative for children in both everyday situations and particularly during times of distress and adversity. However, there continue to be gaps in understanding the interplay of multi-level resources in promoting resilience processes. One body of research that addresses gaps in understanding ongoing resiliency and adaptation investigates pathways of adaptation.

Pathways of adaptation following a disaster.

In endeavouring to understand how children adapt after disasters, it is necessary to examine research that focuses on descriptions of patterns of adaptation and adjustment during a recovery process. 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-disaster state. Consequently, recovery is better understood as encompassing the trajectory a child takes post-disaster, in order to adapt to, assimilate or actively work towards managing their altered present, so that they are able to function adequately in their new circumstances (Norris et al., 2009) and focus on present and future demands.

Recent research using growth modelling techniques such as latent growth mixture modelling (LGMM) has permitted the visual representation of recovery pathways. Pathways show heterogeneous trajectories of adaptation (Bonanno et al., 2010), and add understanding to the complexities of a person's disaster response, by illustrating descriptions of positive as well as dysfunctional outcomes. Existing research demonstrates that there is variability in both disaster impact and outcomes for children, even those who have similar disaster exposure. Children who adapt well to

disasters may begin at very different places, behaviourally and circumstantially (Weems & Graham, 2014). For example, influential elements such as personal competence and socio-economic variables vary from child to child (Osofsky & Osofsky, 2013) and can affect pathways and outcomes.

Plotting the multiple patterns in recovery marks a change in perspective from binary, (pathology/no pathology) outcome findings towards a more complex and nuanced understanding of the variety of potentially adaptive outcomes following disasters. Bonanno (2004), focusing on adults, has illustrated four basic pathways: two adaptive—resilience and recovery, and two showing maladaptive outcomes—chronic and delayed. The most common pathway, Bonanno describes as a “relatively stable trajectory of healthy adjustment or resilience” (Bonanno et al., 2010, p. 11) or what Weems and Graham (2014, p. 2), in studying youth, transcribes as “healthy adjustment, indicated by transient symptoms and minimal impairment”. Less common is the “classic recovery trajectory of initial elevations in symptoms and distress soon after the event that only gradually decreases over the ensuing months” (Weems and Graham, 2014, p. 11). Norris, et al. (2009, p. 2196) have noted that recovery pathways differ from resilience outcomes “primarily in the speed of improvement”. Both resilience and recovery trajectories appear to result over time in positive adaptation. The above research demonstrates that a minority of persons follow maladaptive outcomes.

Research using growth modelling techniques suggests that children demonstrate similar processes of effective adaptation to adults, seen as heterogeneous processes of interaction across multiple levels of functioning (Masten & Obradovic, 2008). These modelled pathways of children’s recovery from the Masten and Obradovic study are illustrated below (Figure 4). Within this figure, pathways that end with positive adaptation and resilience are illustrated by dashed lines: A-resistance; C-disturbance with recovery; E and F- positive transformations. Maladaptive pathways are shown by pathways B, D, G, and H.

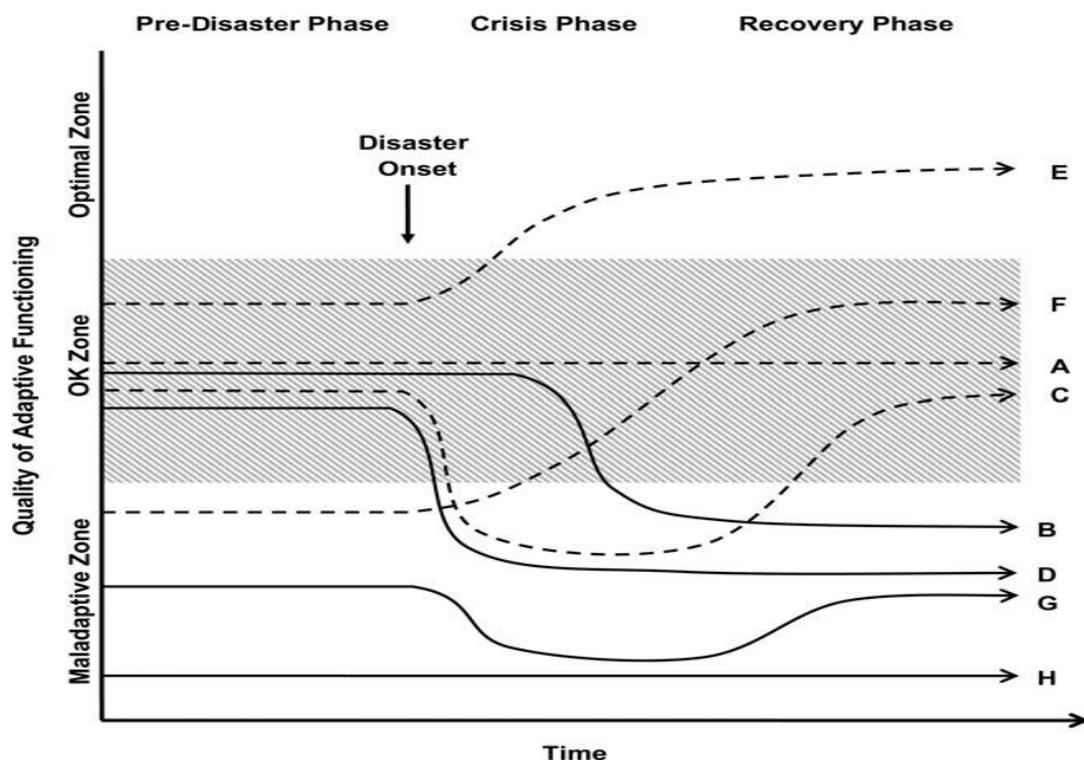


Figure 4. Examples of adaptive and maladaptive pathways in the context of an acute-onset disaster

Recent research investigating outcomes provides further information on adaptive pathways. For example, Bonanno and Diminich (2013) in their annual review underline the distinction between two positive outcomes: minimal impact trajectories (also noted as resistance pathways), and emerging resilience outcome pathways that show a relatively fast return to developmentally appropriate functioning. The few studies of children's trajectories (e.g., Kronenberg et al., 2010; Masten & Obradovic, 2008) demonstrate adaptive pathways as the most common, which suggests that pathways for youth are similar to adult trajectories, and that children, over time, are mainly able to overcome disasters.

Even though research on pathway outcomes illustrates the heterogeneity of response, further research is needed to verify whether the latent growth modelling is confirmed by empirical longitudinal research, and to understand the specific underlying processes in the positive, heterogeneous pathways that lead to adaptive outcomes. To date, most pathway studies have focused on potential trauma, PTS symptoms and pathology rather than on understanding adaptive functioning so that more is known about children experiencing distress.

Although this disaster research has focused on investigating patterns and pathways (Bonanno et al., 2010; Norris et al., 2009), few studies have been focused on adaptive functioning *per se*; that is investigating *how* children construct patterns of healthy post-disaster functioning so as to follow a pathway of positive adaptation. Research to date does not yet provide an understanding of the underlying processes, capacities and resources that underpin these trajectories.

Questions remain to be answered. For example, were children in the resilient groups in recent pathway studies already functioning in a highly adaptive way to daily challenges before the disaster? Future research on this question would benefit from pre-disaster baseline data in order to compare differences in pre- and post-disaster functioning. Also, in the Weems and Graham (2014) study, children in the resilient pathway group did not all have the same exposure or disaster experience. Did the children included in the resilient group have high exposure to adversity and yet adapt, thus showing high levels of resilience, or was this a heterogeneous group that also included children who adapted well due in part to their low exposure to adversity? And how did the children manage to attain and maintain a resilient trajectory; what ways of coping, access to resources, and interaction with the disaster context allowed this resilient group to function at an adaptive level?

Pfefferbaum et al. (2013) in a recent review of studies of children and disasters stated there is very little information on the long-term effects, or recovery from these situations. Most studies, including pathway or trajectory studies have a cut-off point whereas a recovery process pathway may take longer to evolve than a resilient trajectory. For example, Norris et al. (2009) hypothesised that a recovery trajectory in adults would take three to four years post-event. So it is possible that some initial negative pathways may become more adaptive over time, or vice versa.

At present, the inter-related complex processes of adaptation following a disaster are yet to be fully understood and little is known of the underlying processes that result in pathways of positive adaptation. Compas et al. (2001) state that the ways of coping and coping strategies that enable children and youth to follow pathways are core processes. Although resilience research has been growing, far less is understood about these coping processes that appear to underlie children's post-disaster adaptation.

Coping: Ways and strategies of coping.

Various definitions of coping are found in the literature. Despite the multiple definitions that exist some consensus has been reached on what constitutes coping, which is generally now viewed as a form of regulation, adaptive processes, and management in response to stress (Compas, et al., 2013; Zimmer-Gembeck & Skinner, 2011). Lazarus (2006, p. 10) describes coping as “concerned with our efforts to manage adaptational demands and the emotions they generate”.

The definition of coping used in the present study is that of Compas and colleagues who define coping as:

The conscious volitional efforts to regulate emotion, cognition, behavior, physiology, and the environment in response to stressful events or circumstances. These regulatory processes both draw on and are constrained by the biological, cognitive, social and emotional development of the individual. An individual's developmental level both contributes to the resources that are available for coping and limits the types of coping responses the individual can enact (Compas et al., 2001, p. 89).

This definition is pertinent to the present study as it acknowledges the children's developmental characteristics. Compas et al. (2001) distinguish coping from resilience, which they define as a positive outcome that has used competences and adaptive coping to address stresses resulting from a disaster situation.

The definition has limits however, as coping efforts may be adaptive or maladaptive and this definition does not distinguish effective coping processes that enable adaptation and well-being, from those negative coping processes that lead to inadequate functioning following stressful events. Neither does the definition include cultural influences on coping. At present, research to define or categorise what is effective coping in children is still in progress.

Coping in children.

Children's coping, seen in adaptive rapidly functioning reactions and responses to age related challenges, varies across different age and developmental stages. As yet

no clear overall picture of children's coping exists (Skinner & Zimmer-Gembeck, 2007). From the literature it appears that children's coping may not differ drastically from that of adults. Skinner, Edge, Altman, and Sherwood (2003) found that twelve of the higher order categories of coping they identified as potential core families (problem-solving, information-seeking, helplessness, escape, self-reliance, support-seeking, delegation, social isolation, accommodation, negotiation, submission, opposition), were included in scales for both adults and children. Bonanno and Diminich (2013) also confirm coping similarities between adults and children.

However, Compas et al. (2013) point out that coping research centred on developmental elements has mainly focused on later childhood and adults. What is known of younger children's coping is limited. Existing adult models of coping miss a developmental component necessary for a model concerning children. Models of coping specifically focused on children have not yet reached consensus on how to define coping or how to categorise ways and strategies of coping (Skinner et al., 2003), nor do they incorporate a systematic understanding of how coping may change with age related and developmental capacities (Zimmer-Gembeck & Skinner, 2011). For numerous coping researchers, relying solely on chronological age is inadequate for understanding children's complex coping processes. These limitations in coping research have affected the use of models and the possibility of generalising or transferring results.

Nevertheless, several studies (e.g., Compas et al., 2001; Losoya et al., 1998; Pfefferbaum et al., 2014; Skinner & Zimmer-Gembeck, 2007) have attempted further understanding of coping as it evolves in childhood. This research is pertinent to the present study, which seeks to examine coping over a period of development and against a backdrop of dynamic disaster-related demands and challenges. Coping is thought to change across different developmental phases with the growth of new capacities, such as language and executive function. Zimmer-Gembeck and Skinner (2011) reviewed the research and particular ages have been identified when coping processes are often noted as demonstrating shifts in style and frequency⁷. Although most research has focused on older children, age periods where shifts are likely are: infancy to early childhood; ages five to seven; late childhood (10-12 years); early to

⁷ These are similar ages to the "turning points" for developmental changes in resilience processes described by Masten and noted in this chapter p. 33.

middle adolescence (about ages 14-16 years); and middle to late adolescence (around ages 18-22 years) (Skinner & Zimmer-Gembeck, 2009). These age shifts have been mainly cited in studies in a Western cultural context.

Developmental level may determine which coping is used, what forms of that coping are employed, and in what way. In each of the twelve higher order families of coping identified by Zimmer-Gembeck and Skinner (2003; 2011), coping strategies appear to share the similar functions but the forms are reliant on developmental capacities. For example, young children, who are as yet unable to wholly verbalise their ways of coping, may show strategies of coping through play or drawings (Margolin et al., 2010). Support-seeking in young children would probably include parents, but may in adolescence include a wider social network of peers and individuals outside the family.

Coping skills evolve throughout the children's development. For example, Eisenberg, Valiente, and Sulik (2009) state that there is acquisition of skills to regulate emotions in early childhood and this will influence later coping responses. Such coping is influenced by learnt capacities of accepting delay or controlling emotions, which contributes to emotional regulation (Eisenberg et al., 2004). As well, cognitive development affects understanding of situations. For example, children of school age are capable of applying logic to understand some events and appreciate the seriousness and potential consequences (Deering, 2000).

Thus, patterns of coping often became more differentiated with age and increasing developmental capacities (Zimmer-Gembeck & Skinner 2011). Many developmental researchers note that in middle childhood coping strategies become more multifaceted as the child learns and seeks self-reliance. For example, older children may use cognitive reframing and self-talk to regulate emotion, and/or to find new solutions to solve problems, whereas younger children may reference adults in order to understand challenges or play out solutions behaviourally (Compas et al., 2001; Zimmer-Gembeck and Skinner, 2011). In adolescence there appears to be a larger range of coping strategies possible; planning and preventive coping as strategies for solving problems, as well as the possibility of a more internal focus on dealing with emotions. The increased complexity of coping responses may also lead to more

complications for the older child or adolescent: planning for adversity may lead to worrying about adversity (Masten & Osofsky, 2010).

Zimmer-Gembeck and Skinner (2011) state that earlier coping strategies, especially those that work well do not disappear. Emerging from the studies on developmental changes in coping, it appears that where coping strategies have been found to be useful by the child these become the preferred strategies. Thus, adolescents may use more complex and yet fewer types of coping as they use their preferred coping strategies.

Apart from developmental elements in children's coping, additional elements have an effect on what ways of coping are employed. Not only do intrapersonal and interpersonal resources affect children's coping (Masten, 2001), but characteristics of the stressor can mould coping strategies (Zimmer-Gembeck & Skinner, 2011). Disasters as major stressors can produce many situations that provoke coping responses. Children facing disasters therefore use their coping strategies to manage multiple demands.

Children's coping in disasters.

Pfefferbaum et al. (2014) state that little is known about how children cope with the effects of disasters especially over the course of a period of recovery that is measured in years. This scarcity of studies specifically looking at children's coping in disaster context restricts understanding this area. Investigating coping processes following disasters is therefore a crucial component of understanding how children manage to adapt and recover.

In order to advance understanding of children's coping with disaster, it is necessary to comprehend all levels and systems operating in the children's coping context such as the child's development, and the use of internal and external resources linked to positive outcomes (Leipold & Greve, 2009). Studies from various perspectives have attempted some exploration into this complexity: developmental resiliency research; disaster research; coping research; stress research; attachment; and self-regulation research. However, an integrated picture of children's coping experience in disasters

is still evasive (Pfefferbaum et al., 2013) as findings produce parallel rather than confluent results.

When facing a disaster, the child experiences variable levels of distress, and a necessity to react in some way by mobilising coping processes (Folkman & Moskowitz, 2004). Compas et al. (2001, p. 87) conceived of successful adaptation to stress as including “the ways in which individuals manage their emotions, think constructively, regulate and direct their behavior, control their autonomic arousal, and act on the social and nonsocial environments to alter or decrease sources of stress”. Thus coping strategies incorporate multiple processes to successfully cope with stressors.

Research suggests that children who face a disaster effectively may boost their coping capacity (Hobfoll, 2002). This understanding of adversity leading to more effective coping is not new. Rutter (1987) described “steeling effects” where confronting a certain amount of stress helped prepare children for better ensuing adaptation. If children facing disasters are only briefly distressed but not overwhelmed then they may therefore exhibit increased coping capacity. Rutter (2013) suggests that capacities to cope successfully may stem from the effects of brief exposure to negative experiences in circumstances where the child’s resources are not overwhelmed, and where they can therefore cope successfully with the challenge.

However, coping strategies may promote or hamper a child’s recovery (Lack & Sullivan, 2008). Research focused on trauma has provided information about negative coping strategies and has linked negative coping strategies to ineffective coping in disasters: strategies such as withdrawal from others, “wishful thinking”, and rumination (Cryder et al., 2006; La Greca et al., 1996). Terranova, Boxer, and Morris (2009) established that fear reactivity correlated with avoidant coping styles, and Pina et al. (2008) found avoidant coping, such as repression and avoidant action, predicted higher anxiety and PTSD in adolescents experiencing hurricane Katrina. Pre-disaster functioning may also have an effect. Lengua, Long, Smith, and Meltzoff (2005) found that pre-disaster coping styles (e.g., threat appraisal or avoidant coping strategies), could predict post-disaster coping and PTS levels. As much research has focused on maladjustment (e.g., PTSD) rather than positive functioning, effective

coping processes utilised in the face of adversity may have been missed (Taylor & Stanton, 2007).

Studies focusing on effective coping and positive adaptation following disasters have produced a minimal base of knowledge. Better regulatory abilities are linked with more positive outcomes (Terranova et al., 2009; Terranova, Morris, Myers, Kithakye, & Morris, 2015). Problem-solving skills have been linked to positive coping and resilient processes (Masten & Cicchetti, 2010). Also, individual characteristics of children, often emerging in childhood, have been identified as coping resources, such as dispositional optimism, personal control, or mastery, and a positive sense of self or high self-esteem (Taylor and Stanton, 2007). Bonanno et al. (2004; 2010) discuss disaster specific coping self-efficacy, such as the inoculation effect of having dealt well with previous PTEs, which has been associated with better adjustment, along with self-enhancement and flexibility. These intrapersonal capacities are similar to those highlighted by resilience research.

However, Pfefferbaum et al. (2013, p. 315) point out the scarcity of research on the effects of disaster on children's executive functions "such as planning, judgement, problem-solving, reasoning, inhibition, and mental flexibility". These functions develop concurrently with maturation and experience to influence coping. This scarcity limits knowledge about coping under stressful conditions.

Also, research soliciting children's own experience of coping with disasters is rare. Jensen et al. (2013) believed their study to be a first. Their study focused on children's coping strategies employed following the Indian Ocean tsunami of 2004. They found that two primary strategies of coping were used: self-soothing thoughts such as positive thinking and avoidant thinking; and behavioural strategies such as seeking information, comfort, and distraction. Influential factors for coping included the dependence on adults for guidance and protection.

Longitudinal studies of children's reactions and coping are few (Gan, Xie, Wang, Rodriguez, & Tang, 2012; Goenjian et al., 2011). However, the limited findings focused on children's coping suggest that children's immediate subjective response to the disaster event gives some prediction of later pathways of recovery (Jensen, Dyb, & Nygaard, 2009; Lengua et al., 2005). More longitudinal research is needed as other studies suggest that coping strategies may change over the course of a disaster

(Pfefferbaum et al., 2014), and these changes are not observable in cross-sectional research. For example, changes in coping strategies over time may be linked to the evolving disaster situation or to changes in children's developmental capacity.

Additionally, there are conflicting findings in the existing disaster literature on the use of coping strategies. One body of research (e.g., Lack & Sullivan, 2007; Pfefferbaum et al., 2014; Vernberg et al., 1996) has noted that the use of multiple coping strategies may be correlated with poor adjustment in children. However, other findings suggest that the child uses multiple coping strategies to address distress in major adverse situations, as multiple ways of coping may be necessary and adaptive to address the multiple challenges (Compas et al., 2001).

Flexibility in using coping has been linked to adjustment and resilience behaviours, and appears to enable coping where persons flexibly use a number of coping strategies to handle the multiple stressors in a situation (Bonanno, Pat-Horenczyk, & Noll, 2011). Bonanno et al. (2011, p. 118) deduced that persons using coping flexibility—“being able to flexibly deploy diverse types of coping behaviours in accord with the varying demands of different situations” showed less distress. However, Bonanno and colleagues note that expressive flexibility has yet to be widely studied in youth or children.

Existing research suggests that there appears to be a complex interplay of children's capacities (e.g., self-efficacy), developmental aptitudes (e.g., cognitive ability, dispositional optimism), ways of coping (e.g., flexibility, regulatory abilities), protective elements (e.g., buffering from parents) and external resources (e.g., functioning schools) that influence adaptation following a disaster. One of the multiple level interactions that influences children's coping is their interaction with others and with their context. Due in part to their dependency, children develop their coping skills within relationships, which can enable or hinder the processes of coping in disasters (Miller et al., 2012; Pfefferbaum et al., 2014). Thus, understanding the influence of relationships and context on coping is necessary to understand how children respond to disasters.

Influences on children's coping.

Children develop their coping skills within their context of family and community. For example, parents are often the primary caregivers in Western culture and parents' coping style has been associated with children's instances of coping (Miller et al., 2012; Power, 2004). Although research focusing on how precisely social relationships shape children's coping is limited (Skinner & Zimmer-Gembeck, 2007), it is widely understood that parents can assist their children through modelling and teaching, and through helping their children develop their own strategies (coping socialisation). For example parents assist children's coping in emotional regulation (Eisenberg et al., 2009; Gil-Rivas & Kilmer, 2013).

Parents also adjust their behaviours in times of disaster. In the Hafstad et al. (2012) study of parental support to children after the Indian Ocean tsunami, parents' main strategies were watchful waiting, monitoring of the children's reactions, and timely support.

Supporting Rutter's (1987) explanation of "steeling effects" some coping research also suggests that one of the parents' functions is to "dose" children's exposure to tolerable stressors, while providing sufficient support so that the children learn to manage the situation well (Power, 2004). Gil-Rivas, Cohen Silver, Holman, McIntosh, and Poulin (2007) identified the benefits of parent-assisted coping and support (e.g., in positive reframing) in the use of adaptive coping strategies by adolescents following the terrorist attacks of 2001 in New York.

Jensen et al. (2013) found that children of all ages, in the immediate aftermath of a disaster, rely on their parents for protection, and as a reference for how to appraise the situation. Similarly, Miller et al. (2012) examined how parents model and promote their children's adaptive coping in wildfire and tornado disasters. Results of Miller et al.'s qualitative study indicated that parents, through their moderating role in buffering children from natural disasters, also facilitated coping in the way they provided social support, enabled preparation and problem-solving, and modelled effective emotional self-regulation.

Several studies have emphasised the bi-directional relationship of parents' and children's coping; parents influence the child and the child influences the parent

(Cappa, Begle, Conger, Dumas, & Conger, 2011). For example, Power (2004) notes that parenting in relation to coping assistance changes and adapts as the children develop, and Eisenberg and Valiente (2004) suggest that parenting may be influenced by the children's temperament with parents adapting their behaviour in relation to their children. They suggest that children who are able to self-regulate can influence their parent's expression of negative emotions.

Parents may not always be able to promote effective coping or create optimum contexts for their children's adaptation after disasters. Some studies suggest that parents, who are more affected, are less able to be available or support their children's coping in an adaptive way (Hafstad et al., 2012). In the chaos that often characterises the disaster environment, parents may be dealing with their own reactions, be re-organising their lives, or the disaster situation may disrupt family routines and a supportive family environment (Gil-Rivas & Kilmer, 2013).

Also, parental influence may wane with older children as studies have noted that parental influence in assisted coping is less evident in adolescence (Seiffge-Krenek & Pakalniskiene, 2011; Vigil & Geary, 2008). As children become adolescents, parents continue to influence coping, but peers increase in importance as potential social support buffers, as they can reduce isolation, and may assist in coping efforts (Masten & Narayan, 2012; Terranova et al., 2009).

Children are nested in multiple relationships and interact with family and wider social networks that may influence their coping capacities. Limited research has looked at how wider social relationships interact with children's coping within a disaster, but indicates that caregivers, family, and close social relationships, such as teachers, are influential in children's coping with stress (Fothergill & Peek, 2006; Gil-Rivas & Kilmer, 2013; Masten & Narayan, 2012). For example, teachers can provide a safe space, a return to routine, distraction, and coping assistance with emotional regulation (Alisic, 2012).

Finally, in understanding influences on children's coping, it is important to understand the community context of social relationships and the influence that community and cultural elements have on the children's ability to cope (Shinn & Toohey, 2003). Norris et al. (2008, p. 137) discuss the connection between economic resources and post-disaster well-being demonstrated by "social class as a buffer of

disaster stress”. Ungar (2014) states that access to community resources and the influence of the culturally shaped concept of what is effective coping and adaptation has a significant effect on children’s coping.

Proximal community structures are influential in supporting children’s recovery and capacity to cope (Fothergill and Peek, 2006; Kronenberg et al., 2010) through support, protection and coping assistance. For example, schools may provide specific post-disaster interventions that enable coping, and can identify those children needing more specialised assistance (Goenjian, et al., 2005; Udwin, Boyle, Yule, Bolton, & O’Ryan, 2000; Wolmer, Hamiel, Barchas, Slone, & Laor, 2011). Pfefferbaum et al. (2014) point out that the social environment of the school is a vital place where children can receive support, coping assistance and recover, but conclude that the relationship between social and community support in children’s coping with disaster is complex. Structures and resources in communities can inhibit or promote adaptive outcomes.

Chapter Conclusion

The above overview of literature of children in disasters identifies gaps in research on how children’s effective coping and adaptation is understood, and how coping may evolve in a disaster context. Some of the limitations are due to the challenges of undertaking research in disaster contexts. As well, the initial emphasis from psychological research on trauma has resulted in most knowledge about children stemming from children showing extreme stress reactions, or from those whose lives were chronically disrupted by their reactions. This emphasis on potential trauma does not demonstrate the processes a child undertakes to cope adequately with a disaster. More is known about negative coping strategies than, for example, about flexible, effective coping and positive adaptation.

Nevertheless, existing research has highlighted the importance not just of children’s own capacities but of their relationships and context in shaping their capacity to cope and respond. However, there is limited research on how multiple relationships and community systems influence how children cope effectively. Coping and resilience research is still evolving towards understanding the complex interplay of

developmental changes, intrapersonal capacities, interpersonal and community resources, and their influence on coping strategies that influence children's positive outcome after a disaster.

As well, most disaster studies have focused on quantitative changes in behaviour or responses (King et al., 2015), but Franks (2011) proposes that exploring qualitative changes would permit a richer understanding of children's experiences and responses in an area of limited findings. Skinner et al. (2003) suggest too that an inductive approach can lead to conceptually clearer strategies and contribute to understanding what coping is used and the relationships between coping categories.

Researchers have tended to overlook children's own experiences so there is a paucity of research into just how disasters are understood and experienced by children (Gibbs et al., 2013). To date, studies that examine children's own expression of their coping strategies in disaster situations (e.g., Jensen et al., 2013; Mutch, 2013; Uttervall et al., 2014), are extremely limited. There is a need for research that listens to children's own voices. (Fothergill & Peek, 2006; King et al., 2015).

An integrated picture of children's coping experience in disasters is still in progress. Pfefferbaum et al. (2013, p. 288) in a review study on research methods in child disaster studies, notes the gap and points out that "decades of research have helped to explain the connection between independent disaster related variables (e.g., exposure and severity) and a multitude of emotional, behavioral, cognitive, and biological outcomes, while generating relatively little in the way of explanation or prediction". There is limited understanding of what are effective coping processes underlying adaptive functioning, in how children access resources in order to cope adaptively, or how coping evolves over recovery. There is therefore much scope to contribute to the research through the study of effective coping strategies used by children in disasters, and to obtain rich, contextual data by asking the children themselves.

This chapter, in reviewing research that examines children's experience and response to disasters established that children do suffer distress and stress from these adverse situations, but that a majority of children show positive adaptation over time to demonstrate an outcome of adequate functioning. However, the literature often fails to explain and demonstrate an understanding of the underlying processes of how children manage diverse pathways of resilience and positive recovery. Therefore, an

appropriate approach to understanding children's experience and investigating coping and adaptive processes would be to explore qualitative elements in the children's own subjective experiences, including their coping strategies and elements in their life contexts that appear to promote their coping. An ecological perspective provides a framework from which to understand the inter-related functioning and complexity of children in their environment. The present study aims and research questions have evolved from a motivation to understand more of these processes that enable positive adaptation in children following a disaster.

Aims of the Present Study

The present study aims to investigate how children cope effectively with a disaster and to identify resources and influences that promote effective coping and adaptation.

Research Questions

- Which coping strategies are used by children in Christchurch, New Zealand who have experienced the challenges of an earthquake disaster?
- Specifically, what coping strategies and ways of coping are used by children and youth who seem to be adapting effectively to the Christchurch earthquakes?
- How does coping in the Christchurch cohort differ from coping that occurs in the experiences of similar-aged children and youth, who have not lived through earthquakes but who cope with everyday difficulties?
- What resources and influences support or inhibit children's effective coping?
 - In children's intrapersonal resources and individual characteristics
 - In interpersonal and community resources in the children's context
- How might coping evolve over time during a disaster recovery period?

Chapter 3: Methodology

Introduction.

The purpose of this chapter is: to address the issue of how best to meet the aims of the present study and answer the research questions summarised at the end of the last chapter; to provide a clear rationale for selecting the qualitative approach of phenomenology as a research perspective and framework; and to explain the method.

As the subject of children's coping with disasters has not been widely studied (Pfefferbaum et al., 2014), the choice of which approach to use needs thorough consideration. Similarly, in their study of children coping with a tsunami, Jensen et al. (2013, p. 9) note a gap in the literature when they comment that there have been "no studies that have examined children's own views of their coping strategies while experiencing disasters".

In a project that aims to gain a deeper understanding of children's coping from the children's own point of view, and to describe and interpret the structure of effective coping for this group, a qualitative approach is appropriate. The qualitative approach adopted in the present study is expected to further understanding in an area where the descriptions and understanding of subjective experience are extremely limited. Qualitative research methodologies in psychology emphasise discovery, description and meaning (Laverty, 2003), an approach pertinent to the study aim.

Camic, Rhodes, and Yardley (2003, p. 11) describe the qualitative approach as being especially appropriate for research where a phenomenon is to be understood in depth. The qualitative approach allows an "undertaking of situated, holistic analysis of meaning, and is suited to the study of complex behaviour, as it allows researchers to explore and develop multi-layered analyses of different aspects of a topic that is not widely understood". This is especially applicable to the present study which aims to examine in depth a potentially complex but not widely understood phenomenon. It

is an approach that would facilitate examination of the rich detail of children's own lived experience.

As well, qualitative research allows examination of a phenomenon in a real-world context, a criterion of quality in qualitative research. It permits awareness of how the cultural and social context may affect the phenomenon in question, and in respect of the present study, examines how children develop and make meaning within their specific social and cultural context. The qualitative approach adopted in a study therefore, should be the one most pertinent to answer the research questions, but as Crotty (1998) has clearly delineated, many layers of a research study underline the eventual methodology, and the methods chosen to gather and analyse data, and this will influence how the research questions are answered. The conceptual framework for the approach adopted in the study is important and needs to be addressed.

Conceptual framework.

The different branches of qualitative research depend on the researcher's ontological and epistemological perspective—the nature of reality and the theory of knowledge respectively (Braun & Clarke, 2014). Numerous authors, (including Braun & Clarke, 2006; Caelli, Ray, & Mill, 2003; Crotty, 1998; Langdrige, 2007) emphasise the importance, in any qualitative study, of clarifying the specific epistemological and theoretical approach developed, and of keeping consistency in research methodology and research design, as this allows for quality, and clarity in the study.

The conceptual framework of a study influences all aspects of the research. The framework shapes the study design, which then uses certain methods in the way data are collected and analysed. By adopting a specific qualitative approach in the present study, a choice has been made about ontology and epistemology, which in turn affect choice about the theoretical perspective and research paradigm or inquiry lens that influences methodology or the overarching research strategy used.

Ontology

The ontological perspective concerns the researcher's assumptions about reality, about *what is* (Creswell, 2007; Patton, 2002). In the present study, the ontological perspective views reality as being constructed by persons in their life-world and the role of the researcher is one of interpretation of the various realities of this world. This ontological perspective acknowledges that the participants in the study construct their realities, and that reality is continually changing through human interactions. This ontological perspective is pertinent to examining what are the realities for children subjectively experiencing a disaster. The research ontological choice consequently influences epistemology, that is, the nature of knowledge, in understanding *how we know what we know*.

Epistemology.

Epistemology gives the philosophical grounding for deciding what kinds of knowledge are possible, adequate and legitimate within a study (Creswell, 2007). The researcher's epistemology is literally the researcher's theory of knowledge and it influences how phenomena will be studied. Theories of knowledge influence the subsequent methodology and methods used; they need to be clearly outlined. Each qualitative approach has its own subset of methods suited to an epistemological framework.

Epistemological frameworks vary. In the objectivism of the positivist or critical realist paradigm, reality is seen as existing independently from the social actors within it. In forms of constructionism, as in the present study, reality is seen as constructed by the persons within their social context and knowledge is indeterminate and has multiple definitions. Finally, in epistemological frameworks that use subjectivism, such as critical theory (Brinton Lykes, Terre Blanche, & Hamber, 2003), meaning is given by the person (social actor) to the object (elements in the social world).

In the epistemological approach of the present study, knowledge is "constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context" (Crotty, 1998, p. 42). This approach

has been chosen as particularly apt for a study that explores how the children make meaning of their world, as they live within, and are influenced by, their immediate social context. Constructionism views reality as socially constructed and ever changing. There is not one objective reality; people make different meanings of their world. However, this meaning is not wholly subjective. Constructionism holds that knowledge is constructed out of human engagement with objects that are already in the world rather than meaning being discovered or created anew by each person (Caelli, 2000). It is a world where the social milieu in which people develop influence the meaning they make of their experiences. It is the “mix of cultures and sub-cultures into which we are born that provides us with meanings” (Crotty, 1998 p. 79).

Within the epistemological approach of constructionism there is the concept of intentionality. Intentionality here refers to a *reaching out into*. Brentano (1874), and later Husserl (1933), see consciousness as being described as having direction toward an object. The subjective experience for the children in this study, their *reaching out into* makes meaning of an object in their milieu and becomes the children’s reality. Consciousness is directed towards the object and the object is shaped by consciousness. This view of human knowledge understands that meaning for people comes into existence in and out of their engagement (intentionality) with the world.

Following from existential philosophers such as Heidegger and Merleau-Ponty, Husserl’s (1933) view was extended to include the being-in-the-world; the world is always already there and our understanding must take in this fore-conception. People become conscious of their world. Their consciousness gives the world meaning, and they, as we, are influenced by the social and cultural context as they construct their meaning. In a study that examines how children experience living through adversity, and coping with their world, this epistemological approach is especially relevant.

Theoretical perspective.

A further level of conceptual composition in any research is the theoretical perspective adopted for the study. Theoretical perspectives are the set of assumptions

that shape how the researcher perceives and makes sense of the world, as well as inspiring the methodology used to research the world. Patton (2002) suggests that the criteria for judging quality and credibility are in part shaped by the philosophical and theoretical underpinnings of the qualitative inquiry. Following these reflections, criteria for enhancing and measuring quality and validity in this study need to be appropriate to the theoretical approach, and relevant and ethical to the study in question.

The present study adopts a qualitative approach to research within psychology. Within this epistemological approach, constructionism is compatible with the theoretical perspective of interpretivism and phenomenology—the theoretical perspectives adopted in this study. Interpretivism, a manner of interpreting the social life world, has its origins with the work of Max Weber (1920). In this perspective human science is concerned with *Verstehen* (understanding). Interpretivism developed in reaction to positivism in natural science, where explanation rather than understanding is favoured. Interpretivism aims for understanding. Weber elaborated a view that the requirement of social research is to centre on the meanings of acting persons, to *understand* and eventually explain from data taken of subjective meaning. This perspective is followed in the present study. Additionally, interpretivism is an approach that “looks for culturally derived and historically situated interpretations of the social life-world” (Crotty, 1998, p. 67). In the present study, the children’s subjective meaning is the focus, and the researcher aims to understand and explain the children’s meaning as it is understood from their experience within their social world, which is itself set in a cultural and historical context. Deriving from the interpretivist theoretical perspective is phenomenology.

Phenomenology is one of the historical branches emerging from the interpretivist theoretical perspective. Phenomenology was initially a philosophical reflection. The philosopher Edmund H. Husserl (1859-1938), seen by many to be the Father of Phenomenology, looked at the interpretation of how we make meaning of the phenomena that we actually experience—we *know what we experience*. As the aim of the present study is to understand the lived experience from the children’s accounts, the phenomenological perspective is pertinent for analysing data in order to construct understanding.

A recent interpretation of phenomenology is stated by Kvale and Brinkmann (2009, p. 26) who describe phenomenological inquiry from the perspective adopted in this research, as “an interest in understanding social phenomena from the actors’ own perspectives and describing the world as experienced by the subjects, with the assumption that the important reality is what people perceive it to be”. The phenomenological approach is concerned with reporting the multiple perspectives that exist in the individual’s experience of living in a social world. Children are interdependent in their stage of life, and this approach is particularly pertinent to understanding their experience of their life world as it enables attention to the relationships between people situated in their social milieu. Additionally, within this research approach there is an attempt by the researcher to maintain a specific phenomenological reflection and analysis in the methodology that will be developed in the following sections.

Methodological framework.

Emerging from the epistemological framework and theoretical perspective of conducting research, what then governs the methodology used in the phenomenological research approach adopted in the present study? The term phenomenology has been widely used and has diverse meanings that cover all strata of a research project. For example, Lincoln (1995) defines it as an inquiry paradigm, Creswell (1998) as a major qualitative method, and Moustakas (1994) as a research methods framework.

In the phenomenological approach adopted here, to understand the phenomenon from the children’s perspective, it is necessary to describe carefully what the children perceive, and how they make sense of the phenomenon. The researcher then continues, through a systematic analysis to write up what is essential in the phenomenon. Within this study, the notion of what is the essence of the phenomenon of coping in children will not be the universal essence found in Husserl’s conceptual lens, but be seen as context specific and context sensitive. What Moustakas (1994, p. 142) proposes as “containing the ‘bones’ of the experience for the whole group studied”. This present study then will endeavour to understand a structural

description of what coping is for the children, within their group and context. A specific focus will be on understanding effective coping in a disaster.

Evolution of phenomenological research.

Historical perspective.

Historically, the phenomenological approach to research and methodology evolved into different currents. Crotty (1998) expounds the basic Husserlian premise of ‘back to the things themselves’. That is, to engage with the phenomenon by laying aside or bracketing our immediate experience of it in order to see a new or enhanced meaning, and to be able to describe the universal aspects of a phenomenon.

However, within the methodology of the phenomenological approach, there has been a continual development of suiting the approach to research. The phenomenological approach adopted in the present study specifies that a phenomenological study should be more than just a universal description of the phenomenon (Giorgi, 2000b). This phenomenological research should include a structural description that encompasses the vital core of the experience for the group of people studied (Moustakas, 1994).

Recent phenomenological methodology in research.

In recent years, numerous researchers have held views of what is acceptable phenomenological methodology in research. Caelli (2000, p. 372) notes that recent phenomenological research “focuses on describing participants’ lived experience within the context of culture, as opposed to arriving at a universal meaning of it”, which is the view encompassed in the present study. Caelli suggests that recent phenomenology has developed so as to be compatible with a need in research methodology rather than to use phenomenology as solely for solitary philosophical reflection.

Finlay (2009, p. 8) states that phenomenological research is phenomenological “when there is a rich description of the life-world or lived experience, and when the

researcher has adopted an open phenomenological attitude which, initially, refrains from importing external frame-works and sets aside judgements about the realness of the phenomenon”. Phenomenological research endeavours to understand a phenomenon using a clearly defined methodology.

Phenomenology methodology employed in the present study.

Phenomenological attitude.

Phenomenological research and analysis is a method that has been applied, systematised and reflected on by numerous researchers. In adopting a phenomenological methodology, and the consequent phenomenological attitude, the researcher in the present study attempts to espouse and practice phenomenological reduction. Husserl in philosophy and consequent researchers in the social sciences (Giorgi & Giorgi, 2003; Moustakas, 1994) conceived of phenomenological reduction, as an attempt to study a phenomenon as clearly as possible through holding a specific approach and attitude. This reduction is demonstrated in *epoche*; the process of suspending judgement and bracketing out the researcher’s own attitudes, beliefs and preconceptions within the research process and, at the same time, being open to whatever may emerge (Finlay, 2008).

This attitude is seen positively by numerous researchers. Tufford and Newman (2010, p. 81) state that bracketing not only mitigates researcher bias, it “facilitates the researcher reaching deeper levels of reflection across all stages of qualitative research”. For the present researcher, in using phenomenological methodology it is necessary to see the phenomenon of children’s coping afresh in order to capture the unique nature of the phenomenon as experienced by the participants in the research. This suspension of judgement and being open to whatever emerges from the data is an attitude attempted throughout the present study, from the collection of data to analyses.

Yet, the possibility of phenomenological reduction, transcending a natural attitude, is contentious for some researchers, who disagree that this exercise in suspending judgement or bracketing off of preconceptions is possible. As discussed in Finlay

(2008), Merleau-Ponty (1964) has questioned this capacity to cut off our pre-understandings and assumptions; the “most important lesson which the reduction teaches us is the impossibility of a complete reduction”. However, Merleau-Ponty also concedes that we need to attempt reduction or bracketing so as to understand the phenomenon and the meanings as they present themselves.

The debate around the attitude of phenomenological reduction illustrates aspects of rigour, quality, and validity that are intrinsic in qualitative research. For Kvale and Brinkmann (2009, p. 27) phenomenological reduction is “a suspension of judgement, so as to arrive at an unprejudiced description of the essence of the phenomena” for the group. The phenomenological attitude can be seen as an attempt to manage the researcher’s pre-knowledge and assumptions in order to see the phenomenon in as clear a light as possible. This occurs, for example, in the way data are seen: “within the reduction everything that presents itself is to be accounted for precisely as it presents itself” (Camic, Rhodes, & Yardley, 2003, p. 249). This perspective is adopted in the current research project where bracketing is practised so as to describe as lucidly as possible the subjective meanings within their context. Findings are grounded in data.

Phenomenological reduction adopted in this study.

The phenomenological reduction adopted in this study is reflected in the manner through which the researcher collected and examined the data. Finlay (2008) has described this attempt to hold a reductive focus and reflexive self-awareness as an intense dance undertaken by the researcher. This iterative process occurs from the time of interviews until the discussion of data analyses. It is the constant effort made to be open to exactly what is accounted by the participants of their lived experience, whilst simultaneously managing and bracketing pre-understandings. This management of beliefs, assumptions, and fore-knowledge needs to be acknowledged by the researcher but the primary focus is always grounded in the actual data. Later in the analysis process, the researcher examines the contribution of the pre-understandings, acknowledges this contribution, and uses these reflections to gain further insight around identified themes. The reductive focus and reflexive awareness continues throughout analyses.

Dahlberg and Dahlberg (2004) introduce a helpful nuance when they use the term ‘bridling’ rather than ‘bracketing’, to explain that the researcher bridles their understanding so that meaning is not decided too quickly or carelessly. This approach is useful as it allows the concept of managing beliefs and preconceptions, rather than attempting to completely discard eventual fore-knowledge of the phenomenon. The inductive process of at first describing the phenomenon from the data becomes an iterative process where input from the researcher’s knowledge may be introduced in the final analytical and discussion phase of the study.

The research approach of phenomenological reduction has been termed by Giorgi and Giorgi (2003) as the *scientific phenomenological reduction*. Wertz (2005) describes this phenomenological attitude as being open and empathetic. In a pragmatic sense, this attitude of phenomenological reduction is necessary in order to attempt an unprejudiced description of coping as experienced by the children. And, at the same time, it is necessary for the researcher to be reflexive, to acknowledge and manage how her experiences and context, as well as insights, inform the process and outcomes of the research.

Reflexivity.

The phenomenological approach supports reflexivity where it is acknowledged by researchers that their own experiences and background may have an effect on how the research is conducted and the data analysed. There is a need to be reflexive about one’s own perspective and subjectivity, and at the same time to respect and prioritise the multiple perspectives from the participants that the researcher comes across.

Reflexivity reminds the qualitative inquirer to be attentive to and conscious of the cultural, political, social, linguistic, and ideological origins of one’s own perspective and voice as well as the perspective and voices of those one interviews and those to whom one reports. (Patton, 2002, p. 65).

Parallel to the reflexivity and phenomenological reduction is a clear methodological process for undertaking the research and analyses.

Phenomenological process to analyses in this study.

Phenomenological research explores the way complex meaning is built out of simple units of direct experience (Merriam, 2002). The phenomenological approach places emphasis on the simple units of the children's own lived experience, and how they construct their reality within their social context. A process is systematically adhered to. Data are collected from children having experienced the phenomenon being investigated, and is then analysed. The phenomenological approach used in the analysis of data of the present research will be taken from methodology developed by Giorgi (2000b; 2012) and by Braun and Clarke (2006; 2014).

Giorgi (2012) has developed a psychological perspective specifying steps necessary in phenomenological methodology. First, the researcher assumes an attitude of phenomenological reduction (of seeing the data afresh, keeping an open mind and bracketing or bridling out past knowledge and assumptions), so as to account for what is presented. Secondly, the researcher bases what is said about the phenomenon on the data, keeping a psychological perspective and special sensitivity toward the phenomenon being explored. This is what Giorgi and Giorgi (2003) label the attitude of scientific phenomenological analysis to understand the essential structure of the phenomenon.

The Giorgis' (2003) approach incorporates a methodology that permits the researcher to describe a phenomenon based on data but also to analyse the data so as to arrive at an understanding and description of the essence of what is; that is, effective coping for the children participants. This essence is not generalizable to all children but is representative of the contextual population in the study.

Langdridge (2007) defines the essential structure or essence of a phenomenon as the move from a description of individual experience to exploration of the structure underlying such experience. For Dahlberg (2006) the essence can be understood as the structure of essential meanings that annotates the phenomenon studied. What Moustakas (1994) has named the "bones" of the experience for the whole group of participants studied. In the present study the essence encompasses the shared meaning of what is effective coping for the cohort. This structural description is an explication drawn from the data and developed by the researcher. Thus phenomenological research then facilitates understanding of the children's

experience both individually and as a group, as a shared meaning (Patton 2002) through a precisely articulated analysis process.

Giorgi and Giorgi (2003) elaborated steps in the analysis process. The researcher first reads the whole, and then re-reads the whole data set, this time marking parts or meaning units. In this stage, everything is accounted for exactly as it presents itself. Giorgi calls these “concrete descriptions of experienced events” (Giorgi & Giorgi, 2003, p. 251). The next step is to transform these meaning units into expressions that reveal the psychological import. In this phase of the analysis Giorgi uses the method of free imaginative variation. This is, the reflection from the researcher of varying specific dimensions of the phenomenon, in this case children’s coping, to see what is essential and what elements can be discarded, in order to keep the essential nature of the phenomenon—in the present study, the experience of effective coping strategies and processes adopted by the Christchurch children’s cohort in response to the earthquake disaster.

The analysis of data in the present study follows Giorgi’s framework and incorporates thematic analysis as defined by Braun and Clarke (2006; 2014) and Langdrige (2007). Thematic analysis combines analysis of the themes or patterns, with analysis of their meaning in context (Marks & Yardley, 2004) and is similar to steps elaborated by Giorgi and Giorgi (see Table 3.1 below). Braun and Clarke (2006; 2014) expound a six phased recursive process in thematic analysis: immersion in the whole data set; generating initial codes; searching for themes; reviewing themes; defining and naming themes; and producing a report. Along with Giorgi’s phenomenological analysis, thematic analysis is a method that can be used to develop a detailed descriptive account of children’s coping in a disaster. Both approaches were combined in the present study. The iterative manner in which the researcher of this study undertook analysis will be elaborated in the later methods section.

Table 3.1 *Steps in Thematic Analysis*

Giorgi and Giorgi analysis steps	Braun & Clarke thematic analysis
i. Read and re-read whole data set	i. Immersion in the whole data set
ii. Data broken into “concrete descriptions” of meaning units	ii. Generating initial codes
iii. Transformation of meaning units into specific dimensions of the phenomenon (coping)	iii. Searching for themes relevant to coping
iv. Triage of what is essential and discarding superfluous units	iv. Reviewing themes to keep what is relevant
v. Saving the essential structure of the phenomenon for the cohort	v. Defining and naming essential themes for the cohort
vi. Writing up the essential structure of the phenomenon	vi. Writing up the structure of the phenomenon

Pertinence of the specific qualitative approach.

The approach adopted has an impact on research and needs to be most pertinent to the research questions. Areas of study that are researched through, for example, Case Study, Phenomenology, and Grounded Theory approaches are apt to answer different research questions and will consequently provide different insights and findings. Why then has a phenomenological approach been chosen as the most appropriate to answer the research questions in this study rather than other approaches using similar theoretical perspectives?

A consideration for not adopting Grounded Theory in the present study is firstly that the basic phenomenon is yet to be understood from the children’s own accounts of their lived experience. Thus, a methodology that first understands the structural description of what the phenomenon of coping means for this group is preferable. This focus is best served by a phenomenological approach which aims for a synthesis of the meanings and essences of the experience of the group. Future research on children’s coping may benefit from Grounded Theory which focuses on

building a substantive theory, localised and emerging from a real world situation, and grounded in the data from repeated fieldwork (Merriam, 2002).

Another qualitative approach, which could have been adopted for this study, is that of Case Study, which examines a phenomenon in depth, from the subject's experience. The unit of analysis is a single or small number of entities (cases) rather than a topic of investigation. If the present research aimed to examine coping in depth as experienced by several individuals, or to compare coping with a disaster in two separate groups, then the Case Study would be a pertinent approach. However, the present study aims to understand the structure of the phenomenon of effective coping for a cohort of children, representing different ages, rather than to examine how the phenomenon is experienced in depth for a few children or separate groups. For this reason the phenomenological approach elaborated above is most suitable in this study.

Quality strategies in phenomenological methodology.

It is important for all research to answer questions of quality throughout the process, and to focus on how the researcher can ensure that analysis is undertaken in a rigorous and transparent manner, following a coherent theoretical and epistemological stance. It is essential that the final description of the phenomenon should be induced from a rigorous analysis of the data.

Within the phenomenological approach developed in this study, there are several strategies within the methodology that enhance validity in the research. These differ from the traditional scientific research criteria. For example, in a qualitative approach such as this, Lincoln and Guba (1985) suggest confirmability as an analogue to objectivity, and trustworthiness as an analogue to rigour. Elements of trustworthiness would include credibility, transferability, and dependability. Use of these qualitative criteria supports Yardley's (2000) discussion on the necessity of adjusting measures of judging validity to suit the methodological approach. Yardley has elaborated a flexible guide to what constitutes good qualitative research or research that demonstrates quality and validity. She places these under four headings: sensitivity to context, commitment and rigour, transparency and

coherence, and finally impact and importance. A serious attempt to employ these four criteria has been made throughout this study.

First, context is taken into consideration with the theoretical perspective and methodology adopted; there is the awareness of the primordial role the children's context may have, as it interacts on their experience of coping. Secondly, there is a commitment, coherence and rigour in the adoption of a specific research conceptual framework and method. Thirdly, elements of transparency within the analysis (e.g., credibility checking) will be developed in the following sections. Finally, it is proposed that the results emerging from this study will contribute to the understanding of what is effective coping in children, and inform future interventions to support children and youth coping with the challenging life experiences of disasters.

Thus quality in the present phenomenological study results from criteria found in the approach that is adopted, the methods used in the research, and the rigour and competence with which the researcher attempts to conduct the research: both in the keeping to the coherence of the approach, and in the appropriateness, choice of, and competency in using the methods. This includes reflexive consciousness of the researcher's own perspective, seen in the continual interplay of the researcher using phenomenological reduction and reflexivity.

In phenomenological qualitative inquiry the researcher is an important element in measuring the quality of a study. Patton (2002, p. 433) states that qualitative research "depends, at every stage, on the skills, training, insights, and capabilities of the inquirer". So, if the validity and quality of the findings depend in part on the methodology and rigour in the method applied, it also depends on the capacities of the researcher and the rigour with which the researcher undertakes the research. It is in this case dependent on the researcher's ability to check, question, clearly and transparently apply an analytic method, and theoretically interpret the data (Kvale & Brinkmann, 2009).

Morse, Barrett, Mayan, Olson, & Spiers (2002, p. 17) outline verification strategies that are necessary to ensure the researcher produces quality in research: "qualitative research is iterative rather than linear, so that a good qualitative researcher moves back and forth between design and implementation to ensure congruence among

question formulation, literature, recruitment, data collection strategies, and analysis". Additionally, Langdrige (2007) notes that the researcher needs to be conscious of and reflective about the ways in which the questions, methods and position may impact on the knowledge produced in the study. This is particularly relevant to research with children.

Research with children.

The majority of research undertaken with children and disasters is *about* them or *for* them rather than *with* them (Darbyshire, MacDougal, & Schiller, 2005). The way in which researchers perceive children has implications for the whole research process (Punch, 2002). Existing research often tends to approach children as either the same as adults or completely different from them and this influences what methods are used.

Darbyshire et al. (2005) note that the Children's Rights agenda has influenced research. The United Nation Convention of the Rights of the Child-UNCRC (UNCRC) states that children are human beings with a distinct set of rights⁸, such as the right to state their views (UNCRC, Art., 12). There is a growing acceptance by many researchers that children have a right to be heard and can provide informed data (Gibbs et al., 2013). Within the present research, the methodology and subsequent methods employed allow for children to be treated as competent human beings, and at the same time, with age specific capacities. This approach also reflects the assumption of the present researcher that children should be consulted for their own accounts of experience, be treated within the UNCRC guidelines, and within the research process be seen as having definite competencies, as well as having certain needs. The research has been designed around this framework.

Punch (2002) has pointed out that treating children in research as adults are treated may mean that the power balance between adult researchers and child participants is not always acknowledged or adjusted for. A concerted effort to address power asymmetry was woven into the present research through the different phases of data collection and analysis. For example, the interviews were conducted in known places

⁸ See Appendix F: an overview of the UNCRC

where the children could feel secure: their homes or their school. Interviews did not take place within the classroom, where the children may have sensed they were under evaluation. Additionally, the researcher undertook to reassure the children that their input was valuable, that all comments were acceptable and that there were no right or wrong answers. Finally, the younger children were interviewed in the presence of an adult family member, so a known adult could in part counterbalance power asymmetry. The details of these interview particulars are developed further in the method section.

What is necessary in research with children, whether they are treated as adults or as different from adults, is to adapt methods to suit children's competence, knowledge and interest (Punch, 2002). This awareness within the present study was, for example, the checking of interview questions with both professionals (family therapist and teachers) and children, in a pilot study, to verify questions were appropriate for the developmental levels of the participants (see p. 86). In research that conceives of children as different from adults, specific child-centred methods are usually employed. Researchers working with children (e.g., Looman, 2006; Peek, 2009) noted that younger children tend to want to draw about their experiences and adolescents to talk or write about them. These methods were employed in the present child-centred research (see p. 96). Interviews with the five year old children started with a possibility that they could draw and discuss their drawing. This method allowed them to be creative, have fun, and have time to think of how they wished to portray their issues in the discussion about their recent experience of living through earthquakes.

Developmental differences in understanding and attention span may influence data (Punch, 2002). Some researchers, who focus on the possible cognitive limitations of children, or limits in their ability to articulate their ideas, question the value of interviewing children. However, it is argued here that in a research methodology that focuses on lived experience, it is vital to listen to the children themselves at whatever stage they find themselves when experiencing and coping with the disaster. Eder and Fingerson (2001) note that research with children as participants demonstrated that children, even very young children, are capable of expressing view on issues and suggest that interviews are possible from pre-school to adolescence. Kvale and Brinkmann (2009), who focused on the specificities of undertaking research

interviews with children, state that interviews with children let them give voice to their own experiences and understanding of the world. Based on these previous studies, the children's perceptions in the present study are taken as valid. An effort was made, both to see children as a group with common perceptions emerging from age or cognitive levels, and also to accept the diversity in their perceptions as being valuable.

Additionally, in holding a reductionist attitude, the researcher continually attempted, not only to bracket or bridle her assumptions about children's coping in disasters, but also her pre-conceptions about children per se, and to continue to see the data given by the children in a "fresh", non-judgemental light. Reflecting on the lived experience from the framework of a child's perspective throughout this study is an attempt by the researcher to allow the children's voices to be heard and to "hear" those voices clearly in their context.

Interviews, used for data collection in the present study, are particularly well-suited to provide a rich understanding of the strategies and context in which coping takes place. Silverman (2006) adopted the work of Noaks and Wincup to illustrate three methods of collecting qualitative data through in-depth interviews: open-ended, semi-structured and structured interviews. The main distinction between interview types is the degree of structure of the interview, the depth of the interview and the degree to which the interview is standardised across participants (Fontana & Frey, 2000). In structured interviewing, the interviewer asks all participants the same pre-established questions and records the responses in a coding scheme that has been established. There is little room for improvisation. In an open-ended interview there are some topics that are discussed with participants but few pre-established questions. Between these two types of interviews, in terms of structure and consistence, is the semi-structured interview. This form was used in the present study as there was flexibility in questions and in the manner in which the questions were asked, in order to, on the one hand guide participants to discuss common topics, and on the other to allow them to tell the story of their experience in their own way.

The quality of the original interviews is critical for the quality of the ensuing analysis and knowledge produced. Quality elements in the present study included the way the questions were posed and chosen, the profile of the researcher within the interview situation, and the clarity of comprehension. For example, verification of understanding what the children had said, and whether the children had understood the researcher was ongoing during the interview in order to clarify that children's reflections had been clearly understood.

Although interviews are widely used in research, interviews have been shown in the literature to be not without difficulty (Fontana & Frey 2000; Kvale & Brinkman, 2009; Myers & Newman 2007). For example, interviews are subject to effects where the interviewer is not an invisible, neutral entity, but someone who influences responses (Fontana & Frey 2000). The researcher has an effect on the context of the interview itself and can influence the interview social setting. As well, data from interviews may be biased by social desirability (Pfefferbaum et al., 2013), the children giving the researcher what they think she may want. Additionally, the meaning of words used is often ambiguous and it is not always clear that the participants can fully understand what is said. The present study addressed these interview elements (See methods section on interview protocol and procedure).

Ethical approval and considerations.

Kvale and Brinkmann (2007) state that ethical issues are pertinent to all stages of the research. The present study involves research with children, a potentially vulnerable group, and ethics were a consideration throughout the project. All potential participants, and each school, received a written explanation of the study and were given an opportunity for discussion with the researcher or supervisors (see Appendix B). Informed written consent from the school principal, teachers, and parents was obtained prior to the study (please see information sheets and consent forms in Appendix B & C), and oral consent was obtained by the children following written consent from their parents.

Participant's complete confidentiality of all information was assured. When any issues of concern, such as heightened distress or family violence were raised during

the interviews or in contact with the participants, the researcher discussed options with the child and parent and referral to the appropriate services was initiated. This was the case with two referrals that were made in Time One data collection, when the child participants shared their difficulties with the researcher. Participants were also told that they could end their participation in the study at any stage.

The research proposal, protocol 11/60, was approved by the Massey University Human Ethics Committee in February 2012.

Method

Study design.

The present study design uses a phenomenological theoretical framework, and thematic analysis of interview data from qualitative, semi-structured interviews taken over two time points, in Christchurch and Wellington, following an earthquake disaster and the consequent recovery process. The aim of Time One (T1) interviews was to investigate how children cope effectively with a disaster and to identify resources and influences that promote effective coping and adaptation, and compare coping in the two cohorts. Time Two (T2) interviews, 33 months after the February 2011 earthquake, and 16 months after T1 interviews, was to re-obtain interview data from a total of six children—one child from each age group and school in the Christchurch cohort—so as to examine how coping may evolve over a recovery period. A modified version of Giorgi's psychological phenomenological approach, and thematic analysis developed by Braun and Clarke (2006; 2014) is employed for interview data analysis.

Recruitment of schools and participants

Following ethics approval, over sixteen schools in Christchurch and Wellington were contacted by phone or visited to establish interest in participating in the study. Information sheets (see Appendix B) were then sent to Principals and Boards of Trustees (School governance bodies). In the Christchurch cohort, the researcher chose schools in various geographical locations so as to have an overview of the

impact of the earthquakes in the city. Six schools in Christchurch, three primary and three secondary schools, covering north, south, west and east locations agreed to take part in the study. Additionally, two schools in Wellington, one primary and one secondary were chosen as a comparison group, as they are from a similar seismic situation, with children of a similar age but who had not experienced a disaster. Both the Christchurch and the Wellington comparison group coped with everyday stressors.

Once schools consented to participate in the study, teachers were contacted for their consent. The researcher worked with each principal and teacher to organise the most convenient manner of sending out information sheets and consent forms (see Appendix C) to parents and children, and the best time for interviews, so classes or examinations would not be disrupted. Information sheets were sent out via the teachers, to both parents and children, and agreement for participation obtained from the parents. The researcher then contacted the selected parents to set up time and place for the interviews. Children whose parents consented were asked for oral consent at the time of the interviews.

In the first data collection, (T1), there was purposive sampling of Christchurch schools to obtain children who had experienced the earthquake disaster. Within the population who gave consent, there was “purposive random sampling” (Patton, 2002, p. 241) of 9 year-old and 15 year-old students who would be interviewed. The random nature of the sampling of who would be interviewed was to increase the credibility of the study in controlling for selection bias. One school participated in the five-year-old sample and the entire five-year-old group (seven children) who consented were selected for an interview so as to have as many as possible for in depth data collection.

In May 2012, one secondary school in Christchurch withdrew from the study on the day data collection was to take place. This was 16 months after the powerful February 2011 earthquake. Before a newly recruited sixth school could be integrated into the study, several aftershocks occurred, including a (M_w) 5.2 aftershock, which was the largest for some weeks. This aftershock had an impact on the local population. Consequently it was deemed preferable to include only the five schools where contact had already been established and interview times scheduled, rather

than accept a new school to the cohort. Interviews of the Wellington cohort took place in July 2012.

Recruitment of Time Two participants occurred 33 months after the February 2011 earthquake. The children were purposively sampled from the T1 Christchurch cohort, as recommended by Teddlie and Yu (2007), in order to maximise rich data collection, and to have a sample from each age group in the study. The six children in the T2 cohort had been articulate in describing their experience within T1 data collection, and there was a mix of coping skills. For example, some children reported effective coping in T1, whereas others were still exhibiting post stress symptoms such as hair loss and avoidance of public places (malls, cinemas).

The parents of all T2 participants were contacted for consent, and acceptable interview places and times were selected. Consent was also obtained from children at the time of the interview. Additionally, all schools in the study were re-contacted and principals were given an update on the study (see Appendix E). As well, all other T1 participants in both Christchurch and Wellington were contacted by telephone and thanked again for their participation, as well as informed that there would not be a further interview.

Participants: Time one.

The Christchurch interview cohort was made up of 32 children from three age groups: seven children in class Year Zero (5 year-olds); fifteen children from three Year Five classes (9/10 year-olds); ten children from two Year Eleven classes (15/16 year-olds) as well as one parent per child, their class teachers and principals of the three primary and two secondary schools. The children came from the four geographic directions of the city so as to have an overview of earthquake impact. The study attempted to have sufficient numbers of children in each age group so as to obtain adequate in depth data on coping and to have a wide enough range of opinions (O'Reilly & Parker, 2012).

In Wellington, the comparison cohort was made up of 10 children: five children from a primary school (9/10 year-olds in Year Five), and five children from a secondary school (15/16 year-olds in Year Eleven), as well as one parent per child, the class teacher and principal from each school.

A total of forty-two children were interviewed (see Table 3.2 below). In Christchurch fifteen boys and seventeen girls took part, and in Wellington, four boys and six girls. The specific age groups were chosen as these age groups are noted in research (Deering, 2000; Skinner & Zimmer-Gembeck, 2007) as ages where possible shifts in developmental level behaviours, such as coping skills, may occur. In the Christchurch cohort, children in all three age groups were experiencing multiple aftershocks and it was expected that they could remember and discuss their experiences. In the study if 'adolescent' is stated then the children are from the 15/16 year old group.

Participants: Time two.

In November 2013, four girls and two boys from the Christchurch cohort were interviewed. Each age group was represented: one, six year-old; three, ten/eleven year-olds; two, sixteen year-olds. There was one child represented from each of the schools participating in T1 (covering the geographic axes in the city).

Table 3.2 *Participants in the Study*

CHRISTCHURCH PARTICIPANTS	Time 1: July 2012 Interviews	Time 2: November 2013 Interviews
Year 0: One class (5years) - Children - Parents - Teacher	7 children, 6 parents, 1 teacher	1 child
Year Five, 9/10 year-olds: 3 classes - Children - Parents - Teachers - Principals	15 children 15 parents 3 teachers 3 principals	3 children
Year Eleven, 15/16 year-olds 2 classes - Children - Parents - Teachers - Principals	10 children 10 parents, 2 teachers 2 principals	2 children
	Total: 32 children	Total: 6 children
WELLINGTON PARTICIPANTS		
Year Five, 9/10 year-olds: 1 class - Children - Parents - Teacher - Principal	5 children 5 parents 1 teacher 1 principal	
Year Eleven, 15/16 year-olds: 1 class - Children - Parents - Teacher - Principal	5 children 5 parents 1 teacher 1 principal	
	Total: 10 children	

Interview protocol and procedure.

Age appropriate questions were developed for the present study. A semi-structured interview protocol was developed for each age group (see Appendix D). This approach was adopted so that participants could articulate as much detail about their experience as possible and yet allow the researcher to systematically gather data from the cohort. Before contacting the participants in the study, the researcher conducted a small pilot study of the semi-structured interview questions with all age groups of children, and their parents, to test comprehension of information and questions used in the semi-structured interviews.

Questions for the semi-structured interviews had been previously peer-reviewed by a clinical psychologist, who currently works with families. Following feedback from the pilot group participants, several questions in the semi-structured interview prompts were adjusted for comprehension and clarity. The interview guide outlined broad, open-ended questions that gave the children a space to describe their experiences whilst ensuring common coverage of focused areas. There was a concerted attempt to be consistent, and to ask questions that were clear and appropriate for the age group being interviewed.

The researcher, trained as a clinical psychologist, conducted all interviews. There was variability in wording questions and sequencing responses (Patton, 2002). The researcher checked with participants so that they understood questions and took care to verify if participant's responses had been correctly understood by the interviewer. Christchurch and Wellington T1 and T2 interviews started with a broad question: "How has it been for you over the last months?" In Christchurch T1 data collection, the question prompted the children to tell of their experience during the time of the earthquakes. The Wellington children mainly discussed their school and social relationships. The interviewer then followed the person's lead. Depending on the participant's answer, the researcher asked: "What was the most difficult thing for you?" Followed by: "What did you do that worked best?" so as to investigate coping strategies the children may have used. This same protocol occurred for the adults interviewed, but also included a question on what the parents or teachers did for the children that appeared to help, as well as what they noticed that their children did to manage the situation.

Several tactics were used by the researcher to diminish the power difference between the researcher and child participants in the interviews. The researcher worked to establish an atmosphere where the children's own experiences were valued, so that the children realised the researcher was really interested in whatever they had to say. It was clearly stated that there are no right or wrong answers, so that the children felt free to give their individual ideas and feelings about their experiences. The tactic may have tempered the children's willingness to give the researcher what they thought she wanted.

Special care was taken to put the children at ease. For example, interviews were conducted with the parent present unless the child specifically asked to be interviewed alone. This was an attempt to reduce power asymmetry (Kvale & Brinkmann, 2009), as well as to enhance trust. The researcher would also sit on the floor alongside the younger children if they chose that position, and wanted the researcher beside them. The researcher would also let the child and parent decide who wanted to be interviewed first. Optional drawings were often an opening topic of discussion to start the interview with the younger cohort. The interviews then developed from discussions emerging from these drawings, whereas the older children participated solely in interview discussions.

The number and intensity of the after-shock sequence was high at T1 data collection and the Christchurch population was dealing with reoccurring, large tremors. T1 interviews of the Christchurch cohort were clustered over a ten day period in May-June 2012, in order to obtain block data from participants experiencing the after-shock sequence. Christchurch participants were interviewed before the Wellington cohort. Data collection of the Wellington cohort in T1 followed within one month after the Christchurch interviews, in July 2012. T2 data collection took place over five days in November 2013. There was a 100% response rate in T1 and T2. No incentive was offered to participants.

Time One interviews: Christchurch participants.

Thirty-two children and one of their parents were interviewed. Most parent participants were mothers (twenty-seven mothers and four fathers in Christchurch). Parents were present for all interviews of their five year olds, and could choose to be

present for interviews with nine year olds. Interviews were recorded following consent from both the parent and child. Children's interview lengths varied from 15 minutes to 50 minutes with a mean average of 26 minutes. Both parents and children could ask to see the researcher by herself. 60% of parents in Year Five and Year Ten participants, and 100% of Year Zero children's parents chose to remain for their child's interview. All parents, who chose to be present, allowed their child to discuss freely and only made minimal interjections. Similarly, the children only made minimal comments when their parent was interviewed.

Interviews took place either in the school or in the children's homes, environments known to the children. In the schools, a room other than the classroom was chosen as the classroom could be associated with evaluation. Only one child asked to see the researcher alone. Agreement was obtained from the mother for this request, and a joint discussion with mother and child was had following that interview, resulting in a referral, via the school, to social services.

Parents were interviewed for a mean average of 43 minutes either immediately before or after the children. Teachers and Principals were interviewed at their school. Mean average time for interviews was 45 minutes.

Time One interviews: Wellington participants.

Ten semi-structured children's interviews took place either in the school or in their homes. Parents were also interviewed either in their homes, a room provided by the school, or for one interview, at their place of work. Nine mothers and one father took part. Principals and teachers were interviewed at school. The mean average time for all interviews was 36 minutes.

Time Two interviews

T2 data derived from 10 Christchurch children's interviews taken with children selected from the T1 cohort. The semi-structured interviews took place at a time and place chosen by parent and child. Interview times did not exceed 40 minutes. As in T1, the younger children were given an opportunity to draw. Parents chose to be present for three of the six interviews.

Data.

T1 interview data came from a total of 98 interviews: 42 of which were with children. The remaining interviews were with one parent of each child, the class teacher and principals of the schools. The focus of the children's and adult interviews was to explore what coping was used by the children, to examine how, and in what ways parents, teachers and the school and community environment influenced children's coping. Key informant interviews with principals added information on community context and provided data from a different lens than that of teachers, on how the children were faring. Principals also gave an overview of each school within the children's community context. T2 interview data came from six interviews with children. All interview data in T1 and T2 were recorded and transcribed verbatim by the researcher.

As the focus of this study is on how children cope effectively with disasters and adversity, the lived experience as expressed by the children in interview data was given priority. Giving the children voice is to adhere to the view that the most direct manner to understand the children's experience is to learn from the children themselves (Peek & Richardson, 2010). Research has suggested that children are thought to be more accurate reporters of their own experiences than their parents or teachers (Weems & Graham, 2014; Walker et al., 2012). For example, parents hold beliefs about children's developmental capacities and may compare children to siblings, and teachers may compare the child to other students. Both parents and teachers may under-report if they are not fully aware of the children's internal state (Alisic, Boeije, Jongmans, & Kleber, 2012).

However, different sources of interview data are integrated into the study design for several reasons. First, obtaining data from close adults (parents and teachers), as well as from the children, allowed comparison and cross-referencing or triangulation of data from three sources. All sources are understood as giving partial views of the topic (Richardson, 2000). Second, using multiple sources of data in this study is viewed as obtaining multiple 'voices' related to the research topic (Silverman, 2000) as a way of obtaining a fuller or richer story. For example, key informant interviews from principals were expected to provide a different perspective on the overall situation within the school and community; contexts important for the children.

Similarly, the researcher took time to watch the children briefly in their classes and in their homes, wherever the interview took place. This allowed the researcher to see the participants in their context: to note the damage and ongoing repairs to home and school, as well as to note behaviours in the children's recreation and home milieu. This brief contact had a reciprocal nature as it also allowed the children to see, observe and take note of the researcher before the interviews started. The researcher also took field notes, regarding home atmosphere, elements of exchange and emotional tone after each interview to supplement transcript data. Finally, the researcher kept a contemporaneous diary on the Canterbury earthquake recovery where incidents that could affect the participant population were recorded and placed in context. Nevertheless, the primary analysis of this study is based on the interview data.

Member checking (i.e. verification by the participants of the meaning units identified in the analysis), was not part of the study design as it can be difficult for children to remember, discuss, or question transcripts with a researcher. One reason being the power asymmetry mentioned above and another, the accuracy of memory recall several months after the interview, when transcripts were completed. Recall is in part linked to cognitive development in children. For example, younger children may not have fully logical reasoning before the age of seven years and so use a combination of symbols and semi-logical reasoning to understand their world (Miller, 2011) and to recall their experiences. The youngest members of the Christchurch cohort were aged three or four at the time of the first major earthquake.

A further aspect that pertains to children's memory recall, or forecasting of the effects of the disaster, is the impact bias (Wilson & Gilbert, 2005) which can skew recall of long-term effects of negative events. Wilson and Gilbert found that although adults are proficient at predicting whether events are likely to be pleasant or unpleasant, they are less adept at predicting the intensity and duration of their future emotional reactions to events. This may also be evident in children. Finally, it was thought that asking the children to read and recall their experiences during the disaster may not be a positive exercise for all of them. However, transcripts were given to those parents and children who had requested them.

Consistently, in this study, the interviewer attempted to conduct the interviews in such a way that the participants own perspectives and experiences were captured. Nevertheless, there are instances where the interviewer asked leading questions, which can inadvertently shape the content of an answer, or interrupted the children's story. However, Kvale and Brinkmann (2009) point out, that in some instances, leading questions can also be an attempt to clarify if the researcher has heard "correctly" or to focus the participant.

Analysis of Qualitative data.

Verbatim transcripts of T1 and T2 were loaded into atlas-ti (Scientific Software Development, 2009), a Computer Assisted Qualitative Data Assisted Software (CAQDAS) that allows speed in handling large volumes of data (Friese, 2012; Seale, 2010).

Following from the work of Giorgi and Giorgi (2003), and of Braun and Clarke (2006; 2014) who elaborated steps in Thematic Analysis, the researcher immersed herself in the whole data set. Then, each transcript was studied in detail and basic codes given to key phrases and statements. The children's data were coded before the parent and teacher data. This sequence was organised so that the voices of the children were "heard" before the parent's discourse. All data were bracketed and the key phrases and statements located, by "in vivo" or open coding. At this stage all parts of the data were treated with equal value (horizontalised).

The initial 'in vivo' coding resulted in the generation of over 4400 codes. The researcher attempted to be open to coping strategies given by the participants so no pre-defined categories of coping were employed. The researcher continued to reflect on her motivations and assumptions throughout the analysis process, and how they needed to be managed in order to approach the data from as fresh a standpoint as possible.

Once all the data were open-coded, the codes were re-examined for overall meaning. The study data set was then examined for broader themes which the researcher organised into meaningful clusters in a coherent coding map of enhanced versions of each theme (see Figure 6: p. 100). The major themes were given short descriptions.

The researcher identified themes by ‘imaginative variation’ (seeing themes from different angles). These themes were synthesised and given a structure. The researcher gave a textual portrayal and a visual mapping of each theme.

At this stage, overlaps were eliminated, sub-themes were clarified. The researcher continued the iterative process of identifying and interpreting within a circular process, moving from the whole data set to the individual parts and from the individual parts to the whole whilst working toward a final analysis, a method suggested by Debesay, Naden, and Slettebo, (2007). Analysis in phenomenology has been seen as the clarification of meanings by moving back and forth between these whole and part meanings (Holloway & Todres, 2003). Negative case examples that did not fit into predominant patterns were included. The researcher made a concerted effort to be reflexive about perspective and subjectivity in order to analyse and account for what was presented by the participants: both distress and well-being.

The analysis also examined consistencies or inconsistencies between data from different participant sources. For example parent’s interview data were compared and contrasted with the children’s data. Cross-referencing of data can be “understood as a strategy that adds rigor, breadth, complexity, richness and depth to the inquiry” (Denzin and Lincoln, 2000, p. 5). Age groups and geographical cohorts were grouped and the codes were examined for clusters and themes that were pertinent to the research questions: effective coping strategies, influences from the child and from their context, aspects of adaptation, and evolution of coping over time. Care was taken with analyses of data from T1 and T2 so as to promote transparency and coherence in the study. T1 analysis was completed before T2 analysis started so as to separate temporal factors.

The present study analyses developed inductively from specific examples, in this case interview transcriptions from the children and caregiver interviews. Nevertheless, knowledge of the literature around children coping with adversity is not necessarily negative. Tuckett (2005) has noted that some knowledge of the literature can enhance analysis by sensitising the researcher to more subtle characteristics of the data.

The researcher endeavoured to increase the rigour of the study by sharing transcript codes, themes and clusters. Analyses were subject to credibility checks (Braun &

Clarke, 2014) by supervisors, a qualitative consultant, and a doctoral graduand in order to substantiate findings. This credibility checking occurred at the stage of initial codes and for theme mapping. In what Lincoln and Guba (1985) label an audit trail, codes and themes were accepted when consensus was reached.

Finally, a structural description was built up from the data to describe major themes and their relation to the research questions (see Figure 6: Key coping strategies identified). This structural description for Langdrige (2007) is a structural report that describes the move from a description of individual experience to exploration of the structure underlying such experience. The final description of themes in their relation to the research questions of the present study is examined in the four findings chapters.

Chapter Conclusion

The current study uses a phenomenological inquiry lens and builds from basic units taken from interview data toward general patterns that describe the phenomenon of coping as identified in the group of participants. Analysis in the study has followed the phenomenological approach using Giorgis's (2003) framework and thematic analysis (Braun & Clarke, 2014), which bases analysis on themes identified from and grounded in the data. This analysis allows dimensions to be identified without presupposing in advance what the important elements would be.

The thematic structure identified maps the children's experience of living through, and coping with a disaster. It resulted in a description and interpretation of both the common patterns that emerged from such an experience, and the description of the bones of that experience for the participants. The following four chapters examine findings. They are presented as thick description with quotations, so that the reader can make connections between the researcher's interpretation and the experiences documented.

Research Findings and Discussion

GETTING THROUGH: HOW CHILDREN COPE EFFECTIVELY WITH AN EARTHQUAKE DISASTER

Overview

The next four chapters discuss the study findings through an exploration and interpretation of the children's discussions. Chapter 4 examines the children's own coping strategies, intrapersonal capacities and ways of coping that they employ to respond to the earthquake disaster. Chapters 5 and 6 explore how the children's coping and adaptation are promoted or inhibited by people and places in the children's close community: Chapter 5 focuses on family influences; Chapter 6 on close community influences. Chapter 7 investigates how children's coping and adaptation may evolve over time, using data from two collection points. Chapters 4 to 6 use Time One (T1) data from both Christchurch and Wellington participants. Chapter 7 examines data (T1 & T2) solely from Christchurch children.

The final conclusion chapter (Chapter 8) discusses all findings and examines implications of the present study. The findings provide an in depth understanding of how children cope within a disaster and post-disaster recovery process. The children's experiences are set in the cultural and historical context of the 2010-2012 Canterbury, New Zealand earthquake disaster.

Chapter 4: Children's Coping, *Way of Coping* and Intrapersonal Capacities

Introduction

This chapter will develop in detail the identified repertoire of children's coping strategies and the intrapersonal resources that affected their coping. The findings will be illustrated with quotations from children or caregivers. For confidentiality, pseudonyms are used. The final section addresses the interaction of strategies and *way* the children employed their coping repertoire, which appeared to promote coping effectiveness and positive adaptation. However, to understand children's coping it is necessary to at first briefly examine the aversive circumstances which activated the children's coping strategies.

Impact of a Disaster: the Stressor/s

The children from Christchurch faced many challenges in the protracted period from September 2010 until December 2012 when thousands of earthquakes were recorded, four of which were greater than magnitude 6 on the Richter scale (GeoNet, 2012)⁹. The specific characteristics of the Canterbury earthquake disaster resulted in the children having to repeatedly deal with earthquakes and aftershocks that were "scary" and not under their control:

I think all the kids were quite scared because they were just worried about their home and their parents...It took a very long time [to get back to school from downtown] and [we had] another big aftershock shock when we were in the bus. (Kevin, 10 years)

Like Kevin, the children continued to deal with post-disaster consequences through three years of their development, even though the aftershock sequence had diminished in frequency by the second data collection in November 2013.

⁹ 12,000 aftershocks were recorded between 2010-2013 (Mutch, 2015).

Although the children had varied experiences and demonstrated different perceptions of risk, all of the children felt the sudden shaking of the earthquakes and many often experienced the negative emotions of fear and panic. This situation was outside any of their previous experience:

I think it was—it was quite scary, like I'd, I'd never experienced anything like that and it was quite sudden. (Poppy, 15 years)

Poppy's reaction is consistent with the literature examining children's subjective experiencing of potentially traumatic events, where children reported feelings of fear (Jensen et al., 2009; van Wesel et al., 2012).

The recurring earthquakes and their impact were processed over time. Angela remembers vividly the scene she experienced in one earthquake and how her reactions altered from the initial impact to her present state¹⁰:

...we were there and it happened and we started running and our friend got left behind. Like I totally forgot about her...It's funny now but it wasn't funny then. I lost my shoes and stuff. And some people were really badly injured and stuff. Bleeding on the head. (Angela, 15 years)

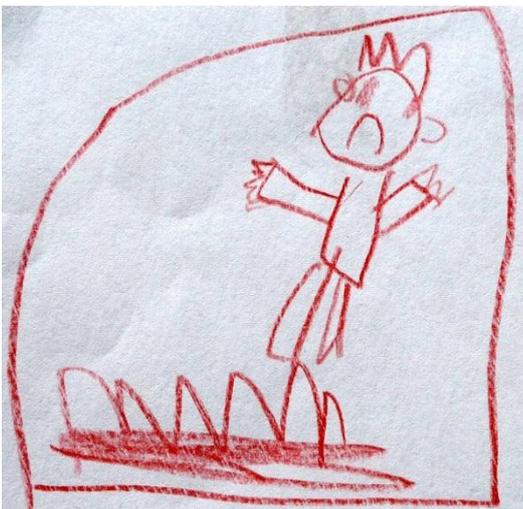


Figure 5. Ted's drawing: "I thought the house would fall down"

The younger children (5 year-olds) spoke more briefly of their fear and distress, which was sometimes apparent in the discussion of their spontaneous drawings (an optional task while waiting for their interview). Drawings have been used as a means for younger children to visually explain their experience (Sunal & Coleman, 2013; Salmon & Bryant, 2002) and give an added opportunity for expression. Ted draws himself in his grandmother's house with a sad or frightened face as the ground shook.

¹⁰ The interview was 16 months after the incident which occurred in February 2011.

Many of the children in the study were able to articulate how “scary” their experience was:

Like it scared me as well. (Amelia, 5 years)

These children had to cope with powerful emotions. Disasters as sudden, frightening events place demands on both children and adults, and produce significant stress (La Greca et al., 2013). Gaffney (2006) has commented that when children experience strong physical and emotional reactions in themselves and close others they can be understandably terrified.

Nevertheless, children’s reactions varied. Not all of the children in the present study experienced intense fear, even when near the epicentre of the earthquakes:

Um, it was not that bad because I’m not really scared of earthquakes. (Sarah, 9 years)

However, some children continued to feel fear and high anxiety at T1 data collection, even when their peers were less upset:

Some people were fine with it [aftershock], didn’t even feel it, and I was, I— I was just screaming out for Mum. I didn’t know what to do. I was outside on the field but I just got really scared. (Ann, 9 years)

Sarah and Ann reacted differently which suggests that children’s reported stress level is not linked solely to impact or exposure. The differences in perception of threat, intrapersonal capacities, and coping skills all appeared to affect the children’s reactions and adaptation, and are illustrated in this chapter.

Children’s Coping Strategies and Intrapersonal Capacities

Children cope within their nested systems of self, family and community. To better understand children’s coping interaction, the present study situates the children within these ecological systems. Within the context of this study, the children’s processes of coping linked with their access to intra and interpersonal resources to enable them to function and eventually adapt following the disaster and consequences.

Coping strategies are understood in this study as the “the conscious volitional efforts [the children] make to regulate emotion, cognition, behaviour, physiology, and the environment, in response to stressful events or circumstances” (Compas, et al., 2001, p. 89). The numerous coping strategies identified (see Figure Six), were the children’s attempts to regulate by multiple processes of thoughts, behaviours, and emotions, the negative arousal and challenges generated by the earthquakes and their consequences. Children understood to be coping effectively reported they were managing the situation, including their emotional reactions, and responding appropriately at school and in relationships

The study includes three age groups in order to understand the children’s functioning as influenced by age and developmental levels. A developmental component is also integral to the concept of successful adaptation, conceived as a child functioning adequately in relation to developmental tasks, despite transitory stress reactions (Pfefferbaum et al., 2013). Data from the Wellington comparison group provided a further understanding of coping with everyday challenges in children of similar ages who were not experiencing a disaster situation.

The study found that the children who appeared to be coping effectively employed the following coping strategies. These six main themes of coping in T1 are explored in this chapter: “don’t get worked up about it”; “working out what to do”; “everything’s gonna be alright”; “getting on”; “are you ok?”; “go to someone”. All coping strategies interacted together (as illustrated by the arrows in Figure 6). All strategies were employed in enabling the children to “get through” the disaster.

One of the major coping strategies that enabled the children not to be overwhelmed, and so be able to use their capacities to respond to the demands of the situation, was the various strategies used to enable them to regulate or manage their emotions.



Figure 6. Key coping strategies identified

Managing emotions: “Don’t get worked up about it”.

Regulating emotions appeared to be an initial and important coping strategy in this disaster situation, which for most of the children was often a context of heightened emotions. The children were actively learning to manage and process emotions engendered by multiple earthquakes.

Coping research conceptualises emotional regulation as one of the functions of coping (Lazarus, 2006), and limits emotional regulation to volitional processes in response to adversity and distress (Compas et al., 2013). The present study supported research that suggests learning to cope with emotions is a conscious effort of "monitoring, evaluation, control and expression of emotion, especially in challenging circumstances" (Taylor & Stanton 2007, p. 379). Here Ryan explains how he actively copes with his feelings:

Well, I just manage the panicky feeling. If you're feeling panicky, just relax...I just relax and stay calm. (Ryan, 10 years)

Different ways of coping are linked to the regulation of negative or positive emotions (Folkman & Moskowitz, 2004). This was confirmed in the present study where children in all age groups practised multiple, active coping strategies to manage their emotional reactions. For example, not only did the children use behavioural strategies to calm and dampen negative emotions (Ryan links behaviour and cognition when he chants the word "calm, calm, calm"). The children also used coping strategies of humour (see examples p. 115), and in the following quotation, self-comforting distraction so as to increase positive emotions:

...it's more like I listen to music and like pump myself up. (Poppy, 15 years)

Joshua drowned out the 'scary' rumbling noise of an earthquake by listening to music, and sought the proximity of his mother, who had initially provided the musical distraction strategy:

Um, when there was a big earthquake, I used to hop in her [mother's] bed and listen to music on her c'puter. (Joshua, 5 years)

Children like Joshua learnt that the earthquakes and other challenging events in the disaster were more manageable if they could have some control, if not over earthquakes, then over a part of the event [the noise] and their emotional reactions.

Regulating emotions is partly about control: controlling the input, managing one's internal reaction, and the resulting response of expressing the emotion (Losoya et al., 1998). Being in some control gave the children respite. Everstine & Everstine (2006) explain that any means to attain a sense of control is enabling in a disaster situation, where there is often a sense of lack of control.

The children in the study who appeared to be adapting effectively were managing their internal emotional reactions and reactivity to the earthquakes. Managing emotions took time and practice. In part, due to the ongoing earthquake sequences, the children were able to repeatedly 'test out' their ways of keeping their emotions to a manageable level. Many children went from reacting emotionally to 'not getting worked up' by learning how to respond with more self-control:

I used to scream but now dad said not to scream because it's ok, and it makes it a bit less scary... After the first few, you were gonna scream but then you had to think, it's not going to make it any better. (Abby, 10 years)

For the children like Abby, regulating and managing of emotions seemed to improve with repetition and time. Abby's example also illustrates the inter-dependent relationship of social and cognitive developmental coping processes; her coping was influenced by her father's assistance.

Both the Christchurch and the Wellington comparison group had ways of coping around emotional regulation. Many of the study cohort reported that managing emotions is equally useful for everyday challenges. For example, this ten year old boy in Wellington stated:

Um, well, it's just easier for me to think of a solution when I'm calmer. (Lachlan, 10 years, Wellington)

However, compared to the comparison group in Wellington, the Christchurch children were regulating emotions more often in their lives, could talk about it more readily, and had diverse strategies in place. This difference in use may be the result of Christchurch children having to practise coping with emotion regulation through multiple earthquakes.

Many of the Christchurch children in the present study were able to regulate emotions and keep up effective functioning, even under highly stressful conditions. By June 2012 at T1 data collection, 16 months after the most destructive earthquake and in a context of ongoing large aftershocks, Neil reports that his capacity to regulate his emotions helps him process his situation and work out what to do:

Um, you definitely have to stay calm. I s'pose it's easier said than done. But, if you stay calm, it makes it easier and you can think things through. (Neil, 15 years)

By managing their fear and perception of danger, the children kept their capacities to react 'operational'. Neil by keeping calm could think more clearly. This capacity to manage emotions has been linked to better adaptation following a disaster

(Terranova et al., 2015) and to being more resistant to stressors (Taylor, Eisenberg, Spinrad, Eggum, & Sulik, 2013).

A minority of the children could effectively manage emotions relatively rapidly. This reaction has been described by researchers as experiencing “only transient distress and maintaining healthy functioning” (Bonanno, 2004; Bonanno et al., 2010, p. 1). For example, Sarah shows a high resistance to stress and could not think of a point when she felt really upset or scared over the former 16 month period:

...my Dad calls me and then he’s ‘are you ok?’ and I say ‘yeah, I’m fine’. I say ‘I’m not really scared you know’. (Sarah, 9 years)

Contrary to the children who could regulate their emotions effectively were a small group who had real difficulty. For example, Ann feels constantly anxious eighteen months after one of the major earthquakes and was not able to use coping strategies that enabled emotional regulation. She was unable to keep calm:

Well,...there was that big shake after [Dec 2011], ’cos we were in the Mall and after that when we got home, um we had to go outside when that happened, I was crying so bad because I was so scared...I’m still worried about if an earthquake happens... ’cause I think something else is going to come like a tsunami. (Ann, 9 years)

Ann’s fear and anxiety were growing, and extending out to other possible threats. She reported that her anxiety and fear interfered with her ability to do schoolwork or play with friends¹¹. She was not able to adapt adequately. A further illustration of ineffective coping and adaptation is illustrated by Ted, 5 years old, who had recurring nightmares for over a year following the February 2011 earthquake and was unable to regulate or control his emotions. Here he is described by his mother as being the only child in a group who was overwhelmed by his fear in one of the aftershocks:

¹¹ It was discussed and decided by the child, the researcher, and her mother immediately after this interview that Ann be referred to professional support.

...he couldn't even think enough to [pause] get under something. He just stood there and just screamed...he was standing there holding the rails and just screaming really. (Mother of Ted, 5 years)

Coping strategies used by the children of this study often were interrelated and affected each other, both positively and negatively. Both Ann's and Ted's inability to manage their emotions had a negative knock-on effect on their problem-solving and appraisal of threat. For example, when Ted's capacity to cope with his emotional reaction was overwhelmed this affected his coping in other domains of his life: to sleep peacefully, or to work out what to do. Zimmer-Gembeck and Skinner (2011), note that children, who were ineffective in managing their emotions, are also associated in research with cognitive confusion and cognitive exhaustion.

Many of the children in the study who were initially overwhelmed by their negative emotions were aware of their inability to cope and that their other capacities were affected:

Yeah, but at the start, during school, when they'd happen, it was the worst feeling ever. Like (pause) and I couldn't concentrate for the rest of the day on my school work. (Hannah, 15 years)

Nevertheless, for the children who were not managing well, a positive point was that interventions to promote coping appeared to be effective. For example, some participants, who were initially unable to control their emotions, were supported by professional counselling. They were then able to learn, over time the behaviours and cognitive strategies necessary to develop effective coping strategies. Here Nan explains:

But then after June, that was when I went a bit funny. Like when I went into buildings and stuff or in cars (pause) I didn't really want to go into buildings and stuff. But then we went somewhere after that and I talked to someone. And I was alright after that...she just taught me techniques for if I did start to panic...this breathing thing. We had to count...did help 'cause it was like something else that was on my mind. I was like doing that rather than 'I'm in a building—something could happen', kind of thing... (Nan, 15 years)

Similarly, Cody who was at times very scared, explains that he found additional help with emotional management through a psychosocial intervention programme (Stormbirds)¹² facilitated by the school. He reported he was coping “ok” now:

Um, I think it’s from our Stormbirds booklets...It’s just about expressing your feelings and what did you feel about the earthquakes and stuff. (Cody, 10 years)

The effective results of such interventions advocate for assistance for those children who are less able to cope, and highlight children’s capacity to respond positively to coping support interventions.

Children, who were able to regulate their emotions, used varied strategies to deal with emotions and keep them at reasonable levels. For example, the children spoke of managing their emotions by concrete actions. Abby reports walking so that she feels less shaking in the aftershocks:

...the first few hours after I,—everyone else just sits there (pause) I normally walk back and forward. (Abby 10 years)

Neil talked with his family and friends:

Yeah, just being able to say it. Get it out. So you don’t have it dwelling inside you. Just getting it out. (Neil 15 years)

Neil is able to take off emotional pressure by talking with his social network, where he is able to ‘offload’ negative feelings and thoughts. Others used play or leisure to process emotions and distract themselves from negative emotions. After an earthquake, John and his peers “calmed themselves” with play:

...some of them calmed themselves playing on the playground [with football]. (John, 9 years)

A major variant of “don’t get worked up about” the disaster was keeping calm.

¹² *Stormbirds*® is a small group program that is based on the belief that change, loss and grief are a normal and natural part of life. (see also p. 214 & 229).

“You gotta keep calm”.

In the present study, many children stated that a key strategy in regulating emotion during earthquakes was that of learning to keep calm, which reduced the related stress and distress:

Um, if there’s an earthquake then stay calm. And um, don’t get worked up about it cause then it’s just more scary. The earthquakes are worse if you get worked up about it. (Lucas, 10 years)

The children used diverse coping processes to stay calm and keep their emotions at a controllable level. This involved thoughts and behaviours, such as relaxation techniques:

Well, I’ve tried to keep calm (pause) I really don’t know how to explain it...Well, (pause) I take deep breaths. (Alec, 10 years)

As the children became aware of their ability to keep calm in highly stressful situations, they recognised a competence:

I wouldn’t say I keep calm all the time [but] I think I’m pretty calm under pressure. More calm under pressure. (Kayla, 15 years)

When he compares himself to others, who are not able to stay calm, Neil experiences himself as competent:

For some people it would have taken months but for me personally it took me less than a week to get to grips...I think for me it seems to go quite quickly. (Neil, 15 years)

Recognising they were competent, often in comparison to other children, appeared to promote and influence intrapersonal resources of self-esteem and self-efficacy, as well as coping abilities. In the present study, children like Kayla and Neil, who reported instances where they demonstrated coping effectively with their emotions, also expressed awareness of intrapersonal resources which appeared to have a positive cumulative effect on their estimation of their own capacities to manage their situation—a positive feedback loop. The interdependence between coping strategies and intrapersonal capacities is reported in research (Lazarus, 2000).

Additionally, there appeared to be a bi-directional influence between children's effective coping strategies in keeping calm and their surrounding context and relationships. For example, not only was regulation of emotions effective for the children, but the children noted that staying calm had a calming effect on those around them:

So, it's more the fact I'm staying calm and that's rubbing off on everyone else, and helping them calm down as well. (Blake, 15 years)

Children exist within multiple relationships and contexts (Bronfenbrenner & Morris, 2006). Bi-directional influences were woven into the child's social and physical environment and affected children's capacities to develop their coping skills:

Everyone that I've been with has been quite calm. And that's good because if everyone's calm then there's no reason to really feel stressed out. (Neil, 15 years)

Findings of the present study, of managing emotions by keeping calm, has been signalled by research listening to children giving advice following earthquakes (Freeman, Nairn & Gollop, 2015).

Many children of all ages in the Christchurch cohort showed effective and appropriate use of diverse forms of emotional regulation. Developmental and age factors affected the form of coping strategies employed. Although acknowledged and commented on throughout the findings chapters, the present study did not specifically examine developmental and age elements in coping. Nevertheless, these elements are known to affect coping responses (Franks 2011) and it is important to pause and reflect on these influences. An example is presented in the following insert.

Table 4.1 *Developmental and Age Influences with "You gotta keep calm".*

<p>This section specifically highlights the developmental perspective in relation to the children's emotional regulation in strategies to keep calm. Consistent with the limited research on developmental and age aspects of children dealing with disasters (Pfefferbaum et al., 2014), children's coping responses in the present study were</p>

influenced by their developmental and age level.

Developmental and age related elements from the present study are mainly consistent with the existing research. That is, the children demonstrated an increasingly complex use of the coping strategy as their age and developmental capacities increased. Similarly, the forms the coping strategy took were consistent with developmental factors as discussed by Losoya et al., (1998). That is, very young children often used more 'concrete' methods of staying calm and older children more cognitively conceived ways of emotional regulation. Varying behaviours and thoughts to regulate emotions were related to cognitive maturity. For example, Craig, at five, talks of a place where he finds comfort and safety:

...me and my dogs made a safe spot when there's an earthquake. It's under the table where we eat. (Craig, 5 years)

He stays calm within the tangible context of pets and a table. Harrison, however copes in a more abstract manner; he explains that avoiding thinking about negatives is a good strategy for keeping calm:

Stay calm...because when you keep thinking about the negatives, you get worse and worse. (Harrison, 10 years)

Neil at 15, can analyse the effects of calmness and how emotional regulation has a positive cascade effect onto others:

They [teachers] remain calm and that's good 'cause you almost see them as role models, and when they're calm you almost feel you should be calm. And when you're calm, other people are calm. (Neil, 15 years)

The older children often used their cognitive abilities to analyse and understand the situation and regulate emotions. From school age, children are able to use logic to understand disaster events (Deering, 2000), and can comprehend the gravity but also the effectiveness of a coping strategy such as remaining calm.

Age is often cited as affecting coping behaviours (Zimmer-Gembeck & Skinner, 2011). For example, Pynoos, Steinberg and Piacentini (1999) discuss developmental changes and age levels in the perception of danger and how developmental

competencies influence emotional responses. For example, many of the younger children in the present study were consistent with the literature in referencing adults' reactions to earthquakes in order to measure danger. However, developmental elements in the present study demonstrated complexity and were influenced by multiple factors. For example, children of all ages, including 15 year olds referenced adults for emotional reaction in earthquake events. Adults were aware of their role in assisting children:

...he gets quite scared but because I don't overreact...you can't panic, because if you panic, everyone else panics. (Mother of Kevin, 10 years)

It may be that in exceptional and unknown contexts, such as disasters, children of all ages revert to referencing adults to measure threat by gauging emotional reactions.

Interestingly, younger children in the present study, who are often represented in the literature as a vulnerable group, were observed by several parents and teachers to have a capacity to calmly 'bounce back' or recover more quickly than the older children:

...but if it shakes I'd say get under the covers and then he'd come back up. And the next he's just matter-of-fact about it all, like, 'oh so when do we get power?' type of thing. (Mother of Joshua, 5 years)

This capacity to adapt may have been a result of the younger children's limited capacity to understand the totality of the disaster events (Gaffney, 2006), which may buffer the younger children from feeling negative emotions, and help them stay calm.

However, the capacity of younger children, who remain calm, may also reflect the plasticity of children. One teacher noted that five year olds are "very of the moment" and could quickly come back to activities after an aftershock. As well, younger children may integrate disaster events as part of their lives more readily than adolescents, who have lived longer without earthquakes in their daily experiences. Compared to young children, adolescents may also be more aware of the exceptional nature of disaster events, and have established a schema of life events, where disasters may be seen as exceptional and threatening:

...quakes that just kept coming and you don't know when. (Poppy, 15 years)

This awareness may affect the older children's capacity to keep calm.

The present study seems to demonstrate that children, especially the younger (5 year old) children, have mixed coping strategies that sometimes show complex, sometimes more simpler variants, as they deal with stressors. Younger children in the study were not necessarily more vulnerable than older children, particularly if supported by proximal adults.

Within the present study, managing emotions was not just confined to coping strategies of keeping calm, it was also related to actively enabling positive emotions and to distancing oneself from one's emotions, as seen in the following themes.

“I think happy thoughts”.

Some of the children soothed themselves by using a cognitive coping strategy of “happy thoughts”, moving towards a positive focus so as to reduce negative and increase positive emotions. Elise, in the immediate aftermath of an earthquake uses self-soothing thoughts and decreases her experience of negative emotions:

I just think everything's gonna be alright. There's not going to be anything, you know, destructive. (Elise, 9 years)

Positive thoughts not only help in emotion management but are reported in research to positively influence intrapersonal capacities and coping strategies in an increasing, positive spiral or loop. For example, Fredrickson (2004) has developed the Broaden and Build theory which describes how experiencing positive emotions broadens a person's functioning capacity, both cognitively and behaviourally. Children in the present study who used “happy thoughts” and self-soothing behaviours may have benefitted from positive emotions, and so increased their capacity to think and cope under challenging conditions. Amelia, a younger child, uses multiple coping strategies: seeking a friend, thinking positive thoughts, and imagination to feel positive emotions. She ‘draws a rainbow’ to represent the positive feeling she puts in her head:

...I drew a rainbow so that's the thinking I'm feeling in my head...just hide under a table and then I just get one of my friends to talk about something nice and then one of us, a friend and me just think of it after.
(Amelia, 5 years)

Deering (2000) states that cognitive processing in younger children is highly influenced by their imagination where objects can become personified. This is demonstrated by Amelia's rainbow. Yet, Amelia also uses multiple, relatively complex strategies to reduce her distress, actively setting up positive behaviours in herself and her peers, and cognitively soothing herself by dwelling on positive things.

The strategy of self-soothing has been mentioned in the literature as a regressive behaviour, such as when children revert to former developmental behaviours such as thumb-sucking and clinging. However, the present study demonstrates that these behaviours need to be seen in context. Self-soothing can be an active strategy that may give temporary respite to children when stress is high, dampen negative emotions, and so increase capacity to manage the ongoing situation.

The coping strategy of self-soothing thoughts and behaviours is found in other studies of post-disaster child coping. Jensen et al. (2013) in their qualitative study of children's (6-18 year olds) self-reported coping strategies following the Indian Ocean tsunami of 2004, found self-soothing thoughts and behaviours to be the most used coping strategy in the immediate aftermath of that disaster.

In the present study, several children used this strategy. Kevin, ten years describes how he copes with the earthquakes by thinking positive thoughts through visualising a loved pet:

... Um, (pause) I just really think about positive thoughts [when there is an earthquake]. Well, like, I have such strong memories— like I remember Angus [dog]. The first time I got him, he was so cute and I was really happy.
(Kevin, 10 years)

Thinking of his pet allows Kevin to feel better during an earthquake. Rachel also uses self-comforting thoughts to regulate her emotions:

I just think to myself it will be ok. That I'm really shaking but... (Rachel, 9 years)

The children used multiple, inter-related processes to increase their experience of positive emotions and this supports coping research, which conceptualises strategies as processes using multiple dimensions and facets (Compas et al., 2001; Folkman & Moskowitz, 2004). For example, children used problem-solving ideas for emotional regulation and vice versa. As well as keeping calm and self-soothing strategies to increase positive emotion, the children employed a further coping variant of regulating their emotions by taking their minds off the situation.

Distancing and distraction: "Taking your mind off it".

In this section, the children's use of distraction is specifically aimed at actively increasing positive emotion and decreasing negative emotions. This strategy had variants. The children distracted themselves by doing something pleasant or they actively "zoned out". Other children kept themselves busy so as to not dwell on unpleasant thoughts or emotions:

I just go off to my room and watch TV and draw because I really like drawing...yeah. Zone out and watch cartoons and stuff. And I forget about the stuff. [Like] about our house falling down and stuff like that. (Connor, 10 years)

As Connor explains, distraction enables him to feel positive emotions (doing something pleasant), and to take a certain distance from feeling his negative emotions ("zoning out" or keeping very busy). In this coping strategy the children took time out from feeling or thinking about the disaster. They recognised the strategy as helpful and could even advise others to adopt it. Cody would tell others:

...I think it's just to get your mind off it and like, doing something that you really like doing and get your mind off it (Cody, 10 years)

When coping effectively, the older children appeared to anticipate their need for respite and organise their distractions. Due to their level of cognitive development and increased independence, the older children were perhaps more able to

proactively plan their distractions (Zimmer-Gembeck & Skinner, 2011). Hannah describes her behaviour that increased positive emotions and took her mind of the disaster situation:

I treat myself, almost. Like I still go out with friends and everything, do stuff with school and everything (Hannah, 15 years)

Some participants rapidly used this strategy of actively taking their minds off the earthquakes as an effort to reduce a high level of distress following an uncontrollable event. This may have been a reflection of a known coping strategy already in use pre-disaster. For example, Kayla reported that it was her style of coping:

But the way I cope with stuff is—listen to music. Just sit down and listen and play round with guitars and things...I just sit down and put my head-phones on. (Kayla, 15 years)

Many used this strategy. The following example of distraction is a combined effort by adults [teachers] and pupils to manage emotions immediately after a major earthquake, when the class was caught in the central business district (CBD). Abby describes what her class did as they crawled in the dust, trying to get back to the school bus:

...and then we had to crawl on our hands and knees to the car-park and we were singing songs. Just to try and take our minds of the earthquakes. (Abby, 10 years)

Activities chosen were often ones the children enjoyed. In a disaster context, these activities gave some respite from the situation:

Probably video games...Yep, just thinking about the games. (Kevin, 10 years)

In coping research, distraction and distancing are often labelled as ineffectual coping strategies, as the children are not actively addressing the adverse situation but actively avoiding thinking or feeling about it (Vernberg, Silverman, La Greca, & Prinstein, 1996). However, recent research has recognised that coping strategies are not universally constructive or negative (Connor-Smith & Flachsbart, 2007; Everstine & Everstine, 2006).

Several studies have suggested that the strategy of “taking your mind off it” can be effective, especially when there is no possibility of controlling a potentially traumatic event (Cheng, 2003; Pfefferbaum et al., 2014; Power, 2004; Taylor & Stanton, 2007). The strategy can enable the children to reduce their negative emotions, possibly increase their positive emotions, and obtain some respite:

Probably put it out of my head. Yeah...I play the piano and trumpet so those help me. (Angus, 15 years)

Findings in the study suggest distraction coping, to avoid thinking about the disaster situation, appears adaptive if the children are using this strategy in a specific manner. That is, in a flexible manner, pertinent to the challenge and not as a predominant or ‘stand-alone’ coping strategy.

The coping strategy of distraction was widespread in children’s repertoires, being found in both the Christchurch and Wellington cohort. For example, Samantha, a 15 year-old girl in the Wellington comparison group, uses it to feel positive emotions:

So I’ll just go to dancing and by the time dancing is finished I’ll be all happy again. (Samantha, 15 years, Wellington)

And Raj uses distraction to have respite from worries:

...just try and get my head somewhere else. Like, listen to music and think of something else...It allows me to just get away from it. (Raj, 15 years, Wellington)

Here distraction and distancing from a problem or negative emotions appears not only to allow some time for respite and increase positive emotion, but also may give time for processing a challenging situation in the children’s everyday lives.

As will be explored in the next chapters, the social context of coping is an important enabling factor for many participants. This is demonstrated with distraction coping. Here the children often associate with their peers to increase positive emotions. Sarah first checks on friends and then “takes her mind off it” by discussing something other than earthquakes:

...and then I just go and find my friends and usually my friends are ok. They're quite strong as well. I say are you ok and they say yeah and then I just talk to them—about something else. (Sarah, 9 years)

Hannah too spends time with friends and uses busyness to keep her mind occupied and her emotions at bay:

Just keeping yourself busy...and I hang out with friends lots. (Hannah, 15 years)

The use of distraction as a strategy for emotional regulation is consistent with the small existing quantity of research on children's coping in a disaster situation. For example, Cardena, Dennis, Winkel, and Skitka, (2005), and Jensen et al. (2013) found that children used both avoidant and distraction thinking ("taking their mind off it") and distracting behaviour ("doing something else") as coping strategies for a way of relieving stress and feeling better. Here Brooke does both:

Um, depends where I am. If I'm with my friends at school, it doesn't last too long because they get my mind off it. But, at home I just watch TV and forget about it (Brooke, 15 years)

A final variant of regulating emotions coping in the present study was the use of humour.

Humour: make a joke about it all.

Several children in the present study were able to regulate their emotions through humour. For example, the younger children such as Sophie and Holly, (5 year olds), renamed the earthquakes "pop, pops" [That they explained was another word for burps and farts]. Joking about the earthquake names may have helped reduce the threat and associated fear, and given some sense of exercising control.

Humour uses the child's intrapersonal resources, most often within a social context. Humour becomes a mutual or enabling strategy for regulating emotions as well as bonding with others:

...some of them don't like it very much but mostly—most of us just get under the desk and afterwards we have a little laugh about it. (Angela, 15 years)

As is often the case with the effective coping strategies, the strategy helps both the person using the strategy and can also have a positive effect on those close to them:

We're really good friends and we just kind of (pause) we like the same things. Like the same video game things and um, we just like talking together (pause). Um, well, he's [his friend] really scared of them, but I help him out in the earthquakes...I make jokes about it all. (Kevin, 10 years)

Research on humour with children in disasters is rare. However, research with adults (Samson & Gross, 2012) has examined humour as a variant of emotional regulation either because it takes the focus off adversity by distancing from negative emotion, or by increasing positive emotions. Research on positive emotion suggests a positive spiral of capacity (Fredrickson, 2004), where positive emotions may be 'sustainers' that motivate and sustain children in their coping. Research has also posited that experiencing positive emotions may be 'breathers' by giving children some respite (Folkman, 2000).

Practising humour, in the midst of stress and distress, takes a certain energy, cognitive prowess (e.g., a capacity to see dichotomy), and comic skill in finding a positive appraisal of the situation. The coping strategy of "joking about it" was only reported by seven children or parents in Christchurch but occurred in all age groups and demonstrated effective management of emotion as well as connecting with others.

In sum, the strategy of regulating emotions, whether to keep distressing emotions manageable, distance oneself from emotion, or to actively cultivate positive emotions, was a major coping strategy for the children in the present study, particularly immediately after earthquakes. Research suggests the regulation of emotions is associated with effective adjustment following disasters. For example, Terranova et al. (2009) mention in research with adolescents that adequate emotional regulation is linked to less post-traumatic stress.

However, there are studies that suggest that emotion focused coping, compared to problem-solving coping is associated with increased distress (Vernberg et al., 1996; Pfefferbaum et al., 2013). Yet, in the present study strategies to manage emotion appeared to be associated with effective coping, especially when the children focused on this strategy with uncontrollable events (earthquakes). For example, when children are experiencing a situation that they are not able to control such as an earthquake, distraction and avoidance ways of coping, may not only allow some emotional relief but the use of these coping strategies may be a realistic way of coping in the uncontrollable circumstances. By managing their emotions, the children were less overwhelmed and more able to use their capacities and coping to address the situation. Future research on this coping strategy would thus benefit from focusing on the context in which strategy is used.

The children in the study who demonstrated high, ongoing stress were those who could not contain their emotional reactions because of ineffective or limited use of emotional regulation strategies. These children were overwhelmed by their emotions and unable to dampen their fear or anxiety.

Conversely, children who were coping well with their emotions on the multiple occasions where they were able to manage emotions effectively appeared to consolidate their skill and increase their confidence. For those children, the strategy enabled them to take advantage of their intrapersonal resources and use other coping strategies such as problem-solving. As a few children stated, keeping calm was a prerequisite for being able to problem-solve around the major stressors in their environment. Coping strategies can be multi-functional (Compas 2009). For example, being calm has been linked to problem-solving capacity (Zalewski, Lengua, Wilson, Trancik & Bazinet, 2011). In the new and stressful situation of the earthquakes, the children needed to work out what to do.

Problem-solving: “Working out what to do”.

As seen in the following section, the children in both Christchurch and Wellington analysed, strategized, and problem-solved around their difficulties, whether it was facing a disaster, or in everyday challenges inherent in growing up, such as school

work or conflicts with family and peers. The focus in this section is on coping strategies that actively change aspects of a stressful situation, as opposed to accommodating or distancing from the situation.

Coping strategies that focus on attempts to act on stressful situations are known in psychological coping research as problem-focused coping (Folkman & Moskowitz, 2004; Compas et al., 2001). These strategies are mainly conceptualised as effective ways of coping and associated with better adjustment (Skinner et al., 2003). In the present study there were several variants of “working out what to do”, which all addressed how to find solutions to challenges and to actively address changes. These coping variants appeared to enable the children to feel more competent at how to respond, working out what to do and where their priorities lay. Problem-solving consequently often reduced stress (Power, 2004).

The following themes were identified. Firstly, ‘I am working out what to do’ revolved around testing and learning what works, a strategy that employed and appeared to enhance the children’s sense of self-efficacy. Self-efficacy (Bandura, 1977) related to the child’s sense of their competence to perform a task (Berry & West, 1993). Secondly, as the children worked out what to do and when their attempts were successful, they increased in mastery behaviours (e.g., knowing how to get organised, effectively practising safety drills) that addressed their challenges. In using strategies that demonstrated making choices and finding solutions, the children often grew in agency (actively taking some action) and mastery (capacity to perform actions), and increased their sense of self-reliance. This is illustrated in the strategy of ‘I am becoming more able to work it out’.

Two further themes were identified from the data that were minor variants on working out what to do: ‘*I’m* the one who knows what to do’, which in psychological literature has to do with self-enhancement¹³ (Bonanno, Rennie, & Dekel, 2005) and ‘working out the new normal’, which was related to the children’s attempts to make sense of what is going on in their situation, decide on priorities, and sometimes, to construct a new or changed set of assumptions about their context, capacities, and life beliefs.

¹³ The “tendency toward overly positive or unrealistic self-serving biases” (Bonanno, Rennie & Deckel, 2005, p 985). See also p. 35 this document.

I am working out what to do.

The Christchurch children reported their sense of increased competence as they talked about practical strategies for coping with the earthquakes. With this coping strategy, older children demonstrated more cognitively complex problem-solving and integrated more elaborate strategies depending upon the context, and their analysed options:

...you probably have to analyse the situation and then—‘what’s going on here—Am I in any sort of danger?’ So, after thinking about the danger, you think ‘what do I do next’. (Neil, 15 years)

As the disaster became a situation of repeated earthquakes and disruption, the children learnt more of what to do, working out needs such as practical preparation:

In the September one [earthquake], people ran out of water and stuff...it actually taught us that we need to have it ready in case. (Abby, 10 years)

Findings identified that a sense of safety became a priority need for the Christchurch children who used their coping strategies to work out how to be safe. This is consistent with the literature (Hobfoll et al., 2007; Maslow, 1943; Sandler, 2001), where safety is designated as a basic need for a population experiencing a disaster or mass violence. The children’s strategies for feeling or becoming safe ranged developmentally from concrete suggestions of younger children:

If you have climbed a tree and an earthquake comes, you’d fall down and break your arm or your leg...Hold on to a fat branch. If you did a little one, it would just snap. (Tim, 5 years)

To, in later childhood and adolescence, cognitively working out that safety can be a perception one can keep in one’s head:

You are as safe as you think you are basically, if you think you are safe, you are safe. (Blake, 15 years)

It became apparent that learning safety drills in school, which in New Zealand is a country-wide practice, enabled the children’s sense of efficacy in planning and problem-solving. In the sudden onset of an earthquake, the children already knew what to do:

I didn't take much notice of them but when it actually happened they were kind of in the back of my mind and...I used to joke about the earthquake drills...but I used them and they were good. (Hannah, 15 years)

Earthquake drills were integrated in all age groups as a routine behaviour in schools. Even five year olds were able to explain clearly their coping strategies of what to do:

Well, we, we learnt how to do um turtles¹⁴ at um kindy [kindergarten], and that's what we do at school... sometimes we do a turtle on the mat and sometimes we do a turtle under our desks. Four people can fit under there because there are four chairs. (Craig, 5 years)

Having learnt at pre-school, Craig already knew what to do when he experienced his first earthquake at primary school. These repeated drills appeared to give the children a feeling of increased competence.

Many children sought information about the earthquakes, so they would know more of how to respond, and that knowledge is woven into their strategies. Ryan plans his response based on possible earthquake intensities measured on the Richter scale:

Well, if I like panic. Say it's a 7.1 one [earthquake]. I'm gonna panic for a little bit and then I'm just gonna go back to sleep...Um, if it's like a 1 or a 1.4 I'd do nothing cause you wouldn't probably feel it. (Ryan, 10 years)

Findings suggest that experiencing multiple earthquakes may have accelerated problem-solving coping skills in the cohort as the children were obliged to work out newer solutions or think of more elements in their surroundings. Hannah learnt to assess risk and adapt drills:

...look after each other and just make sure everyone's safe. I know they say, go into the doorways, but it doesn't work...in a room with heaps of people, you're not all going to go into the doorway... if you've got a desk, go under the desk but, if you haven't, just get down and cover your head. Like glass shatters and everything like that. Yeah. (Hannah, 15 years)

¹⁴ Turtle is the name the young children give the action of 'drop, cover and hold' which is the core of the earthquake drill developed for children by the NZ government agencies (MCDEM & Ministry of Education).

In the present study, many children processed and elaborated their problem-solving strategies through play. This is a common childhood process (Fearn & Howard, 2012). Several parents and teachers commented that children were playing ‘earthquake games’ and testing out what would work:

When we were camping with another little pre-school friend, that day they started doing a role-play and you know, talking about it—‘quick, run’ and you know ‘ it’s an earthquake. Run and hide’. (Mother of Sophia & Holly, 5 years)

All children in the present study used the coping strategy of working out what to do. Compared to the Christchurch children, who problem-solved around disaster related issues, the Wellington cohort used the strategy to work out solutions to everyday challenges. Jessica worked out a plan for her school year:

...just get organised like for myself. Just knowing what I have to do...take a step back and get organised. (Jessica, 16years, Wellington)

And Laura, who was coping with her mother’s illness, made a list of advice she would give to someone else and then used it for herself:

And I sat there and wrote down on a piece of paper all of the things I would say to somebody else if it was them in this position...This was really good advice. (Laura, 15 years, Wellington)

Using the coping strategy of effectively working out solutions to their problems, such as working out how to be safe, or how to respond to different earthquake intensities, seemed to have a cascading effect for the children of experiencing themselves as more efficient and competent. Self-efficacy has been stated to be an important protective factor linked to recovery from adversity (Sandler, 2001; Ungar, 2014). The increase in awareness of competence or efficacy is proposed in developmental theories as having a positive spill-over effect onto other areas of age-salient developmental tasks (Masten & Obradovic, 2006; Masten & Cicchetti, 2010; Masten, 2013).

In the present study, the children’s sense of competence in one domain (problem-solving) often became the scaffold for competence in other domains or in the use of

other coping strategies in the children's repertoire (e.g., "getting on"). Thus personal capacities (e.g., self-efficacy, mastery) and coping skills may then have influenced future responses to challenges. When the children were successful in problem-solving they reported feeling more able.

I am becoming more able.

As time passed, working out what to do, when it was effective, appeared to increase the children's self-reliance, sense of mastery, and agency which fed back into a coping competency:

Mmn, because I know myself that I can get through big earthquakes then I could probably get through this [new challenge]. (Rachel, 9 years)

Angela has had multiple experiences of coping with earthquakes and reports feeling more confident that she could cope better with future possible earthquakes:

I'd definitely say that. If there was another big one, you'd kind of expect it because it's happened so often (light laugh)...I think like, I'd be able to cope with it more. (Angela, 15 years)

Personal mastery and agency are linked to whether the child feels able to have an influence on or some control over their world (Taylor and Stanton, 2007), and has been linked to positive adaptation. Zimmer-Gembeck and Skinner (2011) found that personal mastery and agency was reported more frequently by adolescents than children. Taking active control of what is possible may increase as children grow in cognitive ability and independence. Flexibility in trying to master what they could control, and leaving what they could not, enhanced positive coping and adaptation. Blake became more able at working out where he could have some effect:

You work out in life there are some things you've got no control over, but you can still affect your day to day basis from what happens... (Blake, 15 years)

Self-reliance on their own efforts and abilities appeared to develop over the period of responding to repeated earthquakes for some children:

In September [first major earthquake], it took me a longer time to grasp the fact...in February [second major earthquake], I thought, I've been through this kind of earthquake before, so I can relate [it] to the last one. (Neil, 15 years)

Self-reliance grew with experience and was integrated into the children's intrapersonal resources, the sense of who they were, and their capacity to cope with future challenges:

We've been through them lots of times...We're just more confident, in going through the earthquakes. (Sarah, 9 years)

This capacity of 'becoming more able' appeared felt as a self-perceived strength, of being more able to take responsibility in working out what to do:

...so then if something happens in the future, I almost feel, like, uh, I've been through this and—I've made it out ok. It does make you feel kinda stronger. (Neil, 15 years)

Children in the current study who used their intrapersonal resources to work out how to manage their situation demonstrated more self-reliance and appeared to be adapting adequately to the situation. Some of the children felt particularly competent and this appeared to enhance their problem-focused coping.

I'm the one who knows what to do.

A few children perceived themselves as highly capable from the outset. This has been termed as self-enhancement (Bonanno et al., 2005). Their positive perception allowed these children to feel especially able, and therefore often empowered them to use effective coping strategies in working out solutions to problems:

MM: [researcher]: Can your friends do that? [use positive thoughts in an earthquake] A: No they can't. It's only me with the good thinking head. (Amelia, 5 years)

Bonanno et al., (2005) have studied the positive effect of the self-enhancing bias with adults, and suggest this may be linked with self-protection within a disaster

context. Feeling especially able inflates a person's perception of competence and buffers the person against the stress of not being capable of working out what to do when faced with adversity. Amelia feels she is particularly capable of thinking out what to do and that she is able to cope with challenges.

In the present study the perception of enhanced coping capacity appears to be associated with effective coping when it is linked to other sufficiently effective strategies, as opposed to an "inflated" or unrealistic self-serving bias. For example, Amelia was not only a self-enhancer, her view was reasonably realistic. She appeared to be coping well and used several coping strategies effectively, such as working out what to do, "keeping calm", and "going to someone". A final variant of working out what to do was found in children's strategies focused on processing and problem-solving their changed circumstances.

Working out the new normal.

Research has suggested that fundamental assumptions about the world's meaningfulness and benevolence are shattered by adverse events (Janoff-Bulman, 1985). The earthquake disaster altered the children's assumptive world—routines, safety, and control over their daily lives changed or disappeared:

...thinking through what's happened, and you know, trying to get to grips.
(Neil, 15 years)

In facing an unexpected disaster, the Christchurch children in the current study had to adapt and cope with changes in their expected world. The children, who coped effectively with the stress of these sudden changes, often employed a strategy of trying to analyse and make sense of their altered situation. This was not an easy undertaking. For Alan, his most difficult task was working out what had happened:

Well (pause) just taking it in really. (Alan, 10 years)

For those children who had the capacity to work it out, making sense of what happened enabled them to better understand and adapt to changes. The strategy appeared to enable them to address their new normal (Mooney et al., 2011; Paton & Johnston, 2006). The ability to analyse and understand their changed situation has

been demonstrated as a factor of coping effectively in research exploring children living in highly adverse situations (Punamaki, Quota, & El Sarraj, 2001), and has been linked to more adaptive responses (Grych et al., 2015; Masten, 2007). By making sense of events, the children in the cohort could adapt to events as threat was reduced. The event then lost some of its impact.

For some of the children, as a result of coping with and reflecting on their new situation, their perspectives on life appeared to alter. They confirmed or worked out new priorities:

It's the little things that really count. You don't need power or anything—as long as your family's safe. [my priorities] have really shifted. (Pippa, 15 years)

This increase in capacity to know more of what is vital and important may have enabled the children to better cope with their present and to move forward following a disaster. Pippa (above) and Hannah have analysed what is important:

And concentrating on what really matters like family. Like making sure family's alright, friends are alright. (Hannah, 15 years)

The children in the current study who had analysed their changed circumstances and worked out changes in priorities were the older children. This is consistent with existing research as several studies suggest a certain level of cognitive maturity is necessary to find meaning or changes in perspective following trauma (Milam, Ritt-Olson, & Unger, 2004).

A growing volume of research, often centred on adults, has conceptualised these altered positive perspectives, as Post-Adversity Growth (Joseph & Linley, 2008), or Post-Traumatic Growth (Tedeschi & Calhoun, 1996; Tedeschi, Calhoun, & Cann, 2007). Post-Traumatic Growth (PTG) “refers to positive change experienced as a result of the struggle with trauma” (Kilmer & Gil-Rivas 2010, p. 1211).

The literature examining PTG in children is limited but some studies report changes in several domains such as a greater sense of strength and a greater appreciation of relationships following potentially traumatic events (Alisic et al., 2008; Cryder et al., 2006; van Wesel et al., 2012). These changes were found in several children in the

present study (see above). Nevertheless, until children's baseline assumptions and perceptions about the world are noted and understood pre-event, and compared with their assumptions following an adverse situation, it cannot be stated that this understanding of 'what really matters' is a change in their personal assumptive world, which may have existed pre-disaster, or that PTG has resulted from their experience with coping with and adaptation to the disaster.

By effectively using a problem-solving strategy, the children in the present study were able to find solutions, to report feeling more able to understand and address their difficulties, to understand priorities and, for some, to feel especially able. In this strategy of actively working out what to do with disaster stressors, the children needed to process their situation. Intrapersonal resources such as cognitive ability, self-efficacy beliefs, self-reliance and mastery, as well as perceptions of control or agency appeared enabling elements. This has been confirmed in research (Leipold & Greve, 2009; Cryder et al., 2006). The present study suggests these intrapersonal resources are also promoted by effective problem-solving coping, demonstrating a bi-directional relationship. Research has highlighted a reinforcing loop between children who believe they can problem-solve, and capacity in finding solutions (Carver, 1998).

Children who use a problem-solving strategy are often seen as adapting adequately to their situation (Compas et al., 2001). Children, who feel able, often put more effort and persistence into problem-solving and this is reinforced when problems are solved (Berry & West, 1993). Children's perception of their resources and ability to problem-solve contributed to them appraising future challenges in a positive frame. Perception and appraisal is an important element in the present study and several coping strategies were linked to positive appraisal.

Positive reframing and appraisal: "Everything's gonna be alright".

The children used coping strategies that revolved around how they appraised or reframed the disaster and related events. For example, Poppy positively reframes the

ongoing earthquakes as aftershocks and appraises the probability of another major earthquake as unlikely:

It's just kind of get on with it and we probably won't have another one. It's just aftershocks. (Poppy 15 years)

Her appraisal enables her to “get on” with her adaptation.

The children's use of appraisal is consistent with the Lazarus and Folkman (1984) transactional model of coping, where appraisals of the stressor and of the capacities to respond are part of the coping processes. These cognitive processes “intervene between the encounter [the stressor] and the response [way of coping employed]” (Lazarus & Folkman, 1984, pp. 22-23). Cognitive processes then incorporate how the children perceive and think about their situation and suggest why the same stressor was appraised differently by individual children in the study.

Research (Folkman, 2008; Zimmer-Gembeck, 2011) states that positive reframing and re-appraisal is especially adaptive when experiences are uncontrollable. By accepting the situation positively the children may have felt less distress. Accommodative coping strategies are directed at adjusting to the situation and adjusting to available options (Skinner & Zimmer-Gembeck 2009; Walker, Smith, Garber, & Van Slyke, 1997). Accommodative coping when effective, enabled the children to be less impacted by the disaster, to have a less distressful reaction to events they could not control, and to perceive possible positive elements stemming from their experiences. Accommodative coping is also known as secondary control coping (Skinner et al., 2003; Carver & Connor-Smith, 2010), or positive accommodation (Joseph and Linley, 2008), because the children focus on fitting in to their situation rather than actively trying to change it. In accepting the situation of earthquakes as “kinda normal”, the children appraised them as less threatening. Here Sarah describes her friends who appeared accepting of their situation:

They're not scared 'cause they're used to it. (Sarah, 9 years)

This coping strategy has several forms described in the coping literature (Skinner & Zimmer-Gembeck, 2009), which were employed by the children. Variants included: positive restructuring or reframing of the situation (“putting a positive spin on it”);

minimising negative events (“minimisation”); and acceptance of the situation “I almost think it’s kinda normal”.

Positive reframing: “putting a positive spin on it”.

Some of the older children in this study, who appeared to be adapting well, were aware of this strategy of positive reframing and appraisal and used it to reduce distress:

...so it’s kind of like a game...So it’s definitely trying to put ah, um, a positive spin on the whole thing, ‘cause if you always think of it negatively, it’ll always be that big scary event that happened. (Neil, 15 years)

Neil practices cognitive reappraisal. Gross (2002, p. 281) defines as cognitive reappraisal, “changing how we think about a situation in order to decrease its emotional impact”. Gross envisaged this strategy as being employed before the emotional reaction arising from a situation (i.e., the children in this study using this strategy for future aftershocks). However, Rood, Roelofs, Bögels, and Arntz, (2011, p. 74), made a differentiation in their study of adolescent coping, by following the Folkman and Moskowitz’ (2000) definition of positive reappraisal as “reinterpreting events or situations in a positive manner”. Rood et al., focused on benefits arising from the adverse situation/s and so conceptualised reappraisal as a post-event strategy (e.g., seeing an earthquake in a less threatening frame of “just an aftershock”).

In the present study, the children who used this coping strategy effectively, were able to use both positive reappraisal in real-time as the disaster unfolded, to look at future possible earthquake events as less threatening, and to look back at past adverse events (e. g., damage to their homes) in a positive manner.

This flexibility and creativity is seen in the following quotations. Some children, like Joshua, used re-appraisal to ‘downgrade’ earthquakes to aftershocks, which were less potentially damaging or threatening. To help someone, Joshua would tell them:

It might be stopped by now. You never know. It could be wee ones [aftershocks] after big ones. (Joshua, 5 years)

As the months passed, other children saw the advantage of employing the coping strategy of positive appraisal. They used “positive spin” to contemplate any perceived benefits from living through the earthquake disaster and did not dwell on negative aspects. Harrison decides to actively think of positives in his situation:

Just, try not to worry about anything...think about positives not negatives.
(Harrison, 10 years)

Putting a positive spin on present and past situations also promotes benefit finding (Tennen & Afleck, 2002). Helgeson, Reynolds, and Tomich (2006, p. 798) define benefit finding as “the positive effects that result from a traumatic event”. Neil sees his community in a positive light, accesses his damage as minimal, and understands that seeing the bright side is helpful for coping:

Christchurch worked together extremely well during the earthquakes...neighbours helped each other out, and my house wasn't particularly damaged, and you can start putting positive things on it and it just seems like an easier event to go through. (Neil, 15 years)

For some children, who rapidly appeared to cope effectively, this strategy was used soon after the start of the earthquakes. Elise, discussed earlier is able to think “everything's gonna be alright” during the first earthquakes in 2011. For others, like Ryan, it was a strategy that developed over some months and allowed them to see their future in a positive enabling light:

Um, I'm gonna be in Year 7 [next year], I'm gonna know heaps of things about earthquakes, I'm gonna be really good with earthquakes then. (Ryan, 10 years)

Certain children used positive reframing when thinking of their families and their physical environment:

I don't really need to worry [about the earthquakes] because my family's strong- maybe that's why. (Sarah, 9 years)

Pippa sees not only her situation but the rebuild of her city in a positive way:

In February, everything was destroying everything but now you can drive through town and see everything's getting better, so it does get better. (Pippa 15 years)

Others reappraised themselves in a positive manner. They noted that they had gained from the disaster and were stronger and more able from the experience, even those who had initially felt highly stressed. Nan, who initially showed avoidance and phobic symptoms in not wanting to go out (see p. 103), was able to state:

I think it's kinda made me stronger in a way. I think, yeah, there might be—might be able to face up to more now. (Nan, 15 years)

This positive perception of a disaster experience has been reported in a small but growing research literature. For example, Uttervall et al. (2014), in a study of Swedish adolescents coping with the 2004 Indian Ocean tsunami, found that many felt strengthened and more able to cope following their experience.

Several children were able to find benefit even in the negative consequences of earthquakes. Angela explained that people who see positives cope better, and describes how her family saw the positive side of the disaster situation:

Um, they think the positives. Like our positive was the house needed painting cause it didn't look good on the outside and we thought 'oh we can get the EQC [Earthquake Commission] to do it. (Angela, 15 years)

This coping strategy of reappraising self, situation and surroundings in a positive frame of reference may have enabled these children to feel less helpless as they were, in part, re-defining the situation. Power (2004) notes that children who use positive appraisal of stressors as a coping strategy, such as seeing a situation as a challenge rather than a threat, show higher levels of adjustment. Another variant of accommodating positively to the situation was to appraise the earthquakes in such a way as to minimise their potential menace.

Minimising.

Some children appraised the situation positively by minimising potential threat, or the consequences of the earthquakes, and thus reduced the impact. Coping research frames this strategy as minimising the stressor (Skinner & Zimmer Gembeck, 2009).

Certain children managed to do this quickly. Angus reports his thinking on the day of the February 2011 earthquake. He minimises potential danger by appraising his mother's workplace (the hospital) as structurally safe, and noting that his sister is safe in another town:

I assumed though that the hospital is very well structured. And my sister had started university so she was down in Dunedin [so safe]...in the end, it wasn't that bad. (Angus, 15 years)

He looks back on the major earthquake impact as "not that bad". Other children took longer but nevertheless managed over months to reframe the aftershocks as less worrying, even though ground-shaking was considerable. This strategy helped them appraise the situation as manageable and therefore within their scope of responding.

I just think, 'oh these are just little ones, it'll be all right. Um, it can't hurt us. (Sarah, 9 years)

Conversely, a minority of children in the study, who were unable to reframe the earthquakes as a minimal risk, found aftershocks were upsetting. Brooke is the only one in her class who reacts:

I just don't really like them [aftershocks] at all. And there was one in class a couple of years ago and I was the only one who hopped under the desk! (Brooke, 15 years)

The other children in her class were able to appraise the aftershock as less of a threat. In a further example of positive reframing, several children were able to accommodate the earthquakes not only as a minimal threat but also as becoming part of their ordinary or normal context.

I almost think it's "kinda normal".

Children using this coping strategy accepted living with ongoing aftershocks and integrated earthquakes as a "normal" part of their lives:

I'm not so bothered. It's kind of sick but it's become the normal thing. (Prue, 15 years)

Acceptance of a situation, when not linked with resignation or helplessness, has been found to be an effective coping strategy (Cardena et al., 2005; Pine et al., 2015). Some children developed this appraisal over time:

Like um, I used to be really scared of them but I'm kinda getting used to them now. They're not so bad. (Hannah, 15years)

These children appeared to be adaptable. Blake's response changes over time:

...first hit [earthquake], would have been panicking not coping but after a while you sorta learn to live with it and cope...so basically you can learn to cope with whatever you're having to live with. (Blake, 15 years)

Accommodating positively to their circumstances indicates a certain flexibility of perception (Zimmer-Gembeck & Skinner, 2011). The children who integrated earthquakes as part of their everyday lives reduced the emotional impact of these events.

I don't worry about them that much anymore...usually sleep through them and stuff ...They are just part of everyday life. (Connor, 10 years)

By reducing the impact of the events, the children were not overwhelmed. Rutter (1987; 2006) elaborates a 'steeling' effect; in some circumstances children experiencing stressors, when they are not overwhelmed, may demonstrate more resistance to later stress. It is not possible in the present study to extrapolate the children's resistance to future events. However, T2 data, which focus on how coping may evolve over time (discussed in Chapter 7), does show that children who were able to cope well with the first year of the disaster were often able to continue to cope with new challenges up to three years after the initial earthquake.

There appears to be a positive cumulative interaction with use of this strategy. For example, children who accommodated to earthquakes often reframed their circumstances positively and appeared able to cope effectively with the subsequent earthquakes. Sarah explains for herself and her 'strong' friends:

Some of the earthquakes—they were fine with that because they were used to it. We've had lots of big ones. (Sarah, 9 years)

This is consistent with Rutter's (2013) perspective on the cumulative nature of risk. If children can perceive the situation as "kinda normal", and a part of their everyday world, they may not accumulate risk. Certainly, for the five year old cohort, half of their life experience included earthquake events.

If a child can perceive their situation and their response in a positive manner they are not sensitised but may be possibly inoculated to future adverse events. This is consistent with research looking at inoculation as a result of managing adverse events adequately, compared to sensitisation and feeling more vulnerable from experiencing vulnerability in such events (Bonanno et al., 2010; Seery, Holman, & Cohen-Silver, 2010).

A parent recognised the reduction in distress from this positive acceptance, in the way her children respond to the ongoing earthquakes:

They've got immune to them. (Mother of Gaelle, 9 years)

Not all children had the capacity to accommodate positively. For Ann the situation is not manageable:

Mmmm. But now—we haven't had one in a long time, I just get used to it. But if it happens again, I just, I just shout for Mum, and I just get scared again...on Friday there was a 5, I think. I was at school. I was just about to leave but then and it started shaking and some people were fine with it, didn't even feel it, and I was, I—I was just screaming out for Mum. I didn't know what to do. (Ann 9 years)¹⁵

Children like Ann were more sensitive to events, experienced a negative cascade effect from their coping, and struggled to find an effective means of dealing with their situation. For example, they could not positively reframe their experiences and continued to appraise earthquakes as major threats. Their fear was not regulated and their emotions impacted negatively on their cognitive capacities and their capacity to use other coping strategies. This negative cascade effect has been linked to less effective coping such as avoidant coping (Zalewski et al., 2011).

¹⁵A referral to professional services was organised for this child, in consultation with her mother following this interview

Appraisal in a disaster context is complex. It must “take into account many variables that include the social and physical environment and diverse personal interests” (Lazarus 2006, p. 12). Positively reappraising or reframing included multiple cognitive processes that decreased the impact of adverse events, appraised capacities and helped regulate emotions, behaviours, and thoughts linked to these events (Compas et al., 2001; Lazarus & Folkman, 1984). The strategy of positive accommodation demands a certain developmental level (Skinner & Zimmer-Gembeck, 2007). This was supported by the present study where the strategy was more common in the 9-16 year-old children. However, some 5 year-olds were able to appraise positively (see Joshua p. 129).

The present study found that the strategy of positively appraising or reframing appeared to be employed more in children experiencing higher levels of adversity, who may feel more pressure to reduce stress. For example, positive reframing or minimising was not a common strategy in children from the Wellington comparison group. Findings, however demonstrate multiple use of the coping strategy in the Christchurch cohort.

Capacity for positive reappraisal and reframing has been linked to psychological adjustment (Compas et al., 2013) and well-being (Rood et al., 2011). Accommodating positively to the children’s current world is an effective coping strategy when it translates as adopting a realistic (i.e., not overly optimistic) but positive perception of life events and personal capacities. The Christchurch children using this coping strategy appeared to be coping well with their situation. Positively reframing contributed to them “getting on” or moving forward in recovery, which is the subject of the following theme.

“Getting on”

For several children, who appeared to be managing the situation effectively, there was an active attempt to cope by “getting on” and to allow themselves to project into a future not governed by or focused on earthquakes but to a life of routines and age appropriate tasks:

...some of them are ok. They’re getting on—like me. (Connor, 10 years)

This strategy was recognised in the cohort as one of effective coping behaviours that lead to positive adaptation and getting on to “normal” routines. Connor puts himself in the group of children who are ‘ok’ and Lucas describes peers who cope well as not dwelling on events:

Well, (pause) they’re like focused and, if there’s an aftershock they just get under the table and then just get on with things. (Lucas, 10 years)

Angela distinguishes herself from her sister, who has difficulty adjusting:

[my sister] doesn’t like it and stuff. And she had to take sleeping pills for a while to get to sleep at night...I coped with it after a while. Got over it. I’m pretty fine. Like, getting back into the normal routine and stuff. (Angela, 15 years)

Poppy recognises that getting on is promoted by re-establishing routines:

Um, and also just having a regular routine. You didn’t think about it as much. (Poppy, 15 years)

Routines were appreciated as an element of stability in a world of unpredictable events. Focusing on normal routines also enabled a distancing from any ongoing earthquake events:

I think I just carried on...Tried to stay normal...just doing what I’d normally do, earthquakes or not. (Prue, 15 years)

For the group of children able to “get on” relatively quickly in the months following the first earthquakes they demonstrated resistance to stress. Sarah is an example. Compared to most of the Christchurch participants, who discussed earthquakes and difficulties in the T1 interviews, Sarah tries but can’t remember a major difficulty in her life:

Um, the trickiest thing, I don’t know actually...Yeah, ‘cause I don’t really get the trickiest thing. Actually, I don’t think I had a trickiest thing...Yeah, and some people are really scared—but not me. I just don’t get why they’re scared. (Sarah, 9 years)

Sarah talked about schoolwork and friends, not the earthquakes. For her, the disaster was in the past.

For the younger children, who did not necessarily verbalise the strategy of “getting on”, it was implicit in their spontaneous explanation of their day which, compared to their peers, did not emphasise the earthquakes but rather showed a focus on age appropriate activities. For example, compared to some of his age cohort who spoke of earthquakes, Craig, five years, is focused on his school tasks and school routines:

And I've got reading to do (pause) and it's um ...Yup. And I'm over 40 books [proposed reading list for his class]. I'm on 43. Sometimes I watch movies and sometimes I read book and sometimes I play on the c'puters when it's my day. (Craig, five years)

The children deciding to “get on” were not passive but consciously focused on coping by getting back to their own life course, to what they saw as age appropriate challenges:

I'm just more interested in getting all of my credits now as I'm in year 11...and this year is quite important. (Angus, 15years)

For several children the strategy to “get on” took some months. This may have been in part due to continuing aftershocks (2010-2012) that “reminded” the children of the repeated danger. Similarly, the strategy may have been enabled by diminishing aftershocks (by the end of 2012).

Even so, the children who were adapting effectively reported a sense of progress and an awareness of the complexity of coping with recovery:

I guess every day is better and better and you get better—three or four steps more and one step back, so you are getting further on. Going faster forward than you are back. (Abby, 10 years)

All of the children who were using this coping strategy took back some control over their environment. They saw their need for normality and routine. They were often helped by assistance from close adults, and context, such as schools restarting. Hannah describes this:

Like you can't go through life thinking 'what if an earthquake happened? What if, what if?' Like that's the way I've got over it. 'Cause like you need life to go back to normal after an earthquake, like you'll just be stuck for ages...when school got back together it was a pretty good feeling. Everything was starting to go back to normal. (Hannah, 15 years)

Children's intrapersonal resources may have enhanced this choice of coping strategy. For example, Pippa demonstrates optimism in her positive expectancy:

Um, if, yeah, if something does go wrong, it will get better. (Pippa, 15 years)

Her optimism enabled a positive perception of her situation (see also positive reframing). Optimism has been defined as "positive expectancies regarding future outcomes" (Carver & Scheier, 2014, p. 1). Other intrapersonal capacities such as a sense of self-efficacy and agency, as well as coping strategies of being able to keep calm and work out what to do, may have assisted the focus on a positive future and promoted this strategy.

It is possible that the coping strategy was identified as the data from the present study were obtained over a year after the first major earthquake, and may give an awareness of how some children manage to recover and move on. Much disaster research examines data from surveys taken soon after the event, and this strategy of "getting on" is rarely discussed in the disaster literature. However, studies that have asked children what they did to cope with traumatic incidents have found it to be a coping strategy (see Alisic Boeije, Jongmans & Kleber, 2011). Future research that investigates coping over time following a disaster, as the present study, may contribute further coping strategies that are pertinent to children's coping in a recovery period.

"Are you ok?": Helping others

In the present study, helping others was a strategy that occurred in both the immediate context of an earthquake and in the ongoing recovery period. Taking care of others, especially during earthquakes was adaptive and had aspects of distraction

as it allowed the children to focus on something other than their fear or anxiety. Helping others kept their attention focused elsewhere possibly diminishing impact.

Repeated earthquakes and aftershocks gave children the occasion to learn about helping others:

I hadn't had something like that happen to me before. So I sort of learnt how to look after everybody. (Elise, 9 years)

Both boys and girls talked of helping others:

Well my friend was pretty shaken up—like crying so I made sure she was ok. (Alan, 10 years)

This capacity to help others seems to be associated with those who are coping effectively. For a child to be able to help others, they need to be managing events sufficiently in order to be able to attend to how others are faring. Equally, the child needs to have sufficient internal resources, such as compassion, empathy, and associated social skills, to be able to offer help. Ryan recognises this capacity when he explains how he would describe those that were coping well:

They'd probably be nice and relaxed. They'd probably be helping the ones not coping very well. (Ryan, 10 years)

Ryan too has these skills. He was able to look after his younger brothers immediately after a large earthquake, and is aware others need to feel safe:

Usually I do help some people. You can make them feel safe again. (Ryan, 10 years)

Research suggests that those who have been able to show leadership and help in the post-disaster environment have been seen as capable of resilience and effective coping (Osofsky & Osofsky, 2013). Sarah demonstrated rapid adaptation and was able to employ self-comforting talk to provide support to other children:

I could just say it's fine because you've been through other tricky situations, so this one, this earthquake, I could say it's ok. You know what to do. You've already had situations and you got through. (Sarah, 9 years)

Several parents and teachers noticed the capacity to “help others” in the children:

On the day it happened the other kids were really good with helping them [the upset ones] out...Even the tough, tough, sporty boys. They were all back patting, giving them a hug which is good. (Teacher, primary school)

Children may have observed this strategy of helping others in the adults around them and so benefitted from coping being modelled by proximal adults (see Chapters 5 & 6). Additionally, children may have been coached in how to provide comfort during more formal exercises. This has been suggested in research on school disaster drill exercises that occur in New Zealand schools (Johnston, Tarrant, Tipler, Coomer, Pedersen, & Garside, 2011). The capacity to help others supports research on pro-social behaviour training that enables adaptation (Kia-Keating et al., 2011).

Fothergill and Peek (2006) reported that helping others was found in children of multiple ages following hurricane Katrina. Other disaster studies examined helping others as a coping mechanism confined mostly to adolescents (Jensen et al., 2013; Uttervall et al., 2014). In the present study, helping others was found in all age groups and reflects both individual capacity as well as the cultural values of the children’s context, where empathy and helping are positively regarded skills. Joshua at five years helps his schoolmate:

Ah, even B cried when it was an earthquake. I helped them not to feel sad...If there’s two people, I only look after one (pause) I did it at kindy one day...Um, I stayed with them till the earthquake stopped. (Joshua, 5 years)

Joshua is able to think of reassuring others. When asked how he would talk to other five year olds experiencing distress, Joshua focuses on their feelings:

Are you ok? Have you feeled an earthquake before? (Joshua 5years)

Not all children found helping others possible, even though they tried. For some, their resources were stretched:

I, I was safe but... then liquefotion [liquefaction] started to come in soooo, we went back inside...Becky was crying but I tried to cheer her up (pause) but I couldn’t. (Amelia, 5 years)

However, as the disaster unfolded, there appeared in several children to be an increase in skills such as empathy related to helping others:

I guess that you realise it is not just you that is going through it, it's everyone else. (Abby, 10 years)

Taylor, et al., (2013, p. 822) define empathy as “an affective response that results from comprehension or apprehension of another’s emotional state or condition”. Neil gives an example when he is able to empathise with the distress of others:

I’ve had friends, their house is really badly munted [damaged] and that’s kind of hard on them ‘cause you know, when you’re given kind of 30 minutes to take all the belongings you can, that can be kind of stressful. They lose a lot and they lose a lot of memories. (Neil, 15 years)

Children’s awareness of their competency in helping others may have augmented their capacity to work out solutions to other people’s distress:

If someone else’s spewing liquefaction everywhere, you kind of feel you should be giving them a hand...and even shovelling silt for an hour, that can make a big difference. (Neil, 15years)

The disaster situation may have accelerated learning of how to deal with personal adversity and to practice of empathy:

Just look out for people that don’t know what to do, don’t know how to look, how to feel. (Hannah, 15 years)

The strategy was found in several of the Christchurch cohort but was discussed by only one of the comparison cohort in Wellington, who was experiencing her mother’s serious illness.

One study (Cosley, McCoy, Saslow, & Epel, 2010) suggested compassion for others was a buffer against experiencing one’s own stress. In the present study, helping others kept the focus from the children’s own distress, and may also have promoted feelings of self-esteem and competence. Researchers have discussed this competency when they noted the positive relationships between those children who are empathetic and those that can manage their own emotions and behaviours

(Taylor et al., 2013). Helping others appeared to further increase children's social competency skills, such as understanding others, and included how to more accurately judge whom to approach for support and help. Help either for themselves or for the people they were assisting. Going to someone for support and help was used frequently by the children in the study.

Go to someone.

The present study confirmed the literature that in disasters, children seek out support and guidance from close and known adults (Jensen et al., 2013; Miller et al., 2012). Children whose capacities are not fully developed and who are dependent on close adults may choose to seek support in stressful situations such as disasters (Bonanno, Galea, Bucciarelli, & Vlahov, 2007; Cardena et al., 2005; Jensen et al., 2013; Margolin et al., 2010). It is noted in developmental literature that children, especially younger children, wish to maintain proximity with attachment figures (Murray & Hudson-Barr, 2006).

The children in the Christchurch cohort, including the adolescents, sought support and information from adults more than the children in the Wellington comparison group. In contrast, the Wellington group demonstrated age related behaviours, where peers were seen as a primary group in seeking support;

Probably just to ignore the person who was annoying me and sticking with my friends...They would comfort me and if the person was being really mean, they would tell the person to go away and leave me alone. (Isabel, 9 years, Wellington)

This choice of whom to seek for a source of support in the Wellington cohort is reflected in developmental coping research (Zimmer-Gembeck & Skinner, 2011) that suggests peers are sought from late childhood and adolescence, even though adults continue to be the preferred choice in major or uncontrollable stressors such as disasters (Jensen et al., 2013).

In the present study, actively "going to someone" as a coping strategy employed in the Christchurch cohort had several aims:

To feel safe, protected:

...I was just making sure I was with my parents the whole time... making sure I was with someone in my family so I could be safe. (Cody, 10 years)

To get emotional support:

[What helps?] Well my family, my friends to comfort me.... (Ann, 9 years)

To discuss what to do and find solutions:

Um, I probably talk to people about it and talk to them about how they felt and talk about how I felt and about what we could do next time to make it not so scary.... Yeah, normally talk to my parents or some close friends. (Abby, 10 years)

Several studies have suggested that having secure and supportive attachment figures is an enabling factor in the children's environment (Rutter & Sroufe, 2000).

Being in the proximity of adults was a coping strategy adopted especially in the immediate aftermath of an earthquake:

...the first few hours after...I don't like to go to a room by myself. So I wanna be near my parents. (Abby, 10 years)

Many of the children of all ages referenced adults to measure threat. In the present study, the proximity of adults appeared to give children reassurance, to help them to feel safer, may have provided models of effective coping, and consequently enabled children to manage the situation. The adult was not necessarily a parent:

But I know a couple of people who are quite scared if they go to other people's houses. If I go for a sleepover, I know I'd be safe, if there's an adult. (Ann, 9 years)

However, many children mentioned qualities in the person from whom they sought support:

I can tell people I trust. (Joshua, 5 years)

Research suggests that children are selective in whom they accept as trusted sources of information and often go to people they know, or judge trustworthy (Corriveau & Harris, 2009; Koenig & Sabbagh, 2013):

You'd probably go to someone who you trust, like your school teacher or your parents. (Isabel, 9 years, Wellington)

Research with both adults (Fraley & Bonanno, 2004) and children (Gaffney, 2006; Osofsky & Chartrand, 2013) states that secure attachment facilitates the development of trust and social relationships. For example, children in the present study, who demonstrated secure attachment, appeared to have feelings of trust and assurance that caregivers would be available to them in time of need. They felt secure in employing the coping strategy of "going to someone".

Coping Strategy Interaction

Findings revealed that it was not just the children's coping repertoire that enabled effective coping but how strategies and resources interacted. The present study posits that there is a bi-directional relationship that exists with resources and coping strategies; resources and strategies were inter-dependent and related as a positive feedback loop and an upward spiral of positive adjustment in children who were coping and adapting adequately.

The present study appears to support research that has highlighted the importance of resources; "the degree to which one can manage arousal, and direct the resources at hand are likely to play a critical role in disaster response and resilience" (Masten & Obradovic, 2008, p. 2). Children who appeared to be coping effectively used both internal resources and external resources, all of which have been suggested as influencing their coping repertoire and positive adaptation. (Interpersonal and community resources are discussed in the following chapters).

Intrapersonal resources could be both the antecedents, and outcome of coping and adaptation in the children. Coping effectively with a disaster provided multiple experiences that facilitated development of these personal resources. Intrapersonal resources and characteristics of the children such as self-efficacy, cognitive capacity, optimism, flexibility, and agency have been associated with supporting effective coping and functioning (Compas et al., 2001; Haskett et al., 2006; Kronenberg et al., 2010; Masten & Narayan, 2012) and this was consistent in the present study.

Similarly, the present study supported research (Skinner et al., 2003) demonstrating that there was often a cumulative positive effect between coping strategies when multiple strategies were used effectively. Findings appeared to confirm research suggesting that coping strategies are inter-linked and complement each other (Lazarus, 2006). For example, the children used support and information-seeking from adults as part of their problem-solving coping.

Competence in using one coping strategy often appeared to have a positive effect on other ways of coping and increased the children's awareness of their capacities and their effective functioning. For example, the coping strategy of positively appraising the situation appeared not only to assist regulating emotion, but promoted the capacity of working out what to do—and vice versa. Research refers to this as a positive cascade effect (Folkman & Moskowitz, 2004; Masten & Cicchetti, 2010) and so the children in the present study may have enhanced their coping repertoires by their repeated effective coping during their experience of a disaster.

Certain strategies seemed more effective in relation to others. Particularly in the immediate aftermath of an earthquake, being able to manage and regulate their emotions, to perceive situations in a positive light, and to seek support enabled the children to report feeling calm and positive enough to access their other capacities and strategies: for example, to work out what best to do in a given situation, help someone, or to get on.

The present study findings support research that states it is perhaps too simplistic to divide coping categories into adaptive or maladaptive per se (Bonanno & Diminich, 2013; Leipold & Greve, 2009). The children coping adequately used varied strategies, some of which have been described in some research as maladaptive. Judgements about positive or negative coping may need to be revised in highly stressful situations such as disasters.

Using seemingly negative coping instances such as distraction and avoidance may help reduce distressing thoughts that accompany the experience of adversity (Sheier & Carver, 2003), and enable children to focus more on ongoing activities and goals. Bonanno & Diminich (2013) agree with Compas, et al. (2001) who suggested that the use of seemingly opposite ways of coping such as avoidance and problem-focused coping may be adaptive when the coping suits the stressor. Cadamuro,

Versari, Vezzali, Giovannini & Trifiletti, (2015) have suggested that avoidance coping may have positive benefits on cognitive performance in the initial aftermath of a disaster.

The use of distraction or disengagement by ‘taking your mind off it’ can be adaptive in reducing distress, particularly when the child is faced with cumulative, uncontrollable events such as earthquakes, aftershocks and their consequences. Using distraction can however be maladaptive if the child continues to use this coping as their predominant or preferred strategy. Instead of dividing strategies into maladaptive or adaptive, the present study supports the perspective suggested by Lazarus and Folkman (1984) that it may be pertinent to take the perspective of examining *how* the children use strategies appropriately for a specific situation.

The Way Children Used Effective Coping

Findings suggest that not only the interaction between resources and coping strategies, but *the way* children used their strategies had a major effect on children’s capacity to adapt well following the disaster. The children in the present study demonstrated effective coping when their repertoire was *pertinent* to the stressor and their needs and when the children could change coping strategies *flexibly* in adapting to circumstances. This is demonstrated schematically in Figure 7.

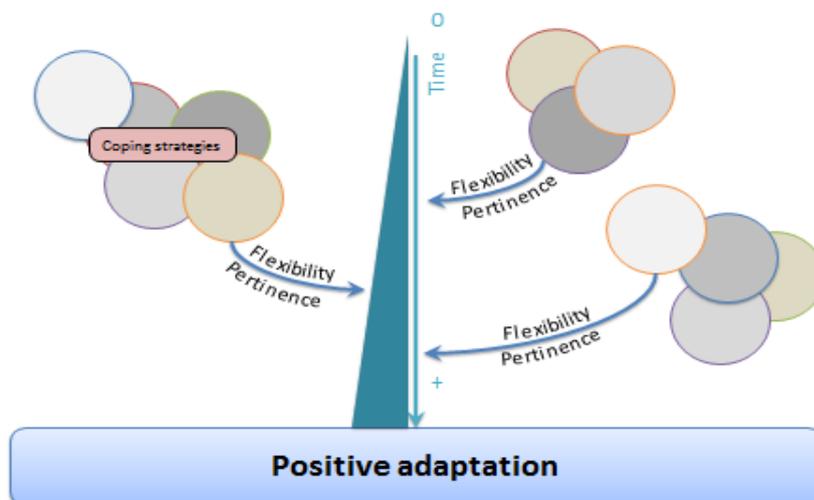


Figure 7. Model of ways of effective coping employed

Flexibility can be linked to the capacity of a child to modify or flexibly adapt to demands in their environment (Spinrad et al., 2006). In the present study flexibility appears to increase adaptive responding. Flexibility gives children more options in their use of their repertoire of coping strategies (Cheng, 2003). For example, the children employed emotional regulation and minimisation when the situation was out of their control and problem-solving or getting on when they could influence some control over their environment.

Several studies of adults have linked the ability to modify strategies flexibly to best match the situation (pertinence) as adaptive and effective (Bonanno 2013; Cheng, 2003; Kashdan & Rottenberg, 2010). The children indicated that they did not persist in using a coping strategy when it was not effective. Research has suggested that the repeated or persistent use of only one or few strategies may be associated with maladaptive functioning (Cheng & Cheung, 2005; Kashdan & Rottenberg, 2010).

Developmental level also influenced how coping strategies were employed. The children in the present study were able to use similar strategies to adults but in developmentally appropriate forms. That is, younger children typically used more concrete variants whereas the older children developed more abstract thinking in their problem-solving. This is consistent with other research (Bonanno & Diminich, 2013; Jensen et al., 2013; Le Broque, Hedrikz, & Kenardy, 2010; Skinner et al., 2003).

However, the present study findings suggest that deciphering age and developmental factors in disaster contexts needs further reflection. For example, (Deering, 2000) states that younger children have a limited understanding of the complexity of disaster events. However, children in the present study presented a more multi-faceted picture after their extended experience of earthquake events.

Younger children appeared to show more understanding and complex, flexible coping than has been reported in research. The youngest group of children, illustrated in the following example, demonstrated diverse coping strategies and cognitive skills that they used in an appropriate manner. Joshua is aware of measurement in earthquakes [the Richter scale], even as he establishes age appropriate comforting contact with his mother:

And even now, if we have a shake, he'll, he'll, if it's at night, call out from his bedroom – 'what do you think that one was Mummy? I reckon a four. [on the Richter scale]. (Mother of Joshua, 5 years)

Yet, Joshua's understanding of earthquake science is emergent and he is not aware that television news repeatedly shows the same buildings falling and needs his parent's explanation to assist him:

Yeah. And he wasn't able to understand about certain things. Was a bit confused. You know when we turned the telly on – they showed the same building over and over again. He didn't know it was the same building over and over again and he thought there was nothing standing – so I had to explain that to him. (Mother of Joshua, 5 years)

Future research may need to combine general understanding of developmental capacities and in-depth understanding of children's use of coping in prolonged disaster situations to extend understanding of how age and development may influence coping strategies.

Chapter Conclusion

Findings from the present study were consistent with research (e.g., Lack & Sullivan, 2007), that coping strategies may function to enable or impede a child's recovery and adaptation. Children who coped effectively demonstrated using their coping strategies and intrapersonal resources to mitigate the distress and stress that they felt experiencing the disaster. Coping processes underpinned the children's adaptive response.

The children in the present study who appeared to be coping effectively had a large repertoire of effective coping strategies, represented in the six major strategies identified¹⁶. Although a section of disaster research has correlated the use of multiple coping strategies with post-traumatic stress (Pfefferbaum et al., 2014; Vernberg et al., 1996), the present study did not confirm this finding. It may be that children in the Christchurch cohort needed to use a large repertoire of strategies in order to address the complex demands of a stressful disaster situation. Certainly, Children

¹⁶ Emotional regulation, problem-solving, positive reframing, getting on, helping others, and seeking support.

who coped effectively demonstrated using their coping strategies and intrapersonal resources to mitigate the distress and stress that they felt experiencing the disaster. Coping processes underpinned the children's adaptive response.

Findings in the present research support Cardena et al. (2005), who note that it is rather the use of strategies regarded as maladaptive, such as self-blame or behavioural withdrawal, which is suggestive of more distress, not the number of strategies employed. The present study supports Alisic et al. (2012) who have suggested that further testing of the hypothesis that children with a bigger repertoire of coping strategies will have better recovery outcomes after potentially traumatic events.

Effective coping strategies used by the children in the present study were varied and pliable processes of actions and reactions changing over time, developmental level, and context. The study did not support the findings of research that adaptive coping is apt to be exhibited more particularly in adulthood (Cardena et al., 2005). The children in the present study showed effective coping from five years of age, albeit in age related forms. The children's effective coping enabled them to adapt positively to their changing circumstances and to "get through" the disaster well. In contrast, the minority of children struggling were often using coping strategies ineffectively and appeared to have difficulty in dealing with the disaster.

Emotional regulation strategies were prominent in the immediate aftermath of earthquakes and appeared necessary for the children to not feel overwhelmed but to stay "operational" and capable of using their other coping repertoire. The children who coped effectively used their coping repertoire in a pertinent and flexible manner that increased the accumulative effectiveness of their coping, enhanced their personal resources, and demonstrated adequate functioning. Findings demonstrated that effective coping strategies and intrapersonal resources interacted together in a positive spiral.

Strategies often were multi-dimensional. For example, a child using one strategy such as seeking support may have multiple aims: to obtain emotional support, information seeking and/or instrumental aid. Competence in one domain often became the scaffold for competence in other coping strategies in the children's repertoire. Findings supported research (e.g., Zalewski et al., 2011) that suggests

children who are more effective with one coping strategy are also more effective in their choice and use of other strategies.

The disaster context as a highly stressful environment solicited multiple coping occasions and responses. This context appeared to hasten coping skills and the complexity of the forms used in those children using strategies effectively. Over time use of coping skills became a learning experience for the children. The Christchurch children coping effectively used their coping strategies and their large coping repertoire in a manner that reflected practice. Seery et al. (2010) have suggested that experiencing non-overwhelming levels of adversity may teach coping skills and promote self-beliefs in the ability to cope effectively with future challenges. Many in the Christchurch cohort were aware of their strategies, could report them more readily, used a wide range of strategies and could use multiple strategies when needed. For example, the Christchurch cohort demonstrated more coping strategies developed for emotional regulation, positive reframing, and helping others, than the Wellington cohort. Many Christchurch children had developed strategies for “getting on” from difficulty.

The capacity to cope effectively appears to increase processes that contribute to better outcomes of adaptive functioning post-disaster. Effective coping contributed to resilience processes demonstrated in a child’s adequate adaptation. In the present study adequate adaptation was demonstrated by age appropriate functioning and sense of well-being.

In contrast, the children who were struggling appeared likely to be more sensitive to future challenges compared to those functioning well. This minority appeared overwhelmed by the complex demands of a disaster situation and could not demonstrate expansion or adaption of their coping strategies. These children did not appear to have a large panoply of strategies to use. Rather they seemed to re-use ineffective strategies or strategies not appropriate to the challenge.

Children do not develop their coping strategies in isolation. One important aspect of the present research is to understand what elements within the child’s environment can promote or hinder the coping processes necessary to deal with a disaster. These elements are examined in the following three chapters.

Chapter 5: Family Influences that Support or Inhibit Children's Coping

I tried not to let it affect me because it would then affect the girls.

I still went out; I still went to the mall, in car-parks.

I can't live in fear. (Mother of 5 year old twins)

Introduction

Within the ecological model (see Figure 3) a disaster is conceived as a life event that impacts on the child and the proximal systems within which the child develops. In the previous chapter the children's coping strategies and intrapersonal resources were discussed. In this chapter, the proximal interpersonal influences of family and extended family are examined. The focus will be on how these influences affect the children's coping strategies, either to promote effective strategies and adaptation, or to hinder them.

Children experience a disaster within their social and community context. Ted's experience and reaction to an earthquake occurs within his extended family and affects to his relationship with pre-school:

He was with my mother-in-law in February [earthquake] and they have an old house...it just moved a lot and a lot of things fell down...we didn't get to him for hours...he was very anxious about being away from us, which kind of affected kindy [pre-school] the most really. Didn't want to go, didn't want to be left. (Mother of Ted, 5 years)

Ted's mother reported his reaction was influenced by the absence of his parents and Ted's reaction in turn affected his parent's behaviour so they increased their presence, support, and kept a watchful eye on his nightmares (see p.102) and clinging. Children are dependent on, and interact with their close social and physical environment. The present study supports research highlighting the social context of children, especially the immediate family system as being associated with children's

reactions and adjustment to adverse events (e.g., Gil-Rivas & Kilmer, 2013; Hoffman & Kruczek, 2011; Proctor et al., 2007).

Lazarus (2006, p. 20) stated that coping should not be extracted from either the persons doing the coping or from the “environmental context in which it takes place”. Within the environmental context of the present study, children witnessed and were influenced by a wide range of adaptive and maladaptive responses made by others, both adults and peers, and the community as a whole.

A body of research suggests that interpersonal and interdependent influences have more impact than intrapersonal resources, “the cumulative impact of individual traits typically accounts for less of the variance in children’s outcomes than systemic factors like the quality of the child’s family, school, or community” (Ungar, 2014, p. 1). However, there is a paucity of research that examines specifically how children’s coping strategies are influenced by their interaction with family, siblings, peers, and teachers, and with their living spaces of home, school, and neighbourhood (Bonanno, Romero, & Klein, 2015; Miller et al., 2012). This study aims to address some of these gaps. The present chapter focuses on family influences.

The Family as a Unit of Influence

In the present study, all members of the family were affected in varying degrees by the earthquakes, reacting and adjusting to a stressful situation. Many children gave evidence of the family influence when they spoke of their family as a vital unit of support during the disaster. Ted, although very stressed by the earthquakes, describes his supportive family system:

Well, um, everyone looks after everyone. (Ted, 5 years)

Within the family system, changes in one member or sub-system influence all other sub-systems (Seiffge-Krenke & Pakalnishkiene, 2011). This is demonstrated in the bi-directional support between family members evident in many children’s and parents’ comments:

...we’ve got four boys quite close together. Like there’s less than five years between them, um, they all look after each other. (Mother of Craig, 5 years)

Craig adds that he can deal with the situation and takes care of his brothers:

I can handle things...I hug my brothers...I cover them with my blanket.
(Craig, 5 years)

The present study suggests that when a family was functioning adequately in the post-disaster context, there appeared to be a positive influence on the children's coping. This is confirmed in research examining how families can set off positive cascades by teaching or modelling coping skills (MacPhee, Lunkenheimer, & Riggs, 2015), and is discussed in the following sections.

In families where the children were coping effectively, the family appeared cohesive and able to understand and adapt to members' needs:

I guess we [pause], like our family's real close. Like, every time there was an earthquake we'd make sure everyone was ok. Like we could all communicate and be together. (Poppy, 15 years)

Research suggests that family resilience, demonstrated by the processes by which families are able to function adaptively following adversity, may result from family cohesiveness and flexibility (MacPhee et al., 2015; Patterson, 2002). This is illustrated by the family above; Poppy reports closeness and ongoing communication. Poppy's family are able to demonstrate a certain flexibility when they adapt to her need for support in the disaster situation and this may enable her capacity to cope.

In comparison, when the family was not functioning so well there appeared to be less cohesion and flexible sensitivity to the children's needs. Gaelle describes her relationship with her parents. Her father 'checks in' but is often inaccessible due to alcohol consumption. Her mother neglects to check up on her after adverse events:

He [father] says like, 'are you alright' and stuff and my mum doesn't normally do that...it's hard to talk to my dad sometimes...he's too drunk...he got his licence taken off him. (Gaelle, 9 years)

Gaelle, who was having difficulty adapting, is aware she cannot rely on her parents and her siblings are not mentioned.

Findings suggested that when families appeared to be functioning adequately, there was often agreement between parent and child on how the family was supportive (see Craig on former page). Similarly, Poppy and her mother explain how the whole family stayed close:

...we actually had eleven people stay here for that first week [in Feb]...That was great. It was different. We had candles and barbequed food outside and just looked after the people we needed to look after. (Mother of Poppy, 15 years)

And the daughter:

We had most of our family staying here...so it was nice having everyone all close and stuff...it was more reassuring having them here than having them in town...Safety kind of... (Poppy, 15 years)

Poppy and her family's account are consistent with research focusing on children narrating their disaster responses, where family members of all ages sought each other out in times of disaster (Jensen et al., 2013; Pujadas-Botey & Kulig, 2013).

Interactive support of family, important in everyday development, appears to become more vital with the impact of the disaster:

I think to be with your family and stuff. More like, to have support around you and have people you can talk to... I think I already knew, but it's more important [now]. (Nan, 15 years)

Children were far from passive; they gave and received support:

He talks and he checks in...I think sometimes he thinks 'Gosh, I'm the youngest—I'm gonna look after you as well'. He's very caring. (Mother of Bailey, 9 years)

Bailey demonstrates that children too were able to care for parents. The presence of children appeared to enhance parent's capacities. Some parents mentioned feeling stronger when their children were with them:

I just find it's very helpful to have the kids with me. In December I got a bit stressed because Brooke didn't want to come home. She was with her friends and having fun. (Mother of Brooke, 15 years).

Family contact was important for the children. In the immediate aftermath of an earthquake most children and parents acknowledged the need to know where the family members were:

I wanted to see if he [father] was ok and that he knew if everyone else was ok. Because I didn't get to see my mum for about three hours afterwards...
(Abby, 10 years)

Knowing family was safe and close reduced stress:

Until my mum comes [then I'm reassured] yeah... 'cause I know she's safe.
(Sarah, 9 years)

Although seeking the whereabouts and physical proximity to close others has been reported as a common coping strategy for persons experiencing disaster (Stein et al., 2004), proximity appeared especially important for all age groups of children in the study, particularly in the immediate aftermath of earthquakes. Ted, visiting his grandmother during one earthquake, explained his relief when his parents arrived. He was only able to leave the "safe haven" under the table when his parents arrived:

Um, um, I stayed under the table till dad comed and I stayed under till mum comed. (Ted, 5 years)

Research has widely reported that children manage better when in physical proximity to attachment figures (e.g., MacFarlane, 1987; Masten & Obradovic, 2008). The present study confirmed that need for proximity and contact was bi-directional in the family system. Hannah's mother was trying to get to her children, and Hannah and her sister went toward their younger brothers:

Mum was on the other side of town and she was trying to get to the school... Me and my sister just went to the school to see if my brothers' were all right. (Hannah, 15 years)

Often a potentially traumatic aspect of disaster for children is the threat of loss of close attachment figures (Hobfoll et al., 2007). The children in the present study were aware of this:

They're [the students] fine if they know their family's fine. (Kayla, 15 years)

Craig explains how he can manage because, in an earthquake, one of his parents is always close:

And mum and um dad goes out and checks out if our neighbours are ok and mum stays with us...And if mum goes out and checks the neighbours are ok then dad stays home with us. (Craig, 5 years)

The importance of proximity to close others for younger children may relate to their larger dependence on close adults (e.g., for explanation, reassurance and comfort). Also, younger children usually have less extensive social support networks established (Franks, 2010) than older children. However, it is noteworthy that all age groups in the present study sought contact with their close others during the immediate earthquake aftermaths. This may be a coping strategy employed when a situation is unknown and threatening.

Although children are thought to be vulnerable in disasters as they are more dependent on their family for support and security (Fothergill & Peek, 2006), disasters often disrupt family activities for all members of the family (Norris et al., 2002; Gil-Rivas & Kilmer, 2013). For example, parents may be under stress and less available to the children, as they deal with insurance claims or employment issues. This disruption may continue for several years (Osofsky & Osofsky, 2013). Nevertheless, despite family disruption from disaster causes, the present study supported research suggesting that family (Bai & Repetti, 2015; Kliwer et al., 2006; Vigil & Geary, 2008), and within the family system, the parents “play a key role in their children’s responses” (Pfefferbaum et al., 2014, p 90).

Parents

In the present study parents played diverse roles in either promoting or inhibiting their children’s capacity to cope (see Table 5.1). For example, parents could either promote adequate coping by modelling effective strategies (e.g., keeping calm), or inhibit adequate coping by modelling ineffective coping strategies such as avoidance or withdrawal.

Table 5.1 *Parental Influences on Coping and Adaptation*

Parental role in <u>promotion</u> of effective coping and adaptation	Parental role in <u>inhibition</u> of effective coping and adaptation
<ul style="list-style-type: none"> • Coping assistance through modelling, coaching, and teaching <i>effective</i> coping 	<ul style="list-style-type: none"> • Coping assistance through modelling, coaching, and teaching <i>ineffective</i> coping such as withdrawal and ineffective emotional regulation (e.g., panic) • Lack of coping assistance
<ul style="list-style-type: none"> • Protection, buffering, reassurance, support 	<ul style="list-style-type: none"> • Lack of protection, support, reassurance • Overprotection
<ul style="list-style-type: none"> • Increased parental awareness: watchful awareness, acceptance of disaster related changes in behaviour, positive appraisal, and active involvement of child in disaster response/preparation 	<ul style="list-style-type: none"> • Limited parental awareness of child's feelings, disaster related behaviour, or needs • Over-watchful awareness mainly focussed on detecting trauma symptoms
<ul style="list-style-type: none"> • Getting on: providing stability and distraction 	<ul style="list-style-type: none"> • Inability to get on, or provide sufficient stability, routines or distraction

In the present study, children's reactions and ways of dealing with stressors were in part influenced by their parents' reactions to stress. Ben describes his parents' reactions to their potentially traumatic experience in one of the major earthquakes:

My mum's laptop got snapped in half [at her workplace]...my dad just about died [a building collapsed by his workplace]...They [parents] weren't panicking. (Ben, 9 years)

Ben's parents, despite difficult events, did not panic. They provided coping models. In a mirror response, Ben can advise others in a way that echoes his parents' calm reactions:

Don't panic and get under the table if you're inside and hold on to the leg.
(Ben, 9 years)

The data in the present study yielded numerous examples of parental responses and how they affected the children's coping response and adaptation to the earthquake disaster. Findings supported research highlighting that parents have an important influence on the child's response (e.g., Kelley et al., 2010; Masten & Narayan, 2012; Skinner & Zimmer-Gembeck, 2007). One vital way in which parents promoted effective coping was through coping assistance to their children.

Coping assistance.

Parents provided the children with models of coping as the parents themselves were experiencing the events and using coping strategies in response to the disaster. Additionally, most parents specifically assisted their children to cope by coping socialisation processes, which “refers to parental goals and practices that influence children's use of strategies to manage stressful events” (Miller, Kliewer, & Partch, 2010; Miller et al., 2012, p. 315). Coping socialisation occurs throughout childhood, but in stressful events such as a disaster, assisted coping appeared to promote children's coping strategies so that the children could more effectively manage these challenging events.

Coping assistance thus can occur through modelling—a mechanism through which children obtain awareness of specific behaviours modelled by others (Bandura 1977; Kliewer, Fearnow, & Miller, 1996), or by coaching coping “social interactions that facilitate or promote a specific coping activity” (Prinstein et al., 1996, p. 464).

Coping assistance in disasters has been defined generally as “actions taken by significant others to help children cope with stressful events” (Prinstein et al., 1996, p. 463). A disaster situation has complex demands, presenting multiple possibilities for coping assistance from parents (Cobham & McDermott, 2014). Parental coping assistance, when effective, provided scaffolding for the children to develop their coping strategies that then enabled them to effectively deal with the challenging events. Scaffolding can be conceptualised as supportive behaviours a parent undertakes to enable a child to manage demanding situations (Power, 2004).

Many parents were aware of their role in influencing and shaping the children's coping. Rachel's mother describes both the modelling of reactions she and her husband provided, and also their coaching assistance in what to do when earthquakes occurred:

I think a lot of the children's reactions are based on how I react or their father reacts. We learnt pretty quickly the less reaction the better. We just told the kids to breathe through it, get down, get safe and it will pass. (Mother of Rachel, 9 years)

All three children in this family were reported by their mother as managing well with the situation and with school tasks. Many examples of coping assistance were identified in the study.

Examples of coping assistance.

Instances of parental coping assistance were varied, as parents who were coping effectively employed multiple coping strategies suited to the different challenges they were facing. In the following examples Bailey's parent modelled effective coping by appraising adversity as a challenge to be faced rather than a threat:

I guess we always wanted to be a good, positive role model. Like, things happen in your life that is really hard. It is how you decide to deal with it. So we wanted to show them that it's really hard, it's really tough and that's going to change but it is what we do with that, which is really important. (Mother of Bailey, 9 years)

Amelia's mother reports how she reframes the situation as becoming normal:

You're just able to tolerate more I think...it just becomes part of normality. (Mother of Amelia, 5 years)

Other parents modelled actively "getting on" from the disaster:

You have to go forward, you can't go backward. (Mother of Rachel, 9 years)

Nan's mother suggests coping strategies such as helping close others and positive reframing:

...strong in yourself for each other. Be supportive of each other. Believe in yourself. That you can get through things. Um, and just talk. (Mother of Nan, 15 years).

Neil's father modelled effective coping around disaster preparation by using problem-solving:

Well, I guess, show him that being prepared was worthwhile...Planning for disaster so you know what to do if you have a disaster. (Father of Neil, 15 years)

The coping strategy of managing emotions appeared a significant strategy for many parents (see Chapter 4):

I tried to teach him to keep calm. Think before you react and run kind of thing. (Mother of Cody, 10 years)

Managing emotions was not limited to parents keeping calm. For example, parents encouraged positive emotions and distraction, and their children found this enabling:

Well, if I'm just scared, she [mother] just tells me something good or funny or... MM: Does that work? S: yeah (laugh) it really does. (Sarah, 9 years)

As role models, the above parents were actively coping with the situation. They had the capacity to envisage their situation as manageable or to model effective coping strategies.

Children were not passive in the coping assistance interactions. Elise observes her mother's positive accommodation to the earthquakes as time passes and notes progress in her parent's coping:

Like, my Mum, when she was little, she used to be quite afraid of the earthquakes but now she's coping well. (Elise, 9 years)

The children coping effectively observed whether their parents were coping. They actively used their parents as a gauge during earthquakes to measure danger by social referencing, that is, checking parents' emotional reactions to decide how they should react (Aktar, Majdandzic, de Vente, & Bogels, 2013; Masten & Obbradovic, 2008). Sarah explains:

I could say it's ok because my Mum...she's fine [not panicking]. (Sarah, 9 years)

Although few studies have analysed caregiver coping assistance in disasters (Gil-Rivas & Kilmer, 2013), findings on parental coping assistance suggest that the above coping strategies (i.e., problem-solving, accommodating positively, “getting on”, helping others, and managing emotions) are linked to more adaptive functioning in the children (Gil-Rivas et al., 2007; Hafstad et al., 2012).

As the present study examined cross-referenced data of parent and child, findings demonstrated that the ways of coping in the parent were often reflected in that of their child. For example, Abby's mother is coping actively:

Don't dwell—deal with it. (Mother of Abby, 10 years)

And Abby too realises she needs to face the challenge:

Parents show that you can't run away from every possible earthquake or rumour...That it's going to be alright, and if we go away and there is one, it will be scary to come back and (pause) we can't go away every time. (Abby, 10 years)

Ineffective parental coping assistance.

Cross-referencing of data also highlighted examples of where the parent was not coping too well and this was often reflected in their children's coping. Gaelle says she is only getting on “a little bit good” (Gaelle, 9 years) and her mother, who appeared withdrawn, is unemployed, and not coping effectively, comments:

Yeah. I try not to let too much out. Try to just get on, you know, so they don't see too much or what have you and, yeah...try to get through it without them knowing all that. But they—they pick it up...You get a bit of recluse. (Mother of Gaelle, 9 years)

Consistent with previous studies (Hafstad et al., 2012; Norris et al., 2002), a minority of parents in the cohort did not cope effectively with the disaster, as seen with Blake's mother:

The seat I was on was under where the spire fell. Crap, I could have been under that ... it's always the 'what ifs'...I don't remember any of it but I headed towards work and um, at some point,...I was leaning up against the pillar and screaming...I don't scream anymore...[but] I've got to get out of here. The thing that worries me to this day is being in a large building. (Mother of Blake, 15 years)

Supporting parents who are not coping effectively appeared a strain on the children's capacity to cope. Blake explains the difficulty of having to manage his Mother's continued panic:

The most difficult thing I've had to deal with is probably having to help everyone else cope as well. Not just coping myself but having to help everyone else cope as well... Mum would panic for a few minutes. She'd start calming down but, you never know... (Blake, 15 years)

As confirmed in research (Kerns et al., 2014; Hafstad et al., 2012), the minority of parents, who were not able to assist their children's coping were parents experiencing high levels of distress themselves.

Parental distress may have also affected their capacity to process information. These parents may not be aware of their child's state (Alisic et al., 2012). This lack of awareness of their children's state was demonstrated by nine year old Ann's mother who explained:

I think she's coping very well...I often suggest to Ann that she is one of the lucky ones, because she copes well with it, and she should support the other children who don't cope quite so well. (Mother of Ann, 9 years)

In fact, Ann was not coping well. She spoke of ongoing fear and anxiety, and was referred on to professional help following the interview. Here Ann worries about future aftershocks:

I think I'd feel 90% scared and I wouldn't know what to do, 'cause yeah—I wouldn't just—not know what to do. (Ann, 9 years)

Ann's mother, although she reported as being "a very positive person" was unable herself to cope adaptively to earthquakes and reported she "panics" when

earthquakes occur. The lack of capacity to support or provide assistance to the child, and the perception by the child that they cannot rely on the parent has been correlated with long-term post-traumatic distress in research with adults (Fraley et al., 2006).

When parents inhibit effective coping, they are not scaffolding adaptation but often modelling ineffective coping strategies such as catastrophising or exhibiting helplessness ideation. Ann's mother continues to model panic in earthquakes:

I'm a terrible panicker and I—when the Feb one hit, I ran. (Mother of Ann, 9 years)

Nine year-old Ann continues to panic in earthquakes (see p. 97).

Similarly, Hannah's mother feels depressed about the city being able to rebuild and cries when she goes to the central city. Hannah (aged 15) is coping reasonably, but her younger brother (aged 9) remains highly anxious. Hannah's mother is aware that her behaviour may have influenced her son and sought professional help for herself:

Plus with my son, I thought, maybe if I dealt with some stuff and he didn't have to see me blub every time I drove through town, it might help him with stuff too. (Mother of Hannah, 15 years)

Parental coping assistance adjusted to children's needs.

In contrast to Anne, Blake and Gaelle (above) were children who reported feeling supported by their parents' ability to cope with the situation. Their parents appeared to have the capacity to recognise their children's needs and respond to them. Supporting children's capacities at an appropriate level is one important aspect of effective coping assistance. This responsiveness to needs in effective parental support is confirmed in research on children experiencing trauma (Alisic et al., 2011; 2012). In the present study, Neil's father was available to his son, and aware of his needs when talking and discussing problems. Neil and his father comment on their enabling relationship where there was discussion and trust:

Ah both times I was around people I knew and trusted which was good...for Sept I was at home, sleeping. So, I was around my dad, so... I didn't get stressed out. (Neil, 15 years)

He talked ...we did a lot of walking...walking and talking...We talked about stuff like that. (Neil's father)

Neil appears supported by having his father close and supportive. This enabling relationship is also reflected in five year old Craig's confidence and trust that his parents will keep him safe:

MM: What are the things you do that helps the most? C: Mm. I listen to Mum & Daddy...They um—keep us safe. (Craig, 5 years)

Craig's mother is aware of her role in supporting her children:

Um, we never made a big deal about it. Like our reaction is always to stay calm about the whole thing, because I think they [children] feed off what the parents are doing. So we've always tried to stay very calm. You know we've always explained to them where the safe place to be is. (Mother of Craig, 5 years)

In the recovery context of the present study, many parents adjusted their parenting style to address disaster related needs. Some like Abby's mother increased their focus on helping their children:

I think the most important thing has been managing the kids and how they are feeling about it. (Mother of Abby, 10 years)

This adjustment to needs has been noted in research on parenting behaviour in wildfires (Miller et al., 2013).

Similarly, Ted's mother actively coached her son, who was fearful of being away from her. In the following example, she scaffolded effective responses in him, by having a talk about what he could do when staying with his grandmother in the event there was an aftershock:

...then I could say to him; 'well, what if there was an aftershock, what would you do?' And he said, 'we'd probably get under the table'. And I said, 'well

what would Oma’—that’s his Grandma—‘what would Oma do?’ And he said, ‘oh she would probably just stay with me under there and we would read some stories’. And he still wasn’t great when I left but he was a lot better. (Mother of Ted, 5 years)

This “rehearsal” allowed Ted to feel more able to manage another possible event.

Parent-child relationships are one of the proximal processes that change over time as the child develops and adapts to challenges (Bronfenbrenner & Ceci, 1994; Hoffman & Kruczek, 2011). Parents, who are able to scaffold and adapt the amount of coping assistance they offer their child, according to age/developmental capacities and need, are noted as the most effective in a disaster (Hafstad et al., 2012).

This capacity of parents to support and adapt according to developmental level and need is confirmed in the present study. Craig’s mother, aware of her child’s age, continued to coach what to do and where to go for safety:

... always had it explained to them where the safe places are and what to do. You know, whenever he’s talked about it we’ve answered him honestly. Well he was still quite little when it all started because he wasn’t even four. (Mother of Craig, 5 years)

Parents of adolescents gave more complex explanations. Poppy’s father, an engineer, explained both the structural strength of the house and the concept of probability of another major earthquake:

Yeah. My dad is an engineer and stuff and he knows that our house is—unless it is another massive one—then it should be fine, and that there is a low probability of another big one so we...So, I guess like with our family, we’ve gotten more relaxed about what’s gonna happen. (Poppy, 15 years)

As in the following example, some parents were able to assist coping behaviour in their children by adjusting their level of support over time, so that the children were not overwhelmed, but at the same time, remained motivated enough by the stressful situation to learn how to adjust. Abby’s parents were protective but not overprotective:

...we had a few nights initially [with children in the parent's room], which is understandable, and we tried to draw a line to say 'Well this is fine. They're gonna keep happening. You know a couple of more nights is great but then—it's just how it's gonna be. Back in your room and go with that.' And they've been really good with that. (Mother of Abby, 10 years)

Vygotsky (1978) describes support such as this as the zone of proximal development where the child is learning new skills. As their children's capacities increased, these parents adjusted their level of supervision and protection.

Parents noted that it was not always easy to help their children cope with the exceptional situation of ongoing earthquakes nor to adjust their parenting assistance. The disaster situation was new not just for children but also for parents. Parents at times needed support themselves, as well as to learn strategies so as to be able to then support and assist their children's coping.

For all parent/child relationships, interventions to assist parents appeared helpful in increasing parents' capacity to help their children. For example, several parents mentioned that they appreciated and learnt from psychosocial interventions such as the parenting tips from the Ministry of Education website¹⁷ or from a UNICEF lecture, held in the community, on how to support the children:

They did give you tips of things to do with your kids at home—reading, athletics... Check out the Ministry of Education website for things...They [UNICEF personnel] were very good... in fact that was probably the most helpful talk for me...You could ask questions and realised there was not a set way to deal with this. It was an extraordinary circumstance and you just deal with the best way you can. (Mother of Craig, 5 years)

Although the literature focusing on parent's assisted coping in disaster situations is limited, other studies on parenting in adverse situations, such as the Kliever et al. (2006) study on managing community violence, has suggested that parental coping assistance, whether through modelling or coaching, influences how the children cope with challenges. The present study supports this literature by providing multiple

¹⁷ The Ministry of Education provided tips on how to support children, how to manage stress reactions, and provide stimulation during the period of school closures.

instances of effective parental coping assistance which promoted more effective coping strategies in their children, and examples of ineffective parental coping in a minority of the cohort that resulted in added stress for their children.

As well as assistance with effective coping, parents demonstrated additional positive parental behaviours related to the disaster situation. These behaviours appeared to specifically support their children through the disaster and promoted effective adaptation. For example, from the initial stages of the earthquakes, parents increased their parental roles of providing support, protection and buffering. These behaviours have been noted in research (Masten & Obradovic, 2008; Miller et al., 2012) as effective parental behaviours in times of adversity.

Support.

Support from parents took many forms in the disaster context. For example: emotional support; support in problem-solving; practical support; and activation of a supportive social support network. Brooke's parents supported her emotionally:

I think we just gave her a lot of support and a lot of love...Being there for her. We tend to just sit and talk and cuddles on the knee...make her feel she's special, yeah. (Mother of Brooke, 15 years)

Parents' continuing focus on their children enabled the support to be ongoing, addressing problems and needs as they appeared. For example, Craig had recently changed from pre-school to a primary school environment during the earthquakes. His mother talks of how she organised a practical support solution to his problem of adjusting to a new environment:

And that night he commented—we were just talking at dinner about it, and he said 'oh, I don't really know what to do at school if there is an aftershock' so,...we got one of the older boys to come in and just say to Mrs P[teacher] 'you know, C's not too sure what to do'. (Mother of Craig, 5 years)

The present study endorsed research (Gil-Rivas, Holman, & Silver, 2004; Kronenberg et al., 2010) that suggested that a supportive family environment and the buffering effect from parental support may enable better adaptation in children, and

that children are more able to use their active coping strategies when they perceive support is available to them (Zimmer-Gembeck & Skinner, 2011). Poppy, who was doing well at school and at home, talks of her parents' support:

They [parents] just like listen and then they, um just like understand and, and with them being in the earthquakes they just understood as well...Like they listened and were there to talk. (Poppy, 15 years)

For Poppy, her parents were a secure and empathetic base. Findings from the present study suggest that children who felt secure with their attachment figures could, from this safe base, use their own resources more effectively to cope with the situation. Secure attachment has been highlighted by research (Rutter & Srouffe, 2000; Gallagher et al., 2016) as enabling children's capacities to cope. In a disaster situation, children's attachment behaviour is activated when the children feel threatened or stressed. Research has noted that children, who felt secure in their attachment, were more likely to expect and seek support when necessary (Fraleay & Bonanno, 2004). Seeking support is regarded as an effective coping strategy.

Findings in the present study are consistent with research suggesting parents of secure children appear more responsive and sensitive to their children's needs (Borelli et al., 2010; Edelstein et al., 2004; Hafstad, Gil-Rivas, Kilmer, & Raeder, 2010). Supportive parents appeared to have the capacity to provide care for their children even in the challenging disaster context. For example, Neil's father adjusted his support to his son's need to continue sports training by doing "different things" so that his son could continue:

He had to overcome those [closures to sports facilities] and keep his training up, so we did different things and he trained in different places. (Father of Neil, 15 years)

The ease of seeking and obtaining support in the above examples diverges from the minority of children, who did not demonstrate secure attachment, or had families with dysfunctional coping, less cohesion and support. For example, nine year old Gaelle was not coping effectively with her situation and commented about her separated parents' lack of support:

She's [mother] not really listens to anything. Sometimes I tell her about my Dad and she goes 'oh, never mind'... [her father] kinda worse 'cause when he drinks, he says 'go away' and stuff and he acts a bit silly. (Gaelle, 9 years)

Gaelle's mother's awareness of how her daughter was coping was limited, and she was less aware of her daughter's needs:

Um, think she's coping quite good. Takes it all in her stride. (Mother of Gaelle, 9 years)

Gaelle, like Ann in the following example, illustrates the benefits of listening to multiple sources (here both children and parents). Ann's Mother said her daughter was coping "very well" when in fact her daughter explains in the following quotation that she was unable to manage her distress:

I'm still worried about if an earthquake happens. And if it happens, I get really scared, 'cause I think something else is going to come—like a tsunami. (Ann, 9 years)

Ann and Gaelle's parents may not have been able to give support as they were not able to ascertain their children's needs correctly, and nor were they coping adequately with their own situations.

Research suggests that a minority of parents underestimate the distress of children in post-disaster situations (Pfefferbaum et al., 2014) or do not seek assistance when their children are experiencing distress (Poulsen, McDermott, Wallis, & Cobham, 2015). The lack of parental awareness in a minority of parents has been confirmed by studies in other areas of adversity. For example, some parents of physically injured children were unaware of their children's coping strategies (Marsac, Donlon, Hildenbrand, Winston, & Kassam-Adams, 2013).

The lack of responsiveness by some parents may be exacerbated by their own distress resulting from the disaster's impact (Kerns et al., 2014; Margolin et al., 2010), or from secondary stressors linked to the disaster. Secondary stressors last over time and include economic (loss of income, impact on housing values), matters related to insurance (deficient compensation) or loss of home and ongoing accommodation difficulties (Lock et al., 2012).

Nevertheless, in the present study despite the demands of the situation many parents were able to be supportive and to increase their supportive behaviours to address need. This mother talks of support in her family:

I think it's very important to acknowledge to each other how you are feeling and talk about strategies. Um, support each other, work together but look after yourself at the same time. (Mother of Bailey, 9 years)

Effective parenting is seen in how parents respond to their children in times of success and struggle (Herbers, Cutuli, Supkoff, Narayan, & Masten, 2014). Many of the Wellington cohort also reflected supportive parenting (e.g., being available and communicating) and coping assistance (e.g., working out what to do) in everyday settings, particularly when the parent/child relationship appeared to be functioning well. This parent was able to adapt her parenting role and support to her child's style of coping:

Um, she [daughter] tends to reflect quite a bit in her room, if things haven't gone right. Then we'll have a talk and try and sort something out. (Mother of Samantha, 15 years, Wellington)

Although post-disaster periods place increased demands on parents, some parents may equally have struggled pre-disaster to be effective parents, establish secure attachment, or be aware of their children's needs (Alisic et al., 2012). A mother, who works in a school library, commented on the parents who are not coping effectively as those who were not coping pre-disaster:

I'm a librarian in an intermediate school, many [parents] are frazzled but they didn't cope with ordinary life so... (Mother of Brooke, 15 years)

Nevertheless, in most of the Christchurch cohort there was an escalation of parental behaviours promoting conditions where children could cope effectively. Apart from coping assistance and support, parental responses that promoted children's effective coping also included protection, buffering, and reassurance.

Protection, buffering, and reassurance.

Certain resources identified in the parent-child relationship are protective elements that have a vital function in times of adversity (Tol, Song, & Jordans, 2013; Patel & Goodman, 2007), such as buffering and protection. The protective (shielding from harm) and buffering (forming a barrier) role of parents has been identified as particularly important for younger children in disaster situations (Osofsky & Osofsky, 2013; Proctor et al., 2007). Protection appears vital in the immediate aftermath and buffering and reassurance increases the children's perception that they can be safe, and that their situation may be manageable. Protection and reassurance strategies adopted by the parents in the present study were multi-dimensional: from re-establishing safety, staying close, protecting the children from the parent's own emotional distress, showing positive emotions, and positively reframing situations to reduce the potential impact of the disaster situation.

Parents were often focused on protection and safety for children of all ages:

Security and safety is what I provided for my children. (Mother of Angus, 15 years)

In the present study, where the child's secure base of home was often shaken by earthquakes, re-establishing a sense of safety was acknowledged by many parents and children as influencing coping and adaptation. Alan's mother acknowledges staying close increased her and her son's capacity to face the earthquakes:

But Alan was fine and we stuck together in all the significant earthquakes...I had to go here and there and everywhere for work and he'd come with me. (Mother of Alan, 10 years)

Parents both protected, and acted as a buffer between their children and the situation so as to increase a sense of safety and minimise the impact of the earthquakes. When asked what her parents did that helped her most, Elise said:

Probably, like just keeping me safe and away from anything that could hurt me. (Elise, 9 years)

Safety, and the perception of safety, re-establishes a sense of a protective environment, diminishes the stress responses that arise out of fear and anxiety, and

helps to reduce a sense of the world as a dangerous place (Hobfoll et al., 2007). Similarly, the importance of safety is confirmed by research that suggests an ongoing appraisal of danger or sense of vulnerability is linked to post-traumatic stress in children and adults (Bryant et al., 2007; Ehlers & Clarke, 2000). Many parents were aware of their role in offering a sense of safety and reassurance and they repeated reassuring behaviour over the numerous earthquake events:

Just be there as quick as you can and offer reassurance. (Mother of Harrison, 10 years)

Abby's parents adapted their responses to the changing needs of their children. They offered protection but not overprotectiveness. Abby feels safe with her parent's protection and calm coping:

Dad was down the hall. Me and C [brother] were in here and it just started shaking again...felt very safe because Dad was here and so he came running in and said 'it's ok. Just stay in the doorway'. (Abby, 10 years)

Parents masked their fear and stress and tried to be strong, which is consistent with research on caregiver's behaviours in disasters (Miller et al., 2012):

When you've got kids, you— be brave. (Mother of Kevin, 10 years)

Many parents stated that they acted more calmly than they felt in an effort to reassure their children. They modelled calmness and coping:

The not panic. Stay calm...the 'shaking will stop and we'll be fine'. (Mother of Abby, 10 years)

Interestingly, children's presence may increase parent's coping abilities. Abby's parent recognised that her behaviour was also influenced by her children. She reacted differently when her children were not present:

But funnily, one of the worst [earthquake reactions] I had was without the kids. And I think when the kids are around, you switch into that mode, of— 'where are they, they're fine, keep them calm'... And I was horrified with myself because I went into this massive panic...And I think it was because I

had no kids to worry about...And the really serious thing was that (laughs) I was going to be crushed by rice cereals. (Mother of Abby, 10 years)

Reassurance from trusted adults (e.g., parents, teachers, whanau) also appeared to be enabling and empowering for the children. Cody says the most helpful thing parents or any adult did was to reassure him:

...probably telling me everything's ok. (Cody, 10 years)

Angela feels reassured by her mother's voice, comforted as well as enabled in finding solutions on what to do:

Like the tone of her voice. Like she says 'it's all right' and that stuff and how she can make solutions for the problems... She um, yeah, she kind of works with me to find them and stuff. She listens and asks questions. (Angela, 15 years)

Parents were creative. A mother, who had several of her children showing distress when she went to work, assures her children of the safety of her workplace by taking them to see how safe it was:

...showed them round work—'this is where I work, probably one of the safest buildings in town to be in'. (Mother of Craig, 5 years)

Another parent reframes school in a reassuring manner:

It's ok. And you know—we wouldn't let you go to school unless we felt it was safe and teachers knew what they were doing. (Mother of Alan, 10 years)

Reassurance by the parents was often centred on reducing appraisal of threat:

And now we're safe...building can't fall any more...we've been really lucky... (Mother of Elise, 9 years)

This positive reframing consequently reduces the negative impact. Hafstad et al. (2012) suggest the effectiveness of the strategy may be linked to fostering positive thinking in the family system which re-establishes thinking of the world as a less threatening place. As well as providing reassurance, support, and protection many

parents increased parental behaviours that focused specifically on the children's reactions and response.

Watchful awareness acceptance and positive appraisal of children's reactions and responses.

Within the atypical context of disaster, responsive parents appeared especially sensitive to any changes in their child's behaviour. Acceptance, watchful awareness and giving overall positive appraisal of how the child was functioning were facilitating responses from parents in the present study. These responses enabled appropriate support to the child, when necessary, and coupled it with an affirmation of efficacy (Saylor, Cowart, Lipovsky, Jackson, & Finch, 2003; Compas et al., 2001).

In the present study, parents who supported effective coping adjusted their behaviours. For example, parents recognised and encouraged coping in their children. Also, they accepted their children's reactions as reasonable in the circumstances. These parents put their children's reactions into context and addressed their children's needs. For example, Ted's mother describes her son's clinging and nightmares as an understandable reaction when he was processing the disaster:

[He] didn't want to go, didn't want to be left...For a while, he didn't even want to be in another room without us really...but this year he's been a lot better... And I think his world just turned on its head and he spent last year just processing it really. (Mother of Ted, 5 years)

Ted's mother demonstrates awareness of her son's distress and the importance of parental acceptance of children's reactions. Although a body of research emphasises the increased number of tasks parents need to manage following a disaster (Norris et al., 2002), the present study confirms research by Mowder, Guttman, Rubinson, and Sossin (2006) that suggests responsive parents are more attuned to children's needs following a disaster, and parenting styles are adapted to meet the diverse reactions of the children.

By parents normalising their children's reactions, children could feel understood, that their behaviour was not 'bizarre' but a reaction to an abnormal situation. Research (e.g., Gil-Rivas et al., 2007; Salmon & Bryant, 2002) highlights that parental acceptance of emotions and behaviours is linked to less distress in the children experiencing potentially traumatic situations. Ted received support and acceptance of his needs and eventually was learning to cope adequately. Ted's parents relaxed their usual rules of no child coming into their parents' bedroom, to give time for their child's increased anxious and clinging behaviour to diminish:

So if he wakes in the night and feels anxious or something...we've just let, for the kids now, for it to be free rein. (Mother of Ted, 5 years)

Parents attributing their child's behaviours to the disaster may limit parental worry about these behaviours; behaviours are thus seen as a response to a challenging event rather than as a sign of disturbance (Alisic et al., 2012).

This acceptance of, and adaptation to, the child's needs was especially evident if the child was not too overwhelmed by their experiences. For the minority of children in the cohort who had extreme stress reactions, parents who were attuned to their child's needs recognised that the child's capacities to cope were inadequate and sought professional help:

She was quite [pause] anxiety a lot, and so we'd gone...through the doctor and she went to someone to talk to and she found that quite useful...she'd just follow the exercises and the breathing. (Mother of Nan, 15 years)

Responsive parents adjusted their behaviour to their child's own pace of adaptation. Lucas' parents gave their son a week's break for needed respite:

I like to think he [Lucas] was the catalyst that got us out of town. (Father of Lucas, 10 years)

At the same time as accepting reactions, many parents, such as Nan's and Harrison's mothers, practised watchful awareness over time to pick up needs and changes in their children, to remain open to these changes, and to see if the children were in need of more support:

I guess after the February one we —I was more anxious than anyone because the trip out to where... they, did they see what happened? [this class was downtown at the time of the earthquake, near the epi-centre]. And we didn't know the answers... and Harrison wasn't talking about it and didn't want to talk about it and that was concerning... 'What has he seen?'. (Mother of Harrison, 10 years)

Effective parenting appeared to demonstrate watchful awareness rather than searching specifically for post-traumatic stress:

Yeah, just keep an eye on it I suppose. Didn't read into anything... Um there was one time after September that I thought the kids were ok because they were playing with E's dolls house and um, (laughs) playing earthquakes and just shaking it and they seem to be enjoying... and I thought, ok (sigh of relief). (Mother of Elise, 9 years)

A minority of parents were unable to adjust their monitoring or support. Some parents appeared not to monitor or were ineffective in picking-up signs of stress. Others continued to watch only for negative stress reactions in their children, even when not present. One mother was monitoring for PTSD symptoms in her son over several months despite no symptoms manifesting. She insisted on refusing his attendance on school trips unless she could accompany him. Overprotectiveness has been linked to increased stress in children (Bokszczanin, 2008; Cobham & McDermott, 2014; McFarlane, 1987). Overprotective parents may limit the child's experience with dealing with stressors and the development and use of coping processes (Fox, Henderson, Marshall, Nichols, & Ghera, 2005).

A further effective parental behaviour occurred when parents in the cohort reported positive appraisals of their children's responses and capacities. This appeared enabling for the children who were aware that their parents felt they were managing well:

... am proud of her... The fact that they [earthquakes] kept coming. And it took a while for her to, not panic... I think she could (pause) handle things... Self-sufficiency and no panic. (Mother of Abby, 10 years)

Findings appeared to support studies that have suggested that parents' positive evaluation of their children can influence how the children view their capacities and attributes. For example, Uszynska-Jarmoc (2001) found that the level of self-esteem in six year old children is linked to their parents' view and can affect coping capacities. Parental positive evaluation may support the children's sense of competency (Hafstad et al., 2010). Other disaster research focused on decision-making has underlined the empowerment that the positive appraisal from trusted others produces (Paton, 2013).

However, the present study highlights the need for accurate appraisal from parents. When appraisal and awareness of needs was not accurate, coping was not promoted as seen with Ann who continued to be anxious even when her mother perceived her as coping well. Pfefferbaum et al., (2014) also suggested that parents' accurate appraisal of their child's reactions would enhance the child's coping following a disaster.

When parents actively involved their children in the family's post-disaster organisation and encouraged the children to be active participants in the disaster response loop, both parents' and children's perception of efficacy appeared to be promoted:

We had a power cut for 20-25 minutes and instantly the children knew...and the torch went on automatically and the fire was on and we just smiled. We were organised, we were prepared. (Mother of Harrison, 10 years)

Treating the children as an active and competent part of the family team, whilst not expecting participation beyond children's means has been discussed as an active strategy by the parents in the present study and appears to assist children's coping and promote their capacities and eventual adaptation.

Recognising and enabling the children to take an active role appeared to encourage a feeling of agency¹⁸, and may have resulted in increased perception of competence and self-efficacy. For example, after an earthquake, ten year old Kevin's mother included her son as a competent person and suggested:

¹⁸ Agency is the capacity for an individual to make choices. "To manage their functioning and exercise control over events that affect their lives." (Benight & Bandura, 2004, p. 1131)

It's all right. Let's go and check on the old people in the neighbourhood.
(Mother of Kevin, 10 years)

This checking on others kept Kevin focused on something other than his own distress, enabled him to take a proactive strategy, and may have increased his sense of being an active participant in the response to the event through helping others.

Parents who were able to monitor their children through watchful awareness, accept the children's reactions to the disaster as understandable, and positively evaluate all effective coping in the children, were enabling. These parents were supporting their children through initial distress, and scaffolding their children's capacity to progress towards recovery.

Getting on: providing stability, routines, and distraction.

Many parents actively promoted a return to some kind of normality for their children. Parents reconstructed routines and stability and worked on enabling their children to "get on" by providing their children with some relief through distraction. This allowed a certain respite within a recovery process. These parental strategies, adapted to developmental age, started immediately following an earthquake in some parents, to continue over the ensuing weeks and months. Parents explain how they organised distraction at different points, from immediately after an earthquake:

Connor was still shaken and covered in dust from the city and stuff. I'd got them to sit on the trampoline and get the rabbit out of the rabbit cage—just to take the focus off. (Mother of Connor, 10 years)

Aftershocks in September, November, February, June, December—so those few days afterwards we just kept ourselves outside...Just playing and because they're running around they don't notice them so much. (Mother of Amelia, 5 years)

Parental efforts at distraction and return to normality continued over time in the post-disaster period:

We're trying to encourage Pippa to get out more, you know, do more with her friends [one year after a major earthquake]... (Father of Pippa, 15 years)

Routines evolved over time in an attempt by parents to provide comfort, safety and to keep the situation as normal as possible:

The February one, we did have a couple of nights when the kids slept under the table and for a while there it sort of become our routine... They knew they were safe. So, um, they've all got their special toy that stayed close—things like that... [Then] We put them back [in their bedrooms]. So we tried to keep normality as much as possible and your routines. (Mother of Craig, 5 years)

Keeping the situation as normal as possible worked to reduce the impact of the earthquakes as frightening events. One mother, used to earthquakes in her native Japan, relativized any potential danger by saying the earthquakes were not exceptional:

Ah, it's/we—I don't feel any shock because I am from Japan. So I told my daughter like, not to worry. So, we are just normal... Like it's normal. It's not big things. (Mother of Sarah, 9 years)

The benefit of normality or getting back to non-disaster functioning was also helpful for the parents, as illustrated by this father:

...just keep going and the frequency has dropped away. But getting normality and I've got a new normality... In 2011 there wasn't a lot of that. (father of Neil, 15 years)

Parents, who could adapt, be flexible, and keep a normal routine, modelled this for their children. Alan's mother explains that work and life goes on:

And we said to him. This has changed and this is damaged but—we need to fit our jobs in around that. (Mother of Alan, 10 years)

Similarly, the ability to move beyond the events and have a forward focus has been described as an effective strategy (Bonanno, Pat-Korenczyk, & Noll, 2011). Abby's mother talks of getting on:

A couple of more nights with us is fine but they're gonna keep happening so it's back to your own room... (Mother of Abby, 10 years)

This strategy of “getting on” with recovery, by using stability, distraction, and getting back to routine appeared a positive influence for the children (and became a coping strategy for some (see Chapter 4, p. 133). These parents had sufficient capacities to adapt and be flexible in their management of the post-disaster situation. Flexibility has been noted as an effective coping skill (Westphal, Seivert, & Bonanno, 2010), particularly as the demands of a post-disaster situation are diverse, new, and often unpredictable.

Studies have demonstrated that parents who were able to adapt routines flexibly were contributing to potentially positive outcomes such as a positive adaptation from their children (e.g., Osofsky, Osofsky, & Harris, 2007; Osofsky & Osofsky, 2013). Parents who imposed routines rigidly may have demonstrated parental distress, or a lack of diversity in coping skills. This can be mirrored in their children (Kelley et al., 2010), and was seen in Gaelle's and Ann's parents.

In summary, children's coping was influenced by their parents' coping assistance and supportive behaviours. The majority of parents interviewed appeared aware of and focused on their children's reactions, and were able to fulfil their parenting role albeit in heterogeneous ways. Almost all parents actively tried to temper their distress and negative emotions so as to protect and support their children by limiting stress, a finding confirmed in related research (Hafstad et al., 2012). The present study also supports findings such as those of Osofsky & Osofsky (2013) who underline the core role parents take in protection and modelling effective coping behaviours for children who are traversing a post-disaster situation.

Children's coping strategies for positive adaptation appeared to be promoted by parenting focused on post-disaster support such as coping assistance, protection, and reassurance. For example, parents modelled and coached effective coping behaviours such as self-regulation, problem-solving and positive reframing that research suggests stimulates an adaptive response to the stressful events (Compas et al., 2001). Equally, parents were watchful of their children's reactions but not overprotective, and often encouraged strategies focused on recovery such as encouraging children to be “getting on” (see Pippa's parent above). When parents'

copied appeared effective, the *way* the strategies were employed was similar to that of children coping effectively. That is, strategies appeared to be pertinent to the challenge, and coping repertoires were used flexibly.

A body of research has linked sensitive and supportive parenting as one element of a positive adaptive outcome for children (Kronenberg et al., 2010; La Greca et al., 1996). Parents who appeared to promote their children's adequate coping were sensitive in that they accurately understood their children's level of comprehension and evolving needs.

Parents may not always be accurate in their assessments of their children. Some parents held beliefs about the children's developmental capacities and this influenced how they accessed and reported the children's coping strategies and capacities, as well as how they assisted those children. Within the cohort, some parents held the belief that younger children understood less, which may have inhibited the child's potential coping capacity:

With his age, he doesn't understand a lot of it. (Mother of Connor, 10 years)

However, most parents in the present study adapted their parenting style to meet the diverse reactions of their children to the disaster, and focused on their children's actual needs and capacities.

Additionally, effective parent behaviours re-established an environment that positively influenced children's effective coping and adaptation. Parenting in the present study that supported children's positive adaptation incorporated most of the five elements thought to be necessary for effective post-disaster supportive interventions (Hobfoll et al., 2007): re-establishing a sense of safety, calming, encouraging self-efficacy, connectedness, and providing hope that all would eventually be all right.

If parents' behaviour positively contributed to the children's capacity to cope with a disaster, children's behaviours also appeared to influence their parents. The present study suggests that effective coping in parents may reinforce effective coping in children in a positive feedback loop. The relationships in the study confirmed research suggesting the parent-child relationship is bi-directional (Edelstein et al., 2004), and that children's coping style may also affect parent's coping style (Seiffge-

Krenke & Pakalnishkiene, 2011). This was also true of parents and children not coping effectively.

Although parents themselves were not being investigated by the present study, parents' discussion of their children revealed that parental assistance and responsiveness was in part dependent on a parent's level of well-being and distress. If parents are experiencing distress, as were a minority in this study, they may have been less able to function in their role, and/or their reactions may have worried their children. This is consistent with research on parental distress and capacity to support (Banks & Weems, 2014; Hafstad et al., 2012; Kerns et al., 2014).

Parental influences can promote children's coping and positive adaptation, but they are one factor in children's capacity to cope with disasters. The following section discusses some of the other influences in the children's close family context that promoted or inhibited the children's coping.

Siblings, Extended Family, and Family Pets

Within an ecological model, different family relationships interrelate and influence each other. Influential proximal relationships are reported in disaster developmental research where children's multiple attachment links with caregivers are discussed (Masten & Obradovic, 2008). The present study identified certain proximal relationships: siblings; the extended family; and domestic pets that had an influence on the child's ability to cope and adapt to the disaster.

Siblings

Just as children observe coping behaviours in parents, they could also observe coping behaviours in their siblings. Children were able to socially reference adaptive sibling responses and to obtain coping assistance. Ted describes what happened after an earthquake occurred, when he and his two older siblings were at school. Ted sought their contact but also noted their different reactions:

Yeah, some were scared. So, when, when it [earthquake] happened—I went over to room five and Rachel [sibling] cried but Lee [sibling] didn't. He wasn't afraid. (Ted, 5 years)

Ted links his siblings' coping to their emotional reactions and is able to reference (i.e., check another's reactions to decide how one should react) his brother who was managing his emotions. Ted reported that he didn't then cry either.

Siblings exhibited a diverse range of children's responses to the disaster. In his family of three brothers, Craig could reference several responses, some of which demonstrated ineffective coping. Craig's mother explains:

Actually of all of them, Craig has probably been one of the best ones. Not the most affected by it. Probably M, who has just turned seven—he's probably the one we've noticed the effects the most. (Mother of Craig, 5 years)

Several parents and children described the mutual support siblings gave to each other. For example, Cody checks in with both parents and a sibling after an earthquake:

I woke up then too and went into my mum's room and to see if my little sister was alright. (Cody, 10 years)

Although limited, studies have examined the mechanisms of how sibling relationships influence each other in a disaster context. It is argued that siblings may be an alternative supportive relationship when parental relationships are lacking, as they provide a possibility of distraction and affection (Parke, 2004), as well as older siblings being able to impart knowledge to younger siblings. Siblings fulfil this compensatory perspective when "emotions and behavior in one family subsystem compensate for the emotions and behaviors in another family subsystem" (Hakvoort, Bos, van Balen, & Hermanns, 2010, p. 183). For example, older siblings may be family members who take responsibility for younger brothers or sisters in a stressful event, when parents are ineffectual or absent. Ryan, the eldest in a family of four, explains:

Last year in the June one, we were left here [at school]. They [the parents] didn't worry about it. They thought we'd be able to handle ourselves. And I

wasn't really worried. They [brothers] were running around—a bit worried... and I just helped them and told them, 'dad will be on his way. We'll just wait in the office – ok.' (Ryan, 10 years)

Ryan stood in for his parents, and reassured his younger brothers. He modelled effective coping and may have been a model of effective coping for them.

The children who mentioned siblings identified the sibling relationship as influencing in a positive or negative way their disaster experience (e.g., “we look after each other”). It is perhaps the quality of the sibling relationship that affects the influence on another rather than the relationship *per se*. In non-disaster research, stressful events can be moderated by sibling relationship quality; if a sibling relationship is positive it can be a buffer against stress caused by challenging life events (Gas, Jenkins, & Dunn, 2007). Hakvoort et al. (2010) discuss the compensatory effect of one warm supportive relationship, such as a sibling relationship, which can have a positive spill-over effect onto other relationships.

However, sibling mutual support and assistance was not identified by all of the children in the study. Many did not mention their brothers or sisters. This may in part be that there were no probe questions for siblings in the interview questions, or that the children did not have siblings. Also, Nygaard, Jensen, and Dyb (2012) in their study of Post-Traumatic Stress (PTS) in siblings following the 2004 Indian Ocean tsunami, found that siblings' influence on PTS symptoms did not differ from those of randomly selected children that were proximal, and suggested that family and family member influences may not be as significant as research has mentioned.

Nevertheless, several children discussed feeling responsible for their siblings during earthquakes, a role that could be both stressful and provide feelings of self-competence, if the siblings felt supported and competent see Ryan (above) and Sarah:

... if it happens, I always try and find my brother, if he's ok. (Sarah, 9 years)

A minority commented that their siblings were not a positive influence in a stressful situation. Ann talks of how it was at school after one of the earthquakes when it was her brother's friend, not her brother, who comforted her:

'Cause last year, my brother was still there...he actually didn't care, but he had a friend called James and he, he always used to always comfort me instead of my brother. (Ann, 9 years)

Ann came from a family where relationships appeared not to be enabling or supportive, where her mother was unaware of her daughter's heightened anxiety. This example suggests that families who were not functioning optimally, as in the example above, have members who may not be aware of each other's needs or be mutually supportive.

In the present study, siblings appeared to be a potential source of mutual support when the family was functioning effectively as a group system, and could 'stand-in' for absent parents. Significant others were also influential in facilitating children's capacity to cope and adapt; many children mentioned their extended family as having an impact on their experience.

Extended family.

To fully understand a child's coping strategies, it is necessary to see a child's experience within their cultural framework. A family system sits within its cultural context, which influences and is influenced by the individuals within it (Bronfenbrenner & Morris, 2007). Within the cultural context of the present study, the immediate family nuclear unit was the key family system for most of the European-NZ cohort. However, two participants in Christchurch spoke of their particular cultural context of collectivism where individuals see themselves as closely linked to collectives (e.g., family, tribe, nation). Children in the cohort from Māori or Japanese cultures viewed their family as including the extended family members (Hamamura, 2012; Moeke-Pickering 1996). For example, Cody was from Māori culture, and he talked of his extended family—his whanau. For Cody, going to see if his extended family were all doing well was intimately linked to his own well-being and that of his immediate family:

...we went round to see all the family. To see if they were all right and they were all right, so then we got over it in the next few weeks... (Cody, 10 years)

Similarly, Sarah and her mother from Japanese culture were at ease with the family sleeping arrangements of mother and children sleeping together. Her mother explained this as a common occurrence in Japanese culture, and something that gave them support. Sarah felt secure enough not to wake for aftershocks, when sleeping with her mother and brother:

We always sleep together. So—and sometimes in the night time, sometimes small shaking [aftershocks] but my daughter don't wake up. (Mother of Sarah, 9 years)

Sleeping together as a family was culturally acceptable and may have provided Sarah with a safe and secure context that promoted her coping.

For many children, including those living in a nuclear family situation, the extended family of grandparents, aunts, uncles, and cousins was a social resource of potential support and distraction, especially when the extended family was cohesive. Fifteen year old Brooke's mother describes their move to Christchurch to be closer to the extended family, a move she sees as positive for the family:

...so we sold up and shifted and um, the kids have had a great time because they are close to the grandparents and cousins... we support each other. (Mother of Brooke, 15 years)

Brooke's extended family was a source of support and distraction for her and her nuclear family during the disaster. For example, Brooke receives support from both her mother and grandmother:

I normally talk to Mum and Granny, so...um, just that they support me. (Brooke, 15 years)

This mutual support is consistent with research suggesting bi-directionality in family and extended family relationships, such as the grandparent/grandchild relationship (Hayslip, Blumenthal, & Garner, 2014). Children's effective coping and adaptive functioning appears in part buoyed by their inter-dependent relationships which provide many supportive and protective functions (Gil-Rivas et al., 2004). Given the bi-directional relationships and the family as a system, research needs to examine the overall emotional family climate to understand how support unfolds for the children (Gil-Rivas & Kilmer, 2013).

The disaster may have had a positive effect on some families. The present study found that families and extended family who were functioning adequately, reported becoming more cohesive in the initial weeks following the first earthquakes. Joshua's mother talks of her son's pleasure in having grandparents staying:

And I had my mum and dad staying at our house, because they were flooded out, so it was like a party at our house...oh grandma and granddad are going to come and stay— and so he got quite excited. (Mother of Joshua, 5 years)

The extended family is reported as a known and largely supportive element (Lustig, Weine, Saxe, & Beardslee, 2004; van Wesel et al., 2012), promoting effective coping and facilitating support or distraction. The present study supported this finding particularly when the family appeared to be functioning adequately. However, the constructive nature of relationships within the larger family was not limited to the human members. For some children, in the post-earthquake environment, their domestic pets were important.

Family pets.

In families where pets were part of the family system, animals appeared to promote coping in several ways: they gave comfort, a feeling of safety, distraction, and their care afforded a sense of competency. Craig explains the bi-directional supportive relationship he has with his dogs, linked to safety and protection:

...me and my dogs made a safe spot when there's an earthquake...we look after them [the dogs] and they look after us under the table. (Craig, 5 years)

Craig has a sense of competence in being able to look after his dogs as does Brooke:

...after all the earthquakes we went to Granny's place. She's got a Siberian husky. She's like lost without me. (15 year old Brooke)

Pets have been associated with “stability, companionship and security” for children, during disaster situations (Travis, 2014, p. 135). Pet relationships are culturally defined. Research in countries where pets are part of the culture has suggested that loss of pets may affect children's response and recovery from disasters (Osofsky &

Osofsky, 2013). In the United States, Hall, Ng, Ursano, Fullerton and Casper (2004, p. 368) state “close to 100% of today’s pet owners identify their pets as members of the family”. The literature notes the importance of the animal-human bond, demonstrated by the number of people who refuse to evacuate during a disaster if they cannot take their pet (Heath, Kass, Beck, & Glickman, 2000).

In the present study, parents were aware of the pet’s role within the family and how this could be a positive element within the family:

It gives the kids something—they think ‘well, we’ve got to look after Beth and Dale [dogs] as well now too’. (mother of Craig, 5 years)

The dog’s scared of earthquakes ...and the kids are quite good because they pat her... taking care of animal is a positive distraction. (mother of Elise, 9 years)

Studies quote children talking of pets when discussing self-care activities following feeling upset (Gaffney, 2006). This was supported by the present study. One child stated he thought of his pet dog during the earthquake in order to reduce his distress (see p. 110), and when ten year old Lucas is asked what works for him he talks of his cats:

One of them, the black cat is particularly scared of the earthquakes....MM: If I asked you what works best, when things are not going too well, what could you say to me? L: um, (pause), stroking my cat. (Lucas, 10 years)

For some children, like Lucas, taking care of their animals provided them with an activity that took the focus away from the disaster and was soothing.

Chapter Conclusion

Although much disaster research to date has focused on children’s trauma and how close relationships such as parental functioning exacerbated or reduced post-traumatic stress in their children (Gil-Rivas & Kilmer, 2013; Saylor et al., 2003; Scheeringa & Zeanah, 2008), the present study reveals that relationships and behaviours within the family system can equally promote effective coping and adequate functioning.

Children's coping capacities depend in part on the resources available to them (Grych et al., 2015). A strength of the present study was the inclusion of data from both children and parents, which revealed multiple elements of how external resources may promote children's effective coping. The children were supported in their coping by assisted coping, protection, support, and parenting sensitive to their ongoing needs. For the children who appeared to be coping effectively and adjusting well to the situation, their relationships within their family system, whether with their parents, siblings, extended family, or pets were often reported as positive and enabling resources.

The present study supports research that suggests children's capacity to cope and adapt is in part influenced by their family's ability, especially the close parental figures' capacity to cope effectively with the disaster (Hafstad et al., 2012). Also, findings support research that highlights the importance of secure attachment relationships for children, as well as the capacities of children's caregivers (Borelli et al., 2010). (e.g., secure attachment relationships promoted and enabled children "going to someone"). Findings from the present study support research that the experience of disaster may increase the bonds between family and in the family system (Wooding & Raphael, 2004). Awareness of cohesion was mentioned by several participants in families who appeared able to cope with the disaster.

Proximal relationships appear to be bi-directional, and of mutual influence (Morris et al., 2007; Power, 2004). These relationships are enabling when functioning well but may exacerbate difficulty when disaster stress is not being managed. The minority of children who were struggling reported dysfunctional or inadequate interpersonal behaviours, as well as higher distress levels in both the children and their family members. Not only was the proximal system of family and extended family influential in promoting or inhibiting coping for children in the present study, but interactions with people and places outside the larger family domain were found to have an effect. The following chapter will focus on the children's ecology outside the family and extended family

Chapter 6: Close Community Influences on Children's Coping

I think that familiarity and consistency and that the rules stay the same every time...helps them [the children] so they're not predicting all the time. It makes them feel a lot safer. My children in this class are quite settled. (Teacher, of children in Year Five, aged 9/10years)

Community: People and Place

The children experienced the disaster within multiple nested contexts or ecologies (see Figure 8, adapted from Bronfenbrenner & Ceci, 1994). Whether proximal or distal, these contexts influenced how the children coped. The different systems and layers in the community appeared to interact and have an effect on children's coping capacity. The children's community context is the focus of the present chapter.

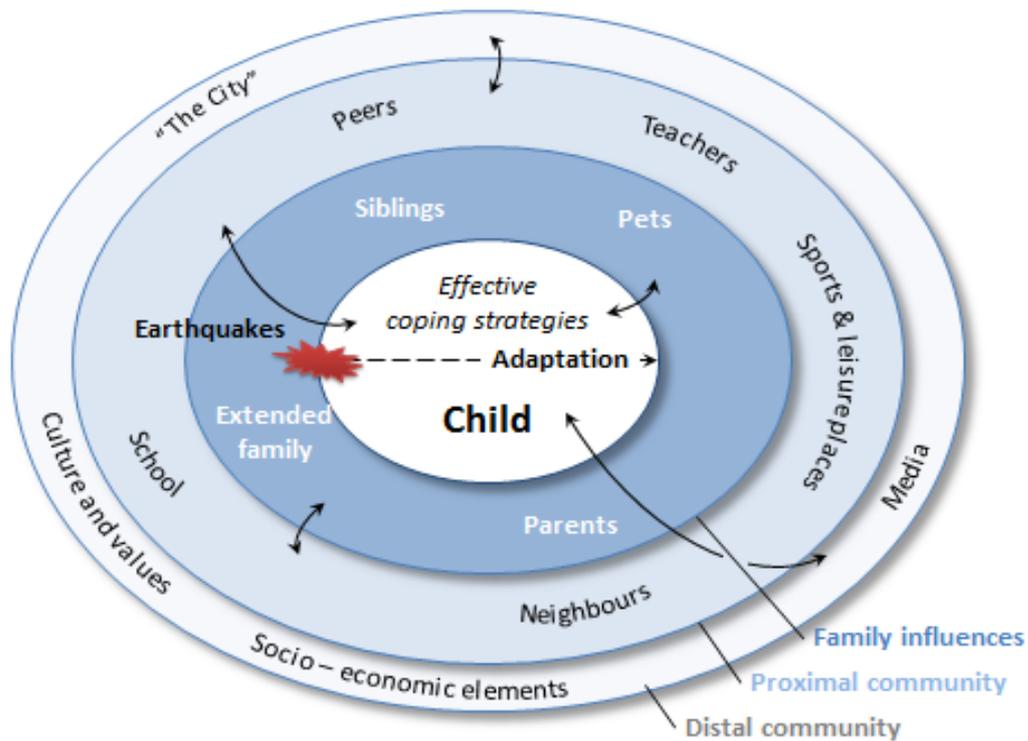


Figure 8. Children nested in their ecologies

Disasters affect a whole community, albeit to varying extents, resulting in children and their community needing to cope inter-dependently and collectively with multiple stressors. Disasters create damage and disruption to the physical and social

community in which children live, to their homes, schools, neighbourhoods, social networks and community infrastructure. Damage and consequences have repercussions on macro-systems, such as socio-economic factors, culture, and values. Policies and socio-economic variables influence the children's world. However, community contexts of children are often under-researched in psychology research on adversity. Shinn and Toohey (2003, p. 427) have termed this a "context minimization error" where the influences of community are not examined for the influence they have on children's behaviour. Findings from the present research aim to lessen this gap, by examining the influence of community factors in children's effective coping.

Community context: restraints and resources.

Although much disaster research focusing on children continues to emphasise children's own capacities to cope and adapt, the children's cultural and community settings facilitate or impede positive adaptation (Shek et al., 2003; Ungar et al., 2013). For example, their families may have experienced job losses, complex insurance claims, or have benefitted from local resources and infrastructures that continued to function. These elements influence children's coping capacity.

The community context is important in children's everyday development. Yet, in the post-disaster context of the present study, the community context was damaged. The negative consequences of the disaster may have impeded children's coping. For example, before the disaster children had routines and activities in their local community, whether in sport or in cultural activities. Following the disaster, these activities, and associated opportunities for development were curtailed as locations became scarce or overwhelmed. Bailey was not able to interact with his social network or celebrate his birthday in a local venue:

Um, he gets brassed off at times. He wants to do things for his birthday, but that place is no longer there... (Mother of Bailey, 9 years)

Access to community resources such as sports fields and leisure centres, as well as institutions such as schools, hospitals and churches, can impact on the children's ability to deal with events.

Additionally, mobility in the post-earthquake city was more difficult, there was earthquake damage to roads and this was compounded by ongoing earthquakes. Not only the children, but their families and teachers had difficulty in reaching work or leisure places. Relocation to temporary housing during repairs often extended routes to school and work for some of the children. On a more macro-level, media focused mainly on difficulties and as time passed gave less attention to the region, even though earthquakes and disaster secondary stressors like insurance assessments and house damage continued to affect the children and their families. Thus, eighteen months after the most destructive earthquake children and adults continued to recover in a community where country-wide visibility and support diminished.

Although in the post-disaster environment the opportunities for the children in the cohort to practice skills within their cultural or sporting community were reduced, as an example of effective coping, some of the children and adults compensated positively for this limitation in their community by organising community gatherings, continued clubs in private houses and hence experienced cohesion despite disaster consequences. Here is an example from Poppy's swim club:

Like our club has gotten smaller now but people go and we've got less people coming in—a little bit. But we're, I think we're still supportive, like we do chants and cheers together and warm-up and race together. (Poppy, 15 years)

If the community is able to mobilise resources, efficacy of the community may be reflected in the children's capacity to cope well. Criteria for understanding what effective community resources are have been a focus for some disaster research. For example Norris et al. (2008) highlight four capacities in community resilience that would reflect a well-functioning community: economic development, social capital, information and communication, and community competence. Although in the chaotic environment of the post-disaster situation of the present study these capacities were not fixed or stable, children in the present study often reported positive aspects of their community.

Most of the children in the present study did not have to relocate to other communities. They continued to live in their neighbourhoods and local schools. This was a potentially positive factor for the children's recovery as they could discuss

their challenges with known others and continue in their usual learning environment. Norris et al. (2002) note that when earthquake survivors do not relocate, the collective sense of shared community can be a positive element in their adjustment.

Similarly, Aldrich and Sawada (2015) have suggested social cohesion in a community, such as trust and bonding in social networks, appear to support post-disaster adaptation. The present study supported the positive influence of community cohesion; several of the cohort reported that the chaotic aspects of their community situation evolved over time to be less disruptive, and that their community continued to be cohesive and supportive:

You are never alone. We are all in the same boat. You're never going through something that someone else isn't...You just reach out and people are there—and they still are. (Mother of Rachel, 10 years)

As reflected in the quotation, many participants appeared to trust their community and feel a bond with their city.

Neil reports his positive perception of his city:

Christchurch worked together extremely well during the earthquakes, and most people stayed extremely calm, and neighbours helped each other out. (Neil, 15 years)

The disaster appeared to give Neil a feeling of having faced a collective adversity and of being part of a collective identity.

The disruptions to the community were not generalised to all, nor appraised as negative by all affected. This father uses positive reframing as an effective coping strategy and explains his positive view of the rebuild of his city:

I still feel energised about the rebuild. Like, because personally we coped ok...I'm looking at it as an opportunity for the city...I've got involved with is called the Ministry of Awesome...the idea behind it is to try and promote the positive things that are happening in Christchurch already. (Father of Lucas, 10 years)

Lucas' father's positive perception of his community may have cascaded onto Lucas. It is often the perception of a situation that is an enabling factor in whether a child is able to use effective coping strategies and to adapt well to a post-disaster context. Even though the disaster had damaged infrastructures and access to community resources, Abby, who is coping adequately and plays many sports, does not lament the lack of facilities but focuses on new possible locations:

There's an artificial turf, um football field...you can just play for fun or practise. That is quite cool. (Abby, 12 years)

How the community was viewed from the children's perspective had an influence on their coping capacity. In part it was the children's *appraisal* of damage and the rebuild that influenced their reactions.

Community as seen through the children's eyes

A shared adversity and mutual support

Being part of a community was experienced as supportive for many of the children. Findings demonstrated that the children appeared to feel an increased sense of belonging to their city overall:

...just the fact that I was around people I knew and I could talk to people about what happened and all that. And I didn't have to keep it inside...there's always people we have in the family, and someone at school, and even friends at school and the coach. They all just understood in Christchurch because they'd been through it all. (Poppy, 15 years)

Poppy is relieved she can talk to people she knows who have had similar experiences. She reported that this sense of collective belonging helped her cope. Similarly, Angela is helped by her awareness of being connected and part of a population who all have had to face the earthquake challenges:

Knowing you're not the only one going through it and stuff. Everybody had to deal with earthquakes too. (Angela, 15 years)

Pippa describes her positive experience of community support in the immediate aftermath of an earthquake:

There was this one family. She saw I was by myself and gave me a hug and told me everything would be alright and yeah. I had no idea who she was. She was just (pause) lovely. (Pippa, 15 years)

Pippa found resources in her immediate community that bridged the space left by absent family and known others.

Not all identification was easy. Children identified with their wider community and experienced sadness in the face of destruction:

He was ok for most of it [watching the film of the city] and they [he and his father] went down the city mall and he realised what was gone and he got quite upset then. So, um, the loss of the buildings, the architecture... and we talked a lot, said it was ok to be sad. (Mother of Alan, 10 years)

The solidarity and identification with the community, including identifying with place (Scannell & Gifford, 2010), did not just create sadness but also appeared to give the children a motivation to make sense of what had happened, to talk it through, and to get on despite the disaster. Poppy describes how her swim team swam for Christchurch in their competitions:

Yeah, it was kinda—let's go out and do it for them [people of Christchurch]. (Poppy, 15 years)

Poppy's team showed place attachment—the bonding that occurs between persons and their meaningful places (Winstanley, Hepi, & Wood, 2015), and had a determination to support their city. This determination motivated them to give support, and may have promoted their own capacities to get through the disaster. The present study confirmed research (e.g., Flanagan, 2015) suggesting that increased meaning and connectedness occurs when children identify with their larger community. Connectedness has been linked with well-being in post-disaster contexts (Hobfoll et al., 2007).

A community of social capital and local places

The children in the present study, particularly the younger participants, reported their community as a place of people and places they knew. The children's community appeared to be a resource for many of the children. The proximal community such as social networks, places of neighbourhood, school, and community centres appeared particularly influential and were often discussed by the children. The children's social capital appeared to have a definite influence on how the children interacted and processed the disaster. Social capital has been defined as the combination of resources (e.g., from human and network contacts) linked to social networks (Norris & Stevens, 2007). Ungar (2015) includes cultural embeddedness and trust.

One social network reported by the children was that of their neighbourhood. When children had pre-established contact with their neighbours, neighbourhoods and neighbourhood networks appeared to be a source of solidarity and potential support for many of the cohort. Children sought their social networks after earthquakes so as to discuss and to be together:

When we got home [from school after an earthquake]...I think they just like hung around with the other kids in the street and just chatted with them.
(Mother of Gaelle, 9 years)

The physical neighbourhoods in New Zealand often consist of individual houses where families are in close proximity and provide opportunities for contact. Ben is able to play with neighbourhood children despite ongoing earthquakes and his mother is perhaps relieved to know he is with known others and enjoying himself:

I know that the December one [earthquake] that just happened before Christmas—we had family and Ben was across the road playing...children in his class live in our street so they just play all the time. (Mother of Bailey, 9 years)

Ben's routines of play, as well as reliability of person and place had not been disturbed by the earthquakes. Reliability of person and place are noted as supportive of recovery (Hawkins & Maurer, 2011) as they afford a feeling of routine and security in the children's environment. Similarly, Angus' mother had to work at the hospital at nights and his only sibling was far away, but Angus felt secure as

neighbourhood friends were around. He explains he could talk with a friend “because they’re right next door” and that he and his mother benefitted from a close social network that appeared more cohesive in facing a disaster:

My mum has a lot of friends that live close by, which is good...we [neighbourhood] are a bit closer than before the earthquakes. (Angus, 15 years)

Studies note that people report closer ties with neighbours in a post-disaster situation (Kaniasty, 2012; Pujadas, Botey, & Kulig, 2013). Most of the children spoke of increased contact within their local neighbourhood, especially in the aftermath of earthquakes, when neighbours gathered for information or to collect water from emergency water sources.

As the children grew older they often increased in mobility and were able to seek out more distal social contact and support in school (teachers and peers) when needed. This feeling of being part of a supportive community social network was evident with the adolescents who had often formed a social network outside of the family:

I’ve got quite good friends so I could probably go to them as well...it’s probably easy as well that they’ve been through the same experiences I’ve been through...so you’re sort of like a whole group. (Neil, 15 years)

Due in part to the ongoing nature of the disaster, with multiple earthquakes and aftershocks continuing over months, the feeling of solidarity and increased communication within the larger community appeared to continue over some time:

...um, like straight after the earthquakes, weeks after, we were more in contact with people we didn’t know. Like, they were getting to see if we were ok. Even people from other countries [in the city]. We kind of shared stories with others. (Angela, 15 years)

Nevertheless, contact and solidarity with the local community appeared absent or minimal in those families where the children were not adjusting well. Ann, who was referred to specialist help, has a mother who describes their distant relationship with their neighbours:

We know our neighbours but don't have an awful lot to do with them.
(Mother of Ann, 9 years)

Children and parents from the cohort who were struggling rarely mentioned neighbourhood or community contacts, or did not find the support they needed. John and his mother were both struggling to adapt to the post-disaster situation. John's mother was disappointed by her community support:

Yeah, it was a bit of an eye-opener...the support [from her church community] we both received as a result of the earthquakes has been non-existent. (Mother of John, 10 years)

The lack of social network connections in children who appear to be struggling with disasters is reported in research (Kaniasty, 2012; Weems & Graham, 2014). Children such as Ann and John may have been isolated pre-disaster, or unable or hesitant to seek social support. Yet, for many children like Angus and Poppy (pp. 195, 192), proximal neighbourhood and community contacts appeared to promote support and scaffold effective coping. Social support is a known protective factor and associated with positive outcomes in both adults and children (e.g., Brewin et al., 2000; Kronenberg et al., 2010); a protective factor that appeared lacking in children like Ann and John.

Also, the community competencies (e.g., supportive schools with high parent/child interaction, accessible health centres) and contacts may have been a resource for parents who were subsequently supported and helped in dealing with the children. Craig's mother talks of her neighbourhood friends, who gathered together over the recovery period:

Just being able to talk with friends actually. We're all in the same situation... strength in numbers was how we dealt with it. We've all got young kids...everybody looks after everybody... and if you are a bit nervous, it's good to have others there that are ok. They can deal with that child. (Mother of Craig, 5 years)

Many children and parents talked of how friends and neighbours were helpful in providing support, information, and coping assistance when they or others were feeling vulnerable:

...people really did get together and support each other... you kind of got things into perspective just talking to people and working through that.
(Mother of Jack, 5 years)

Neighbours and members of the community were also of assistance when parents couldn't get to their children following an earthquake and thus provided bridging support:

And if Ralph's [father] not home, there were the neighbours—they've been very good. Stick together in that way...at those times [of earthquakes].
(Mother of Nan, 15 years)

Children interacted actively with their community. They also helped and supported members of their community. Helping others gave children a focus and may have taken their minds off the stressful aftershocks:

We've got two elderly neighbours who live by themselves, and the kids are quite fond of them and they were like 'well we've got to go and check on D and P as well'. So that's been another wee focus for them. (Mother of Craig, 5 years)

Helping and checking up on the neighbours, just as they did with their pets, possibly allowed the children to feel competent and active.

Social support was not constant over the protracted post-disaster period. Prior research (Norris, Baker, Murphy, & Kaniasty, 2005; Pina et al., 2008) has reported the erosion of community cohesiveness over time in a post-disaster period. In the present study, many talked of support in the immediate aftermath of earthquakes, but over the extended recovery period, several parents commented that community relationships sometimes eroded when local community members focused on recovery tasks and had less time for social interactions.

A further factor in the decline of community support may be the result of displacement. Due to the damage to housing, numerous children in the present study, in all of the school groups, were displaced at least temporarily until their houses could be repaired. Displacement has been shown to be a negative factor as it

separates children from peers, neighbourhoods and schools (Weems & Overstreet, 2008).

Nevertheless, although some families in the present study had to change homes due to damage, and an estimated 70,000 persons left Christchurch in the weeks following the February 2011 earthquake (Statistics New Zealand, 2012) with 7581 students enrolled in schools outside Christchurch (Statistics New Zealand, 2011), most children in the present study reported not being displaced from their schools or known neighbourhoods, as their schools often had repairable damage. Consequently, one positive factor for the children in this study was the stability of their proximal place of routines and social network, including those existing within their schools.

Living in a multi-cultural community

Findings in the present study support research that highlights cultural influences on children's style of coping and adaptation. Research suggests that children perceive adversity and make their responses within a cultural lens (Lee, Kwong, Cheung, Ungar, & Cheung, 2010) so that coping and adaptation are culturally defined (Theron & Theron, 2013). The children in the present study used their coping and adapted in culturally acceptable ways. For example, several of the children exhibited stoicism. That is, they demonstrated emotional control or endurance (Wagstaff & Rowledge, 2001). Stoicism is "a prominent cultural motif in New Zealand" (Dew, Dowell, McLeod, Collings, & Bushnell, 2005, p. 1193).

Cultural beliefs and ways of functioning appear to influence children's efficacy and effective coping, particularly when these beliefs and culturally influenced behaviours were functioning well pre-disaster (Paton & Tang, 2009). For example Sarah sees herself from a "strong culture". This influenced her responses to the disaster. She said "we are strong". That children perceive and are influenced by cultural values is confirmed in research (Ungar, 2011, 2014; Walsh, 2007; Wu, 2013) and supported by findings of the present study.

In the present study, the children's own coping capacities and intrapersonal resources, their social relationships, as well as their perception of culture, and community capital (e.g., school and leisure centres, social networks, relationships

between community structures) influenced how they coped with the adversity. The children's awareness of their city and the larger societal context increased with age but also arguably with their experience of the disaster and the intense initial coverage by media of the widespread damage to their region. Many children talked of their social network of friends and contacts of their own age that existed in school; peers were an influence in how the children adapted to the situation.

Peers.

The support system that peer friendship provides has been linked to positive adaptation (Fothergill & Peek, 2006; Pina et al., 2008). However, to date there is scarce literature that specifically focuses on the influence of peer relationships in children's coping in disasters, even though these relationships were often recognised by children, parents, and teachers in the present study:

Children are very resilient. And part of that is the friendships they form at school. (Teacher, secondary school)

Parents recognised that peer relationships provide mutual help in processing experiences:

Connor was still really shaken up but she [his sister] had her friend still with her and I think that helped. (Mother of Connor, 10 years)

Peer relationships, were often "going to friends" when the children were coping with problems and may be especially relevant for older children, who have developed a social network. Cryder et al. (2006) found the older children in their six to fifteen year old cohort were more likely to have social support systems of friends with whom they could discuss problems than the younger children in the study. The present study is consistent with this research as the older children mentioned peer friendships as part of their social network more often than the five year old group, who had budding friendships but who appeared more reliant on family relationships. Angela, an adolescent, comments on who she would seek out if she had a problem:

I normally go to my friends, 'cause they're like my age and they're going through the same kind of stuff. (Angela, 15 years)

Both adult and peer support.

The present study suggests that peer relationships may become less prioritised than adult relationships when there is major adversity such as a disaster, particularly in the immediate aftermath. The Christchurch children of all age groups gave many examples of using adults, as well as friends, for support in dealing with earthquakes:

I'd probably say that 'it's alright to be a bit scared but it's alright to be ok if you're staying with your friends or with an adult that you know good. (Cody, 10 years)

There are a lot of people who would help me cope if I started to panic. Especially the teachers. (Neil, 15 years)

In the present study peers were influential in supporting children's adaptive functioning but took a secondary role in earthquake events. Reliance on close adults rather than peers is consistent with the limited body of research that examines the influences of social relationships in disasters (Quota et al., 2008; Yu et al., 2010). This literature suggests that adults, such as teachers and adult members of the extended family, may become the preferred social reference persons for children when they are experiencing major adversity.

Referencing of adults in the present study may be due to the exceptional and unknown nature of the disaster experience. The children may need both explanation and support from adults. In contrast, the children in the Wellington (Wn) group who did not have to deal with major challenges gave more examples of referring specifically to peer relationships for help:

...like if you go to some friends and they give you advice...they give me more options of what I should do and then they help me select the right one. (Lahiru, 15 years, Wn)

Peer support and assistance.

The children in Christchurch referenced their adult social network, but continued to interact with peers over the recovery period. Peer relationships were often a

continuing potential source of support. When asked what helped her manage the disaster situation, Kayla says contact and discussing with close others:

Friends and family—talking. (Kayla, 15 years)

Peer support was acknowledged from immediately after the earthquakes, when adults were not present:

...so basically we all stayed outside [in the school grounds] and stayed together—keeping each other company. (Blake, 15 years)

And peer relationships were influential over time:

I got a friend in my class and he usually relies on me so, I'd rely on him. (Alan, 10 years)

Often there was mutual support. Being with peers allowed the children to talk through and process their experiences:

If you were freaked out you could tell them [friends]. And they would possibly be able to help you. (Neil, 15 years)

In a situation of disruption and disorganisation, peer relationships were a reminder of stability and routines:

Like, we knew each other. We're together all the time, like it was like a routine, do something regularly together... Like we had no school, but we'd just go swimming, or go to each other's houses and hang out. (Poppy, 15 years)

Peers often used social media and texting to continue support when they were not physically together. For example, during night earthquakes, they would text each other:

Um my friends text and say 'are you ok?' and I say yeah. (Brooke, 15 years)

When the internet was functioning, social media extended the children's capacity to stay connected 24/7, to give and receive support.

Peer relationships not only were a source of support and assistance, they also provided the children in all age groups with respite through distraction and play. Respite that reduced stress and increased children's sense of well-being. Brooke's friends "take her mind off it" and Amelia describes her friend's play following aftershocks:

...and C and me, ah we just sing songs and we just dance and use our scooters. (Amelia, 5 years)

Interestingly, in the disaster situation, peers mirrored in part some of the roles and activities found in caregivers: that of support, reassurance and assisted coping:

I'd be a bit scared but I'd know what to do because I'm under the table with most of my friends and they're helping us through it. (Cody, 10 years)

Peer relationships provided assisted coping, such as in emotional regulation:

It was quite scary because we were stopped at the lights and there was about a 5 [earthquake] and the bus went like...um, we all kind of screamed a bit and we all like, calmed each other down. (Abby, 10 years)

Elise's friends promote her coping by reframing the situation positively:

Well, they [friends] say um it's ok. Nothing's happened. We haven't gotten hurt. (Elise, 9 years)

Nevertheless, peer relationships reflected once more the interdependence of proximal relationships which could be positive or negative:

...you've got many variations. From calm to panicky and it's the calm ones who help the panicky ones to keep calm. (Blake, 15 years)

Interestingly, children in the study who were coping effectively were more likely to have a group of peers who were also coping well:

...it's good my two friends now. One is from Iran and one was born in New Zealand but is from Australia. 'Cause I know they're not going to cry, 'cause they're strong as well...just like me. She's not scared of anything—like going to the toilet by herself. (Sarah, 9 years)

As much research has historically focused on trauma and risk factors, the influence of positive peer relationships has not been fully examined. In the present study, having peers who were coping well and being part of that particular group appeared to increase feelings of competence, and provided occasions to observe effective coping and adaptation.

Findings of the present study extend current understanding of the supportive roles peers can undertake in disaster situations: providing support, assisted coping and distraction. The present study suggests that positive peer relationships may enable more robust coping and positive adaptation. Much of the peer interaction occurred within the children's close community context of school, which had an influence on children's coping.

The school institution.

The present study suggests that within the multiple, interdependent, systems that constitute the children's recovery environment, the capacity of the school systems to adapt to children's needs in the radically changed disaster context was an important element in enabling the children to cope. Research has highlighted this element by suggesting that to fully understand the influences that promote adaptation in children, it is necessary to explore the important systems in the children's context of the classroom and the school (Peek & Richardson, 2010).

The children coping adequately appeared to perceive their community (including their schools) as a resource they had access to. Perceptions of local environments affect reactions (Moser, 2009). The school institution was perceived as important by both children and parents:

The school has not only been stable, but provided him with another positive support around him. (Mother of John, 10 years)

In normal circumstances schools can be both challenging and enabling places for children. Challenging as schools are places where children may have to manage bullying and address academic demands. Enabling in that schools provide a place for children to learn both academic and social skills. Masten and Narayan (2012)

underline that a well-functioning school institution fulfils several roles, such as connections to competent adults, opportunities for children to demonstrate prowess, and the opportunity to interact with peers. These roles are reflected in Lucas' comment on school:

Um, quite fun. Um, I guess just getting to play a lot of fun games with little kids...adults coming from a different school to watch what we do [in this programme]'cos they're thinking about doing it...(Lucas, 10 years)

Lucas, whose school described him as academically able, spoke of taking part in a leadership activity which included facilitating social relationships with the younger students. This activity, ongoing in the post-disaster period, appeared to engender distraction, confidence, and possible recognition from visiting adults (interested in examining the activity), all of which may have promoted his capacity to cope.

For both the Christchurch and Wellington children, in the best of cases school provided a known place of routine where for many hours weekly they were developing skills, keeping focused on tasks other than disaster-related or daily problems, and being able to be with friends:

When you're at school you don't think about it [problem] so much cause you've got work to do and...and you've got friends here to talk to. (Caitlin, 9 years, Wellington)

Schools in the disaster context.

Re-establishing routines and stability.

When disaster strikes, schools take on additional roles and can become what Fothergill and Peek (2006) have described as one of the cornerstones of recovery. Schools have been linked with reduced stress and the move towards recovery (Norris et al., 2002b; Kronenberg et al., 2010; Ungar, 2014).

Restoration of schools' functioning is recognised as an important aid to children following a disaster (Ager, Stark, Akesson, & Boothby, 2010), as it gives a signal

that normality is being restored. It also demonstrates an aspect of community competence (Norris et al., 2008). That schools provided routines and stability was reflected in some participants' comments stemming from school closures:

Last June a big earthquake happened and school closed quite a long time: one or two weeks. Of course they must check all the buildings but it quite a long time it closed that school. In Japan, maybe school doesn't close [so] children thinks it big thing. (Mother of Sarah, 9 years)

Nevertheless, despite closure to assess damage, schools in the study reopened quickly after most earthquakes. For the children (and parents) their school being open was a sign that danger had lessened and reassured them. Most children appreciated the return to stability and routine that school provided, as well as the possibility of social contact with peers:

I kinda enjoy it [school]...more than home because you just stay with your brother and they don't do stuff you want to—like [with] your friends. (Sarah, 9 years)

Routines evolved within the recovery period to reflect the school's coping strategy of "getting on". As the earthquake sequence diminished, activities such as school camp outings were reintroduced:

There's probably a lot of things we're gonna do this year...we might go on trips. (John, 10 years)

As time passed the schools were able to interweave disaster preparedness with everyday events so that preparedness became routine and encompassing. A policy appreciated by Elise's mother:

...they've [the school] tried to keep things as normal—so they've still gone on the school trips. And built in the earthquake preparation as part of the—so we know they're prepared and where to pick up the children if necessary. (Mother of Elise, 9 years)

The return to the usual school events appeared to engender hope that the situation was returning to a more normal pattern. Hope has been signalled as an element that

supports recovery and is linked to agency and a sentiment of self-efficacy in both individuals and in the community (Hobfoll et al., 2007; Norris & Stevens, 2007).

The school community also provided opportunities for the children to participate in age-appropriate, adult-guided activities that promoted coping, and to benefit from ongoing support. For example, five year old Ted had lived with earthquakes since he was three. He had been strongly affected, with recurring nightmares. His mother relates that the school helped him to “turn a corner”:

And I would say a lot of it is to do with school...It's brilliant. A very warm, family, community environment. It's very calm and fun over there in room B, so it's all going really well. (Mother of Ted, 5 years)

Schools are amongst the most commonly stated supportive and protective environments following a disaster (Wolmer et al., 2011).

School as a place of safety, efficiency and reassurance.

In the often chaotic and uncertain post-disaster environment, the schools were a familiar place, a place of safety, solidarity, and relationships for both children and parents:

...she knew the place. It was like a second home to her. And we'd chat when I picked her up. They were like family to me as well. (Mother of Amelia, 5 years)

Schools enabled children's significant others to concentrate on recovery by providing parents with time to focus on post-disaster tasks and ongoing daily challenges. Knowing their child was at school was associated with relief and reassurance for parents as they felt their child was safe:

...but I knew they'd be safe at school so I wasn't that worried. (Mother of Jack, 5 years)

The perception of safety was communicated to the children and associated with school. Alan's mother discusses how she reassured her son:

...we wouldn't let you go to school unless we felt it was safe and teachers knew what they were doing. (Mother of Alan, 10 years)

Safety was important for the children and allowed them to feel reassured. When they associated school with safety, being at school enabled them to react and cope from a secure base:

Well this is a really good school and they have good safety... I can just sit back and relax at this school. (Ryan, 10 years)

The perception of a sense of safety has been noted in research as a factor associated with reduced distress and less post-traumatic stress symptoms in children and adults (Bryant et al., 2007; Ozer, Best, Lipsey, & Weiss, 2003). The school was often perceived by the children who were coping effectively, as a structurally safe place:

...and our building will never fall down. It's a safe building to be when there's an earthquake. (Craig, 5 years)

Perception of safety varied and depended in part on the children's perception. Here John is convinced he is safe:

...we had to go to the hall, so we—because the hall can't have any cracks. It's a strong building. (John, 10 years)

When children perceive themselves as belonging and connected to their schools they benefit from a school's safety and efficacy (Kia-Keating & Ellis, 2007). Ryan feels his school would cope and that he is part of a system that functions well:

If there was an earthquake, they [school staff] would hustle all the people outside. Yeah. And they just cope with all of the children at the school. They do it really well. (Ryan, 10 years)

Perception is also coloured by the children's capacity to cope. Ann, who was not coping effectively, did not perceive her school as a safe place. She could not feel safe and continued to worry and experience distress both at home and at school:

I only feel a little bit safe—but I know it [hall] won't fall down... it's gonna be ok but it looks like it's going to fall down...the cracks worry me. (Ann, 9 years)

Research suggests the settings, and interactions between settings of the child's social and physical environment (home, school, sports arenas, etc.), have an impact on how the child can effectively adapt (Fothergill & Peek, 2006). When the settings are stable, and provide a safe and supportive environment, they meet the children's needs and promote effective coping (Ungar et al., 2013). The present study supported this interaction between children's settings particularly when the children were not struggling. Findings suggest it is the settings but also the child's perception that define influence.

Similarly, parents' perceptions of the school setting influenced their children. Craig's mother describes her positive view of the school's organisation, which she may have transmitted to her children:

That the children are safe. That they will do anything for them, so, you know, I'm not worried about that aspect of things...tarpaulins to sit on, 'dressing the chair' with 'grab and go' coats, kids facing outwards away from arriving, possibly worried parents. (Mother of Craig, 5 years)

Schools in the study prioritised children's needs in the disaster and post-disaster context. This was understood by child and parent:

School was amazing...put their own families and homes and things on hold to put the kids first...clear and positive message. (Mother of Alan, 10 years)

Schools understood children's needs, such as the positive effect of connectedness and organised the children to be together in times of stress post-earthquake:

They, um took us to the new big hall...well, I just think it's better to be together than separate. You know where everybody is. (Rachel, 10 years)

The schools accepted their role as a place of social contact, reassurance and support throughout the disaster and recovery process. Children were aware of this:

Personally I like being around a lot of people in a high kind of stress situation 'cause you feel that you are not alone in it and you feel you've got other people to back you up if you're starting to uh, feel freaked out or something. (Neil, 15 years)

Being able to connect with others promotes the capacity to cope post-disaster (Hobfoll et al., 2007). Schools understood that connecting with others allowed the exchange of practical information and also support in coping strategies from problem-solving and emotional management to normalising of reactions. For example, schools enabled contact with siblings, present at the same school, so that family connections were re-established as quickly as possible. Rules became flexible so as to accommodate needs: children could go to classes of siblings following an earthquake, and carrying cell phones and phone contact with parents was also allowed:

...cell phones in their bag [pause] weren't allowed but they do now and that's peace of mind for me, as well as for them. (Mother of Harrison, 10 years)

During the disaster schools increased skills. The schools became more efficient at enabling communication and providing supportive information both for parents and children:

When there's a big one [earthquake] the school lets me know straightaway. A text goes out to say the children are safe, when I'm at work. A big peace of mind. (Mother of Rachel, 10 years)

The schools used website posting of information, and set up texting trees to alert or reassure parents after the earthquakes. John's mother explains:

Um it was also brilliant because I got a text message from his teacher um to let me know that J[son] was ok. And then text me again to let me know my mum had picked him up. (Mother of John, 10 years)

Also, schools provided reassuring feedback after earthquakes:

...we did have a meeting shortly afterwards when the school opened up again. They've put a lot of thought and they just reassured us in what they have done and things like that. Yeah and they kept us informed of what they were doing. (Mother of Craig, 5 years)

Schools were aware of needing to reassure both children and parents. All schools in the study communicated that they were structurally sound when the children returned

after major earthquakes. Abby talks of her school as endeavouring to re-establish normal routines and discuss safe structures:

...try and make it normal again. Um, they talk to us occasionally and when we've come back to school—that it's alright because the buildings are standing. (Abby, 10 years)

Parents had information not only on closures and reopenings but on whether the children were doing well:

I've really liked that the school has done is [laughs] connected to twitter...you'll get a message on your cell phone saying 'all the children in M [school] are fine'. It's been peace of mind, reassurance. (Mother of Harrison, 10 years)

Children were aware of planning and knew when and where their parents would come. The interconnectedness of school and family systems, when functioning effectively appeared a resource; two important structures for the children were functioning well together.

Schools modelling coping and source of supportive interventions.

As well as providing a safe, functioning environment, the school was often able to model effective coping. They employed strategies such as “keeping calm”:

The Deputy Principal shouted through the megaphone, because some started to panic because of another aftershock, and she shouted “we are ok!” and the kids all giggled, ...and having someone on the gate to kind of diffuse—just bring the parents down [calm them]. (Mother of Ted, 5 years)

Modelling calm may have helped to diminish hyper-arousal and promoted a state that enabled more constructive coping. Harrison explains the school's instructions as he states the calm way the children need to proceed:

...just get under the table, and once it was over, just line up outside and then walk to the court. (Harrison, 10 years)

A teacher comments:

They [the students] actually saw this [the school] as a place of structure and calmness I think. I think, had there not been school, I think it would have had a much more significant effect. (Teacher, secondary school)

One school activity operating pre-disaster promoted the capacity to regulate emotion. Part of the children's feeling of calm may have resulted from their feeling of efficacy, stemming from a rehearsed and well known drill response that they repeated throughout the extended earthquake sequence. Following a national plan, the schools had established disaster preparedness drills that had often been repeated before the disaster happened. The children therefore knew what to do (see also p. 119). Amelia explains that her classmates had practised drills and knew how to react:

They have to [do the turtle drill] at kindy or pre-school. Their teachers taughted them so we don't need a practice. (Amelia, 5 years)

In the disaster situation, these drills became automatic, the children's knowledge cascading onto to all environments. Here at home:

They did the drills quite a few times after February so they knew what to do. It was right on lunchtime the day of the earthquake and they just all got down as turtles. (Mother of Sophie & Holly, five years)

Parents felt the disaster preparedness and safety procedures were positive and affirming for their children, giving a message of efficacy and hope:

...safety packs for all the kids with message "we can get through this". (Mother of Connor, 10 years)

Research suggests that disaster preparedness activities underpin an increase in children's skills and perception of efficacy (Ronan & Towers, 2014) although further research on long-term effects is necessary (Ronan, Alisic, Towers, Johnson, & Johnston, 2015).

Schools undertook activities that enabled connectedness when the children returned to schools that had been temporarily closed for earthquake damage assessment. Being part of a group within the school enabled the children to process their experiences and ease back into normality:

I think just being round people kind of and the first day back like, we kinda sat and you could kind of talk...ease us back into—yeah I was with people again. (Nan, 15 years)

Telling and listening may have enabled the children of all age groups to feel their responses were ‘normal’ or shared and to hear from others how to manage. Several schools actively instigated discussion, as the children returned to classes after the major earthquakes:

After February [earthquake], the first day we came back, we spent an hour, an hour and a half, just talking about everything...the whole school did it but it was in individual classes...knowing that other people like, weren’t doing quite as well, and how they were getting through it as well. (Pippa, 15 years)

Or there was discussion when earthquakes occurred at school that promoted understanding and coping assistance:

Um, I was holding on to the leg of our desk...um, but after that it was almost time to go home, um well, we talked about it [earthquake], then we know how to do/deal with it. (Ted, 5 years)

Findings support research suggesting that discussion in a safe and protected environment, when well facilitated and not forced, can be positive in allowing children to process events and feel solidarity in their group (Mutch, 2013; Openshaw, 2011). The school, incorporating a known place, with a social network of teachers and peers provides an environment that is conducive to both disaster preparedness and disaster response activities.

Specifically related to managing disaster related stress reactions, several schools in the study instigated programmes designed to provide support and coping skills for the children in processing their experiences. For example, a school-based programme such as ‘Stormbirds’¹⁹ adapted from the Australian bush fires, was mentioned by several children and teachers in two primary schools. Abby describes how she learnt that she could “get back up” after adversity by thinking of the bounce back doll:

¹⁹*Stormbirds*® is a small group program that is based on the belief that change, loss and grief are a normal and natural part of life.

...and that was about changes and getting through it, and this year it's more about changes. We've done one thing—it's the 'bounce-back doll'...and we thought you do! You get knocked down and get back up. (Abby, 10 years)

Cody, who experienced a (M_w) 4.6 earthquake during the research interview, managed to stay calm and says he was not one of the children upset, because of the programme:

... Um, it's just for you to write down your stuff that you need to know and you don't have to share it if you don't want to. (Cody, 10 years)

A teacher mentioned that the programme seemed positive for some of his students; the enabling aspect of helping process emotions continuing over to a new school year:

[the children were] helped by Stormbird programme. Helps them talk about their emotions. Some learnt—you could see [it] this year. (Teacher, Year Five)

Present study findings support research that has focused on the value of school-based support programmes after traumatic incidents. Findings suggest that the programmes can alleviate children's distress and support them in their adaptation to their new situation (e.g., Cohen & Mannarino, 2011; Openshaw 2011; Ronan & Johnston, 1999; Ronan et al., 2015; Wolmer et al., 2011). Both children and parents in the present study, who mentioned such programmes, described benefits in assistance with their own coping and adaptation. Additionally, these programmes provided occasions to hear how others were dealing with the situation and hear diverse coping strategies being tried (e.g., humour). Also, children requiring more specialised assistance could be identified during the programme by teachers, who were facilitating the programmes. All schools in the present study organised referrals to known specialist structures within their community.

Schools as a community resource.

Schools were a community resource. Even when closed temporarily for damage assessment, some schools remained an important community institution for

connecting the local population by providing extra activities specifically focused on post-disaster needs via basic needs, sports, and social events. Angela reports on how the school was helpful for her by providing basic needs such as food, and allowing time to be with her family:

...like we went to school for groceries and stuff. And they gave us some time off so we could be with our families. (Angela, 15 years)

Another school continued to provide the community with a meeting point, games and sports, which provided continuity of routines with known teachers, facilitated connectedness, gave information, and provided distraction:

...they [the school] ran activities down at the local park. Teachers playing games with the children so we all still came together...get some routine back. That life is going to move forward, kids got to talk to their friends straightaway. (Mother of Bailey, 9 years)

Several schools in this study provided places of community assembly and connection to compensate for the closure of, or to diminish the effects of damage to local community structures, such as sports fields, leisure centres, and other schools. For example, one school provided site sharing for another badly damaged school by reducing time for their school activities to mornings and welcoming the other school for the afternoons. This meant that children from both schools could continue their education and have ongoing routine and support. Although an added strain, it appeared to enable the host school children to feel they were contributing to other children's access to education. It gave many, like Poppy, a feeling of self-efficacy as they were completing their curriculum in reduced time:

We shared school with Lincoln so we had um, half-days. We had the morning classes [Lincoln had afternoons]...we were all like focused and let's get this done and go... I think we were pretty good at coping with the time frame and the lessons. (Poppy, 15 years)

Despite real difficulties stemming from the disaster, such as damage to buildings, site sharing, and increased demands on the school's roles within the community, the school appeared to be a place of routine, normality and positive experience for many of the children and parents in the Christchurch cohort. Schools often provided

support to children by responding to needs and scaffolding capacities and coping strategies so that all could respond more effectively to the demands of a disaster situation. No child or parent discussed the schools as a negative institution. The emotional connections that persons form with places that are especially important to them (place attachment) (Hildago, 2013) may have promoted the children's coping capacity, particularly if they identified with the school as an institution effectively managing the situation.

Research has suggested that a trusted source of information is a vital community asset in a disaster setting as it enables the population to respond effectively (Norris & Stevens 2007; Paton, 2013). The trust in the school institution was demonstrated in the participants' comments and the way several parents and teachers used the tips on the Ministry of Education website to assist them in their approach to supporting the children in exceptional circumstances. In the post-disaster context of Christchurch, schools were appraised by the cohort as a physically safe place, as well as a source of social contact, and support. Notably, schools were the site of the teacher relationship, often cited as a supportive and positive element in the children's coping.

Teachers and principals.

Teachers.

As important as the school institution is in itself, the teachers, principals, and counsellors were particularly influential relationships that affected children's capacity to cope in all three age groups²⁰. Few studies have focused on how teachers support children following disasters. Yet, teachers are with children for long periods and can be the only adult present during earthquake events occurring in school hours:

...very frightening for them, there were lots of tears, and they were holding on to me. I couldn't even get beneath the table on February the 22nd [major

²⁰ Three ages groups in the study are: 5 year-olds (Year Zero); 9/10 year-olds (Year Five); 15/16 year-olds (Year Eleven).

earthquake] because I had all these appendages that were holding on to me.
(Teacher of 5 year olds)

In the present study, teachers were interviewed so as to understand their assessment and perspectives on the children's coping. Teachers were aware of the disaster's effect on themselves and their students, both in the immediate aftermath of an earthquake and over time:

I'm a very positive person, take things as they come and I'm a problem solver and I get things done and I know, just this term really [17 months after the February 2011 earthquake], I have started to feel my own personal wheels start to get wobbly...If I'm feeling like that, I can only think what these kids, who are—have got immature minds to deal with things and shelve things in a way that makes sense to them. I can just imagine how tiring it is for their little brains to try and make sense of it all. (Teacher of 9/10 year-olds)

Teachers: source of safety and proximal support

The children often spoke positively of the teachers. Abby explains that the teachers are important for her to feel safe:

As long as I have my teacher around, I feel safe and stuff. (Abby, 10 years)

And teachers were aware of providing a safe environment:

The three teachers in this Year [Year 5] class—we worked on making the children feel safe. That was good. (Teacher, of 9/10 year-olds)

Even though some teachers had their own children, they stayed at the schools with their classes after each of the numerous earthquakes until parents could collect children:

We were really impressed by the way it was managed. L's teacher, he had a young baby...but he held it together enough for some of the parents to arrive.
(Father of Lucas, 10 years)

In the present study situation, the vital proximity to family members was lacking when the earthquakes occurred during school hours, resulting in a delay in making family connections:

She had fantastic teachers at pre-school and they're all so supportive...the fact that the teachers stayed there, when they had their own families to go to, and it took me two hours to get there you know. (Mother of Amelia, 5 years)

With the damage to road access, parents often took hours to reach their children in the schools [immediately following major earthquakes], and although some parents were able to have phone or text contact, many of the phone systems were overloaded and unavailable. Such a delay has been reported as a risk factor in disasters (Rubin, Brewin, Greenberg, Simpson, & Wessely, 2005). Parents and children reported appreciating teacher presence and support:

I know that the biggest majority of the staff at the school have children of their own but they still stay with our children. They don't go looking for their own. So—that's huge. (Mother of Harrison, 10 years)

Children realised that their teachers put them first and would stay with them:

And when earthquakes happen, teachers can't go home until the last child's picked up. (Connor, 10 years)

Considering the importance that the children in the present study gave to seeking support from adults in a crisis, this knowledge of being a priority for their teacher was reassuring for the children and gave them some security in a threatening situation. The proximity to close others has been identified in disaster research as a positive element for children (Hagan, 2005). Teachers' presence provided a "bridging person", enabling the child to have close proximity and connection to a known adult. This was an enabling resource for the children and may have promoted their coping strategies of seeking support, information, and reassurance, from a trusted adult.

Teachers as known, often trusted, adults were able to reassure the children. They were also the source of trusted information and clear communication. When asked who she would talk to, Elise mentioned friends and her teacher:

Well, sometimes I just talk to my friends and my teacher...She tells us that there's nothing to worry about and that everyone will be alright. (Elise, 9 years)

Children accept information and support more readily from trusted others (Koenig & Sabbagh, 2013) and research (e.g., Kia-Keating & Ellis, 2007; Pfefferbaum et al., 2014) has suggested schools as environments where children benefit from trust relationships.

Many layers of adult support existed within the schools. For example, some children in secondary schools also mentioned the school nurses and counsellors as trusted relationships for support, especially in connection with specific incidents such as student violence, a student murder, or in loss:

One of my friends was like, threatening to cut himself so I went to see the nurse—no the counsellor, to talk about it and she told us what to do...and we talked about it and went for five or six weeks on Fridays and she helped us through it. (Brooke, 15 years)

The majority of children however talked of the teachers as their focal person in their schools.

Teachers re-established routines and provided support and reassurance.

Within the disaster context, teachers filled multiple roles (e.g., protection, assisted coping). Reflecting their knowledge of the children's needs, many teachers recognised the importance of stability and routine in the midst of ongoing stressors and changes to their environment:

They're just getting on with it...after those initial couple of weeks of February, they got back into school then everything was back to normal for most of them...They just wanted normality and they just seemed real keen just to be at school and do their work. (Teacher of 9/10 year-olds)

Teachers actively worked to provide this stability and routine:

Well I guess it's normality—structure, normality, and routine is essential for most people. Particularly young people and this [coming to school] was their opportunity for familiarity and structure. (Teacher of 15/16 year-olds)

The present study suggests that stability and routines provided by rapidly reopening schools, and teacher emphasis on regular structure was a positive element in promoting the children's recovery. These elements have been signposted in research (Ager et al., 2011; Masten & Osofsky, 2010).

Another enabling element for the children was the support they received from teachers who were aware of their role:

You know what your job is, your job is to help and support. (Teacher, of 9/10 year-olds)

Teacher support was also available to those children who left Christchurch for temporary respite. One mother describes the teachers in her son's new school:

All the teachers were very supportive...the teacher in Oamaru where he went to school was amazing. (Mother of Connor, 10 years)

For many children, but also for parents, teachers were significant and supportive others. This teacher assumes a supportive role in her way of alerting the parents to school reopening after an earthquake. She adapts rules to needs:

...that was why I did phone people and I did say so we are opening [after an earthquake] and...come in, do you want to look at the classroom, do you want to stay, that's ok with me. (Teacher, primary school)

Teachers reassured their students. Reassurance, as discussed previously in sections on parents (see p. 171) and peers (see p. 202) is often linked with protection, and is an enabling factor in supporting coping. Craig explains this reassurance and protection for upset children after an earthquake:

They sit by Mrs W [the teacher] and they get to sit on the teacher's chair. (Craig, 5 years)

These children are reassured by the proximity and presence of their teacher, who manages to keep calm and demonstrates understanding of their needs.

Teachers and assisted coping.

Children referenced their teachers to know risk as well as to see how to respond:

They [the children] look over at me and I'd be like (laughs and looks nonchalant) 'nothing to worry about' and they have a giggle and they get on with their work. You cope with it in a very sensible, controlled, calm, collected manner...you just have this calm, collectedness of 'this is what you need to do and we'll do it calmly and quietly and methodically'. (Teacher of 9/10 year-olds)

Most of the teachers were able to model effective emotional regulation:

I've had quite a few aftershocks [earthquakes] with teachers and stuff. They remain calm and that's good 'cause you almost see them as role models and when they're calm you almost feel you should be calm...It can help other people that maybe aren't. So everyone feels sort of more relaxed or something. (Neil, 15 years)

When teachers modelled a calm response they assisted the children in multiple ways, not only to manage their emotions but also to perceive an earthquake as not necessarily life threatening. This reframing of risk as manageable may have diminished the children's anxiety and promoted the children's sense of facing a challenge rather than a threat. As well, the children may, like Neil, have been able to mirror the teacher's calmness and feel some self-efficacy themselves in coping with earthquakes. Staying calm is suggested as diminishing the child's level of anxiety, and preventing worry from generalising to other areas of their daily lives (Weems & Overstreet, 2008). Teachers in the present study often adapted their behaviours in an attempt to promote a context of effective coping:

I can stay poker-faced quite easily...I didn't want to scare the children. (Teacher of 9/10 year-olds)

However, children were only empowered by teachers when they perceived the teacher's reaction to be realistic. Ten year old Alan was not reassured by his teacher, who minimised a strong aftershock:

He [the teacher] said it was nothing! But, you know, it was pretty big. (Alan, 10 years)

So, children's appraisal is a factor in teachers being an enabling element. Children were able to recognise which teachers had difficulty coping and so were not a source of support and coping assistance for the children. During one aftershock, Brooke describes her teacher's reaction:

And my teacher was scared. (Brooke, 15 years)

Brooke herself was often fearful. She may have modelled her fear response, in part on that of her frightened teacher, or may have projected her fear onto her teacher. Nevertheless, most of the teachers in the present study were reported as able to regulate their emotional reactions and be sensitive to the children. When trusted and realistic, they were seen as able to manage the situation and enable coping in the children.

Teachers promoted coping skills in various ways. This teacher focuses on increasing the class knowledge about earthquakes:

I also think that knowledge is power so I've done a little study on earthquakes...so I'm just trying to give them connections and a context, you know. (Teacher of 9/10 year-olds)

Here the teacher was providing earthquake information in a safe environment, where questions were encouraged so that a fearful phenomenon could become more of an understandable hazard. The sharing of clear information may have increased the children's sense of working out what to do and of competency— "I know more now"²¹. Research has suggested that teachers assist children in processing events (Baum et al., 2009; Russo & Boman, 2007) as they operate within the children's zone of proximal development.

²¹ Theme in problem-solving coping discussed in Chapter 4.

Additionally, teachers adapted teaching materials so that the children could problem-solve around the changes brought by the situation:

Obviously social studies are a great context... I'm their form teacher and I can relate it [the post-disaster situation] back to coping with change. (Teacher of 15/16 year-olds)

Teachers also practised and modelled positive appraisal as a coping strategy:

Relatively my home and family were ok compared to others... All that came to the front. (Teacher of 15/16 year-olds)

Other teachers modelled coping strategies linked to having some control or agency, and to managing and "getting on":

You deal with your right now...you don't think, you just keep going forward. (Teacher of 9/10 year-olds)

Teachers, in their daily coping, were modelling efficacy and demonstrating that they and the children might belong to a group that would have positive outcomes and could cope with the situation. Self-efficacy is linked with positive outcomes (Bandura 1977; Benight & Bandura, 2004):

If there's a significant event, we'll just have to deal with it. (Teacher of 15/16 year-olds)

Teaching coping skills to adolescents has been shown to be effective (Goenjian et al., 2005). However, the present study demonstrates that coping skills can be coached in all age groups. (see Chapter 4).

Positive cascades appeared to occur between coping assistance from interpersonal others (e.g., teachers) and children's coping skills and adaptation. The present study supports the suggestion that interactions between coping strategies can have a cumulative, positive effect (Skinner et al., 2003). This interaction may have been reflected in the overall National Certificate for Educational Achievement (NCEA) examination results, evaluated by the New Zealand Education Review Office who noted that NCEA result for Christchurch school children (Years Eleven-Thirteen), were some of the best in New Zealand in the year of major earthquakes (2011).

Results reflected the investment of teachers and the children's academic coping capacity and motivation within a challenging situation. This teacher had several students who were in the top 10% of national results for their portfolios:

That is as bad as it can possibly get and I still managed to get students past their [exams]. (Teacher of 15/16 year-olds)

Many teachers were able to use their coping skills in a flexible manner so as to more easily adapt to the major and diverse changes in the post-disaster context. In this they provided a positive model for their students:

I'm adaptable to change and so for me it was perhaps easier to cope with all the changes that were happening. (Teacher of 15/16 year-olds)

Contributing to coping in their students, teachers generally co-ordinated and modelled specific disaster-related behaviours and became efficient in the use of drills:

We now know protocols. If there's an aftershock, people know what they need to do: get under the desk, wait for instructions, we have compassionate text for the family if you feel the need to... We've adjusted as a staff to have systems in place in the event that there are further earthquakes. (Teacher of 15/16 year-olds)

Children could see their teachers as competent leaders. Amelia relates how her teacher matter-of-factly responds in an earthquake:

Then one of the teachers called Becky [pause, as drawing]. I'll tell you what Becky says. She says 'earthquake' [said slowly and clearly] and then all the children go under. That's just what we need to do. (Amelia, 5 years)

Empowering relationships have been discussed in relation to parents and extended family (Chapter 5) but also occurred with teachers. Children, who have competent adults in proximity have a resource to support their capacity to cope effectively. Children could observe teacher efficacy, effective coping and benefit from their support. The children were able to feel part of a successful drill response, and possibly in consequence more confident in using their own coping capacities.

Teacher's knowledge of the developmental level of the children allowed them to adapt their words and behaviour to fit the children's capacities of understanding. Here the teacher of the five year old group, following an earthquake, calmly gives concrete, simple instructions to her class:

Right, now we are going outside Room B. You are OK. I am gathering up people's sweatshirts, we are making a line, we are walking outside. (Teacher of 5 year-olds)

In the more complex terms appropriate to adolescent and adult levels of understanding, a secondary school teacher explains his leadership role of portraying strength and capacity during a crisis:

I think what was positive was that they really understood what a community—a school community was. The pulling together...my role as a teacher to communicate a sense of strength and confidence. (Teacher of 15/16 year-olds)

Teachers and disaster specific behaviours.

Teachers, similar to parents, actively adopted specific behaviours useful in responding to children experiencing the exceptional nature of a disaster such as monitoring and acceptance of children's reactions. For example, they showed a watchful awareness of the children's state of mind and accepted and normalised reactions:

Till the earthquakes there was pretty much a sense of certainty in their lives: they came to school, they eat their lunch, they hang out with their mates...but now, the door just has to bang...it's that flight or fight that's more at the surface...some kids deal with it really, really well um, some kids don't. (Teacher of 9/10 year olds)

Many of the teachers, who knew the children reasonably well, were monitoring for any changes:

I'm privileged in that I'm their form teacher and so I monitor them every day. (Teacher of 15/16 year-olds)

A small body of research has suggested that teachers are in fact a community resource for assessing children exposed to disasters, and are often as accurate as mothers in predicting adjustment (Widyatmoko, Tan, Seyle, Mayawati, & Silver, 2011).

Teachers were not only able to monitor the children in order to assess needs; they adapted so as to be more flexible with behaviours they accepted in the classroom:

I continued to let the children have some space when I could see it was too much. I let them have 10 min breaks...I was able to go 'this lesson isn't working, they are not emotionally right for today'... (Teacher of 9/10 year-olds)

Teachers recognised effective coping in their students and condoned it. Here a teacher allows humour as a coping strategy in a student:

My older boy in the June one [earthquake] shouted 'we're under attack!' and the teacher didn't tell him off about it. They all kind of laughed afterwards and that was quite nice. (Mother of Ted, 5 years)

The same teacher adapted teaching techniques so as to involve the children:

I've noticed, the children they get tired a lot faster...takes a lot more to get them engaged in learning, and effort from me and I tend to be much more dramatic in the classroom to really get them hooked. (Teacher of 9/10 year-olds)

Another teacher was aware of relocation and disruption in the children's lives and relaxed her demands:

It's hard for kids because they're not coming from as much stability as they're used to, and if home repairs become a problem or they're tired from staying all together in a hotel room [while houses being repaired]...so I guess again you've got to be a bit looser. (Teacher of 9/10 year-olds)

Teachers not only adapted their manner of teaching, they were more sensitive to subject areas in the post-disaster environment:

I think it's about having the support and about the discussions...so it's not really changing what we are teaching, but the delivery of it. (Teacher of 15/16 year-olds)

The adaptation of teaching style and schedule was commented on by all of the teachers in the present study. For example, one teacher who normally would move around when reading, learnt to stay still, as one child was very sensitive to the floor shaking when anyone moved.

Interestingly, the teacher-child relationship was bi-directional, both mutually influencing one another. For example, one teacher asked her class not to jump around, as she too was sensitive to shaking for some months and her students were able to calm their behaviour down for her:

I was able to say to them that they couldn't jump around me as I was really sensitive to shaking. They understood this. (Teacher of 9/10 year-olds)

Teachers were observers of recovery. They noted an evolution in the children's coping capacity and adaptation. There was a slow improvement in those initially stressed:

I had a couple of children who were profoundly upset and then as the year rolled that became less and less and less. (Teacher of 9/10 year-olds)

Some teachers explained this was due to fewer aftershocks:

As the ground calms they [the students] calm. (Teacher of 15/16 year-olds)

Yet, teachers were also aware of needs and that children remained affected by the situation, but in a different way:

Yeah I'd say more tired now than last year. The adrenaline's gone now and it's the aftermath I guess. And they're trying to get back to normal but they're still a bit wired without realising it. (Teacher of 9/10 year-olds)

Teachers commented that the parents who were coping effectively also had children who were coping well with the situation:

I firmly believe it was how the parents dealt with it at home...those parents that you know, gathered up the family...get the torch, you know the survival thing. I think those kids did very well. (Teacher, primary school)

Many teachers felt the children's coping reflected the capacity of their parents to deal with the situation. Nevertheless, the teachers who were with the children for hours, five days a week, also played their part in facilitating the children's capacities to cope.

Teachers adapted their teaching over time to reflect the change in children's needs:

I think we try and present business as normal as much as we could...went through different phases. The crisis point...and subsequent phases...sometimes exams can go on the back-burner. Let's ride the storm. Let's provide some distraction. Some learning. (Teacher, secondary school)

Teachers as facilitators of school-based intervention programmes.

As well as adapting their teaching methods and contents to respond to the children's needs and scaffold children's coping, specific supportive programmes (see pp. 104 & 212) were facilitated by some teachers, who took on this additional role:

Yeah and we had a support programme for some of the kids called Stormbirds...And just ways to relieve stress and things like that. So, it was good. (Teacher of 9/10 year-olds)

These programmes focused on promoting effective coping as well as relieving stress. Teacher-delivered supportive interventions can be helpful to children as they are able to hear diverse reactions from peers, and note acceptance of these reactions by the teacher which can normalise reactions. Rolfsnes and Idsoe (2011), in their meta-analysis of school-based intervention programmes for children following trauma, argued that school-based professionals such as counsellors or teachers can be successful in facilitating interventions.

However, not all teachers are able to facilitate such programmes without the necessary additional training. Other research has highlighted that teachers feel uncertain about providing support to children after potentially traumatic incidents,

and may benefit from training and support (Alisic, 2012; Russo & Boman, 2007). Findings from the present study support additional support and supervision for facilitators of the programmes.

Interventions to support teachers' coping skills, and expand their knowledge of what assists children's positive adaptation, have been suggested as constructive (Baum et al., 2009; Russo & Boman, 2007). Not all programmes in the present study were for children. Some focused on promoting how to react to children in disasters. The education system was supporting parents and teachers in managing children within an exceptional situation. The benefit to teachers and parents would have potentially had a cascade effect on the children. For example, teachers commented on specific programmes, some organised by the Ministry of Education:

In September they sent us on a course and we had people...on how to deal with our parents and what we need to watch for in our children. (Teacher and mother of Bailey, 9 years)

As has been discussed, these programmes were well received by both children and parents. This is consistent with the research which has underlined the potential of psychosocial programmes having a positive effect on children's post-disaster recovery (Peek & Richardson, 2010; Pfefferbaum & Shaw, 2013; Wolmer et al., 2011).

Although the present study focuses on elements that promote effective functioning and adaptation in children, it is necessary to note that teachers lived within a community affected by the disaster, and they too experienced definite strain and distress that lasted during the recovery period:

It's draining trying to be normal but realising it is not quite that normal...now we're back to, I don't know, nose to the grindstone...normal expectations are back when the environment is not quite normal. (Teacher of 9/10 year-olds)

Providing a supportive class environment comes at a cost in the post-disaster context. Teachers are only able to promote effective coping in children when they are not overwhelmed by their own distress. As a group, teachers not only had to continue their teaching work, and often their family roles, they also supported their classes, while dealing with ongoing disaster consequences such as house insurance,

damaged transport access, and changes in class profiles. Nevertheless, many teachers in the present study made an effort to protect their students when they dealt with their own stress:

I think I'm fine under pressure and then later, when no-one's around then I [get upset]...I have someone at home. So that's fine. (Teacher of 15/16 year-olds)

This prioritising of children's need was protective for children.

Despite the added burdens resulting from the disaster context, several teachers noted that there were positive consequences from the disaster. They talked of more cohesion in their teams, more peer support and more collaboration in the teacher community throughout the city:

In our layer of teachers, we're very close now and we want to make sure each other is ok and we're really a tight bunch...it's really brought us a lot closer. (Teacher of 9/10 year-olds)

This increase in teacher cohesion and co-operation was positive for the children.

Additionally, teachers reported positive consequences of the effect of the disaster for some children, who became more responsible and gained skills:

Empathy, resilience I guess. Um, being flexible...I know that giving them that responsibility in a time of uncertainty is— has made them step up. (Teacher of 15/16 year-olds)

In sum, many teachers were able to provide the children in this study with support, protection, and a perception of safety and calm. From their awareness of the children's developmental levels, they were able to assess the children's reactions, understand needs, and adapt their schedules and manner of teaching. Through their own coping they often provided models of coping and coping assistance (e.g., effective emotional regulation during aftershocks) for children and parents. Within their teaching role they provided stability and normality.

This concerted approach by the teachers and school staff supported children's coping and adaptation, and may have given children hope that their teacher and school were

functioning adequately so that recovery was a possibility. When functioning well, as when the quality of the teacher child relationship was that of a trusted other, the teacher appeared an enabling resource for the children in their post-disaster context both in providing a positive reference, and in acknowledging when children were coping effectively. The present study also highlighted that school principals were a further resource for the children. They appeared to promote children's and teachers' capacity to cope well.

Principals.

Leadership and support.

Principals of all participating schools in the present study were interviewed. They provided an in depth understanding of leading and organising a school during the disaster:

I think we managed it well as a school...in a crisis situation...people want some certainty because there is so much uncertainty and they want some decisions. (Principal, 15/16 year-old group)

Effective leadership of schools had a positive cascade effect of supporting the children. Principals focused on priorities:

We don't want to use the earthquakes as an issue for underperformance um, you have to have priorities and you have to target certain areas. And I suppose our view was to do less but better. (Principal, 15/16 year-old group)

The focus on, and knowledge of, the children allowed principals to prioritise children's needs and offer support:

You have a duty of care first to the children whom you are working with. (Principal, 9/10 year-old group)

Principals set limits and realistic goals. For example, cancelling non-vital meetings or extra-curricular activities, in order to alleviate the workload of the teachers:

We pulled back on all of our professional development, we pulled back on meetings and it was interesting because I said – I do not want to see people

here early in the morning, I do not want to see people here late at night or late. I want you to be looking after yourselves. Do what you need to do for your classroom and not anything extra. (Principal, 9/10 year-old group)

These measures of concentrating on the essential and alleviating teacher workload may have had a positive effect on both teachers and children, in that the school continued to function well with routines and academic achievement but with less pressure.

Principals were a supportive influence for teachers support and coping:

On the very first day, before the students came back, we used the hall and just over a hundred staff, we used this huge circle and we went right around the circle and it was just an opportunity to, to, for every staff member just to tell a wee bit about their experiences. (Principal, 15/16 year-old group)

For the majority of principals, there was a positive appraisal of their own ability to get through the situation:

...we just carry on...even though we've got all that other stuff happening. (Principal, 5 and 9/10 year-old group)

Principals had awareness of their leadership role:

I also have a professional responsibility to keep my eye on the ball and to keep students, staff and everyone else informed. To make decisions you know, around the school and it was key to have a strong team around me. (Principal, 15/16 year-old group)

Principals' effective coping, competence and leadership was appreciated by the teachers:

There was enormous appreciation for the Principal for his leadership. I think he came through enormously. He did well, good leaders communicate. (Teacher, 15/16 year-old group)

However, not all principals or schools were functioning adequately in Christchurch. Several principals in the study were members of the Primary Principal Association²² and worked together on peer supporting networks for schools and principals in the city such as the following:

I'll be advising the Ministry of Education and the Methodist mission on a wrap-around service for 30 schools which are out in the east [of the city]...which will be great because they'll have a key person who will do all that, who will contact social worker or a psychologist... (Principal, 9/10 year-old group)

Children would have benefitted from improved school functioning and leadership.

Because of the principals' place in the educational system, organisational issues and Ministerial demands were often experienced as stressors:

The powers that be are saying, right, our focus for this year is boom, boom, boom, charters and national standards, and there's no understanding that my charter is very low priority for me...I don't want sympathy, I just want people to be aware, whilst the roll numbers might have gone down, the needs are going up. (Principal)

Principals stated that they were both supported and challenged by their contact with the Ministry of Education. Bureaucratic demands can be an added stressor when the school system is under strain. When dysfunctional or excessive, the demands may filter down and inhibit the children's adaptation. For example, Gaffney (2006) discusses the negative effect that cumbersome bureaucratic structures had on inhibiting professional help for children after the 9/11 terrorist attacks in America. Within the present study there were added demands (e.g., charters and national standards) but also resources from the Ministry of Education. For example, several parents, teachers and principals, commented on the useful tips on the Ministry website.

²² Group of principals, who promote research and skills, and support other principals through information, mentoring, and peer support.

Within the disaster context, despite added stressors, principals adapted their role and management. They actively put in place measures that enabled the school and the school population to function adequately in the circumstances:

You are managing your staff, managing your kids as well as managing the parents who were arriving...And then we set up a system where I would ring the team leaders and they were expected to ring their teams and check in with them...we put in place a lot of emotional support. (Principal, 9/10 year-old group)

By promoting measures of emotional support, the principals supported well-being not only of teachers but ultimately of pupils and their parents:

The well-being of my pupils, my staff and my parents is my priority. (Principal, 9/10 year-old group)

The principals, like many other adults surrounding the children, kept a watchful awareness of needs over time, whether it was for staff or student:

One of the systems we had in place was that myself, my Deputy Principals and two of my deans would get into the classrooms every day and we still do that now...all we're doing is checking the pulse. (Principal, 15/16 year-old group)

Principals not only supported staff but worked with the teachers to provide a positive environment for the children:

I encouraged our committee to do lots of silly things. You know, to just keep the laughing and the humour and stuff going...and trying to just focus on the kids and keep them going. (Principal, 9/10 year-old group)

Like parents and teachers, principals too modelled and taught effective coping strategies (e.g., positive reframing, effective problem solving, and "getting on") as well as demonstrating a flexible way of using these strategies:

I have a sense of optimism...there is potential in the city...you've got to be flexible. (Principal, 9/10 year-old group)

The principals' coping strategies were multiple and influenced their school environment, as well as the school within its community. This principal works to rebuild and get back to routines:

We were trying to be creative...respond quickly...locally driven...one of the things we noticed after September [earthquake] was one of the best ways, in terms of a coping mechanism, is to try and get back to normality...so, there's a sense of 'we're ok so let's get on and start rebuilding and recovering'.
(Principal, 15/16 year-old group)

As teachers were monitoring and supporting children, principals and their teams were monitoring the teaching staff and offering in-house support:

...so we had support staff out there in classes with teachers so nobody was on their own and I would walk around—just round and round and round.
(Principal, 9/10 year-old group)

The support to staff appeared to promote connectedness and reassurance within the school community. When necessary, principals facilitated professional support, so that teachers who were having difficulties were referred and were not struggling or affecting their class:

I did get that person to go to counselling. (Principal, 9/10 year-old group)

Principals' behaviour complemented the supportive teacher-student relationship throughout the recovery period:

...as a principal, I get a sense of where I need to put in support...Every Monday we have a Deputy Principal/Principal meeting, we go through staff and the children and families and see what stresses are there... regularly scanning our whanau and taking the temperature in all sorts of different ways um then – looking at the best way to support them. (Principal, 9/10 year-old group)

Several schools in the present study endorsed support workshops for staff during this period. Most principals noted that a minority of teaching staff were highly distressed (5-25%). This reported percentage is consistent with research on modelling post-disaster reactions within adult populations (Bonanno, 2004; Bonanno & Diminich,

2013). However, principals also highlighted the coping capacity of most of their staff, which was enabling for the children. Overall, principals emphasised that teaching staff were exemplary in supporting children throughout:

I think a lot of staff put in a lot of extra time and um they came up with a whole range of different strategies to get our Christchurch students through.
(Principal, 15/16 year-old group)

Support within the staff of the school was often bi-directional and so enabling the principals:

I really, really felt this huge sense of support of the staff for one another. More so than I have ever felt in my whole career. You know I really felt I had a real team and a real empathy and understanding about everyone's needs...during this time I felt supported and valued by my own staff.
(Principal, 15/16 year-old group)

Principals work as a community resource.

Principals saw the school as an interdependent part of the community. Principals increased communication with parents and students, and through this increased contact could monitor children's and family's needs. For example, they facilitated community access to other services when necessary:

...being on the phone for four hours the other day trying to get one service for one family. (Principal, 9/10 year-old group)

They adjusted school demands as they were mindful of stressors operating on parents:

...we asked for no money from our parents all of last year. (Principal, 9/10 year-old group)

Alleviating stress was positive for parents, supporting a context more conducive to coping within families.

As a consequence of principals' actions, schools were a place of connection and mutual help. One principal describes a working bee in the school after an earthquake:

It's not actually about cleaning up, it's about the people having the opportunity like they're doing something...that they had a chance to, to dig it [liquefaction] out and people were standing around chatting to each other as well. It was a hugely healthy and productive day. (Principal, 15/16 year-old group)

Principals' awareness of a community's need to be active, participate, and feel competent and connected promoted a sense of community, with the school as a hub. Research on individual and community resilience has highlighted how social resilience develops when collective action is facilitated and encouraged (Kulig, Edge, Townshend, Lightfoot, & Reimer, 2013).

Principals as observers.

Principals had the capacity to observe the children's overall functioning. They were monitoring students. As such they were in a position to observe and report that most of the children in their schools were able to cope adequately with the situation. Principals noted that the copers "were engaged in their learning and able to bounce back" (Principal of 9/10 year-old group), which is consistent with the research (Kronenberg et al., 2010; Weems & Graham, 2014). The children's reported capacity to demonstrate a return to adequate functioning ("bouncing back") may have been buoyed in part by their effective coping processes that enabled them to adapt and show age appropriate behaviours of engaging in their school tasks.

The observation that most children were able to cope effectively is consistent with prior studies (Masten & Obradovic, 2008; La Greca et al., 2013). Here a principal comments on teachers' and students' capacity to cope well:

Overall, the staff have been—and even our students have been remarkably resilient...majority of our students are remarkably calm, settled, keen to be here, keen to get on with their school work...and um, as I say, our negative behaviour and issues, have, you know, decreased. (Principal, 15/16 year-old group)

Interestingly, many teachers and principals confirmed that negative behaviours appeared to decrease in the post-disaster environment. This may in part be due to the

focus of many on coping with disaster challenges and may have resulted from the children's sense of shared community.

One principal felt that experiencing the same disaster increased support and solidarity:

I am talking about relationships between leaders and teachers and between teacher/teacher, between student/staff...this whole real understanding...of all of us being in the same boat and irrespective of your background...as a result of that, you really see the best of humanity...(Principal, 15/16 year-old group)

When the principals were effective in their role, that is, able to lead and manage the school and support staff and students, they provided a context noted in research (Weems & Overstreet, 2008) where children were protected and supported, and could adapt to the situation. Principals, within their role of leader, similarly practised behaviours also found in the parents and teachers of support, coping assistance and monitoring. Additionally, principals contributed to the local community functioning by leadership of an institution that often appeared as a hub in the community, and in so doing contributed to enhancing a positive community context for the children.

Chapter Conclusion

Influence on children's coping comes from all levels: from socio-economic resources and culture, through neighbourhood, family, and peer networks, the classroom, and from the biophysical systems of the children themselves (Hoffman & Kruczek, 2011). Disasters highlight how individual, family, and community systems are interdependent (Masten & Narayan, 2012). Well-functioning social systems and structures are important for children recovering from a disaster. Within the present study, positive functioning community systems and the links between them also promoted critical elements in aiding disaster recovery: safety, calmness, efficacy, hope and connectedness. All of which have been signalled in research (Hobfoll et al., 2007; Norris & Stevens, 2007).

Children identified with their community and community resources and access to those resources promoted children's capacity to adapt effectively and be able to cope well. In the present study, children's social network of extended family and teachers, as well as social relationships with peers and neighbours, provided coping assistance (e.g., calmness and efficient problem-solving), support, protection and connectedness. Equally, community resources of functioning neighbourhood places, school institutions, and local infrastructures appeared to promote the children's routines and sense of safety and security, as well as giving hope that their situation could improve.

Cultural elements influenced which coping and adaptation was deemed effective and recognised in the children's context (e.g., children's capacity to demonstrate emotional control and endure was perceived as coping well). Present study findings support research that suggests children make meaning of their world, the disaster erupting within it, and their reactions, as they live in, influence, and are influenced by their immediate social and cultural context (Ungar, 2008).

When all of the children's ecologies, such as family and social networks, school, neighbourhood, and community infrastructures functioned at an adequate level, then this environment appeared to promote children's capacities to cope, thrive and adapt positively to the post-disaster context. The enabling influence of these elements in the children's context was in part influential because of the children's positive perception of these close community influences. A minority of children did not perceive they were supported by their community and this perception influenced their capacities to cope effectively.

A functioning community is an interactive system that works effectively over multiple levels. However, in a post-disaster context, the interacting systems that are the child's ecologies are continually evolving and changing. The next chapter will discuss how six of the children from the T1 Christchurch cohort demonstrated coping from two time points (17 months and 33 months after the destructive February 2011 earthquake).

Chapter 7: How Coping Evolves Over Time

The earthquakes turned everything upside down but now they're [the children] kind of coping with change and they know what to do.

(15yr old Christchurch student, Time Two)

Temporal Element in Children's Coping and Adaptation

This chapter focuses on the children's experience and effective coping strategies within a temporal framework. The chapter adds to the literature by broadening our understanding of how children's coping may change or adapt, as they respond to an ongoing post-disaster situation.

Much of the research that focuses on how children cope with disasters has been cross-sectional so that findings reflect the children's reactions and their coping strategies at one moment in time. However, children develop and interact both in space and time within their social and physical environment (Bronfenbrenner & Morris, 2007) and their coping strategies are not static but fluid responses to actual unfolding challenges. Research has suggested that a clearer determination of what is effective coping in resilient outcomes can more accurately be obtained by repeated assessments over time (Bonanno et al., 2015).

At the time of writing the present study, there is no known research that examines how children's effective coping responses, as described by the children, evolve over the months and years in a post-disaster context. To address this limitation in understanding of children's coping processes the present study includes an analysis of data collected from two time points in the children's recovery period.

Thirty-three months after the most destructive earthquake (February, 2011), six children from the Christchurch T1 cohort were selected for a second interview. There were almost seventeen months between T1 and T2 data collection. Data from T2 interviews stem from children in each of the T1 age groups: one child is from the 5 year-old group, three children from the 9/10 year-old group, and two children from the 15/16 year-old group. All five of the schools in the Christchurch T1 cohort are

represented. The criteria for choosing these children are discussed in the methodology and method chapter (p. 83).

In T1, after-shock earthquakes were still occurring, but in T2 were tapering off considerably although consequences continued to impact on the children's daily lives. For example, the disaster disrupted a known supportive system in the children's ecology—their social network. None of the children in the T2 cohort had been forced to relocate permanently, but some children reported they had to make new friends and they all knew of children who had changed homes, schools, and consequently social relationships:

There are some people coming in [to school]...they've moved houses. (Elise, 10 years, T2)

The T2 cohort was limited to six children and findings cannot be generalised too broadly from this smaller cohort. Nevertheless, findings demonstrate how coping strategies, as well as personal and proximal resources influenced an ongoing recovery process towards adequate adaptation. All six of the children reported that life was “better” despite a heightened awareness of disaster-related elements in their context.

Things Have Got Better, but a Heightened Awareness Remains

The six children demonstrated that aversive events do have an impact and that recovery takes time. Without doubt disasters provoke stress and distress, and this is true for the children in the present study (see Chapter 4). In T2, the children still had relatively recent adverse experiences in their consciousness, even as they stated that the last year (2013) had been better than the year before:

Like there was a lot of uncertainty [at T1], and now [T2] most of it is sorted out. (Pippa, 15 years, T2)

A general statement made by all six of the children was that life had improved since we last spoke together. The perception of their lives ‘getting better’ is still related to the lessening of earthquake events:

Oh, I've been fine over the last year. There haven't been earthquakes or aftershocks I've actually felt. (Neil, 15 years, T2)

The specific nature of this earthquake disaster resulted in all of the children in the study experiencing strong earthquake shaking, the associated noises, and consequences on repeated occasions lasting over two years. These repeated events influenced their experience, even for the youngest children. Amelia's comment that her "life is better" is connected to the absence of earthquakes. She continues to remember how she reacted in a large earthquake over a year before:

Like—better without the earthquakes...I ran into the spare bedroom [was scared]. (Amelia, 6 years, T2)

Although fear appears to have diminished in T2, memories of recent experiences remain in the children's consciousness and heightened awareness for earthquake signals was still present. For example, sensitivity to earthquake cues was mentioned by one of the children interviewed. Abby explains how she recognises differences in noises. She continues to be sensitive to unexpected sounds ranging from planes landing to sudden sounds in her environment:

...with the airport close and the wind going one way...but you learn to know the differences. Yeah, it makes you more aware though of noises. If someone bumps the table or something. You're just more aware of everything really. (Abby, 12 years, T2)

The stress experienced by these children did not appear to impede their adaptation. None of the T2 cohort reported overwhelming stress. It is noteworthy that all the children in T2 were managing to cope adequately. For example, their attachment relationships (e.g., family and friends) continued to function adequately, and they reported getting on well at school.

In the present study, impact of the disaster was not the only factor that influenced how the children coped and adapted. Exposure to disaster events appears not to be necessarily synonymous to stress (Bonanno et al., 2015) as some children perceive events differently, particularly those children who are not overwhelmed by disaster events. Pippa's positive appraisal was that the consequences were mainly addressed—"most is sorted out".

The children's *perception* of the disaster consequences had an important influence on their capacity to cope and adapt. By T2 the children appeared able to lessen the negative impact of the disaster by perceiving their recent experience in a positive light—"things have got better". This is consistent with research on benefit-finding from adverse experiences (Affleck & Tennen, 1996). Over time, findings suggest that living through the disaster also had positive consequences for most of the children.

We Have Got Stronger from our Experience

In T2 most of the children reported that they had grown stronger from their experience of living through a disaster despite some memories of distress. Abby perceives her experience as having been helpful for future disasters. She now knows how to prepare:

It [the disaster experience] has helped because you know when you go somewhere, you know what you need to, to actually to have to have in case you do need it. (Abby, 12 years, T2)

The T2 children who perceived themselves as stronger or more capable from addressing the disaster events also appeared to experience feelings of competency in addressing present and future challenges. Neil feels able to advise others how to cope:

So I'd probably say, um, ...I'd say the first thing you kinda wanna do is just try and stay calm, make sure your friends and family are ok...remember that you still have all your family and friends with you, all this kind of stuff. That will just keep you—keep the hope up...That's kind of important as well, making sure that you can look forwards. (Neil, 15 years, T2)

Findings suggest that exposure to stress, when it is not overwhelming, may increase children's capacity to address present or future stress. T2 findings support research that having to cope with adversity may strengthen capacity and resources (Hobfoll, 2002; Mittal, Griskevicius, Simpson, Sung, & Young, 2015).

The T2 cohort also noticed that their experience was similar and generalised to that of their peers, who they reported as having improved over the last months. For example, Elise noticed increased positive accommodation in peers coping with earthquake drills:

Mm, last year there were some people who were nervous but they just got used to that. (Elise, 10 years, T2)

This positive adaptation in T2 reported by most of the cohort is consistent with research (e.g., Kronenberg et al., 2010; Masten & Obradovic, 2008) that reports most children adapt adequately over time.

In T2, the children commented that developmental capacities were enabling adaptation. Elise thinks her peers' positive adaptation to their situation is due to them maturing:

I think everyone's ok. So they've just grown up since last year. (Elise, 10 years, T2)

The present study supports research suggesting that natural progression towards maturity that reflects children's development may be speeded up, in some circumstances, by living through a disaster (Franks, 2011). Both the T2 children's effective coping with a disaster and their evolving developmental capacities appear to underpin the children's reported sense of increased strength and competence. It is probable that with time children's maturing developmental processes were coupled with repeated experiences of successful coping when facing the earthquakes, which could have accelerated coping skills. The successful experiences then culminated in a perception of the children's increased capacity.

Research that focuses on children's coping and adaptation over time is very limited. Gan, Xie, Wang, Rodriguez, and Tang (2013) in a quantitative study suggested that adolescents who had been exposed to the Sichuan earthquake in 2008 had more mature cognitive development than their peer cohort, and commented that their developmental processes had been accelerated by the experience. Another quantitative study by Goenjian et al. (2011) did find that adolescents (13-16 years) who had experienced adversity showed higher moral development than their peers, who did not experience a disaster. However, the Goenjian study also noted that the

disaster experience did not only provide a context of positive gain, as adolescents who had lived through the disaster also had higher rates of distress.

The children's perceived sense of having grown stronger from their experience has been mentioned in the scarce disaster research listening to children's voices. For example, Uttervall et al. (2014) found the adolescents in their study felt strengthened, and more able to cope following their experience of the 2004 tsunami. The present study findings demonstrate that not only adolescents but younger children report feeling stronger from their experience.

It took time for some of the children to feel stronger. Findings from T1 and T2 demonstrate heterogeneous recovery pathways of positive benefit from the disaster experience. Some children, like Neil, felt stronger from dealing with the disaster even in T1:

Um, I definitely feel that this experience has made me kind of um, almost kind of like stronger—I've had something happen to me that's kind of, you know, um chaotic... that's completely out of my control, and...I've been able to deal with it and go through with it. (Neil, 15 years, T1)

Other children, like Pippa (see p. 177) adapted more slowly. In T1 she was unable to go out with friends and took until T2 for her to report that she was benefitting from her experience. The present study appears consistent with research on modelling trajectories that suggests most children either return relatively quickly to a positive level of functioning (resilience trajectory), or do so after some months of distress (recovery trajectory) (La Greca et al., 2013; Weems & Graham, 2014). However, by T2 the children not only reported feeling stronger, but also more capable of coping effectively with difficulty.

We may be better at coping now.

In dealing adequately with a disaster context, the children perceived that they had strengthened their intrapersonal capacities and coping skills. For example, all reported themselves as competent and able to cope with challenges:

I feel that this year I have managed to keep up...to do better than expected.
(Neil, 15 years)

Learning how to cope effectively with the disaster and its consequences may have had a positive cascade effect (Masten & Narayan, 2012) of learning how to cope adequately with other challenges. In T2 Pippa can relativize facing exams:

Like I mean, exams are a big stress for everyone and we've had practice exams but they've never been as important as these ones—but I think that everyone's had that big stress of earthquakes and worrying about your family and everything, and this [exams] doesn't seem so bad as it would've if you hadn't had anything. (Pippa, 15 years, T2)

Based on developmental literature it is reasonable to assume that the T2 children's coping strategies were intertwined with developmental capacities. Thus, the children were able to use ways of coping influenced by their evolving capacities through increasingly complex cognitive, emotional, and behavioural functioning. Findings from T2 support Franks (2011) who suggests that the children's increased maturity may help attenuate the effects of disaster. For example, in T2, Elise is able to express complexity of response when she is aware both sadness and yet a capacity to "get on":

Friday I went into C mall 'cause they said the shops were opening for 10 o'clock, um – it's kind of sad seeing all the earthquake damage but, you kind of just get on with it. (Elise, 10 years, T2)

Not only do children's capacities to cope typically increase as they develop and age, but the children's awareness in T2 that they had gained in competence from effectively living through the disaster and post-disaster period, appeared to have a positive effect on their intrapersonal capacities (e.g., sense of agency and self-efficacy). This increase in awareness of personal resources then influenced their coping skills. The disaster experience may, for some children who coped effectively have become a relatively successful part of their developing self.

Interestingly, the present study demonstrated, in some children, an increased perception of capacity and strength to cope in comparison to the close adults around them. Even though children, especially younger children, are thought to be more

dependent, and therefore a potentially vulnerable group, some of the adolescents by T2 felt more able to adapt to the situation than the adults. These children attributed this in part to their larger capacity to change compared to adults. For example, Pippa notes that the enduring post-disaster context of secondary stressors such as changes in house and employment, insurance claims, and adjusting family relationships, appeared to be more challenging for adults. Pippa perceived adults, even with their larger knowledge of the world, as less able to adapt flexibly to these challenges and changes than children:

I think they've [adults] always grown up knowing about earthquakes and big stresses and everything, but it was really a big shock to them cause—I mean we're still young, we're used to things changing and everything, but they haven't known Christchurch to be any different...so I think it's been really big for them. Maybe even more so than for us because...everything's always changing for a teenager: new friends, old friends, exams, but adults—they're pretty solid. (Pippa, 15 years, T2)

It may be that stressors for adults were more numerous and complex than those for children and adolescents. Nevertheless, Pippa highlights the capacity in children to be malleable to change and potentially to better manage their challenges.

An increased capacity by children to be adaptive in processing the changes and challenges in a post-disaster context may be partly explained by research on assumptions about the world. A child's assumptions are suggested as more malleable than adults (Janoff-Bulman, 1992; Kilmer & Gil-Rivas, 2010). The present study findings support this research as the findings demonstrate that children's assumptions of the world being a safe, stable place were shaken by experiencing the disaster, but also that these assumptions may have been less ingrained and fixed than in adults.

Children have had fewer years of building assumptions. Children are building and changing their suppositions of the world as they grow and develop. For the children, particularly the younger two age groups in the cohort, the disaster events lasted for many years of their lives. This may allow new experiences, even adverse experiences, to be more easily incorporated by the children into their schema of the post-disaster world.

The developmental concept of plasticity—“the capacity of the organism to adjust to changing circumstances and demands of the context” (Palacuis, Roman, Moreno, Leon, & Penarrubia, 2014, p. 169 citing Lerner, 1984), may enable more capacity for adaptive coping in children, who demonstrate this plasticity. The children can therefore be more flexible in processing the new experience and integrating it in their assumptive world. Plasticity has been mentioned for adolescents (Uttervall et al., 2014), and in the present study is reflected not just in adolescents but appears to be present in all age groups. For example, in T2 Amelia (6 years) has managed to translate her disaster experience into competence. She explains that she is capable of helping others if there was a disaster:

I would say, find some helpers like me and get them to go and help you and make friends with them and then you’ll always be—help each other. (Amelia, 6 years, T2)

A disaster may then become a catalyst for the development of coping strategies; the experience becomes a successful part of the child’s malleable developing self, despite the related stress. Amelia’s perception of self-efficacy in being able to help has potentially cascaded onto her present life:

...and I’ve finished my book for writing...Busy is kind of fun. (Amelia, 6 years, T2)

Many of the children in the T2 cohort, like Amelia, were able to cope effectively with extra tasks, face difficulties, and manage them well. Similarly, Abby shows agency and proactive coping when faced with a current challenge:

I struggled at first but...I found it hard and so—decided to work ahead to get it done. (Abby, 12 years, T2)

Neil at T2, as well as his full-time school curriculum, has a new job and appears to be coping well with the increased responsibility:

I work at Pioneer as a swim instructor. I only work a couple of days a week but that whole extra responsibility has been kinda interesting. And new. (Neil, 15 years, T2)

Historically, research focused on the traumatic effects of disaster suggested that children's developmental progress toward maturity may be negatively affected by adverse events (Salmon & Bryant, 2002; Furr et al., 2010), as the events may cause regression or slowing in developmental maturation. This appears to occur in a minority of children in the present study, who exhibited negative effects from experiencing disaster (discussed in Chapters Four-Six).

However, developmental progress does not seem to be negatively affected in those children who cope adequately. All the children interviewed in T2 felt they were adept at coping with their present lives, and had not noticed a reduction in their capacities:

Everything's been going fine since last year. Everything's been going well.
(Neil, 15 years, T2)

Time is a factor in coping capacity and awareness. Analysing data from two time points revealed a growing sense of coping ability within the children. Findings demonstrate the importance of examining both temporal and experiential elements in understanding how children's coping develops following adverse events.

Some of the children, initially affected by the disaster, took time to perceive their increasingly effective coping. For example, Pippa, who had symptoms of distress at T1,²³ is conscious of her progress by T2:

It's got better. I was at the Palms [a mall] in the earthquake [February 2011] and after that, even after it opened and it was safer than ever, I refused to go but now I go with my friends, go to the movies, and it's no big deal anymore.
(Pippa, 15 years, T2)

By the time of the T2 interviews, the children felt more able to live their lives in an age appropriate way. In focusing on effective coping strategies, findings suggest that underlying coping processes and intrapersonal resources support positive adaptation. By coping with earthquakes, the children reported that they were more adept at coping and managing well. This may have empowered them to use their repertoire of coping strategies.

²³ Pippa's parents reported she had stress hair loss in the T1 interview and both Pippa and her parents said she was fearful of going to public places.

Effective coping was particularly evident when the children felt their capacities to manage the situation were not over-stretched or depleted. Even at age six, Amelia in T2 is aware that she can better think of what to do when not overwhelmed:

I can be kind of struggling. I would say like, can I just go away and think about [it], because quiet makes brains work better. (Amelia, 6 years, T2)

Others too are aware of their ways of coping to keep stress to a manageable level:

I try and study so I am on top of things. And try not to get too overwhelmed by everything. (Pippa, 15 years, T2)

The present study is consistent with research focusing on how children cope effectively with adversity. That is, children who are not overwhelmed may be more able to use their coping repertoire, and actually increase their capacity to cope through managing to deal with difficulty (Rutter, 2006; Seery et al., 2010). Masten and Obravodovic (2008), note that high levels of arousal can interfere with problem-solving. The present study suggests the reverse is also possible in that children in the cohort who were able to regulate their emotional arousal so as to keep the level of arousal manageable, were also more able to problem-solve and manage challenges. Pippa, who initially had difficulty coping with stress, now uses strategies to cope with challenges, and by T2 was able to study extra maths and additional art work within her school year:

Just try not to worry about it too much. Just think 'I'm doing the best I can...yeah. If I worry too much, I just close in on myself and think "Oh, I can't do it!'.(Pippa, 15 years, T2)

By T2, the cohort's perceptions of competence and increased coping capacity were found across all age groups and had a constructive effect on their self-efficacy beliefs and everyday coping strategies.

The present study did not support research (e.g., Deering, 2000) that suggests the increased capacity of older children and adolescents to understand difficulties and consequences may mean that they are potentially more affected by disaster consequences. In T2, even though the older participants of the cohort understood many ongoing disaster consequences, they also perceived themselves as coping

effectively and felt competent in managing demands. They did not demonstrate being more affected than the other age groups.

It is possible that a perception of being able to cope effectively may have allayed the impact of disaster in all age groups in the present study. This perception may cascade on to future events. Weems and Graham, (2014) suggest that coping well with one disaster may promote effective coping in a following disaster. A positive perception and optimistic view of capacities have been shown in adults to be positively linked to effective coping strategies and adaptation (Nes & Segerstrom, 2006). This relationship also appears to be consistent with the children in the present study by T2. All six children employed their effective coping skills not only to deal with disaster consequences but in their adaptation to everyday challenges. By T2 children such as Pippa demonstrate they are able to “move on” from focusing on coping with disaster stress to using their coping capacity to address present challenges:

I think, like everyone felt a way of how to how deal with earthquakes, and that it was very stressful, and maybe they're applying that sub-consciously to other situations as a coping mechanism. (Pippa, 15years, T2)

Shift in Focus: We Now use our Coping Strategies for Everyday Challenges

Time had affected the children's focus for their coping. By T2, those who were adapting positively were focusing on “moving on” from the disaster and using their coping repertoire to cope with everyday challenges. That is, no longer mainly focused on looking at the earthquake damage and aftershocks, but actively concentrating on age appropriate tasks, daily difficulties, and planning for the future. When discussing what was difficult for them over the last months, disaster consequences were not mentioned. Ryan notes that life is now similar to what he experienced before the disaster:

My life has just gone off like it usually does. It's good and bad. (Ryan, 11 years, T2)

As the children like Ryan manage to process their experience and adapt, their situation appeared to return to a more ‘normal’ rhythm.

In T2, the children showed awareness of difficulties that are related to everyday, age appropriate challenges: dealing with academic tasks; cultivating friendships; and managing after school activities or jobs. The children’s repertoires of coping strategies are now used in these areas. Neil explains that his focus is on school and future careers:

We have new challenges. ...When you actually reach Year 12 you think I’ve actually gotta study for my exams. I gotta put a lot more effort into doing everything. (Neil, 15 years, T2)

Elise reports her areas of difficulty as schoolwork or peer relationships:

...but the teachers are quite strict on homework and things...Well friends arguing. (Elise, 10 years, T2)

And Amelia is focused on her school successes and challenges:

Like second highest for maths and reading...and I think I should be in the highest. (Amelia, 6 years, T2)

In order to face these age related challenges, the children apply coping strategies that they have used many times during the earthquakes. Neil now uses emotional regulation strategies in his workplace:

...even if you’re getting annoyed, you have to put that frustration back and always meet a new class [Neil coaches swimming] with a happy smile and that kind of stuff...I can use that with people as well. (Neil, 15 years, T2)

The ability to regulate emotions has been shown in research to improve attention and focus on schoolwork as well as helping in peer relationships (Terranova et al., 2009). Ryan gives an example of this when he deals with peer bullying (“people teasing me”) by keeping calm so that he limits an escalation in the reactions of others:

The only thing I wouldn’t recommend is don’t have a tantrum about it ’cause if you don’t want attention you’ll get 20 odd people around you...(Ryan, 11 years, T2)

Positive reframing by self-comforting and motivating self-talk is in the T2 cohort's tried repertoire (also employed in T1). The younger children use positive appraisal to perceive their proximal contexts:

Some of my other friends had to go to a different classroom and didn't get Mrs W. I's lucky. (Amelia, 6 years, T2)

This strategy is now employed to help the children cope with current challenges of school projects and tests:

I just tell myself that I've got to get them [projects] done... that I'm doing all I can here... That you've had a whole year to learn this stuff so it's in there. (Pippa, 15 years, T2)

The accumulation of effective experiences in coping, such as using emotional regulation, positive reframing, and problem-solving strategies appeared to have a positive knock-on effect in other areas of the children's actual functioning. Effectiveness in one domain of competence can also become a scaffold for emerging domains of competence (Masten, 2013).

However, effectiveness of positive appraisal and reframing in the present study was enabling if it stayed within a realistic dimension. For example, Pippa does not deny damage but focuses more on her house having been repaired:

I mean like, everyone—their house was damaged and everything. We got our house fixed...I think it's a lot better. (Pippa, 15 years, T2)

In the present study, where the children in T2 see their daily situations and future within a positive framework, it appears to allow them to also feel positive emotions and more optimistic about their circumstances. Despite ongoing issues with the rebuild, Abby, in T2 sees her city repair in an optimistic light:

...more modern 'cause Christchurch used to be quite old in the buildings and that. I think it'll be quite cool when it's finished. (Abby, 12 years, T2)

She also describes her present school situation in an affirmative manner:

Good! I've made heaps of friends now and I'm really enjoying the intermediate bit, 'cause we get three hours of tech. (Abby, 12 years, T2)

Seeing events and situations in a positive light is linked to positive emotions, well-being and cognitive functioning (e.g., Rood et al., 2011; Tugade & Fredrickson, 2004).

The present study confirms that both negative and positive perceptions influence how events are experienced. Bryant and Salmon (2007) suggest that putting a negative spin on an event can lead to more stress, whereas Jensen et al. (2012) propose that children in the 2004 Indian Ocean tsunami, who perceived a positive aspect in that stressful situation, appeared to show evidence of more positive longer term adaptive reactions. In both T1 and T2 findings, positive appraisal rather than negative appraisal allowed the children to see their situation as more acceptable and easier to manage.

Positive appraisal also affected the children's future experience. Pippa does not see taking on additional school work as a challenge but as potentially positive:

Next year I'm still taking my academic subjects but I've got obviously my art and I'm taking a photography course which wasn't offered at level one, which I'm really looking forward to. Yeah! (Pippa, 15 years, T2)

For children having lived through a disaster, focusing on the positive may reduce memory of the negative aspects of the cohort's recent experiences. Weems et al. (2014) have stated that "forgetting" negative aspects of past events may be adaptive in supporting current well-being.

In T2, the children demonstrated other coping strategies to address their shifted focus onto current challenges. Many problem-solve. Ryan "figures out" how to influence his parents to allow him pets:

I've been doing research...and I tell my parents a lot about them, then they'll be impressed and they'll probably get me [the rats]. (Ryan, 11 years, T2)

Neil uses problem-solving as a coping strategy to improve the training of his swimming students:

...look back and think is there something I can do to get these kids up to the level of the other kids. (Neil, 15 years, T2)

Others work out what to do in relation to school work:

When I have to get something done, I sit there, and I focus. (Pippa, 15 years, T2)

What is identified here by the children's use of their coping repertoires is that by T2 they actively engage with their present lives by using effective coping skills pertinent to the difficulty. They use varied and multiple strategies to flexibly address different tasks and challenges.

Findings revealed that there were changes in coping strategies between the two data collection periods. In T2, although the children continued to seek out adults, their coping differed from T1 in that they appeared less reliant on adults for support. In T2, the children at first try to cope themselves, or ask their peers:

But, this year, you kinda—if you weren't understanding something, I'd talk to one of my friends and he'd explain. (Neil, 15 years, T2)

In the present study, going to adults appears linked to the size of the challenge. Ryan deals with problems himself when they appear manageable and goes to adults only when his coping resources are strained:

When things are not too big, you can go read a book, walk away [if it is a really big thing] then you should talk about it with someone. Like with my youth leaders. (Ryan, 11 years, T2)

This shift in coping strategies of seeking support may in part be attributed to the children having challenges that were more manageable for their age, and less overwhelming or unknown, than those they faced in T1. The shift could also be related to the children in T2 reporting they felt more able in their coping and in their efficacy, so that they addressed current issues or discussed them with a peer, rather than seek adult support.

In T2 the children, who appear to be coping effectively, retain positive memories linked to the disaster experience of knowing support is available to them if necessary:

When stuff hits the fan, it's cool to know you have other people there for you...um, remember that you still have all your family and friends with you, all this kind of stuff. That will just keep you—keep the hope up. (Neil, 15 years, T2)

In the disaster period of ongoing aftershocks (2010-2012) the children sought support, and referenced trusted proximal adults for either emotional or informational support that promoted their capacity to cope effectively. This knowledge of past support provides a safe and secure base and enables the children to seek support when necessary. The children's ability to use their social network in a way pertinent to their current needs is linked to positive adaptation.

By T2, several of the children's coping strategies appear to have expanded directly from their earlier experience during the disaster. For example, many have learnt that helping others is a way of helping themselves:

...you're gonna instantly let them feel a little bit happier. And seeing someone else happy helps you feel a lot better about yourself...And that's important really you definitely wanna—you feel useful and stuff. (Neil, 15 years, T2)

Similarly, in T2 the children had increased their awareness of coping. When their coping strategies and style of coping was perceived as effective, they continued to use that repertoire. For example, Amelia (as in T1) continues to boost herself with self-praise and self-enhancement:

And my friend Ann, she thinks she's the best in the group but she actually isn't, I'm best because I can do the diviabide [division] and...no one knows what 10x10 is. I'm the only one. (Amelia, 6 years, T2)

Ryan continues, as he did in T1, to use distraction in conflict situations. He distracts himself with books and music and avoids conflict if he can:

Like, when I'm feeling bad or something...I'll play C J music...[when bullying continues] just walk away and read a book...takes your mind off things. (Ryan, 11 years, T2)

Avoidant or distraction coping has in fact been identified as an effective means of managing distress after adverse experiences (Cadamuro et al., 2015), and is effective in potentially dangerous situations, or when the child has no or little control.

In the present study distraction and avoidance appear to be coping strategies that can be effective, if used sparingly, in certain situations to give temporary respite. Ryan doesn't just rely on distraction or avoidant coping, he uses this strategy within an effective coping repertoire. For example, he uses multiple strategies such as problem-solving or seeking adult support when necessary (see former page). Also, Ryan continues to use the strategy of humour when he positively reframes his 'quirkiness' and uses humour to engage his social network, and as a distraction from his worries:

I tell funny jokes usually... Well, a lot of people laugh at me and that's pretty good for me because most of the people didn't laugh last year. But, it's like laughing in a good way though...It helps a lot actually. It takes my mind off things. (Ryan, 11 years, T2)

Preferred coping strategies evolve. Ryan reports his skill at using humour has improved in T2 compared to T1 ("last year").

Although in T2 coping strategies used by the children were similar to those of T1, their patterns of coping over time become more differentiated. In part due to increasing age and developmental capacities:

This year is better... 'cause we're older and we know more things. (Ryan, 11 years, T2)

Overall, children in T2 were not rigidly using a small range of coping strategies, but flexibly using all the strategies in their repertoire, they had found useful in their recent past to address present challenges. Pippa is able to use multiple strategies to address different aspects of sitting exams, using self-talk, and distraction (see above) and here, emotional regulation so she can be in an optimum frame of mind:

When you get into an exam, don't panic. I can't focus on my exam if it is all stiff and rigid. (Pippa, 15 years, T2)

Research with adults and college students (Cheng, 2003; Galatzer-Levy, Burton, & Bonanno, 2012) suggests that the ability to be flexible and use what strategy is most appropriate enables young people to manage diverse challenges. Children's coping skills evolved from T1 to T2 and enabled them to deal effectively and flexibly with diverse demands. They test out ways of coping and adapt effectively to new situations:

It just takes a while to get used to it and once you have a routine, it's fine.
(Abby, 12 years, T2)

Neil explains how he and his peers are now actively adapting to face the challenge of more demanding schoolwork:

I was a lot like just 'went with the flow' in year 10 and 11...but this year it's more like, everyone has to step up and everyone has to—instead of going with the flow, has to actually push themselves a lot more. (Neil, 15 years, T2)

In the present study, coping strategies used by children in T1 and T2 are consistent with coping research (Lazarus, 2006), in that the children's strategies are not fixed but are evolving processes of reactions and behaviours that change over time. Not only were the children employing their coping strategies to address their new challenges, they were using coping flexibly. One focus of their coping strategies in T2, specifically aimed at adaptation, was their efforts at "moving on" from the disaster.

We Are "Moving on" With our Lives

By T2 the children were using their capacities and coping skills to manage the situation so as to "move on" with their lives. They were "getting through by moving on". They focused more on their present and future rather than their recent past:

Forget about the past and just keep...going. Yeah, then you can just live your life instead of worrying what might happen. (Elise, 10 years, T2)

In the T2 cohort, the capacity to move on reflects a behavioural, cognitive, and emotional shift in focus from T1. When earlier the majority of children were absorbed in using their coping skills to manage aftershock earthquakes and their

consequences, the T2 children are now employing their coping strategies, such as reframing, to move on from the earthquake disaster. Moving on is possible for these children, in part because they have had the capacity to effectively manage and process their experience.

This need to move on with their lives was occurring despite heightened awareness of the possibility of another earthquake. For example, Pippa comments:

...everyone still thinks of it. It's always in the back of your mind. Like another big one could happen, didn't see that one coming, we won't see another one coming but it's like you've just gotta get on with life. (Pippa, 15 years, T2)

In T1 the children reported a strategy of "getting on" focused on managing the disaster, whereas in T2 the children were concentrating mainly on their present day and future life. Amelia focuses on new skills. She is moving on and appraises her new school year even though she has the same teacher:

I've got a new life. I've got a life of singing. (Amelia 6 years, T2)

Abby extends her future focus to her environment:

Well I think that Christchurch has always been a really creative place with the busker's festival, and the art centre and everything so—I think now that it has started, there's not really a way to stop it. It's already in motion. (Abby, 12 years, T2)

This capacity to process their experiences and move on has a cultural aspect that reflects a socially acceptable example of coping and adaptation in the New Zealand context, stoicism. Although, in T1 Elise states "it [earthquake] gave me quite a shock" she now appears stoic as she reports:

Forget about it eventually, move on...get on with your life. (Elise, 10 years, T2)

Elise is stoic in the way she uses her coping strategies to be self-reliant, to regulate her emotions, not to dwell, but move on from the disaster. She is matter-of-fact and discusses her emotions discretely.

The children in the present study were nevertheless not a homogeneous group. They had different temporal pathways in the timing of their coping responses and adaptation. Findings suggest that recovery takes varying amounts of time for children, even in positive adaptation. In T1 some of the children (Sarah & Neil) were already able to quickly focus on a world not governed by earthquakes. This capacity to adapt quickly to age appropriate functioning without undue distress is an example of an outcome of resistant resiliency processes (Bonanno & Mancini, 2012) and is seen only in some children. By T2 however, most of the children were actively deciding to “move on” with their lives. This active approach to their recovery process assisted them in progressing along a trajectory of adaptive functioning.

However, coping effectively and adapting adequately was linked not just to the children’s intrapersonal resources, coping strategies, and way of coping, but was also promoted by interpersonal relationships and community and socio-cultural elements. Children in T2 benefitted from these external resources within their proximal systems, many of which assisted them to cope effectively and adapt adequately.

External Resources that Promote Coping and Adaptation

The present study highlights the importance of proximal resources in promoting the children’s coping as the children live through a recovery period (see also Chapters Five & Six). Resources in a child’s context, rather than the child’s own capacities, have been shown by some research, to be particularly influential in promoting adequate coping and adaptation when the adverse events are important or chronic (Ungar, 2014). In the present study both intra and interpersonal resources appeared influential in the children’s effective coping as it evolved over time.

The interaction between the children and their close ecologies demonstrated many processes of influence that supported adaptation. In the children’s systems of family, school, and local community there were interactions at all levels and between these systems that appeared to promote the children’s coping. In T2 the children often reported feeling competent at working out their own problems, but they could also be proactive in seeking support from their available and close network when needed:

So, if I’m unsure, I’ll go out of my way to ask a teacher (Neil, 15 years, T2)

The children continued to mention the supportive elements of parents, peers, and teachers as well as proximal community structures of school and local community resources. Effective adaptation was promoted by the children being able to access, and knowing when to use these proximal resources. What appeared of core importance was the ongoing quality of good parenting.

Parents.

The family network, particularly the parents, remained central in scaffolding the children's capacity to cope over time. Parents provided coping assistance through modelling or coaching and were a source of support, buffering, and reassurance when necessary. In children who were coping adequately there appeared a complementary connection between parental assistance and children's capacity. For example, parents in the cohort were able to continue to reassure in T2 and provide models of effective coping such as reframing positively for those children, like Abby, who continued to think about disaster:

We were talking about the floods and the big bush fires happening around everywhere else around the world and Dad was saying, it's [earthquake disasters] actually kind of the best disaster in a way because once it's happened, it's over but flooding, you (pause) it just keeps coming whereas with an earthquake, in the next couple of seconds it's gone and then you have time to do whatever you want. (Abby, 12 years, T2)

Abby's parents are proximal resources. They are responsive and aware of her needs for reassurance and assistance; both attributes of adequate parenting (Winnicott, 1965). Recent research has suggested that close relationships, such as the parent-child relationship, when functioning well, are influential in enabling neuroplasticity and effective behaviour in children (Davidson & McEwen, 2012).

The present study supported research that suggests protective factors are predictive of lower levels of distress (Masten & Tellegen, 2012). For those children like Abby, who continued in T2, to be sensitive to disaster threat, the proximity of their parents gave protection and allowed them to see risk within a positive framework. Abby was aware of her parent's protective role, which may have allowed her to face challenges

in her situation with some confidence and underpinned her perception that she would manage well:

But sometimes you do think when you're going somewhere, 'oh I wonder what would happen if we have an earthquake right now. And you think, oh I've got mum here so that'll be alright, and we're all together. (Abby, 12 years, T2)

In T2, parents appeared to continue their protective strategies of behaviours specifically related to the disaster context, such as watchful awareness and buffering that many had practised in T1. Abby's father, in discussing disasters above may have accurately appraised his daughter's continuing apprehension, instigating discussions with her about positively reframing their disaster experience, and so enabling her perceptions to move towards the positive. In the following example he is a catalyst in enabling her to participate in a new challenge by demonstrating confidence and video-recording in her skills:

Um, I really wanted to do it so he [father] posted it. He videoed it – me calling them [rally drivers] and him reacting to them, and that we could watch and everyone was saying I did really well for my first time...It was good. (Abby, 12 years, T2)

Abby's father encouraged her and communicated her success. This was empowering for her. As in both T1 and T2, parents' capacity to recognise effective coping in their children promoted children's awareness of capacities. Being recognised as coping adequately by the parent, when realistic, increased the child's perception of self-efficacy.

From the present study it is suggested that parents are enabling when they adapt their protective role to accord with their children's needs and pace of recovery. For example, Abby's parents demonstrated more active assistance for her coping in T1 than in T2. Abby's parents were more active overall than Elise's parents. Elise, from T1 was demonstrating many instances of effective coping and had less need of parental assistance. She was succeeding at school, had friends and suggested that it was possible to move on:

[just] get on with your life...do what you're doing. (Elise, 10 years, T2)

Conversely, the children who needed more professional assistance in T1 often had parents that could not understand or respond to their children's needs (see Ann & Gaelle, pp. 160, 159).

Parenting care adapted to need, is a positive factor as it supports proximal processes of development and scaffolds coping. Findings from research focusing on cumulative risk in childhood development suggest that disruptions in these processes from adverse events can result in interference in healthy development (Evans, Li, & Whipple, 2013). However, in the present study, most parents, as seen in T1 and T2, were able to continue parenting to support and assist their children despite disruptions, and parents of the T2 cohort all had children who were functioning adequately.

Most parents in T2 continued to prioritise stability, protection and caring for their children. For example, despite having a baby-sitter, Amelia explains how her working parents look after her when she is unwell:

Well, first for lunch time, one of them comes and stays home and for after lunch they go away and the other parent comes. (Amelia, 6 years, T2)

Amelia appears to feel secure in her relationships and knows she will receive support when needed. Equally, although Neil's parents have separated some years ago they continue to fulfil their parental role without imposing difficulties for their son:

I think it's been fine really. It's cool because whilst Mum and Dad split up, they're still friends and everything. There's no bad blood between them so that's alright. You know if for some reason, one of them's going away, they talk...I don't have to take on any conflict really. It's cool. (Neil, 15 years, T2)

Neil's parents provide a stable environment from where he employs his coping skills.

As the children altered their focus from managing earthquakes (T1) to age appropriate challenges (T2), the children reported that parents also adapted their assistance to less focus on earthquake recovery towards a supportive in their role in relation to their children's present challenges. Whether it be school:

...like with my exams, Mum writing out when my exams were,...she offered to help me revise and everything... (Pippa, 15 years, T2)

Or by facilitating peer friendships and networks:

Well Mum & Dad said I could get Facebook to keep in touch with the people from M [her former school] friend, so I still talk to K. (Abby, 12 years, T2)

In T2, although parents appeared available and supportive, the older children reported less discussion with their parents than in T1. This could be due in part to the lessening of potentially stressful aftershock events. Equally, this reduced emphasis on parental contact could be linked to the children's change in emphasis as they moved towards a focus on age-related goals of school-work and friendships; challenges that the children themselves may have felt more able to manage. An added factor in this lessening of reliance on parents was the developmental shift to peer relationships that occurs particularly in later childhood (Cryder et al., 2006).

Peers.

Peers became more of a reference group for the all the children in T2 even though forming peer friendships could be a challenge following relocation. Elise's friends had left Christchurch following the earthquakes:

...well, it was quite kind of hard to find new friends but—I found them eventually. (Elise, 10 years, T2)

Children also deal with conflicts within the peer relationships:

...when I first went to M [school], I got bullied to try and make friends, 'cause it was the middle of the year and everyone already had friends and I had no friends. So they were saying I can't play with them if I don't get a quiz right or something. (Abby, 12 years, T2)

However, peer relationships could equally be fun and important for protection in the playground as described by Ryan:

We usually play tag at lunchtime...Most of them are really fun to have around. Most of them live close to me... It's good to have them around though 'cause if someone hurts someone, we'll always back them up sort of. (Ryan, 11years, T2)

The children in T2 spoke mainly of the bi-directional help and distraction that peer relationships provided. Peers were a resource:

I kinda mess around with them...mates can be real good when you don't know something and they're always there to help and lend a hand. And you do that back to them if they don't know something. You help them out and stuff. (Neil, 15 years, T2)

This was particularly clear with the older children who were working more autonomously on school projects:

...we're in most of the same classes together so we know when we've got to get things done. And we help each other which is quite nice. (Pippa, 15 years, T2)

Mutual help and distraction was a strong part of peer relationships in all the age groups of the T2 cohort, although expressed differently in age-related complexity:

I listened with my friends, and then...I started singing it with my friends...they always join in and help me. (Amelia, 6 years, T2)

In T2, most of the cohort spoke of the increase in quality of their peer relationships over time. This could be the result of the children's evolving developmental social skill capacity, but could also be a result of increased coping skills linked with their disaster experience and positive adaptation. As seen in T1, children who were coping effectively appeared to gain in empathy and capacity for friendship. In T2, increased capacity for friendship is one element that reflects adequate coping and adaptation. Ryan speaks of this positive change in T2:

I've got lots of good friends in my class and things...I had less friends in my class [last year]. (Ryan, 11 years, T2)

Increases in peer relationships are echoed by others in the cohort:

And I've got lots more friends and I'm still friends with the other girls.
(Amelia, 6 years, T2)

Positive peer relationships occurred despite changes in the children's environment. By T2, following damage from earthquakes, some of the children had dealt with changing schools and with finding new friends as old friends left the city.

Changes, and adapting to changes, are integral to a developing child's world. For example, in the child's world, peer friendships, teachers, and individual capacities evolve and change over their childhood. Yet, a disaster may accelerate changes. Disaster-related changes added adjustment demands for the children. Several children in the study had changed schools or lost teachers or friendships. Nevertheless, although reported as initially difficult, the T2 cohort reflected their effective coping by successfully adapting to changes, by making new friends, and being once more able to benefit from the stability and support of having a close social network:

Oh, it's fine. It's just feels like we've been friends for ages—like we've always been friends. (Elise, 10 years, T2)

By T2, most peers appeared to mirror the cohort's effective coping. With time, the cohort reported that many children appeared to be coping adequately:

Everyone's coping more now. (Pippa, 15 years, T2)

Interestingly, it appeared that the children who were coping well congregated in groups with others who were coping adequately and may have benefitted from bi-directional peer coping assistance. Peer relationships appeared to be functioning and supportive despite the ongoing disruption of the post-disaster environment. Peer relationships appeared to flourish especially at school, one of the important proximal contexts for the children. The present study confirmed research (e.g., Cadamuro et al., 2015; Forrest-Bank, Nicotera, Anthony, & Jenson, 2015) that elements such as positive peer relationships and attachment to schools were protective factors for children facing adversity.

Schools and teachers.

Schools, a local community resource, were all up and running in T2. Thus the children were able to adapt within a known environment of routine and age appropriate challenges. Schools provided leadership and stability. They strengthened the focus on children returning to study and routines. The school was an important place for children to use their coping and social skills. Amelia is learning to be a leader in a learning dyad:

At maths time on Mondays, I've got a partner called Ethan...um, so and I'm in a group with him and I'm the leader person and he's the second person. (Amelia, 6 years, T2)

Schools and teachers were spoken of positively by all of the children in T2 and were a resource in their coping and adaptation. For example, Abby is reassured when her intermediate school informs her about safety:

...said at the open night, they'd had no problems with the earthquakes and they told us what their procedure was... (Abby, 12 years, T2)

The school, aware of possible stress and fear linked to recent experiences, was often able to present a secure and safe picture for student and parent. This information and reassurance appeared enabling as Abby reported feeling reassured, and decided to change schools and take on the challenge of leaving her primary school to go to an intermediate establishment.

Teachers continued to have a positive role in the school environment. In T2, the children mentioned their teachers within a positive light:

...the teachers are awesome at C [school]. They're really hands on. (Neil, 15 years, T2)

As discussed in T1 findings, schools and teachers provide assisted coping, stability, a routine, and support for many children. All children in T2 reported that teachers were an important element in their lives. Teacher support, added to that from parents and peers, increased the positive proximal resources available to the cohort. When asked how his current year is going, Ryan talks primarily of his teacher and class:

Well it's been very good. My teacher and my class is really good this year...and my teacher's really supportive which is good. (Ryan, 11 years, T2)

In the post-disaster recovery environment of T2, the teachers continued to undertake multiple roles during the many hours each week that they were with the children. From the children's comments it was clear that despite the ongoing pressures of the post-disaster context teachers continued to provide added support and gave extra time and attention to those children who appeared to be struggling:

And she [teacher] came in during holidays. She stayed behind after school and in lunchtimes and everything to help her [student] out. (Pippa, 15 years, T2)

The teacher's positive support, including recognition of work well done was an enabling element influencing the children's coping:

...and my maths teacher thinks I'm doing quite well doing both exams. (Pippa, 15 years, T2)

In T2, teachers responded in multiple supportive ways not related to their strict teaching role. Teachers were mentioned as being supportive and encouraging not only for academic challenges, but also in enabling the children in diverse ways such as with their social network:

The teacher paired us up with someone who also didn't also have someone they knew. (Abby, 12 years, T2)

Teachers provided coping assistance by their own adequate functioning. As well, they supported the children's functioning by acknowledging their successful coping with challenging situations:

Um, it was actually my class teacher. 'Cause she's said just put a note on her desk if you want to talk so I did that... She [teacher] said afterwards I was becoming more mature...um, just with friends and that, becoming more mature. (Abby, 12 years, T2)

Accessibility to teachers allowed the children to feel secure in their environment. The children were often proactive in approaching the teachers in whom they had confidence:

If you tell one of your teachers, they can usually sort out the problem. (Ryan, 11 years, T2)

Teachers could be a buffer and protection for the children:

They don't get bullied around work 'cause the teacher's in the classroom. (Ryan, 11 years, T2)

They provided a safe and socially enabling environment, even to "stretching" rules around phone use:

We're not meant to have cell phones but our teacher said she's happy for us to keep them in our pocket in case there's an earthquake or a fire...So yeah, you know that if you have an earthquake, you have your phone. Abby, 12 years, T2)

As with all relationships in the present study, there was bi-directionality demonstrated in mutual influence. The children's capacity to cope and adapt had a positive impact on the teaching environment. For example, the children, who were able to regulate their emotions in class, facilitated the teaching environment and the teacher's opportunity to share knowledge. Elise behaves well in class and this enables the teaching climate:

I behave. (Light laugh) I, just—if he [teacher] asks a question and I know the answer, then I'll just say it instead of just saying something silly. (Elise, 10 years, T2)

Consistent with research on children coping with disaster (e.g., Pfefferbaum et al., 2014), teachers were a significant element, constant over time in enabling the children to continue to function adequately²⁴. Over the protracted recovery period, they offered stability in the instability of the post-disaster environment, and were a

²⁴ Capacity of a child to meet normal developmental milestones in school and in relationships, in a culturally relevant framework despite adversity.

source of help, coping assistance and encouragement when difficulties arose. Added to the positive social capital of parent, peer and teacher relationships, the children by T2 had access, although sometimes limited, to local community resources.

Community resources.

Research with adults following earthquakes has stated that poor infrastructure repair and ongoing damage are hindrances and influence health-related quality of life (Liang & Lu, 2014). Certainly in T2 there were ongoing consequences in the children's post-disaster environment: transport was frequently disrupted, and community sports and leisure activities reduced. From the present study however, it was not just the availability of resources within the environment that promoted the children's coping, but also the positive perception of these resources by the children.

Despite the rebuild of the city, housing shortages, and the disruptions to transport for school that continued in T2, the children reported having sufficient access not only to schools but to a growing number of repaired community sport and leisure facilities. The children made overall constructive comments on their community:

And lots of art work. Murals and that is cool to see, and hopefully when they get all the fences down and the CBD open with all the new buildings it will look quite cool I reckon. (Abby, 12 years, T2)

Findings from T2 suggest that children, who are coping effectively and adapting well to their circumstances, appear to focus on the positive elements in their community that promoted their ongoing adaptive recovery, rather than perceive negative elements in their environment.

Both the environment and the child's perception of that environment, needs to be taken into consideration when researching the influences of children's context. For example, despite the loss of her known environment and the accompanying sadness, Pippa, uses positive reframing to find changes in her city to be enhancing and encouraging:

All the landmarks and buildings I used to use. They're not there anymore so, so it's like a whole new city. Yeah, it's really sad to see such beautiful old

buildings go ...But it's really nice to see, bits of art and community-based things pop-up. Like there might have been an old run-down house there but now there's something the whole community can use and get to know each other. (Pippa, 15 years, T2)

The interactive processes of Pippa's effective coping are demonstrated in her positive reframing, coupled with the actual physical rebuild of her city context. Both assist her positive adaptation.

Similarly, the children's feeling of belonging to their community was a helpful factor for the children, like Pippa, who perceived her community as renewing. Not only were the children attached to people in their proximal community but place attachment (Lewicka, 2011; Hildago, 2013) appeared important for the cohort. The proximal community was part of their identity and often linked by the children as a reference for their own recovery. The children appeared attached psychologically to their neighbourhood and town centre. Their place attachment may have influenced them to self-identify with their renewing city.

In T2, leisure and sports' facilities were slowly opening again so that the children could play and develop within known, safe spaces. Ryan was re-establishing routines and activities he knew from pre-disaster days. Here he talks of once more going as a family to a leisure centre:

Like the other day we [Ryan and his family]... in the changing rooms of the swimming pool. (Ryan, 11 years, T2)

The children's community places were known places where the children could live out their developmentally appropriate social interactions. Abby meets new friends:

There were quite a few from P school. They weren't friends but we could talk to each other—have someone to play with the first few days. (Abby, 12 years, T2)

Research has suggested that community resources may have a cumulative positive effect over time and be especially influential in highly adverse situations (Ungar, 2013). In T2, the children's positive perception of their community was promoted by the actual rebuild. The cohort's houses were liveable, if slightly damaged, and their

schools were all functioning even though some had ongoing repair work. Leisure and sports facilities were reopening. Thus the children had the stability of functioning in a known local environment. Equally, within their school and community, the cohort in T2 reported highly perceived social support (see comments on peers and teachers), which has been signalled by research as promotive elements in their post-disaster recovery environment (La Greca et al., 2010). The above elements promoted the children's positive adaptation.

Adequate Ongoing Adaptation

Criteria for understanding whether children are adapting well are not yet fully conceptualised. Nevertheless, the children's adaptation at T2 was an indication of effectiveness in their coping processes and needs to be understood. Certain criteria of adaptation are now briefly discussed.

An initial approach for defining adaptation in research on children in disasters was the absence of symptoms following adversity. Following this focus, none of the children in T2 had needed professional follow-up, despite some like Pippa who showed symptoms of distress in T1. However, an approach focused on symptoms has been criticised as lacking information on what is adequate adaptation, which is more than the absence of psychopathology (Bonanno & Diminich, 2013).

Recent research suggests that adequate or positive adaptation appears as an interaction of many factors and processes, occurring in multiple levels. Adaptation is coping effectively with adverse events that threaten children's development (Masten, 2014), and continuing to keep up with what is culturally defined as children's maturation (Ungar, 2013). Positive adaptation occurs over time and emerges gradually as the child matures to adulthood and is demonstrated by the maintenance of equilibrium despite adversity.

Positive adaptation for children can be demonstrated by a pathway pattern following adversity that emerges from processes of resilience (of doing well despite adversity) that unfold over a person's development (Panter-Brick & Leckman, 2013). Pathways may emerge from shorter periods. Masten and Monn (2015, p. 8) discuss a pathway

of adaptation as the “observable pattern, course or trajectory over time of adaptive function in a system”.

Recovery pathways of positive adaptation can be discerned in studies that have multiple data collection, such as in the present study. Having findings from two data collections permitted the exploration of how time can affect children’s effective coping, and provides insights into how adequate adaptation may unfold. It is not possible to discuss completed post-disaster trajectory outcomes in the present study, as adaptation was still ongoing in T2. Recovery processes can take years (e.g., Furr et al., 2010; Nygaard et al., 2012; Weems & Graham, 2014). Additionally, children as a population continue to progress developmentally so that eventual adaptation outcomes would need to be measured by future developmental milestones. However, findings from the two data collection points, 16 months after the most destructive earthquake in February 2011 (T1 interviews) and 33 months from the same earthquake (T2 interviews), allowed a tentative exploration of an observable pattern of adaptation for the period examined.

The present study demonstrates that effective adaptation appears to result from varied pathways and confirms research demonstrating multiple recovery pathways of adaptation (Bonanno & Mancini, 2012; Weems & Graham, 2014). The T2 cohort reflected heterogeneous pathways to effective adaptation, from a rapid, resistant return to adequate functioning (Neil and Sarah), to pathways of initial distress and a lowering of functioning, followed by effective adaptation over time (a recovery trajectory) (Pippa and Abby). For example, in T2 Neil, is aware that he has moved on quickly. He demonstrates a resistant pathway:

...it’s been easier for me to cope with it and move on. And deal with it. Mmn. I’d say around 2012 I’d just kind of—I’d say I was pretty much over it by then. So...maybe it’ll take 3 or 4 years for kind of—most of the community to have got over all that kind of stuff and look forwards. (Neil, 15 years, T2)

Elise too was quite rapid in adapting well. In T1 she knew “that everything was going to be alright” and in T2 she could say:

Forget about the past and just keep going. (Elise, 10 years, T2)

Research (Jensen et al., 2009) has suggested that children's immediate response to a disaster may give some prediction of later coping and adaptation. In this study, this finding is consistent with the children in the present study who demonstrated early effective coping and resilience processes (in T1) that continued in T2.

Present study findings suggest that effective coping and developmental maturation interact to scaffold pathways of adaptive function and adaptation. In children one area of observable adaptation criteria is focused on age-related, developmental expectations and examples of behaviour and achievement. Investigations defining positive child adaptation have considered several criteria of developmental progress (Masten & Obradovic, 2006), including cognitive prowess. From a developmental perspective, children who are adapting well are moving forward in their increasingly complex developmental tasks (Franks, 2011). Children in T2, who were moving in the direction of greater adaptation, despite their experience of a disaster, demonstrated positive adaptation by age appropriate functioning in increasingly complex tasks.

The children in T2 did not appear to show regression or be "stunted" by their adverse experience. They were demonstrating effective coping and positive adaptation in multiple domains and on many levels. All six of the children were functioning well, demonstrated in Ryan's comments on his test:

Well we had a test today. I aced it. I got 10 out of 10. (Ryan, 11 years, T2)

None of the children in T2 reported having difficulties in school and all had managed to sustain friendships. The T2 children appeared conscientious in their work patterns and showed self-control in approaching school and social tasks; all aspects that have been linked with positive adaptation (Shiner & Masten, 2012). Ryan's reported highlight of the week was visiting his friend:

And on Saturday night I'm going to Josh's house. He's like my best friend.
(Ryan, 11 years)

Coping strategies are linked to adaptation. The children in T2 appeared to be coping effectively following Ungar's (2014, p. 5) definition that states "effective coping strategies are an optimum response to adversity and so scaffold a resilient or adaptive outcome". The present study supports Ungar's definition as coping

strategies promoting effective adaptation were reported by many of the children and adults in T1 (see Chapter 4), and by all of the children in T2.

The present study findings support research that suggests children's adequate coping in disasters includes effective emotional regulation, which promotes positive adaptation (Terranova et al., 2015). Additionally, the present study highlights that being able to flexibly transfer coping strategies so as to address everyday challenges, and to focus on actively "moving on", are effective coping behaviours within a recovery period that scaffold positive adaptation. In T2 the children altered their focus to employ coping strategies for every day, age-related challenges and actively "move on" in recovery.

Positive adaptation is multi-dimensional, and includes elements such as a sense of well-being. The T2 children coping effectively also reported aspects of well-being. Pippa experiences positive feelings from contemplating her future school programmes:

...taking a photography course which wasn't offered at level one, which I'm really looking forward to. Yeah! (Pippa, 15 years, T2)

Multiple definitions of a child's well-being exist in research (Pollard & Lee, 2003). Navarro et al. (2015, p. 2) in their study of Spanish adolescents, stated that subjective well-being is "how people evaluate their lives". In the present study all of the children noted that their lives had improved, many felt they were doing well, were hopeful and optimistic about their futures:

Yeah. It's gotten easier. Yeah, way more interesting. (Ryan, 11 years, T2)

Hope and optimism are indicated as markers of psychological well-being (Carver & Scheier, 2014).

Children differ in their capacity to cope and adapt effectively, so research on positive adaptation benefits from two data collections which can highlight heterogeneous pathways to adaptation. As discussed, some of the cohort took longer to cope effectively than Neil above, and yet by T2 had adapted well. Pippa, who initially suffered from hair loss and avoidance symptoms in T1, possibly due to disaster-related stress, could in T2 feel positive about her academic prowess:

I think they've gone well. I've passed level one and hopefully I've got my excellence endorsement. (Pippa, 15 years, T2)

By T2, as reported by the children, the entire cohort were coping and adapting adequately demonstrated by pertinent criteria of practised social skills, subjective perception of well-being, and appropriate behaviour in context.

It is also important to note that these positive criteria and patterns of behaving can cascade positively onto many domains in the child's life and may give promise for future adequate functioning. The rare examples of longitudinal or time-series research on competence and effective adaptation following adversity suggest there is substantial continuity of adaptive functioning over time (Masten & Tellegen, 2012). Certainly, the children in T1 who were doing well were adapting well in T2.

Chapter Conclusion

The present study, is to the researcher's knowledge, the first to examine children's effective coping from their own point of view, in a selected group of children over two time points of a recovery context. This chapter has focused specifically on children's effective coping strategies as they evolve over this time in a post-disaster situation. Equally, the chapter investigated individual and proximal resources that appeared to promote effective coping within an adaptation processes.

The interdependence of event, child, context, and development over time, is illustrated in the themes that were identified in T2. By T2 the children perceived that their lives had improved. They were adept at using coping strategies learnt during their experience of disaster to effectively cope with their daily, age appropriate challenges. In fact, they felt that they had gained from their experience (were stronger), were more competent at coping and managing, and were now focused on "moving on" with their lives. To "move on" competently, they accessed proximal intra and inter-resources, and adapted their coping flexibly to address any difficulty they faced.

Although the T2 cohort was limited to six children, findings suggest that the children's effective coping and positive adaptation result in part from an interaction

of individual coping strategies. Effective coping is also linked: to how the strategies are flexibly employed; to intrapersonal capacities; and to use and access to systemic resources within the child's family, social and community ecologies. From the findings the present study suggests that it was the interweaving of children's coping skills, ongoing maturation, and enabling resources that promoted positive adaptation in the children.

By T2, all six of the children appeared to be coping effectively, demonstrated by their adequate level of age appropriate adaptation and reported well-being. Some of the T2 cohort took longer before they reported positive adaptation. However, the cohort was continuing to develop and post-disaster consequences were still unfolding, so positive adaptation was as yet ongoing.

The following chapter draws the present study findings together from all four findings chapters. Strengths and limitations of the study are highlighted. Recommendations for interventions to support children's effective coping and positive adaptation following a disaster are discussed. Avenues for future research are outlined.

Chapter 8: Discussion and Conclusion

“Stress and adversity often play a valuable role in the development of the personal strengths needed to survive and flourish”. Lazarus (2003, p. 106)

This chapter draws the findings of the present study together to discuss children’s effective coping. The chapter elaborates how the diversity of coping strategies employed by children, as well as their pertinent and flexible way of using their coping repertoire, contributes to our understanding of how children adapt positively in disaster situations. Conclusions are drawn on how intrapersonal, interpersonal and community influences promoted or inhibited the children’s coping. From re-interviewing a smaller cohort of six children in T2, suggestions are made as to how children’s coping may evolve over time. Strengths and limitations of the study are documented. Finally, recommendations are made for interventions to support and assist children, and suggestions for future research are outlined.

The present study contributes to a greater understanding of understudied processes. Prior research into understanding how children cope with disasters and their consequences, and adapt to their “new normal” is extremely limited. At the time of writing this dissertation, the researcher found fewer than seven articles which asked children to comment on their coping from their own perspective, in order to understand how they manage and adapt following a disaster. Additionally, although T2 data were obtained from a reduced cohort, to the researcher’s knowledge the present study is the first to obtain data from children on their coping at two different time points in a disaster recovery period. Findings contribute an insight into how time affects children’s coping as it evolves in a recovery process.

In order to examine the complex interaction of children with their environment, the approach adopted in the present study focused on the children as nested within multiple systems of relationships and contexts that function and interact on many levels of complexity. Children’s coping with disasters both influence and are influenced by their capacities, and by their relationships, community, and culture. In order to have a more in-depth perspective of children’s coping, the present study incorporated concepts from coping, disaster, developmental, and resiliency research.

The study employed a phenomenological approach to explore and capture the rich experience of how children of various ages cope effectively with a disaster experience.

Children's Effective Coping

Coping strategies used by the children contributed to and supported their post-disaster adaptation. Strategies included emotional regulation, problem-solving, positive appraisal and reframing, helping others, seeking support, and focusing on “getting on”, and in T2, “moving on”. Many of the children employed multiple coping strategies to effectively face challenges. For example, a child would use the coping strategies of helping others, working out what to do, and minimising, when facing an aftershock earthquake.

Analyses revealed that coping strategies were not stand alone but were often interlinked and interdependent, affecting each other either positively or negatively. For example, employing a strategy of appraising a situation as not too threatening also assisted emotional regulation by reducing fear and may then have enabled the child to employ problem-solving in working out what to do. When multiple strategies were used effectively, they could have a positive cumulative effect. For example, the effective employment of seeking support, positive appraisal, and problem-solving all combined to enable the child to face a difficulty. In many instances, competence in one coping strategy (e.g., emotional regulation) seemed to become the scaffold for competence in other domains (e.g., positive appraisal or “getting on”) thereby increasing the child's coping capacity.

A wide range of coping strategies enabled the children to address their difficulties. The present study did not support research (e.g., Lack & Sullivan, 2007; Pfefferbaum et al., 2014) that suggested the use of numerous coping strategies is linked to poor adaptation. In the present study, the children who appeared to be coping well (i.e., functioning adequately at home, school, and socially) often had a large repertoire of strategies, and were using them in a pertinent way to address the specific challenges they were facing.

This finding is supported by research suggesting a large repertoire of coping strategies is employed by children addressing adverse situations (Alisic et al., 2011; Cadamuro et al., 2015). As most of the disaster research has focused on children suffering post-traumatic stress, studies have examined coping in children who were unable to effectively use their repertoire. As the focus of the present study was on effective coping, it was able to identify coping repertoires that appear to be a result of adequate coping, and personal capacity in coping choices. The findings suggest that employing a large repertoire demonstrates coping skill, and provides opportunities for flexibility in facing major and diverse stressors.

The present study findings suggest that facing a disaster forced the children to manage multiple and new challenges, and may have enhanced practise of coping skills in those children who coped effectively. The Christchurch children repeatedly had experiences of employing their coping strategies and demonstrated larger repertoires than the Wellington cohort. The Wellington comparison cohort reported less diversity of coping strategies except when a child was experiencing a major difficulty, such as the serious illness of a parent.

However, it was not solely the repertoire of coping strategies that demonstrated effective coping or coping strategy interactions. Effective coping was revealed in *the way* the children used their repertoire. Children who coped effectively had the capacity to use their repertoire in a *pertinent* and *flexible* manner, adapting strategies to challenges. The children's flexibility was demonstrated in their capacity to differentiate the many facets of a situation, appraise it competently, and integrate the information into the most appropriate coping response. For example, children might use distraction as a coping strategy when they could not control the situation, but then problem-solved when that coping strategy could have some impact on their circumstances. In this way the children benefitted from some respite or buffering from uncontrollable events, and yet addressed situations they had some control over.

Currently, research on flexibility in coping is mainly limited to adults. Findings from the present study extends understanding of flexibility. The analyses demonstrated ways in which children from five to sixteen years could demonstrate flexibility in the use of their coping strategies to best match the situation. These findings are

consistent with research on young adults (Bonanno et al., 2004; Galatzer-Levy et al., 2012; Cheng, 2003).

Several elements may have promoted the children's flexible approach. The extended earthquake sequence allowed for many repetitions of coping behaviours. Repeated coping enabled children to build up and test which coping strategy could be effective or pertinent. They built up their repertoire from having to face not only multiple but varied post-disaster situations, and could experiment with the flexible use of strategies. Equally, the children had numerous occasions to observe flexible coping in close others and may have integrated this flexibility in coping into their own repertoire. Also, the children demonstrated capacities of plasticity (being able to adjust to changing circumstances) (Palacuis et al., 2014). Children's plasticity may have been an advantage to the children in the present study allowing them to flexibly adapt to a new situation, even one of disaster.

However, the capacity for flexibility in employment of a coping repertoire was not found in all children. Children who were struggling to cope adequately often used fewer coping strategies and employed them in a haphazard or inflexible manner, resulting in the strategies chosen being less appropriate for the challenge. They often rigidly employed strategies they were familiar with, such as avoidance or withdrawal, in a situation that may have needed more emotional regulation, problem-solving, or support seeking. Children who were struggling appeared overwhelmed, were often not adept at emotional regulation, and so may not have been able to monitor or appraise the implications of the event, or discern which strategy was the most useful to cope with the situation.

In children coping effectively, study findings revealed that there was not one repertoire or combination of coping strategies that predicted adequate adaptation. These children were using heterogeneous coping strategies adapted to challenges. The heterogeneous use of coping strategies for positive adaptation may have depended on elements in both the context and the children themselves. Within a disaster context the children were facing dissimilar challenges (e.g., distance from epi-centres, extent of damage to homes, temporary relocation), even as they experienced the same earthquakes. Also, children would have had access to different

proximal resources and support, or have had differing individual capacities and styles of coping that may have existed pre-disaster.

Children were also appraising difficulties differently. All of these elements could influence the heterogeneous nature of what were effective coping strategies leading to adequate adaptation. For example, some children used more problem-solving and positive reframing; others employed more distraction or support seeking. Often several coping strategies were used at the same time. Thus, the present study found that within a complex disaster situation, it is not sufficient to categorise coping strategies into positive or negative per se. It is probable that no one coping strategy is constantly adaptive (Bonanno, 2013; Eisenbarth, 2012), and no one combination was always appropriate. Children coping effectively used strategies that were multi-dimensional, diverse processes that changed over time and circumstance.

Yet, findings in the study did demonstrate one coping strategy that appeared particularly pertinent to effective coping in the immediate disaster aftermath context, and which often scaffolded subsequent effective coping. In all three age groups (five, nine, and fifteen year olds), the children's effective coping strategies were focused on promoting their capacity to manage their internal emotional reactions and reactivity to earthquakes. When the earthquakes were frequent, as in T1 data collection, the children often focused initially on emotional regulation to keep calm. During the protracted earthquake sequence lasting over two years the children regularly employed this strategy when they needed to cope with their fear and anxiety in aftershocks or when wondering when further earthquakes would occur.

Coping strategies related to managing emotion helped the children maintain a functioning relationship with their environment. This enabling aspect was also confirmed in research with maltreated children. Research with maltreated children noted that those children who could regulate their emotions were less likely to develop negative symptoms and were more able to cope and interact with their context (Kim-Spoon, Cicchetti, & Rogosh, 2013).

In both the present study situation and in cases of maltreatment of children, children need to manage their emotions over multiple adverse situations so as to interact adequately with their chronic adverse situation (repeated earthquakes or repeated incidents of abuse). The results of using coping strategies to manage their emotions

appear twofold for these children: to keep their distress to a manageable level; and to keep sufficient control of their emotions so as to be able to use their capacities and coping strategies to address their challenges.

The strategy of emotional regulation was linked with several other coping strategies that were pertinent to the children's capacity to cope: the ability to appraise their situation in a positive light, which reframed the situation as manageable; the capacity to problem-solve difficulties, which promoted feelings of competence and control; and "going to someone", which could provide support and additional information. These strategies in turn enhanced emotional regulation—a positive feedback loop. When the children could manage their emotions well, or reframe their experience as manageable, then experiencing the disaster may also have enabled the children's other coping capacities such as helping others and "getting on".

Most of the children learnt over time to shift from reacting emotionally to earthquakes, where keeping calm appeared paramount, to a more controlled response of coping with their emotions during the recovery period by using multiple coping strategies related to emotional management. The children in the present study were creative in their use of coping strategies to regulate their emotions: they practised self-soothing behaviours (e.g., breathing calmly, or pacing behaviours so as not to feel tremors); positive cognitions (e.g., cultivated "happy thoughts"); used distraction to "take their mind off it"; and some of them were able to use humour to buoy up their emotional state.

Effective emotional regulation coping was not immediate for most children. A small group learnt quickly; some children reported being able to regulate their emotional reaction to earthquakes in the first weeks after the major earthquakes. A minority of the children were struggling to adapt and were not able to cope well with their emotions at T1 interviewing 21 months after the first large earthquake. The ability to manage emotional responses, and other effective coping strategies appeared to be precursors to positive adaptation for most of the cohort. This finding supports research which notes a child's initial subjective response to an event may predict later pathways of recovery (Jensen et al., 2009). Those children who reported rapid use of effective coping were demonstrating positive adaptation.

However, the present research demonstrates that it was not just the effective use of coping strategies, but the pertinent and flexible way a child used his or her coping repertoire that foretold of later adaptation. Children need to adjust to many new events in their evolving lives and integrate these events into their life schema. The children who coped well appeared to be able to use their capacity for plasticity, and be flexible in their appraisal of earthquakes, integrating them into their experience, and seeing them as one more change in their lives. Coping effectively then appeared to be influenced by, and influence the children's intrapersonal resources.

Intrapersonal Resources and Individual Characteristics

The present study was able to highlight multiple personal resources and characteristics that appear to influence the children's effective coping. Children who perceived themselves as having self-efficacy, motivation for mastery/agency, empathy, social skills, flexibility, and optimism were enabled in the use of their coping capacities. Children's intrapersonal capacities were both antecedents, and the result of effective coping strategies. Children coping effectively appeared to increase in awareness of their intrapersonal resources.

Intrapersonal resources could then scaffold coping strategies. For example: awareness of self-efficacy and agency appeared to promote coping strategies such as problem-solving and "getting on"; personal control enhanced coping strategies associated with emotional regulation such as keeping calm; and empathy enhanced the strategy of helping others; optimism assisted the coping strategy of positive appraisal. The present study also suggests that a strategy which is effective is likely to produce positive feedback loops with the children's intrapersonal resources.

Not only intrapersonal resources but children's individual characteristics also appeared to influence their coping capacity. For example, children who reported having secure attachment in their relationships seemed to seek support more easily, including information from their family and social network when necessary. Just as personal characteristics and resources underpinned coping, coping strategies when effective often resulted in an increase or consolidation of a characteristic. For instance, when the strategy of seeking support was successful, then the child was

more at ease in seeking further support for information on how to manage a situation. Problem solving was then enhanced, and the children may have then felt more efficient. Children in secure attachment relationships appeared to have many examples of support being available to them when needed, so their sense of security was reinforced.

Findings identified that attachment behaviour and coping were linked to developmental and age characteristics. Children demonstrated differing levels of dependence that influenced their coping; the younger children in the cohort did appear to be more reliant on adult support. They often sought adults and referenced adult reactions to assist them in their coping, whereas older children appeared to reference the adult reactions more particularly in immediate post-earthquake periods. The dependence of all ages on referencing adults may have been a result of the intensity and unknown aspect of the disaster events. Seeking support appeared linked to the size of the challenge children were facing.

The present study supported research (e.g., Deering, 2000; Peek, 2008) that children use different forms of coping depending on their developmental level and chronological age. The older children (15/16 years old) were more able to use abstract cognitive coping and seemed to have more established coping styles such as using humour, or positively reframing. This may have resulted from their use of these strategies over longer periods in their lives than the younger, five year old group. Findings however did not support research (e.g., Cardeña et al., 2005) that suggested adaptive coping is apt to be exhibited more particularly in adulthood. On the whole, the children in the present study supported research that suggests children use similar adaptive strategies to those found in adults (Skinner et al., 2003), but often in developmentally appropriate forms (e.g., problem-solving of how to react in earthquakes through using play in younger children).

Although studies note that understanding of adversity and consequent response is limited or nascent in younger children (e.g., Gaffney, 2006; Salmon & Bryant, 2002), the present research findings were more nuanced. Even though the younger children (five year old group) in the study used concrete variants of coping strategies more often than the older children, the younger children also demonstrated more complexity of response than is commonly noted in this age group. For example, the

younger children used cognitions and abstract strategies be it at an emergent level. Amelia, five years old, reported she could “think happy thoughts” during an earthquake as a strategy to manage her distress.

Coping strategies need to be interpreted in context. Findings demonstrated that children’s coping strategies are employed not just as a response to a stressor, but also in response to their needs. For example, some coping behaviours labelled in the literature as regressive, such as continually seeking support and proximity to close adults, could also be a reflection of the children effectively using a coping strategy temporarily for respite and to address their need for safety and security. Equally, children are reliant on others, particularly proximal adults to help them interpret and develop their capacity to respond. Once needs were met the children often demonstrated other more developmentally complex coping strategies in their repertoire such as minimisation or “getting on”.

Although research (Kronenberg et al., 2010) has stated that a consistent pattern of age differences in children’s response to disasters has yet to be elaborated and explained, the present study demonstrated that coping skills in children experiencing a disaster may emerge at the young ages of five and nine years. Findings from the present study contribute to the literature by suggesting that younger children can develop coping strategies that exhibit at times complex, as well as simpler concrete variants, as they deal with new and exceptional stressors.

Findings demonstrated that it is problematic to attempt to disentangle whether the children’s increased coping capacities are a result of only one process, or arise from their developmental level, or from available resources. Analyses identified that coping skills in children of all ages experiencing disasters may be a composite result of: experiencing adversity, effective coping with feedback loops, maturation, and enhancement from intrapersonal and proximal resources (see Chapters Four-Seven). Distinguishing what proportion of increase in capacity is related to effective coping skills, and what proportion is the result of the possible acceleration of developmental processes during a disaster, is complex. It is probable that the increased capacity to cope effectively and adapt adequately is the result of a combination of multiple elements, including access to interpersonal and community resources.

Interpersonal and community resources

The present study suggests that there is an accumulative, interactive positive effect between children and their close systems of family and community, when these systems were functioning adequately. The present study supports the perspective that children cope and adapt while they are nested in multiple systems as in Bronfenbrenner's ecological systems model (Bronfenbrenner & Morris, 2007). Children who appeared to be coping well were interacting within multiple relationships and contexts (family, social networks, school, and community) that promoted their coping capacities. These children perceived, recognised and took advantage of resources in their immediate environments. Children coping effectively actively accessed these proximal resources, be they extended family, pets, peers, teachers, neighbours, or community structures.

Relationships with family, teachers, and social networks of peers and neighbours offered resources and were linked to the children's effective coping in numerous ways. An important resource for the children was the re-establishment of safe, stable home and school environments with known routines. Children who reported living in these contexts appeared more able to access their own effective coping strategies. This study therefore concurs with research which has suggested that children need to re-establish some sense of calmness and normality (e.g., Alisic et al., 2011) before they are "open" to gain from other resources, or are fully capable of using their own coping resources.

However, if the adults or community structures were unable to provide safety, or stability and routines, as was the case for a minority of the cohort, then the children appeared to be less able to benefit from close others, or have access to positive resources. Some of these children demonstrated the need for adults to be continually present in their search for security and safety. Findings are consistent with research (Proctor et al., 2007) that suggests the family context can provide either supportive or aggravating influences when a child faces a disaster. Influences depend on whether the family system is dealing adequately with the adversity and is thus a resource for the children.

In all age groups in the present study, a core relationship was the bi-directional parent-child relationship. The present study, as a retrospective study, can only

surmise pre-disaster relationships. However, it is probable that when the parent-child relationship was functioning well during the disaster, a period of increased stress, then this relationship was possibly supportive pre-disaster. Children who had pre-established positive relationships with parents were likely to have faced the disaster experience with pre-disaster promotive factors that supported their coping capacity. Factors include a secure relationship with parents, adequate coping mechanisms within the family, and pre-disaster referencing of effective coping assistance from observing or being coached by parents.

Many of the children were assisted in their coping skills by observing proximal others' effective coping that was triggered by disaster events. This coping assistance often facilitated children's acquisition of effective coping skills. Proximal others: parents, teachers, extended family, peers, and neighbours modelled and actively coached effective coping strategies, such as keeping calm or reappraising a difficult situation as a challenge to be met (rather than be seen as an uncontrollable threat). Adults were referenced by all age groups of children in the immediate aftermath of earthquakes and trusted adults were particularly influential. The present study also demonstrated numerous instances of collaborative learning, coping assistance, and support between peers. This latter relationship was found more consistently in middle and later childhood than in the five year old group.

Findings from the present study demonstrated that well-functioning relationships, such as the parent/child, teacher/children relationships, also provided specific protective elements which assisted the children during a disaster and promoted their effective coping and adaptation. These protective elements included watchful awareness (monitoring) whilst concurrently re-establishing stability, offering support, protection, and buffering. Parents and teachers who promoted the children's capacities showed flexibility in their responses. They adjusted their responses to the child's developmental level and needs, buffering when necessary, being able to discuss the situation to assist processing, and/or supporting children's coping capacities and encouraging a re-focusing on everyday tasks.

Parents and teachers re-established a supportive environment for the children. Many parents and teachers accepted and normalised children's temporary stress reactions and actively recognised the children's instances of effective coping when they

occurred. When parents, teachers, or peers recognised children's effective coping strategies, the recognition appeared to promote the children's use of these effective strategies, and enhanced their sense of self-efficacy. Interestingly, parents' and teachers' behaviours were often focused on what has been recognised by the literature (Hobfoll et al., 2007), as basic needs following a disaster, the restoration of: safety; calm; connectedness; efficacy and hope.

Supportive behaviour from parents and teachers may have come at a cost however. Several parents and teachers commented on the added stress and strain of supporting children whilst dealing with disaster-related consequences (and the issues they created for them). Nevertheless, teachers often experienced support from their peers, as well as hierarchical support from within the school system (principals), and Ministry of Education supported workshops that mitigated the increased pressure stemming from the situation. Parents reported peer support, support from the school, and some external interventions (e.g., UNICEF) as positive supportive elements.

Findings revealed that both parents and teachers, who were effective in promoting adequate coping in the children, were neither over protective nor too absent, but adapted their support to the children's changing requirements. Like effective parents, teachers increased their watchful awareness of the children and adjusted their teaching behaviours accordingly. Some potentially vulnerable children, who were initially struggling, were buoyed up by parents and teachers, who increased their protective and instructive behaviours, often relaxing normal rules and regulations until the children could integrate more effective coping.

Findings highlighted that children are far from passive in a disaster situation. Children are influenced by but also influence others in interdependent relationships. Parents and teachers focusing on the children's needs, often stated that they were enabled by the children's presence to manage their own situations well; many teachers and parents reported being calmer and more able to cope effectively when the children were present. The children, when coping effectively, contributed to the family and school-class's sense of competency—"we are managing well". Several children were focused on helping others, including neighbours, immediately after an earthquake, which helped others but also promoted a sense of competence in the children who were helping.

The study findings support the contention (e.g., Ungar, 2008) that effective coping and positive adaptation are culturally conceived phenomena. For example, children in the study who demonstrated the culturally accepted capacity to be stoic were recognised and supported within their families and community as children who were coping well. Similarly, associated coping strategies of emotional regulation and “getting on” were recognised and supported. Instances of children from a more collectively-focused culture (Māori and Japanese) were influenced in their coping and adaptation by cultural elements in their relevant groups. For example, these children were aware that they were coping well if their extended families or whanau were coping well. Their collective coping focus was acknowledged and encouraged in the relevant cultural groups within their community.

Community structures of neighbourhood and school, both the people and place, appeared influential in supporting children’s adjustment to the post-disaster situation. Findings support research that the children’s social and physical contexts, as well as interactions between these settings had an impact on how the children coped and adapted.

Neighbours and proximal others were frequently reported as giving reassurance and modelling adequate coping. Neighbours and neighbourhoods contributed to continuity of place. The school was often a source of safety, reassurance and of community connectedness. Well-functioning schools provided leadership within the community, promoted disaster response skills, and modelled effective coping. A school reopening after an earthquake was a signal to the children that life would go back to a predictable rhythm in a known place of routines, learning, and social interaction. Community structures influenced children’s coping. Children of all age groups commented on their local environment rebuild, but older children appeared to have a larger interaction with and more independent access to their city, which may have resulted in a larger influence from community elements within this group.

However, the influence of the proximal community on children’s coping depended not solely on whether the community was able to function adequately, provide infrastructure resources or social capital for the children and families. Importantly, the influence of the community also depended on the children’s appraisal. In the present study, when children perceived that their community was exhibiting signs of

recovery and competence, then the community had a positive effect on their sense of connectedness, local identification, and sense of recovery. As with all resources, the perception and influence of the community changed as infrastructure and functioning altered over the recovery period. Time was an important influence on how the children's coping evolved.

Coping Over Time: A comparison between T1 and T2 coping

This study investigated the influences of time on coping and adaptation by comparing T1 and T2 findings. T2 interviewing of six of the children occurred 33 months after the most destructive earthquake and 17 months after T1 interviews. In T2, children coping effectively continued to employ pertinent strategies and flexible use of coping, but their focus had shifted. Findings suggested a recovery process, as coping strategies were less focused on disaster consequences and more on everyday difficulties such as age-related challenges of school work and relationships. The children reported they were "moving on" with their lives.

Some coping strategies revealed in T1 appeared less important for the children in T2. Emotional regulation and seeking support were not as prominent as the post-disaster situation evolved. However, the children's flexibility and the use of their strategies in a pertinent way to address their present concerns continued to be signs of effective coping. For example, transferring coping skills onto school examinations promoted positive adaptation.

In T2, all six of the children had a repertoire of coping strategies that were practised, pertinent, and contributed actively towards their positive adaptation. For example, many of the children's capacity to manage emotions in earthquakes improved over time, as did their capacity to know what to do. They were in fact "getting through" the disaster. When a coping strategy was effective, there appeared to be a consolidation of that strategy and an increase in the probability of resilience processes that are found in positive adaptation.

Coping with the disaster may have accelerated coping and intrapersonal skills. For example, by T2 all of the children reported having gained from the disaster by feeling stronger and being more adept at coping. The children's awareness of having

managed the disaster well appeared to promote their sense of self-efficacy and competence, even as they continued to remember the distress of the recent disaster experience. All six children in T2 demonstrated positive adaptation, in appropriate functioning for their ages in managing at school and demonstrating ongoing relationships with friends and family.

However, the T2 cohort demonstrated heterogeneous pathways to effective adaptation. Some children showed resilience pathways, defined as their rapid return to age appropriate functioning, whereas others showed initial stress reactions and took time to cope at a level that exhibited adequate development behaviours (recovery pathway). In the recovery group, negative coping strategies such as avoidance diminished over time from T1 to T2. The children's pathways support research on children's post-disaster trajectories (e.g., Masten & Obradovic, 2008; Weems and Graham, 2014) where resilience and recovery pathways were the most common adaptive pathways. In both the resilience and recovery pathways of positive adaptation, coping strategies remained varied processes that continued to benefit from both the children's intrapersonal resources and the resources of the people and community.

Positive adaptation, as suggested by the findings of the present study, appeared to emerge from an interweaving of the children's coping skills, their capacities and ongoing maturation, as well as access to, and use of proximal resources. A visual representation of these findings is developed in Figure 9. This model presents diagrammatically the trigger processes from adverse events, and how the use of effective coping, as well as personal and proximal resources, influenced ongoing positive adaptation.

Figure 9 demonstrates that coping strategies, intrapersonal resources, proximal and distal interpersonal and community resources interacted together over time. Although criteria for understanding whether children are adapting well is not yet fully conceptualised, findings revealed that positive adaptation in the children in the present study appears to be a complex interplay of elements. This interplay results in children continuing normal development, competence in relationships, and experiencing subjective well-being.

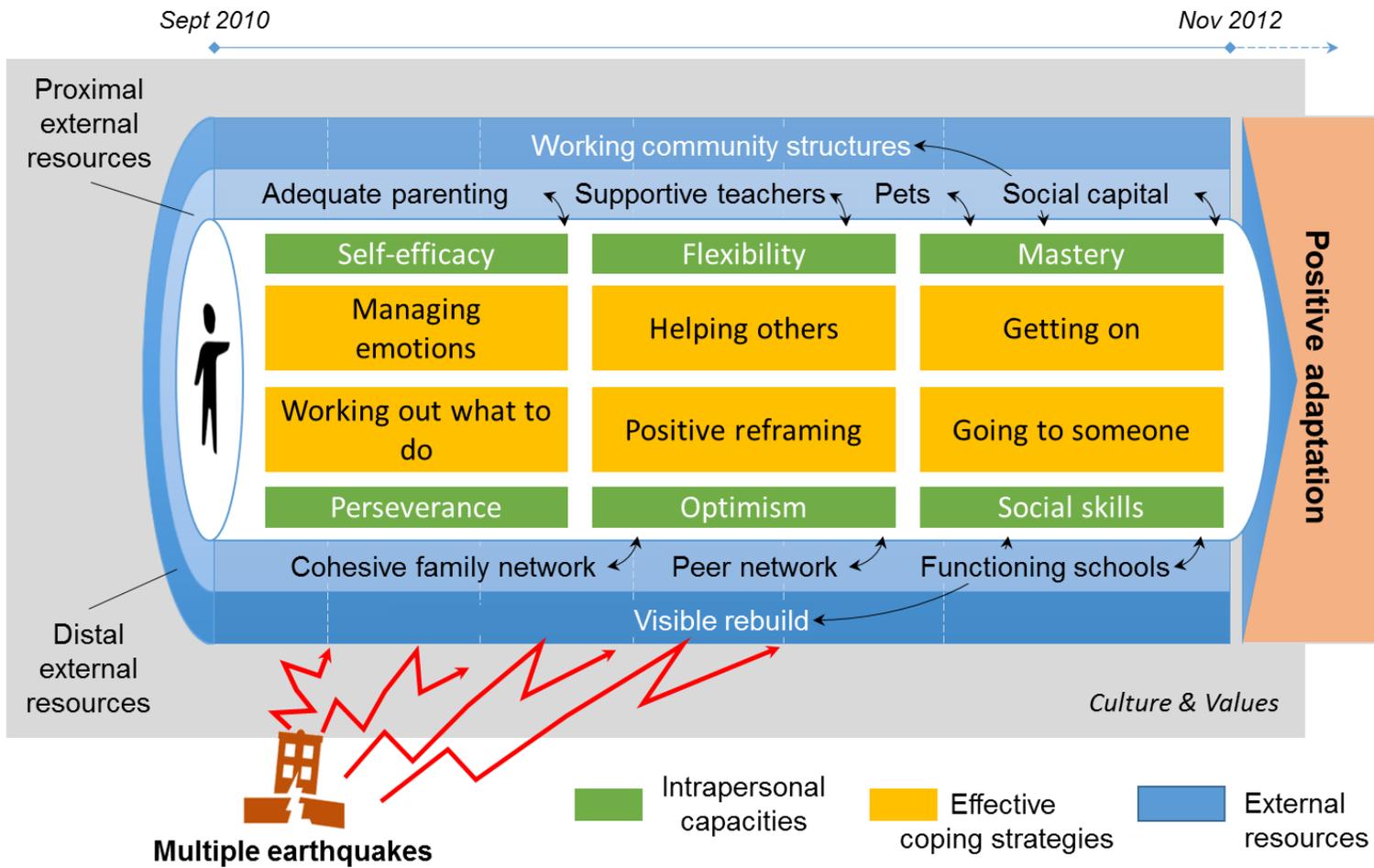


Figure 9. Children's effective coping leading towards positive adaptation

Limitations

There are several limitations to the present study. Firstly, as a qualitative study understanding the phenomenon of coping effectively from the children's perspective, the study is context specific and context sensitive. Although this framework allows rich understanding of children's coping, all generalisations should be taken with caution as findings are nested in a specific culture and from a particular disaster scenario. Nevertheless, findings from this study may have some transferability in that the study has a description of context, participants, and detailed analyses.

Secondly, the participants in the study may not be representative of the overall population of Christchurch who experienced the earthquake disaster. Data were obtained from children, parents, and teachers, who were willing to participate in the research, and therefore findings may not provide a global view of children's coping in this context. Results may be biased toward those children and families who were coping adequately with the disaster and so were able to consider participating in the research. However, the bias may not be highly significant, as recent longitudinal research on health outcomes with adults in a disaster suggests that non-response and attrition does not have a serious impact on understanding effects (Yu, Brackbill, Stellman, Ghuman, & Farfel, 2015). Nevertheless, some groups may be under-represented or absent, such as children who may have been highly affected, were relocated, or who were not willing or able to discuss their experiences, as well as children and families who were minimally affected, and who did not see the interest in participating.

The present study design may have influenced and limited findings. Most of the interview data were retrospective, which may have biased memory of what coping strategies were employed. Thus, data could be limited by increased error in recall (Frazier & Kaler, 2006). T1 interviews occurred 16 months after the most destructive earthquake and findings may have reflected coping that was related to a post-disaster context rather than in the immediate aftermath of a disaster. However, due to the ongoing intense aftershock sequence of this disaster, large aftershocks were frequent at T1 and so children continued to experience and cope with multiple adverse events at that time.

Also, very few of the younger children (five or nine-year-old groups), were seen without a parent present and this may have influenced discussion. For example, children may have tried to protect parents from knowing their distress and so reported more positive experiences. However, conducting interviews with both parent and child present may equally have established trust (Punch, 2002), so that the child felt more at ease in discussing their experience. In addition, interviews with a trusted adult present may have been less prone to power asymmetry that can exist in research interviews with children on their own.

A further limitation in the study design may have resulted from the use of thematic analysis which is appropriate for exploring themes, but less pertinent for understanding the interaction of relationships. This limitation was in part compensated for by having data from different members of a dyad (child/parent, child/teacher) which provided cross referencing of information on relationships.

There was a primary focus in this study on investigating effective coping and positive adaptation rather than negative coping. Nevertheless, the researcher continued to question findings and to bracket or bridle researcher preconceptions so as to be open to all data. Examples of negative coping and distress were acknowledged and discussed.

Finally, the scope of the study resulted in limitations. For example, the T2 cohort was limited in number and so findings can only be understood as tentative suggestions for coping over time. As well, although community influences are a rich source of influence on children's coping and all coping is culturally defined, restraints within the scope of the study resulted in restricted exploration of these cultural and community elements. Notwithstanding the above limitations, findings in the present study provide an in depth understanding of what is effective coping in children facing a disaster.

Strengths of the Present Study

The present study is one of few that asked children directly about their subjective experience with disaster and its consequences over a time frame that more realistically reflects the longer term dynamic nature of disaster impact and recovery.

Doing so increased the ability of the study to offer systematic insights into how children themselves view and clarify their coping responses and adaptation. Children are articulate and the study approach enabled them to give their unique perspective.

The qualitative phenomenological approach adopted informed understanding of what constitutes children's effective coping, and enabled richness and breadth of detail in investigating their perspectives on stressors, adaptation, and how the influence of the children's own resources, proximal relationships, and community elements promoted or inhibited their coping. The integration of multiple conceptual perspectives (e.g., ecological systems theory, risk and resilience and coping research) is infrequent in the literature, which so often gives insight into children's experience through parallel but separate research approaches.

A further strength of the study was the inclusion of data from multiple informants (teachers and parents) in the Christchurch cohort and data from a separate children's comparison group in Wellington. Examining data from a children's comparison group in another city enabled a comparison of coping from children of similar ages, cultural and seismic region, and added to understanding of how coping in disasters may differ from everyday coping.

Obtaining data from the children's parents, teachers and principals contributed to gaining multiple perspectives of the children's experiences and added layers of information to the children's reports. Multiple informants allowed data to be cross-referenced. By investigating data from teachers and principals, understanding was extended as to how the school institution and school relationships influence children's effective coping during a disaster and throughout a post-disaster period.

The present study gained from focusing on children as nested in multiple systems, from individual to community interactions (see Figures 3, 8 & 9), rather than seeing children as isolated and coping as an individually influenced behaviour. Findings thus increased understanding of how these multiple resources stemming from many contexts promoted or hindered children's coping. The present study has thus increased understanding of children's effective coping in disasters from multiple sources and in interactions with multiple contexts.

This study is, to the researcher's knowledge, the only study to investigate children's own reported coping from two time points in a recovery period. Although T2 data were restricted to six children from the larger T1 cohort, viewing the temporal dimension of coping processes allowed a more detailed picture of the children's effective coping within their pathways of adaptation. Although based on a small group, comparison of T1 and T2 findings contributes to our understanding of how coping may change within a disaster recovery context. It also offers a robust platform on which to develop research questions for future research into children's coping with disasters and their dynamic consequences.

Much disaster research has focused on older children (e.g., children 16-19 years in Pine et al., 2015; Uttervall et al., 2013) whereas the present study included children from five years of age and examined coping in three age groups. The age groups were chosen specifically so as to examine coping in ages where cognitive, emotional, and behavioural shifts in coping processes may occur.

Although not the main focus of the study, exploration of coping strategies in three age groups enabled a consideration of developmental and age related influences on children's coping. Findings in the study mainly substantiated the existing literature in respect of the increasing complexity in children's understanding and coping that comes with increasing maturity. However, the inclusion of five-year-old children added to the literature by demonstrating that this group is capable of more complex coping strategies than previously indicated. Not only the older children but many children in all age groups in the Christchurch cohort demonstrated instances of multi-faceted coping strategies and moreover, could use their repertoire flexibly. Based on the present study, the following recommendations are made.

Recommendations

Findings suggest that children can be supported to develop effective coping and benefit from assistance from proximal others. It is recommended that support and coping skill enhancement programmes are introduced in both the education and health spheres, such as within a school curriculum and in community health centres. The following proposed key recommendations differ from many disaster support

interventions as they are not focused solely on stress reactions but are actively concentrated on coaching effective coping skills, supporting resources influential in promoting children's coping, and enabling children's community participation and connectedness. Key recommendations fall into three groups:

1. Programmes to coach effective coping
2. Interventions tailored to support children who struggle
3. Interventions to support caregivers

1. Programmes to coach effective coping.

In order for children to have the necessary time to master and practise a coping repertoire, it is recommended that there are interventions that prepare for, and interventions that respond to, disaster needs. Activities, adapted to age and developmental levels, are recommended to assist children to learn:

- Strategies to regulate emotions
- Application of flexibility and pertinence in their coping repertoire
- How to employ multiple coping strategies
- Use of interlinked and cumulative coping strategies
- How to identify resources that promote effective coping
- How to access and employ personal and proximal resources, both social capital and community resources
- How to be active participants in community projects

It is recommended that:

- Interventions take place in known safe places such as class settings with visits to community projects when applicable
- An environment be created so that children are able to share and reference multiple ways of responding from others, and practise coping techniques (e.g., role play)
- Support and supervision for facilitators is integral to the programme

2. Tailoring interventions for children who struggle.

Key recommendations for these children are for interventions to focus on a combination of psychosocial support, re-establishment of some normality, and coaching effective coping. It is recommended that interventions:

- Focus on activities supporting basic needs (e.g., safety and security)
- Scaffold emotional regulation skills and nascent effective coping skills
- Enable practice of stress management tools (e.g., relaxation techniques, mindfulness training), and use of flexible coping strategies

3. Interventions for children's caregivers.

Although the present study focuses on effective coping in children, findings revealed the importance of caregivers (e.g., parents and teachers) in supporting and promoting effective coping capacities. Interventions are recommended for the immediate aftermath of a disaster when parents and teachers are dealing with the exceptional situation of children's initial reactions, yet need to be extended over the recovery period as psychosocial recovery takes time.

Key interventions aimed at caregivers should include:

- Information on common childhood reactions
- Acceptance and management of children's reactions
- Learning specific caregiver behaviours supportive to children's needs in a disaster context (e.g., protection, re-establishing routines, watchful awareness, positive appraisal)
- How to assist coping through modelling and coaching effective coping
- The importance of self-care

Future Research Directions

Findings from the present study give a rich interpretation of children's effective coping and adaptation within disaster contexts and suggest multiple avenues for future research in an area where research is as yet limited.

The study findings demonstrate that children's coping strategies and way of coping effectively are a result of multiple interactions between many of the children's proximal and distal systems (shown in Figure 9). Future research that addresses this complexity would benefit from including different research perspectives (e.g., mixed methods) and conceptual frameworks (e.g., coping and resilience research, ecological systems framework), as well as a study design that incorporates cross-disciplinary approaches (e.g., psychology and sociology).

Children do not cope in isolation. Findings from the present study suggest that further research focusing on understanding how systems of family, school, and neighbourhood promote coping in children would increase current knowledge of elements that support children's effective coping. Ideally future research should explore both individual and community interactions within a multi-layered ecological model focusing on both effective and ineffective coping processes over time.

The present study has demonstrated that children are articulate and yet are often unheard in the literature. Understanding of children's effective coping in a disaster context would benefit from further research that investigates children's experience from their own point of view. This would mean giving the children a voice. Research with children can benefit from the use of multiple methods of data collection and analysis. For example, not only data from interviews and observation of reactions in real time, but children's participatory research. Children are far from passive, so child-participatory methods of collecting data such as through video, theatre, and peer reporting may allow the children to express their experiences fully and provide rich data. Disaster contexts are difficult arenas for research, but children-facilitated school-supported projects and observation of children in school grounds are possibilities as schools are often re-established as soon as possible post-event.

Gaps exist in the literature relating to the understanding of long term outcomes of effective coping in highly adverse situations. The present study has demonstrated that recovery takes time and that children evolve at different paces and across different pathways towards positive adaptation. These heterogeneous pathways and the criteria that underpin adaptive pathways are yet to be fully understood.

Longitudinal studies would further clarify how coping processes evolve temporally towards positive adaptation.

Children's coping and adaptation is culturally influenced, and yet little is known of what is effective coping in different communities. Future research in differing cultural and disaster contexts is necessary to explore the ways cultural values influence what is effective coping and adaptation in children. Research in different cultural contexts would contribute to understanding how effective coping processes may differ but also highlight commonalities.

Finally, future research is necessary that focuses on processes of pre-disaster functioning in children, or how pre-disaster stressor interactions and coping may influence post-disaster coping pathways. If pre-disaster baseline data are obtained by research focusing on everyday coping behaviour in geographical areas of risk, then data would be available if and when disasters strike in these areas. This baseline data would then allow, for example, research to investigate coping processes in different groups of children including those who initially experienced high levels of distress but who eventually exceed their pre-disaster functioning.

Understanding how children manage complex adversity is a vital area of study if we are to understand the processes that underlie effective coping and positive adaptation in disasters. Although a potentially vulnerable group, the present study has identified that children are articulate and active participants in "getting through" a disaster. In the literature, the focus on children in disasters continues to be heavily concentrated on children demonstrating traumatic symptoms and negative coping. Future research that concentrates on effective coping and positive adaptation would provide a more holistic understanding of how children cope with disaster and better inform interventions to assist them.

References

- Abramson, D. M., Park, Y. S., Stehling-Ariza, T., & Redlener, I. (2010). Children as bellwethers of recovery: Dysfunctional systems and the effects of parents, households, and neighborhoods on serious emotional disturbance in children after Hurricane Katrina. *Disaster Medicine and Public Health Preparedness*, 4 Suppl 1, 17–27. doi:10.1001/dmp.2010.7
- 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. doi: 10.1097/01.nmd.0000228503.95503.e9
- Affleck, G., & Tennen, H. (1996). Construing benefits from adversity: Adaptational significance and dispositional underpinnings. *Journal of Personality*, 64(4), 899–922. doi:10.1111/j.1467-6494.1996.tb00948.x
- Ager, A., Stark, L., Akesson, B., & Boothby, N. (2010). Defining best practice in care and protection of children in crisis-affected settings: A Delphi study. *Child Development*, 81, 1271–1286.
- Aktar, E., Majdandžić, M., de Vente, W., & Bögels, S. M. (2013). The interplay between expressed parental anxiety and infant behavioural inhibition predicts infant avoidance in a social referencing paradigm. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 54(2), 144–56. doi:10.1111/j.1469-7610.2012.02601.x
- Aldrich, D. P. & Sawada, Y. (2014). The physical and social determinants of mortality in the 3.11 tsunami. *Social Science & Medicine*, 124, 1–31. doi:10.1016/j.socscimed.2014.11.025
- Aldwin, C. M., & Levenson, M. R., (2009). Posttraumatic growth: A developmental perspective. *Psychological Inquiry*, 15(1), 19–34. doi:10.1207/s15327965pli1501
- Alisic, E. (2011). Building child trauma theory from longitudinal studies: A meta-analysis. *Clinical Psychology Review*, 31, 736-747.
- Alisic, E., Boeije, H. R., Jongmans, M. J., & Kleber, R. J. (2011). Children's perspectives on dealing with traumatic events. *Journal of Loss and Trauma*, 16(6), 477–496. doi:http://dx.doi.org/10.1080/15325024.2011.576979
- Alisic, E., Boeije, H. R., Jongmans, M. J., & Kleber, R. J. (2012). Supporting children after single-incident trauma: Parents' views. *Clinical Pediatrics*, 51(3), 274–82. doi:10.1177/0009922811423309
- Alisic, E., van der Schoot, T. A. W., van Ginkel, J. R., & Kleber, R. J. (2008). Looking beyond post-traumatic stress disorder in children: Posttraumatic stress reactions, post-traumatic growth, and quality of life in a general population sample. *Journal of Clinical Psychiatry*, 29, 1455–1461.
- Antonovsky, A. (1979). *Health, stress & coping*. San Francisco, CA: Jossey-Bass Publishers.
- Antonovsky, A. (1996). The salutogenic model as a theory to guide health promotion. *Health Promotion International*, 11(1), 11–18. doi:10.1093/heapro/11.1.11
- Bai, S., & Repetti, R. L. (2015). Short-term resilience processes in the family. *Family Relations*, 64(1), 108–119. doi:10.1111/fare.12101

- Baldwin, T. Ed., (2004). *Maurice Merleau-Ponty: Basic writings*. London, UK: Routledge.
- 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.
- Banks, D. M., & Weems, C. F. (2014). Family and peer social support and their links to minority youth. *American Journal of Orthopsychiatry*, 84(4), 341–352. doi:http://dx.doi.org/10.1037/ort0000006
- Bannister, S., & Gledhill, K. (2012). Evolution of the 2010–2012 Canterbury earthquake sequence. *New Zealand Journal of Geology and Geophysics*, 55(3), 295–304. doi:10.1080/00288306.2012.680475
- Baum, N. L., Rotter, B., Reidler, E., & Brom, D. (2009). Building resilience in schools in the wake of Hurricane Katrina. *Journal of Child and Adolescent Trauma*, 2(1), 62–70. doi:10.1080/19361520802694323
- Becker-Blease, K. A., Turner, H. A., & Finkelhor, D. (2010). Disasters, victimization and children's mental health. *Child Development*, 81, 1040-1052.
- Benight, C. C., & Bandura, A. (2004). Social cognitive theory of posttraumatic recovery: The role of perceived self-efficacy. *Behaviour Research and Therapy*, 42(10), 1129–48. doi:10.1016/j.brat.2003.08.008
- Benzies, K., & Mychasiuk, R. (2009). Fostering family resiliency: A review of the key protective factors. *Child & Family Social Work*, 14, 103–114, <http://dx.doi.org/10.1111/j.1365-2206.2008.00568x>.
- Berry, J. M., & West, R. L., (1993). Cognitive self-efficacy in relation to personal mastery and goal setting across the life span. *International Journal of Behavioral Development*, 16(2) 351-379.
- Betancourt, T. S., & Khan, K. T. 2008. The mental health of children affected by armed conflict: Protective processes and pathways to resilience. *International Review of Psychiatry*, 20(3), 317–28.
- Betancourt, T. S., McBain, R., Newnham, E. A. & Brennan, R. T. (2013). Trajectories of internalizing problems in war-affected Sierra Leonean youth: Examining conflict and post-conflict factors. *Child Development*, 84, 455- 470.
- Bokszczanin, A. (2008). Parental support, family conflict, and overprotectiveness: Predicting PTSD symptom levels of adolescents 28 months after a natural disaster. *Anxiety, Stress, and Coping*, 21(4), 325–335. doi:10.1080/10615800801950584
- Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, 59, 20-28.
- Bonanno, G. A. (2005). Resilience in the Face of Potential Trauma. *Current Directions in Psychological Science*, 14(3), 135–138. doi:10.1111/j.0963-7214.2005.00347.x
- Bonanno, G. (2013). Meaning making, adversity, and regulatory flexibility. *Memory* 21(1), 150–6. doi:10.1080/09658211.2012.745572

- 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 in the Public Interest*, 11(1), 1–49.
- Bonanno, G. A., & Diminich, E. D., (2013). Annual research review: Positive adjustment to adversity—trajectories of minimal-impact resilience and emergent resilience. *Journal of Child Psychology and Psychiatry*, 54, 378–401. doi:10.1111/jcpp.12021
- Bonanno, G. A., Galea, S., Bucchiarelli, A., & Vlahov, D. (2007). What predicts psychological resilience after disaster? The role of demographics, resources, and life stress. *Journal of Consulting and Clinical Psychology*, 75(5), 671–82. doi:10.1037/0022-006X.75.5.671
- Bonanno, G. A., & Mancini, A. D. (2008). The human capacity to thrive in the face of extreme adversity. *Pediatrics*, 121, 369–375.
- Bonanno, G. A., & Mancini, A. D. (2012). Beyond resilience and PTSD: Mapping the heterogeneity of responses to potential trauma. *Psychological Trauma: Theory, Research, Practice, and Policy*, 4(1), 74–83. doi:10.1037/a0017829
- Bonanno, G. A., Papa, A., Lalande, K., Westphal, M., & Coifman, K. (2004). The importance of being flexible: The ability to enhance and suppress emotional expression predicts long-term adjustment. *Psychological Science*, 15, 482–487.
- Bonanno, G. A., Pat-Horenczyk, R., & Noll, J. (2011). Coping flexibility and trauma: The perceived ability to cope with trauma (PACT) scale. *Psychological Trauma-Theory Research Practice and Policy*, 3, 117-129. doi:10.1037/a0020921
- Bonanno, G. A., Rennie, C., & Dekel, S. (2005). Self-enhancement among high-exposure survivors of the September 11th terrorist attack: resilience or social maladjustment? *Journal of Personality and Social Psychology*, 88(6), 984–98. doi:10.1037/0022-3514.88.6.984
- Bonanno, G. A., Romero, S. A., & Klein, S. I. (2015). The temporal elements of psychological resilience: An integrative framework for the study of individuals, families, and communities. *Psychological Inquiry*, 26(2), 139–169 doi:10.1080/1047840X.2015.992677
- Borelli, J. L., Crowley, M. J., David, D. H., Sbarra, D. A, Anderson, G. M., & Mayes, L. C. (2010). Attachment and emotion in school-aged children. *Emotion*, 10(4), 475–85. doi:10.1037/a0018490
- Boyce, W. T., & Kobor, M. S. (2015). Development and the epigenome: the “synapse” of gene-environment interplay. *Developmental Science*, 18(1), 1–23. doi:10.1111/desc.12282
- Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77- 101
- Braun, V. & Clarke, V. (2014). *Successful qualitative research: A practical guide for beginners*. London, UK: Sage.
- Brentano, F. (1955). *Psychologie vom empirischen Standpunkt* [Psychology from the empirical point of view] (Vol. 1). Hamburg: Meiner. (Original work published 1874)

- 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
- Brinton Lykes, M., Terre Blanche, M., & Hamber, B. (2003). Narrating survival and change in Guatemala and South Africa: The politics of representation and a liberatory community psychology. *American Journal of Community Psychology, 31*(½), 79-90.
- Bronfenbrenner, U. (1979). Contexts of child rearing: problems and prospects. *American Psychologist, 34*(10) 844-850. doi: 10.1037/0003-066X.34.10.844
- Bronfenbrenner, U. (1986b). Recent advances in research on the ecology of human development. In R. K. Silbereisen, K. Eyferth, & G. Rudinger (Eds.), *Development as action in context: Problem behaviour and normal youth development*. (pp. 286–309). New York: Springer-Verlag.
- Bronfenbrenner, U., & Morris, P. A. (2006). The bio-ecological model of human development. In R. M. Lerner & W. Damon (Eds.), *The handbook of child psychology, Vol I: Theoretical models of human development*. (pp.793-828). Hoboken, NJ: Wiley 6th ed.
- Bryant, R. A., Salmon, K., Sinclair, E., & Davidson, P. (2007). A prospective study of appraisals in childhood posttraumatic stress disorder. *Behaviour Research and Therapy, 45*(10), 2502–7. doi:10.1016/j.brat.2007.04.009
- Cadamuro, A., Versari, A., Vezzali, L., Giovannini, D., & Trifiletti, E. (2015). Cognitive performance in the aftermath of a natural disaster: The role of coping strategies, Theory of Mind and peer social support. *Child & Youth Care Forum, 44*(1), 93–113. doi:10.1007/s10566-014-9272-z
- Caelli, K. (2000). The changing face of phenomenological research: Traditional and American phenomenology in nursing. *Qualitative Health Research 10*, 366-377.
- Caelli, K., Ray, L., & Mill, J. (2003). ‘Clear as mud’: Towards greater clarity in generic qualitative research. *International Journal of Qualitative Methods 2*(2), 1-13.
- Camic, P. M., Rhodes. J. E., & Yardley, L. (2003). *Qualitative research in psychology: Expanding perspectives in methodology and design*. Washington DC: APA
- Cappa, K. A., Begle, A. M., Conger, J. C., Dumas, J. E., & Conger, A. J. (2011). Bidirectional relationships between parenting stress and child coping competence: Findings from the Pace Study. *Journal of Child and Family Studies, 20*, 334-342. doi: ao.1007/s10826-010-9397-0
- Cardeña, E., Dennis, J. M., Winkel, M. & Skitka, L. J., (2005). A snapshot of terror: Acute posttraumatic responses to the September 11 attack. *Journal of Trauma & Dissociation, 6*(2), 69-84, doi: 10.1300/J229v06n02_07
- Carver, C. S. (1998). Resilience and Thriving: Issues, Models, and Linkages. *Journal of Social Issues, 54*(2), 245–266. doi:10.1111/j.1540-4560.1998.tb01217.x
- Carver, C. S., & Connor-Smith, J. (2010). Personality and coping. *Annual Review of Psychology, 61*, 679–704. doi:10.1146/annurev.psych.093008.100352
- Carver, C. S., & Scheier, M. F. (2014). Dispositional optimism. *Trends in Cognitive Sciences, 18*(6), 293–9. doi:10.1016/j.tics.2014.02.003

- Catani, C., Gewirtz, A. H., Wieling, E., Schauer, E., Elbert, T., & Neuner, F. (2010). Tsunami, war, and cumulative risk in the lives of Sri Lankan schoolchildren. *Child Development, 81*(4), 1176–1191.
- Cavallo, E. & Noy, I. (2010). The Economics of natural disasters: A survey. *Inter-American Development Bank*, (May).
- Charney, D. S. (2004). Psychobiological mechanisms of resilience and vulnerability: Implications for successful adaptation to extreme stress. *American Journal of Psychiatry, 161*, 195-216.
- Chemtob, C. M., Nomura, Y., Rajendran K., Yehuda, R., Schwartz, D., Abramovitz, R. (2010). Impact of maternal posttraumatic stress disorder and depression following exposure to the September 11 attacks on preschool children's behavior. *Child Development, 81*(4), 1128–40.
- Chen, S. H. & Wu, Y.C. (2006). Changes of PTSD symptoms and school reconstruction: a two-year prospective study of children and adolescents after the Taiwan 921 earthquake. *Natural Hazards, 37*, 225-244. doi: 10.1007/s11069-005-4671-y.
- Cheng, C. (2003). Cognitive and motivational processes underlying coping flexibility : A dual-process model. *Journal of Personality and Social Psychology, 84*(2), 425–438. doi:10.1037/0022-3514.84.2.425
- Cheng, C., & Cheung, M. W. L. (2005). Cognitive processes underlying coping flexibility: Differentiation and integration. *Journal of Personality, 73*(4), 859–86. doi:10.1111/j.1467-6494.2005.00331.x
- Cicchetti, D. (2010). Resilience under conditions of extreme stress: A multilevel perspective. *World Psychiatry 9*(3), 145–54.
- Cicchetti, D. (2013). Annual research review: Resilient functioning in maltreated children – past, present, and future perspectives. *Journal of Child Psychology and Psychiatry, 54* (4) 402-422. doi:10.1111/j.1469-7610.2012.02608.x
- Cicchetti, D. & Rogosch, F. A. (2009). Adaptive coping under conditions of extreme stress: multilevel influences on the determinants of resilience in maltreated children. In E. A. Sinner & M. J. Zimmer-Gembeck (Eds.), *Coping and the development of regulation: New directions for child and adolescent development, 124*, (pp.47-59). San Francisco, CA: Jossey-Bass.
- Clay, R., Knibbs, J., & Joseph, S. (2009). Measurement of posttraumatic growth in young people: A review. *Clinical Child Psychology and Psychiatry, 14*, 411– 422.
- Cobham, V. E., & McDermott, B. (2014). Perceived parenting change and child posttraumatic stress following a natural disaster. *Journal of Child and Adolescent Psychopharmacology, 24*(1), 18–23. doi:10.1089/cap.2013.0051
- Cohen, J. A., & Mannarino, A. P. (2011). Supporting children with traumatic grief: What educators need to know. *School Psychology International, 32*(2), 117–131. doi:10.1177/0143034311400827
- Compas, B. E. (1987). Coping with stress during childhood and adolescence. *Psychological Bulletin, 101*, 393-403.

- Compas, B. E. (2009). Coping, regulation, and development during childhood and adolescence. In E. A. Skinner & M. J. Zimmer-Gembeck (Eds.), *Coping and the development of regulation: New directions for child and adolescent development*, 124, (pp. 87–99). San Francisco: Jossey-Bass.
- Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin*, 127, 87–127.
- Compas, B. E., Hinden, B. R., & Gerhardt, C. A. (1995). Adolescent development: Pathways and processes of risk and resilience. *Annual Review of Psychology*, 46, 265–293.
- Compas, B. E., Jaser, S. S., Dunbar, J. P., Watson, K. H., Bettis, A. H., Gruhn, M. A., & Williams, E. K. (2013). Coping and emotion regulation from childhood to early adulthood: Points of convergence and divergence. *Australian Journal of Psychology* 1, 1-11. doi: 10.1111/ajpy.12043
- Connor-Smith, J. K., & Flachsbart, C. (2007). Relations between personality and coping: A meta-analysis. *Journal of Personality and Social Psychology*, 93(6), 1080–1107. doi:10.1037/0022-3514.93.6.1080
- Contractor, A. A., Layne, C. M., Steinberg, A. M., Ostrowski, S. A., Ford, J. D., Jon D., Elhai, J. D. (2013). Do gender and age moderate the symptom structure of PTSD? Findings from a national clinical sample of children and adolescents. *Psychiatry Research*, 210 (3), 1056-1064.
- Copeland, W. E., Keeler, G., Angold, A., & Costello, J. (2007). Traumatic events and posttraumatic stress in childhood. *Archives of General Psychiatry*, 64, 577-584.
- Corbin, J., & Strauss, A. (1990). Grounded theory research: Procedures, canons and evaluative criteria. *Zeitschrift fur Soziologie*, 19 (6), 418-427.
- Corriveau, K., & Harris, P. L. (2009). Choosing your informant: Weighing familiarity and recent accuracy. *Developmental Science*, 12(3), 426–437. doi:10.1111/j.1467-7687.2008.00792.x
- Cosley, B. J., McCoy, S. K., Saslow, L. R., & Epel, E. S. (2010). Is compassion for others stress buffering? Consequences of compassion and social support for physiological reactivity to stress. *Journal of Experimental Social Psychology*, 46(5), 816–823. doi:10.1016/j.jesp.2010.04.008
- Costa, N. M., Weems, C. F., & Pina, A. A. (2009). Hurricane Katrina and youth anxiety: The role of perceived attachment beliefs and parenting behaviors. *Journal of Anxiety Disorders*, 23, 935–941.
- Creswell, J. W. (2007). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.), Thousand Oaks, CA: Sage.
- CRED (2015). *The human cost of natural disasters: A global approach*. Centre for Research on the Epidemiology of Disasters, Bruxelles, Belgique.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. NSW, Australia: Allen & Unwin.
- Cryder, C. H., Kilmer, R. P., Tedeschi, R. G., & Calhoun, L.G. (2006). An exploratory study of post-traumatic growth in children following a natural disaster. *American Journal of Orthopsychiatry* 76(1), 65–69.

- Cyrułnik, B. (1999). *Un merveilleux malheur*. Paris, France: Odile Jacob.
- Dahlberg, K. M. E. (2006). The essence of essences – the search for meaning structures in phenomenological analysis of lifeworld phenomena. *International Journal of Qualitative Studies on Health and Well-being*, 1, 11-19.
- Dahlberg, K. M. E., & Dahlberg, H. K. (2004). Description versus interpretation- a new understanding of an old dilemma in human science research. *Nursing Philosophy* 5, 268-273.
- Darbyshire, P., MacDougall, C., & Schiller, W. (2005). Multiple methods in qualitative research with children: More insight or just more? *Qualitative Research* 5(4), 417-436.
- Davidson, R. J., & McEwen, B. S. (2012). Social influences on neuroplasticity: Stress and interventions to promote well-being. *Nature Neuroscience*, 15(5), 689–696. doi:10.1038/nn.3093
- Davidson, S., & Adams, J. (2013). Adversity and internalizing problems among rural Chinese adolescents: The roles of parents and teachers. *International Journal of Behavioral Development*, 37(6), 530–541. doi:10.1177/0165025413503421
- Debesay, J., Naden, D., & Slettebo, A. (2007). How do we close the hermeneutic circle? A Gadamerian approach to justification in interpretation in qualitative studies. *Nursing Inquiry* 15(1), 57-66.
- Deering, C. G. (2000). A cognitive developmental approach to understanding how children cope with disasters. *Journal of Child and Adolescent Psychiatric Nursing*, 13, 7-16.
- Denzin, N. K. (1970). Strategies of multiple triangulation. In N. K. Denzin, (Ed.), *The research act in sociology: A theoretical introduction to sociological method*. (pp. 297-313). New York: McGraw-Hill
- Denzin, N. K., & Lincoln, Y. S. (2000). Introduction: The discipline and practice of qualitative research. In *Handbook of qualitative research*. (2nd ed.), (pp 1-28). Thousand Oaks, CA: Sage
- Dew, K., Dowell, A., McLeod, D., Collings, S., & Bushnell, J. (2005). “This glorious twilight zone of uncertainty”: Mental health consultations in general practice in New Zealand. *Social Science and Medicine*, 61, 1189–1200. doi:10.1016/j.socscimed.2005.01.025
- Diaz, J. H. (2006). Global climate changes, natural disasters, and travel health risks. *Journal of Travel Medicine*, 13(6), 361–72. doi:10.1111/j.1708-8305.2006.00072.x
- Dich, N., Hansen, A. M., Avlund, K., Lund, R., Mortensen, E. L., Bruunsgaard, H., & Rod, N. H. (2015). Early life adversity potentiates the effects of later life stress on cumulative physiological dysregulation. *Anxiety, Stress, and Coping*, (December), 1–19. doi:10.1080/10615806.2014.969720
- Dirkzwager, A. J. E., Kerssens J. J., & Yzermans, C. J. C. (2006). Health problems in children and adolescents before and after a man-made disaster. *Journal of the American Academy of Child and Adolescent Psychiatry*, 45(1), 94-103. DOI: 10.1097/01.chi.0000186402.05465.f7 .
- Edelstein, R. S., Alexander, K. W., Shaver, P. R., Schaaf, J. M., Quas, J. A., Lovas, G. S., & Goodman, G. S. (2004). Adult attachment style and parental responsiveness during a stressful event. *Attachment & Human Development*, 6(1), 31–52. doi:10.1080/146167303100001659584

- Eder, D., & Fingerson, L. (2001). Interviewing children and adolescents. In J. F. Gubrium & J. A. Iolstein (Eds.), *Handbook of interview research* (pp. 181-203). Thousand Oaks, CA: Sage.
- Edlynn, E. S., Gaylord-Harden, N. K., Richards, M. H., & Miller, S. A. (2008). African American inner-city youth exposed to violence: Coping skills as a moderator for anxiety. *American Journal of Orthopsychiatry*, 78, 249–258. doi:10.1037/a0013948
- Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy*, 38(4), 319–45. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/10761279>
- Eichler, M. (2015). Raising children to cope with climate change? *Canadian Review of Sociology*, 52(2), 232-240.
- Eisenbarth, C. (2012). Coping profiles and psychological distress : A cluster analysis. *North American Journal of Psychology*, 14(3), 485–496.
- Eisenberg, N., & Valiente, C. (2004). Elaborations on a theme : Beyond main effects in relations of parenting to children' s coping and regulation. *Parenting: Science and Practice*, 4(4), 319–323.
- Eisenberg, N., Valiente, C., & Sulik, M. J. (2009). How the study of regulation can inform the study of coping. In E.A. Skinner, & M.J. Zimmer-Gembeck (Eds.), *Coping and the development of regulation: New directions in child and adolescent development 124*, (pp. 75–86). San Francisco, CA: Jossey-Bass.
- 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.
- Enarson, E. (2012). *Women confronting natural disaster: From vulnerability to resilience*. Book review.
- Eng, E., & Parker, E. (1994). Measuring community competence in the Mississippi Delta: the interface between program evaluation and empowerment. *Health Education Quarterly*, 21(2), 199–220. doi:10.1177/109019819402100206
- Eshel, Y., & Majdoob, H. (2014). Posttraumatic recovery to distress symptoms ratio: A mediator of the links between gender, exposure to fire, economic condition, and three indices of resilience to fire disaster. *Community Mental Health Journal*, 50(8), 997–1003. doi:10.1007/s10597-014-9734-7
- Evans, G. W., Li, D., & Whipple, S. S. (2013). Cumulative risk and child development. *Psychological Bulletin*, 139(6), 1342–1396. doi:10.1037/a0031808
- Everstine, D., & Everstine, L. (2006). *Strategic interventions for people in crisis: Trauma, and disaster* (Revised ed.), New York: Routledge.
- Fearn, M., & Howard, J. (2012). Play as a resource for children facing adversity: An exploration of indicative case studies. *Children & Society*, 26(6), 456–468. doi:10.1111/j.1099-0860.2011.00357.x
- Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health*, 26, 399–419. <http://dx.doi.org/10.1146/annurev.publichealth.26.021304.144357>.

- Finlay, L. (2008). A dance between the reduction and reflexivity: Explicating the “phenomenological psychological attitude”. *Journal of Phenomenological Psychology* 39, 1-32.
- Finlay, L. (2009). Debating phenomenological research methods. *Phenomenological & Practice*, 3(1), 6-25.
- Fivush, R., McDermott Sales, J., Goldberg, A., Bahrick, L., & Parker, J. (2004). Weathering the storm: Children’s long-term recall of Hurricane Andrew. *Memory*, 12, 104–118.
- Flanagan, C. (2015). Youth finding meaning through a larger sense of community. *American Journal of Orthopsychiatry*, 85(6), 70-78.
- Folkman, S. (2008). The case for positive emotions in the stress response. *Anxiety Stress Coping* 21, 3–14
- Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. J. (1986). Dynamics of a stressful encounter : Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology*, 50(5), 992–1003.
- Folkman, S., & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist*, 55(6), 647–654.
- Folkman, S., & Moskowitz J. T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology* 55, 745 -774.
- Fontana, A., & Frey, J. H. (2000). The interview: from structured questions to negotiated text. In N.K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed.), (pp.645-672). Thousand Oaks, CA: Sage
- Forrest-Bank, S., Nicotera, N., Anthony, E., & Jenson, J. (2015). Finding their way: Perceptions of risk, resilience, and positive youth development among adolescents and young adults from public housing neighborhoods. *Children and Youth Services Review*. doi:10.1016/j.childyouth.2015.05.015
- Ford, D. H., & Lerner, R. M. (1992). *Developmental systems theory: An integrative approach*. Thousand Oaks, CA: Sage.
- 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.
- Fothergill, A., & Peek, L. (2006). Surviving catastrophe: A study of children in Hurricane Katrina. In *Learning from catastrophe: Quick response research in the wake of Hurricane Katrina*, (pp. 97-129).
- Fox, N. A., Henderson, H. A., Marshall, P. J., Nichols, K. E., & Ghera, M. M. (2005). Behavioral inhibition: Linking biology and behavior within a developmental framework. *Annual Review of Psychology*, 56, 235–262. doi:10.1146/annurev.psych.55.090902.141532
- Fraley, R. C., Fazzari, D. A., Bonanno, G., & Dekel, S. (2006). Attachment and psychological adaptation in high exposure survivors of the September 11th attack on the World Trade Center. *Personality & Social Psychology Bulletin*, 32(4), 538–51. doi:10.1177/0146167205282741

- Franks, B. A. (2011). Moving targets: A developmental framework for understanding children's changes following disasters. *Journal of Applied Developmental Psychology, 32*, 58-69.
- 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.
- Frazier, P. A., & Kaler, M. E. (2006). Assessing the validity of self-reported stress-related growth. *Journal of Consulting and Clinical Psychology, 74*(5), 859-869. doi:10.1037/0022-006X.74.5.859
- 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.
- Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences, 359* (1449), 1367-78. doi:10.1098/rstb.2004.1512
- Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in Crises? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality and Social Psychology, 84* (2), 365-376.
- Freeman, C., Nairn, K., & Gollop, M. (2015). Disaster impact and recovery: what children and young people can tell us. *Kōtuitui: New Zealand Journal of Social Sciences Online, 10*(2), 103-115. doi:10.1080/1177083X.2015.1066400
- Friese, S. (2012). *Qualitative data analysis with ATLAS.ti*. London, UK: Sage.
- Furr, J. M., Comer, J. S., Edmunds, J. M., & Kendall, P. C. (2010). Disasters and youth: A meta-analytic examination of posttraumatic stress. *Journal of Consulting and Clinical Psychology, 78*(6), 765-780.
- Gabrielli, J., Gill, M., Koester, L. S., & Borntrager, C. (2010). Psychological perspective on acute or chronic trauma in children: Implications of the 2010 earthquake in Haiti. *Children and Society* Doi:10.1111/chso.12010.
- Gaffney, D. A. (2006). The aftermath of disaster: Children in crisis. *Journal of Clinical Psychology, 62* (8), 1001-1016.
- Galatzer-Levy, I. R., Burton, C. L., & Bonanno, G. A. (2012). Coping flexibility, potentially traumatic life events, and resilience: A prospective study of college student adjustment. *Journal of Social and Clinical Psychology, 31*(6), 542-567. doi:10.1521/jscp.2012.31.6.542
- Gallagher, H. C., Richardson, J., Forbes, D., Harms, L., Gibbs, L., Alkemade, N., MacDougall, C., Waters, E., Block, K., Lusher, D., Baker, E., Bryant, R. A. (2016). Mental health following separation in a disaster: The role of attachment. *Journal of Traumatic Stress, 29*, 1-9.
- Gan, Y., Xie, X., Wang, T., Rodriguez, M. A., & Tang, C. S. (2012). Thriving in the shadow of the 2008 Sichuan Earthquake: Two studies on resilience in adolescents. *Journal of Health Psychology, 18*(9), 1232-1241. doi:10.1177/1359105312459897

- Garland, E., Gaylord, S., & Park, J. (2009). The role of mindfulness in positive reappraisal. *Explore (New York)*, 5(1), 37–44. doi:10.1016/j.explore.2008.10.001
- Gass, K., Jenkins, J., & Dunn, J. (2007). Are sibling relationships protective? A longitudinal study. *Journal of Child Psychology and Psychiatry*, 2(48), 167–175. doi:10.1111/j.1469-7610.2006.01699.x
- GeoNet 2011c. <http://www.geonet.org.nz/resources/basic-data/> The official source of geological hazard information for New Zealand
- Gergen, K. (1985). The social constructionist movement in modern psychology. *American Psychologist*, 40(3), 266-275.
- Gergen, M. M., & Gergen, K. J. (2000). Qualitative inquiry: Tensions and transformations. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed.), (pp. 1025-1046). Thousand Oaks, CA: Sage
- Ghuman, S. J., Brackbill, R. M., Stellman, S. D., Farfel, M. R., & Cone, J. E. (2014). Unmet mental health care need 10-11 years after the 9/11 terrorist attacks: results from 2011-2012 World Trade Center health registry. *BMC Public Health*, 14(1), 491. doi:10.1186/1471-2458-14-491
- Gibbs, L., Mutch C., Connor, P. O., & Macdougall, C. (2013). Research with, by, for and about Children : lessons from disaster contexts. *Global Studies of Childhood*, 3(2), 129–141.
- Gil-Rivas, V., Cohen-Silver, R., Holman, E. A., McIntosh, D. N., & Poulin, M. (2007). Parental response and adolescent adjustment to the September 11, 2001 terrorist attacks. *Journal of Traumatic Stress*, 20 (6) 1063- 1068.
- Gil-Rivas, V., Holman, A., & Silver, R. C. (2004). Adolescent vulnerability following the September 11th terrorist attacks : A study of parents and their children. *Applied Developmental Science*, 8(3), 130–143.
- Gil-Rivas, V., & Kilmer, R. P., (2013). Children’s adjustment following Hurricane Katrina: The role of primary caregivers. *American Journal of Orthopsychiatry*, 83 (2), (3), 413-421.
- Giorgi, A. P., 2000b. Concerning the application of phenomenology to caring research. *Scandinavian Journal of Caring Science* 14, 11–15.
- Giorgi, A. P. (2005). The phenomenological movement and research in the human sciences. *Nursing Science Quarterly*, 18 (1), 75-82.
- Giorgi, A. P. (2012). The descriptive phenomenological psychological method. *Journal of Phenomenological Psychology*, 43, 3-12.
- Giorgi, A. P., & Giorgi, B. M. (2003). The descriptive phenomenological psychological method. In P. M. Camic, J. E. Rhodes, & L. Yardley (Eds.), *Qualitative research in psychology: Expanding perspectives in methodology and design*. (pp. 243-275). Washington DC: APA.
- Glaser, B. G. (2002). The future of Grounded Theory. *Grounded Theory Review* 1, 1-8.
- Godeau, E., Vignes, C., Navarro, F., Iachan, R., Ross, J., Pasquier, C. & Guinard, A. (2005). Effects of large-scale industrial disaster on rates of symptoms consistent with post-traumatic stress

- disorders among school children in Toulouse. *Archives of Pediatric and Adolescent Medicine*, 159, 579-584.
- Goenjian, A. K., Walling, D., Steinberg, A. M., Karayan, I., Najarian, L. M., & Pynoos, R. (2005). A prospective study of posttraumatic stress and depressive reactions among treated and untreated adolescents 5 years after a catastrophic disaster. *American Journal of Psychiatry*, 162, 2302-2308.
- Goenjian, A. K., Roussos, A., Steinberg, A. M., Sotiropoulou, C., Walling, D., Kakaki, M., & Karagianni, S. (2011). Longitudinal study of PTSD, depression, and quality of life among adolescents after the Parnitha earthquake. *Journal of Affective Disorders*, 133(3), 509-515.
- Gottlieb, G. (2007). Probabilistic epigenesis. *Developmental Science*, 10(1), 1-11.
- Greeson, J. K. P., Briggs, E. C., Layne, C. M., Harolyn, M., Belcher, E., Ostrowski, S. A., . . . & Fairbank, J. A. (2014). Traumatic childhood experiences in the 21st century: Broadening and building on the ACE studies with data from the National Child Traumatic Stress Network. *Journal of Interpersonal Violence*, 29 (3), 536-556.
- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, 39(3), 281-91. doi:10.1017.S0048577201393198
- Grych, J., Hamby, S., Banyard, V., (2015). Psychology of violence the resilience portfolio model : Understanding healthy adaptation in victims of violence. *Psychology of Violence*. doi:doi.org/10.1037/a0039671
- Guha-Sapir, D., Hoyois, P., & Below, R. (2012; 2014). Annual disaster statistical review: The numbers and trends. WHO collaborating Centre for Research on the Epidemiology of Disasters-CRED. Université Catholique de Louvain, Belgium.
- Gupta, S., & Bonanno, G. A. (2011). Complicated grief and deficits in emotional expressive flexibility. *Journal of Abnormal Psychology*, 120, 635-643. doi:10.1037/a0023541.
- 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.
- Hafstad, G. S., Haavind, H., & Jensen, T. K. (2012). Parenting after a natural disaster: A qualitative study of Norwegian families surviving the 2004 tsunami in Southeast Asia. *Journal of Child and Family Studies*, 21, 293-302.
- Hagan, J. F. (2005). Psychosocial implications of disaster or terrorism on children: A guide for the pediatrician. *Pediatrics*, 116(3), 787-795.
- Hakvoort, E. M., Bos, H. M. W., van Balen, F., & Hermanns, J. M. A. (2010). Family relationships and the psychosocial adjustment of school-aged children in intact families. *The Journal of Genetic Psychology*, 171(2), 182-201.
- Hall, M. J., Ng, A., Ursano, R. J., Fullerton, C., & Casper, J. (2004). Psychological impact of the animal-human bond in disaster preparedness and response. *Journal of Psychiatric Practice*, 10(6), 368-374.

- Hamamura, T. (2012). Are cultures becoming individualistic? A cross-temporal comparison of individualism-collectivism in the United States and Japan. *Personality and Social Psychology Review, 16*(1), 3–24. doi:10.1177/1088868311411587
- Haskett, M. E., Nears, K., Ward, C. S., & Mcpherson, A. V., (2006). Diversity in adjustment of maltreated children: Factors associated with resilient functioning. *Clinical Psychology Review 26*, 796-812. doi: 10.1016/j.cpr.2006.03.005
- Hawkins, R. L., & Maurer, K. (2011). “You fix my community, you have fixed my life”: The disruption and rebuilding of ontological security in New Orleans. *Disasters, 35*(1), 143–159. doi:10.1111/j.1467-7717.2010.01197.x
- Hawkins, S. S., & Radcliffe, J. (2006). Current measures of PTSD for children and adolescents. *Journal of Pediatric Psychology, 31* (4), 420-430.
- Hayslip, B., Blumenthal, H., & Garner, A. (2014). Health and grandparent -granchild well-being: One year longitudinal findings for custodial grandfamilies. *Journal of Aging and Health, 26*(4), 559–582. doi:10.1177/0898264314525664
- Heath, S. E., Kass, P. H., Beck, A. M., & Glickman, L. T. (2001). Human and pet-related risk factors for household evacuation failure during a natural disaster. *American Journal of Epidemiology, 153*(7), 659–665.
- Helgeson, V. S., Reynolds, K. A., & Tomich, P. L. (2006). A meta-analytic review of benefit finding and growth. *Journal of Consulting and Clinical Psychology, 74*(5), 797–816. doi:10.1037/0022-006X.74.5.797
- Herbers, J. E., Cutuli, J. J., Supkoff, L. M., Narayan, A. J., & Masten, A. S. (2014). Parenting and coregulation: Adaptive systems for competence in children experiencing homelessness. *American Journal of Orthopsychiatry, 84*(4), 420–430.
- Hidalgo, M. C. (2013). Operationalization of place attachment: A consensus proposal. *Estudios de Psicología, 34*(3), 251–259. doi:10.1174/021093913808295190
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*, 513–524.
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6*, 307–324.
- 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.
- Hoffman, M. A., & Kruczek, T. (2011). A biocological model of mass trauma: Individual, community, and societal effects. *The counselling Psychologist, 39* (8), 1087-1127.
- Holloway, I. & Todres, L. (2003). The status of method: Flexibility, consistency and coherence. *Qualitative Research 3*, 345-357.
- IASC Reference Group for Mental Health and Psychosocial Support in Emergency Settings. Mental health and psychosocial support in humanitarian emergencies: what should humanitarian health actors know? Geneva: IASC, 2010.

- International Federation of Red Cross and Red Crescent Societies (IFRC) World Disaster Reports, (2010; 2012; 2013;2015) www.ifrc.org
- James, E. (2008). Getting ahead of the next disaster: recent preparedness efforts in Indonesia. *Development in practice*, 18 (3), 424–429. doi:10.1080/09614520802030607
- Janoff-Bulman, R. (1985). The aftermath of victimization: Rebuilding shattered assumptions. In C.R. Figley (Eds.), *Trauma and it's wake: The study and treatment of posttraumatic stress disorder*. New York: Brunner/Mazel.
- Jensen, T. K., Dyb, G., & Nygaard, E. (2009). A longitudinal study of posttraumatic stress reactions in Norwegian children and adolescents exposed to the 2004 tsunami. *Archives of Paediatrics and Adolescent Medicine*, 163(9), 856–861. doi:10.1001/archpediatrics.2009.151
- Jensen, T. K., Ellestad, A., & Dyb, G. (2013). Children and adolescents' self-reported coping strategies during the Southeast Asian tsunami. *British Journal of Clinical Psychology* 52, 92–106.
- Johnston, D., Tarrant, R., Tipler, K., Coomer, M., Pedersen, S., & Garside, R. (2011). Preparing schools for future earthquakes in New Zealand: Lessons from an evaluation of a Wellington school exercise. *Australian Journal of Emergency Management*, 26(1), 24–30.
- Joseph, S., & Linley, P. A. (2005). Positive adjustment to threatening events: An organismic valuing theory of growth through adversity. *Review of General Psychology*, 9(3), 262–280. doi:10.1037/1089-2680.9.3.262
- Joseph, S. & Linley P.A. (2008). *Trauma, recovery and growth: Positive psychological perspectives on posttraumatic stress*. New Jersey, USA: Wiley
- Kaiser, C., Holden, J., Beavan, D., Beetham, R., Benites, A., Celentano, D., ...& Zhao, U. (2012). The Mw 6.2 Christchurch earthquake of February 2011: preliminary report. *New Zealand Journal of Geology and Geophysics*, 55:1, 67-90, DOI: 10.1080/00288306.2011.641182
- Kaniasty, K. (2012). Predicting social psychological well-being following trauma: The role of postdisaster social support. *Psychological Trauma: Theory, Research, Practice, and Policy*, 4(1), 22–33. doi:10.1037/a0021412
- Kaniasty, K., & Norris, F. H. (1993). A test of the social support deterioration model in the context of natural disaster. *Journal of Personality and Social Psychology*, 64, 395–408.
- Kaniasty, K., & Norris, F. H. (2009) "Distinctions that matter: Received social support, perceived social support, and social embeddedness after disasters." *Mental health and disasters*, 175-200.
- Kashdan, T. B., & Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. *Clinical Psychology Review*, 30(7), 865–78. doi:10.1016/j.cpr.2010.03.001
- Katsuhiro, Y. (2013). Inexpressible memories and learning for reconstruction: Between the major earthquake disasters in post-war in Japan. *Educational Studies in Japan: International Yearbook*, 7, 21-35.
- Kelley, M. L., Self-Brown, S., Le, B., Bosson, J. V., Hernandez, B. C., & Gordon, A. T. (2010). Predicting Posttraumatic Stress Symptoms in Children Following Hurricane Katrina: A

- Prospective Analysis of the Effect of Parental Distress and Parenting Practices. *Journal of Traumatic Stress*, 23(5), 582–590. doi:10.1002/jts.
- Kerns, C. E., Elkins, R. M., Carpenter, A. L., Chou, T., Greif, J., & Comer, J. S. (2014). Caregiver distress, shared traumatic exposure, and child adjustment among area youth following the 2013 Boston Marathon bombing. *Journal of Affective Disorders*, 167, 50–55. doi:10.1016/j.jad.2014.05.040
- 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.
- Khamis, V. (2005). Post-traumatic stress disorder among school age Palestinian children. *Child Abuse and Neglect*, 29, 81–95.
- Kia-Keating, M., & Ellis, B. H. (2007). Belonging and connection to school in resettlement: Young refugees, school belonging, and psychosocial adjustment. *Clinical Child Psychology and Psychiatry*, 12(1), 29–43. doi:10.1177/1359104507071052
- Kilmer, R. P., Gil-Rivas, V., Tedeschi, R. G., Cann, A., Calhoun, L. G., & Buchanan, T. (2009). Use of the revised Posttraumatic Growth Inventory for children. *Journal of Traumatic Stress*, 22(3), 248–253. doi:10.1002/jts.
- 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.
- Kim-Spoon, J., Cicchetti, D., & Rogosch, F. A. (2013). A longitudinal study of emotion regulation, emotion lability-negativity, and internalizing symptomatology in maltreated and nonmaltreated children. *Child Development*, 84(2), 512–527. doi:10.1111/j.1467-8624.2012.01857.x
- 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.
- King, L. S., Osofsky, J. D., Osofsky, H. J., Weems, C. F., Hansel, T. C., & Fassnacht, G. M. (2015). Perceptions of trauma and loss among children and adolescents exposed to disasters a mixed-methods study. *Current Psychology*, 34(3), 524–536. doi:10.1007/s12144-015-9348-4
- King, T., & Tarrant, R. (2013). Children’s knowledge, cognitions and emotions surrounding natural disasters: An investigation of year 5 students, Wellington, New Zealand. *Australasian Journal of Disaster & Trauma Studies*, 1, 17-26.
- Kliewer, W., Fearnow, M. D., & Miller, P. A. (1996). Coping socialization in middle childhood: Tests of maternal and paternal influences. *Child Development*, 67, 2339–2357.
- Kliewer, W., Parrish, K. A., Taylor, K. W., Jackson, K., Walker, J. M., & Shivy, V. A. (2006). Socialization of coping with community violence : Influences of caregiver coaching, modeling, and family context. *Child Development*, 77(3), 605–623.
- Kobasa, S. C. (1979). Stressful life events, personality, and health: An inquiry into hardiness. *Journal of Personality and Social Psychology* 37(1), 1-11.

- Koenig, M. A., & Sabbagh, M. A. (2013). Selective social learning : New perspectives on learning from others. *Developmental Psychology, 49*(3), 399–403. doi:10.1037/a0031619
- Kronenberg, M. E., Hansel, T. C., Brennan, A. M., Lawrason, B., Osofsky, H. J. & Osofsky J. D. (2010). Children of Katrina: Lessons learned about post-disaster symptoms and recovery patterns. *Child Development, 81* (4), 1240-1258.
- Kulig, J.C., Edge, D., Townshend, I., Lighfoot, N., & Reimer, W. (2013). Community resiliency: Emerging theoretical insights. *Journal of Community Psychology, 41* (6), 758-775. DOI: 10.1002/jcop.21569
- Kvale, S., & Brinkmann, S. (2009). *InterViews: Learning the craft of qualitative research interviewing* (2nd ed.). Thousand Oaks, CA: Sage.
- La Greca, A. M., Lai, B. S., Jooman, J., Auslander, B. A., & Short, M. B. (2013). Children’s risk and resilience following a natural disaster: Genetic vulnerability, posttraumatic stress, and depression. *Journal of affective Disorders, 151*, 860-867.
- La Greca, A. M., Lai, B. S., Llabre, M. M., Silverman, W. K., Vernberg, E. M., & Prinstein, M. J. (2013). Children’s postdisaster trajectories of PTS symptoms: Predicting chronic distress. *Child & Youth Care Forum, 42*(4), 351–369. doi:10.1007/s10566-013-9206-1
- La Greca, A. M., Silverman, W. K., Vernberg, E. M., & Prinstein, M. J. (1996). Symptoms of posttraumatic stress after Hurricane Andrew: A prospective study. *Journal of Consulting and Clinical Psychology, 64*, 712–723.
- La Greca, A. M., Silverman, W. K., Lai, B. S. & 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.
- La Greca, A. M., & Silverman, W. K. (2009). Treatment and prevention of posttraumatic stress reactions in children and adolescents exposed to disasters and terrorism: What is the evidence? *Child Development Perspectives, 3* (1), 4-10.
- Le Brocque, R. M., Hendricks, J. K., & Kenardy, J. A. (2010). The course of posttraumatic stress in children: Examination of recovery trajectories following traumatic injury. *Journal of Pediatric Psychology, 35*(6), 646–655.
- Lack, C. W., & Sullivan, M. (2007). Attributions, coping, and exposure as predictors of long-term posttraumatic distress in tornado-exposed children. *Journal of Loss and Trauma, 13*(1), 72–84. doi:10.1080/15325020701741906
- Lai, B. S., La Greca, A. M., Auslander, B. A., & Short, M. B. (2013). Children’s symptoms of posttraumatic stress and depression after a natural disaster: Comorbidity and risk factors. *Journal of affective Disorders, 146* (1), 71-78. doi:10.1016/j.jad.2012.08.041.
- Lalande, K. M., & Bonanno, G. A. (2011). Retrospective memory bias for the frequency of potentially traumatic events: A prospective study. *Psychological Trauma: Theory, Research, Practice, and Policy, 3*(2), 165–170. doi:10.1037/a0020847
- Langdrige, D. (2007). *Phenomenological psychology: Theory, research and method*. Harlow, UK: Pearson/Prentice Hall.

- Laufer, A., & Solomon, Z. (2009). Posttraumatic symptoms and posttraumatic growth among Israeli youth exposed to terror incidents. *Journal of Social and Clinical Psychology, 25*(4), 429-447.
- Laverty, S. M. (2003). Hermeneutic phenomenology and phenomenology: A comparison of historical and methodological considerations. *International Journal of Qualitative Methods 2*(3), 21-35.
- Lazarus, R. S. (2000). Toward better research on stress and coping. *American Psychologist, 55*(6), 665-673. doi:10.1037//0003-066X.55.6.665
- Lazarus, R. S. (2003). Does the Positive Psychology Movement Have Legs ? *Psychological Inquiry, 14*(2), 93-109.
- Lazarus, R. S. (2006). Emotions and interpersonal relationships: Toward a person-centered conceptualization of emotions and coping. *Journal of Personality, 74*(1), 9-46. doi:10.1111/j.1467-6494.2005.00368.x
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. NY: Springer.
- Lee, T. Y., Kwong, W. M., Cheung, C. K., Ungar, M., & Cheung, M. Y. L. (2010). Children's resilience-related beliefs as a predictor of positive child development in the face of adversities: Implications for interventions to enhance children's quality of life. *Social Indicators Research, 95*(3), 437-453. doi:10.1007/s11205-009-9530-x
- Leipold, B., & Greve, W. (2009). Resilience: A conceptual bridge between coping and development. *European Psychologist, 14*(1), 40-50. doi:10.1027/1016-9040.14.1.40
- Leech, B. L. (2002). Asking questions: Techniques for semistructured interviews. *Political Science and Politics, 35*, (4), p. 665-668.
- Lengua L. J., Long, A. C., Smith, K. I., & Meltzoff, A.N. (2005). Pre-attack symptomatology and temperament as predictors of children's responses to the September 11 terrorist attacks. *Journal of Child Psychology and Psychiatry 46*(6), 631-645.
- Lerner, R. M. (2006). Developmental science, developmental systems, and contemporary theories of human development. In W. Damon & R. M. Lerner (Series Eds.), & R. M. Lerner (Vol. Ed.), *Handbook of child psychology: Vol 1. Theoretical models of human development* (6th ed.), (pp. 1-17). Hoboken, NJ: Wiley
- Lerner, R. M, & Castellino, D. R. (2002). Contemporary developmental theory and adolescence: Developmental systems and applied developmental science. *Journal of Adolescent Health, 31* 122-135.
- Levine, L. J., Whalen, C. K., Henker, B., & Jamner, L. D. (2005). Looking back on September 11, 2001: Appraised impact and memory for emotions in adolescents and adults. *Journal of Adolescent Research, 20* 497 -523.
- Lewicka, M. (2011). Place attachment: How far have we come in the last 40 years? *Journal of Environmental Psychology, 31*, 207-230.

- Liang, Y., & Lu, P. (2006). Health-related quality of life and the adaptations of residents to harsh post-earthquake conditions in China. *Disaster Medicine and Public Health Preparedness*, 8(5), 390–396. doi:10.7326/M14-0180
- Lincoln, Y. S., (1995). Emerging criteria for quality in qualitative and interpretive research. *Qualitative Inquiry* 1 (3), 275- 89.
- Lincoln, Y S., & Guba, E. G. (Eds.). (1985). *Naturalistic inquiry*. Thousand Oaks, CA: Sage.
- Liu, C.-L. J., & Mishna, F. (2012). Resilience in a cultural context: Taiwanese female earthquake survivors. *Qualitative Social Work*, 13(2), 288–303. doi:10.1177/1473325012470694
- Lock, S., Rubin, G. J., Murray, V., Rogers, M. B., Amlôt, R., & Williams, R. (2012). Secondary stressors and extreme events and disasters : A systematic review of primary research from 2010-2011. *PLOS Current Disasters*, 1–16. doi:10.1371/currents.dis.a9b76fed1b2dd5c5bfcfc13c87a2f24f.
- Looman, W. S. (2006). A developmental approach to understanding drawings and narratives from children displaced by Hurricane Katrina. *Journal of Pediatric Health Care*, 20(3), 158–166. doi:10.1016/j.pedhc.2006.01.008
- Losoya, S., Eisenberg, N., & Fabes, R. A. (1998). Developmental issues in the study of coping. *International Journal of Behavioural Development*, 22(2), 287–313.
- Lustig, S. L., Weine, S. M., Saxe, G. N., & Beardslee, W. R. (2004). Testimonial psychotherapy for adolescent refugees: A case series. *Transcultural Psychiatry*, 41(1), 31–45. doi:10.1177/1363461504041352
- Luthar, S. S. (2006). Resilience in development: A synthesis of research across five decades. In D. Cicchetti & D.J. Cohen (Eds.), *Developmental psychopathology, 3: Risk, disorder, and adaptation*. (2nd ed.), (pp. 739–95). Hoboken, NJ: Wiley
- 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.
- MacFarlane A. C. (1987). Posttraumatic phenomenon in a longitudinal study of children following natural disaster. *Journal of the American Academy of Child and Adolescent Psychiatry* 26(5), 764–69.
- MacFarlane A. C., Van Hooff M. (2009). Impact of child exposure to disaster on adult mental health: 20-year longitudinal follow-up study. *British Journal of Psychiatry* 195, 142–148.
- McFarlane, A. C., & Norris, F. H., (2006). Definitions and concepts in disaster research. In F. H. Norris, S. Galea, M. J. Friedman & P. J. Watson (Eds.), *Methods for disaster mental health research* (pp. 3-20). NY: The Guilford Press
- MacPhee, D., Lunkenheimer, E., & Riggs, N. (2015). Resilience as regulation of developmental and family processes. *Family Relations: Interdisciplinary Journal of Applied Family Studies*, 64, 153–175. doi:10.1111/fare.12100
- McEwen, B. S. (2003). Mood disorders and allostatic load. *Biological psychiatry*, 53(3), 200-207.

- McRae, K., Gross, J. J., Weber, J., Robertson, E. R., Sokol-Hessner, P., Ray R. D.,... & Ochsner, K. N. (2012). The development of emotion regulation: an fMRI study of cognitive reappraisal in children, adolescents and young adults. *Social cognitive and affective neuroscience* 7(1), 11-22. doi:10.1093/scan/nsr093
- Manning, L. G., Davies, P. T., & Cicchetti, D. (2014). Interparental violence and childhood adjustment: How and why maternal sensitivity is a protective factor. *Child Development*, 85(6), 2263–2278. doi:10.1111/cdev.12279
- Margolin, G., Ramos, M. C., & Guran, E. L. (2010). Earthquakes and children: The role of psychologists with families and communities. *Professional Psychology, Research and Practice* 41(1) 1-9. doi:10.1037/a0018103.
- Marks, D., F., & Yardley, L. (2004). Introduction to research methods in clinical and health psychology. In *Research methods for clinical and health psychology*. D.F. Marks & L. Yardley (Eds.), (pp. 1-20). London, UK: Sage
- Marsac, M. L., Donlon, K. A., Hildenbrand, A. K., Winston, F. K., & Kassam-Adams, N. (2013). Understanding recovery in children following traffic-related injuries: Exploring acute traumatic stress reactions, child coping, and coping assistance. *Clinical Child Psychology and Psychiatry*, 0(0) 1–11. doi:10.1177/1359104513487000
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, (13), 370–396.
- Maslow, A. H. (1943). Hierarchy of needs. Originally published in *Psychological Review*, 50, 370-396. *Social Studies Research and Practice*, 8 (3), 21-41.
- Masten A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, 56 (3), 227–38.
- Masten, A. S. (2006). Developmental psychopathology: Pathways to the future. *International Journal of Behavior and Development*, 30(1):47–54.
- 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(02), 493-506.
- Masten, A. S. (2013). Global perspectives on resilience in children and youth. *Child Development*, 00, 1-15 doi:10.1111/cdev.12205
- Masten, A. S. (2014). Global perspectives on resilience in children and youth. *Child Development*, 85, 6–20. doi:10.1007/s10567-013-0150-2
- Masten, A. S., Best, K. M., & Garmezy, N. (1991). Resilience and development : Contributions from the study of children who overcome adversity. *Development and Psychopathology*, 2(1990), 425–444.
- Masten, A. S., & Cicchetti, D. (2010). Developmental cascades. *Development and Psychopathology*, 22, 491-495. doi:10.1017/S0954579410000222

- Masten, A. S., and J. D. Coatsworth. 1998. The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist* 53 (2):205-220.
- Masten, A. S., & Monn, A. R. (2014). Child and family resilience: A call for integrating science, practice and training. *Interdisciplinary Journal of Applied Family Studies*, 64, 5-21. doi:10.1111/fare.12103
- 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*, 63:227–57. doi: 10.1146/annurev-psych-120710-100356
- Masten, A. S., & Obradovic, J. (2006). Competence and resilience in development. *Annals of the New York Academy of Sciences*, 1094, 13–27. doi:10.1196/annals.1376.003
- Masten, A. S., & Obradovic, J., (2008). Disaster preparation and recovery: Lessons from research on resilience in human development. *Ecology and Society*, 13 (1). <http://www.ecologyandsociety.org/vol13/iss1/art9/>
- Masten, A. S., & Osofsky, J. D., (2010). Disaster and their impact on child development: Introduction to the special section. *Child Development*, 81(4), 1029-1039.
- Masten, A. S., & Tellegen, A. (2012). Resilience in developmental psychopathology: Contributions of the Project Competence Longitudinal Study. *Development and Psychopathology*, 24(02), 345–361. doi:10.1017/S095457941200003X
- Merleau Ponty, M. (1964). *L'Oeil et l'Esprit*. Paris: Gallimard.
- Merriam, S. B. (2002). Introduction to qualitative research. In *Qualitative research in practice: examples for discussion and analysis*. S. B. Merriam and associates (Eds.), (pp.3-17). SF, CA: Jossey-Bass.
- 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.
- Milam, J. E., Ritt-Olson, A., & Unger, J. B. (2004). Posttraumatic growth among adolescents. *Journal of Adolescent Research*, 19(2), 192–204. doi:10.1177/0743558403258273
- Miller, P. (2011). *Theories of developmental psychology*. (5th Ed.), NY: Worth publishing.
- Miller, P. A., Kliwer, W., & Partch, J. (2010). Socialization of children's recall and use of strategies for coping with interparental conflict. *Journal of Child and Family Studies*, 19 (4), 429–43.
- Miller, P. A., Roberts, N. A., Zamora, A. D., Weber, D. J., Burlison, M. H., Robles, E., & Tinsley, B. J. (2012). Families coping with Natural Disasters: Lessons from wildfires and tornadoes. *Qualitative Research in Psychology*, 9 (4), 314-336.
- Mittal, C., Griskevicius, V., Simpson, J. A., Sung, S., & Young, E. S. (2015). Cognitive adaptations to stressful environments: When childhood adversity enhances adult executive function. *Journal of Personality & Social Psychology*, 109(4), 604–621. doi:10.1037/pspi0000028
- Moeke-Pickering, T. M. (1996). Maori identity within whanau: A review of literature. Waikato University, Hamilton, NZ.

- Mohr, W. (2002). Understanding children in crisis: The developmental ecological framework. In W. N. Zubenki & J. A. Caozzoli (Eds.), *Children and disasters: A practical guide to healing and recovery* (pp 72-84) New York, NY: Oxford University Press.
- 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.
- Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development (Oxford, England)*, 16(2), 361–388. doi:10.1111/j.1467-9507.2007.00389.x
- Morrissey, S., & Reser, J. P. (2007). Natural disasters, climate change and mental health considerations for rural Australia. *Australian Journal of Rural Health*, 15, 120-125.
- Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal for Qualitative Methods*, 1(2), 13-22.
- Moser, G. (2009). Quality of life and sustainability : Toward person – environment congruity. *Journal of Environmental Psychology*, 29(3), 351–357. doi:10.1016/j.jenvp.2009.02.00
- Moshman, D. (2005). *Adolescent psychological development* (pp. xv–xvii) (2nd ed.), Mahwah, New Jersey: Lawrence Erlbaum
- Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.
- Mowder, B. A., Guttman, M., Rubinson, F., & Sossin, K. M. (2006). Parents, children, and trauma: Parent role perceptions and behaviors related to the 9/11 tragedy. *Journal of Child and Family Studies*, 15, 733–743
- Murray, J. S & Hudson-Barr, D. (2006). Understanding the effects of disaster on children: A developmental-ecological approach to scientific inquiry. *Journal for Specialists in Pediatric Nursing*, 11(3), 199–202.
- Mutch, C. (2013). “Sailing through a river of emotions”: Capturing children’s earthquake stories. *Disaster Prevention and Management*, 22(5), 445–455. doi:10.1108/DPM-10-2013-0174
- Mutch, C., & Gawith, E. (2014). The New Zealand earthquakes and the role of schools in engaging children in emotional processing of disaster experiences. *Pastoral Care in Education*, 32(1), 54–67. doi:10.1080/02643944.2013.857363
- Myers, M. D., & Newman, M. (2007). The qualitative interview in IS research: Examining the craft. *Information and Organization* 17, 2-26.
- Narayan, L. M. (2004) Disaster intervention: Long-term psychosocial benefits in Armenia. *Prehospital and Disaster Medicine*, 19 (1) 79-85.
- National Child Traumatic Stress Network and National Center for PTSD (2008) Psychological first aid: Field operations guide, 2nd Ed., July, 2006. Retrieved August 25, 2010 from: www.nctsn.org

- Navarro, D., Montserrat, C., Malo, S., González, M., Casas, F., & Crous, G. (2015). Subjective well-being: What do adolescents say?. *Child & Family Social Work*, 1–10. doi:10.1111/cfs.12215
- Nes, L. S., & Segerstrom, S. C. (2006). Dispositional optimism and coping: A meta-analytic review. *Personality and Social Psychology Review: An Official Journal of the Society for Personality and Social Psychology, Inc*, 10(3), 235–51. doi:10.1207/s15327957pspr1003_3
- Noble, T., & McGrath, H. (2012). Well-being and resilience in young people and the role of positive relationships. In *Positive relationships: Evidence based practice across the world*. S. Roffey (Ed.), London, UK: Springer.
- Noltemeyer, A. L., & Bush, K. R. (2013). Adversity and resilience: A synthesis of international research. *School Psychology International*, 34(5), 474–487. doi:10.1177/0143034312472758
- Norris, F. H., Baker, C. K., Murphy, A. D., & Kaniasty, K. (2005). Social support mobilization and deterioration after Mexico's 1999 flood: Effects of context, gender, and time. *American Journal of Community Psychology*, 36 (1/2), 15–28. doi:10.1007/s10464-005-6230-9
- Norris, F. H., Friedman, M., & Watson, P. (2002b). 60,000 disaster victims speak: Part II. Summary and implications of the disaster mental health research. *Psychiatry*, 65, 240–260.
- Norris, F., Friedman, M., Watson, P., Byrne, C., Diaz, E. & Kaniasty, K. (2002). 60,000 disaster victims speak: Part I. An empirical review of the empirical literature. 1981-2001. *Psychiatry* 65 (3), 207-239.
- Norris, F. H., & Stevens, S. P. (2007). Community resilience and the principles of mass trauma intervention: Commentary on “five essential elements of immediate and mid-term mass trauma intervention”. *Psychiatry*, 70(4), 320–328.
- Norris, F. H., Stevens, 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. doi 10.1007/s10464-007.9156-6.
- Norris, F. H., Tracy, M., Galea, S. (2009). Looking for resilience: Understanding the longitudinal trajectories of responses to stress. *Social Science & Medicine* 68, 2190-2198.
- Nygaard, E., Jensen, T. K., & Dyb, G. (2012). Stability of posttraumatic stress reaction factors and their relation to general mental health problems in children: A longitudinal study. *Journal of Clinical Child and Adolescent Psychology*, 41(1), 15–26. doi:10.1080/15374416.2012.632344
- Obradovic, J., & Boyce, W. T. (2009). Individual differences in behavioral, physiological, and genetic sensitivities to context: Implications for development and adaptation. *Developmental Neuroscience*, 31, 300–308.
- Openshaw, L. L. (2011). School-based support groups for traumatized students. *School Psychology International*, 32(2), 163–178. doi:10.1177/0143034311400830
- O'Reilly, M., & Parker, N. (2012). “Unsatisfactory Saturation”: a critical exploration of the notion of saturated sample sizes in qualitative research. *Qualitative Research*. doi:10.1177/1468794112446106
- Osofsky, J. D., & Chartrand, L. C. M. M. (2013). Military children from birth to five years. *Future of Children*, 23(2), 61–77.

- Osofsky, J., & Osofsky, O. H. (2006). Children and adolescents displaced by Katrina: In the eye of the storm—resilience in Katrina's wake. Program and abstracts of the 19th U.S. Psychiatric & Mental Health Congress, November 15–19, 2006. New Orleans, Louisiana, Session 25-8.
- Osofsky, H. J., Osofsky, J. D., (2013). Lessons learned about the impact of disasters on children and families and post-disaster recovery. In A. M. Culp (Ed.), *Child and family advocacy: bridging the gaps between research, practice, and policy*. (pp. 91-105) Issues in Clinical Child Psychology, NY: Springer Science+Business Media. doi 10.1007/978-1-4614-7456-2_7
- Osofsky, J. D., Osofsky, H. J., & Harris, W. W. (2007). Katrina's children: Social policy considerations for children in disasters. *Social Policy Report*, 21, 3–18.
- 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, 212–220.
- Overstreet, S., Salloum, A., Burch, B., & West, J. (2011). Challenges associated with childhood exposure to severe natural disasters : Research review and clinical implications. *Journal of Child and Adolescent Trauma*, 4(1), 52–68. doi:10.1080/19361521.2011.545103
- Ozer, E. J., Best, S. R., Lipsey, T.L., & Weiss, D. S. (2008). Predictors of post-traumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin*, 129, 52-73.
- Palacios, J., Roman, M., Moreno, C., Leon, E., & Penarrubia, M. G. (2014). Differential plasticity in the recovery of adopted children after early adversity. *Child Development Perspectives*, 8(3), 169–174. doi:10.1111/cdep.12083
- Panter-Brick, C., & Eggerman, M. (2012). Mental health : The production of hope. In M. Ungar (Ed.), *The social ecology of resilience: A handbook of theory and practice* (pp. 369–386), Springer Science & Business Media. doi:10.1007/978-1-4614-0586-3
- Panter-Brick, C., & Leckman, J. F. (2013). Editorial commentary: Resilience in child development - Interconnected pathways to wellbeing. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 54(4), 333–336. doi:10.1111/jcpp.12057
- Parke, R. D. (2004). Development in the family. *Annual Review of Psychology*, 55, 365–99. doi:10.1146/annurev.psych.55.090902.141528
- Patel, V., & Goodman, A. (2007). Researching protective and promotive factors in mental health. *International Journal of Epidemiology*, 36(July), 703–707. doi:10.1093/ije/dym147
- Paton, D. (2013). Disaster Resilient Communities : Developing and testing an all-hazards theory. *Journal of Integrated Disaster Risk Management*, 3, 1–17. doi:10.5595/idrim.2013.0050
- Paton, D., Bajek, R., Okada, N. & McIvor, D. (2010). Predicting community earthquake preparedness: A cross-cultural comparison of Japan and New Zealand. *Natural Hazards*, 54, 765-781.
- Paton, D., & Johnston, D. (2006). Identifying the characteristics of a disaster resilient society. In D. Paton & D. Johnston (Eds.), *Disaster resilience: An integrated approach* (pp. 11-18). Springfield, Illinois: Thomas.

- Paton, D., Smith, L., & Violanti, J. (2000). Disaster response: Risk, vulnerability, and resilience. *Disaster Prevention and Management, 9*, 173–179.
- Paton, D., & Tang, C. S. (2009). Adaptive and growth outcomes following tsunamis: the experience of Thai communities following the 2004 Indian Ocean Tsunami, (pp. 125-140). In *Atlantic and Indian Oceans* E. S. Askew & J. P. Bromley (Eds.), New York. ISBN 9781606924754
- Patterson, J. M. (2002). Understanding family resilience. *Journal of Clinical Psychology, 58*(3), 233–246. doi:10.1002/jclp.10019
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Peek, L. (2008). Children and disasters: Understanding vulnerability, developing capacities and promoting resilience- an introduction. *Children, Youth and Environments, 18* (1), 1- 29.
- Peek, L. (2009). Age. In B. Phillips, D. Thomas, A. Fothergill & L. Blinn-Pike (Eds.), *Social vulnerability to disasters* (pp.150-185). Boca Raton, FA: CRC Press.
- Peek, L. & Richardson, K. (2010). In their own words: Displaced children’s educational recovery needs after Hurricane Katrina. *Disaster Medicine and Public Health Preparedness, 4*, 63-70.
- Peek, L., & Stough, L. M., (2010). Children with disabilities in the context of disaster: A social vulnerability perspective. *Child Development, 81* (4), pp 1260-1270.
- Penrose, A., & Takaki, M. (2006). Children’s rights in emergencies and disasters. *Lancet, 367*(9511), 698–699. doi:10.1016/S0140-6736(06)68272-X
- Pfefferbaum, B. J., DeVoe, E. R., Stuber, J., Schiff, M., Klein, T.P., & Fairbrother, G. (2004). Psychological impact of terrorism on children and families in the United States. *Journal of Aggression, Maltreatment and Trauma, 9*, 305–317.
- Pfefferbaum, B., Lai, B. S., Joormann, J. Auslander, B. B., & Short, M. A. (2013). Children’s risk and resilience following a natural disaster: Genetic vulnerability, posttraumatic stress, and depression. *Journal of Affective Disorders, 151*, 860-867.
- Pfefferbaum, B., Noffsinger, M. A., Wind, L. H., & Allen, J. R. (2014). Children’s coping in the context of disasters and terrorism. *Journal of Loss & Trauma, 19* 78-97.
- Pfefferbaum, B., & Shaw, J. A. (2013). Practice Parameter on Disaster Preparedness. *Journal of the American Academy of Child & Adolescent Psychiatry, 52*(11), 1224–1238. doi:10.1016/j.jaac.2013.08.014
- Pfefferbaum, B., Weems, C. F., Scott, B. G., Nitiéma, P., Noffsinger, M. A., Pfefferbaum, R. L.,...& Chakraborty, A. (2013). Research methods in child disaster studies: A review of studies generated by the September 11, 2001, terrorist attacks; the 2004 Indian Ocean Tsunami; and Hurricane Katrina. *Child Youth Care Forum 42*, 285-337.
- Pfefferbaum, B., Varma, V., Nitiéma, P., Newman, E. (2014). Universal preventive interventions for children in context of disasters and terrorism. *Child and Adolescent Psychiatric Clinics of North America. 23*(2), 363–382. doi:10.1016/j.chc.2013.12.006.

- Pina, A. A., Villalta, I. A., Ortiz, C. D., Gottschall, A. C., Costa, N. M., & Weems, C. F. (2008). Social support, discrimination, and coping as predictors of posttraumatic stress reactions in youth survivors of Hurricane Katrina. *Journal of Clinical Child & Adolescent Psychology, 37*(3), 564-574.
- Pine, N., Tarrant, R., Lyons, A., & Leathem, J. (2015). Rolling with the shakes: An insight into teenagers' perceptions of recovery after the Canterbury earthquakes. *Kōtuitui: New Zealand Journal of Social Sciences Online, 10*(2), 116-125. doi:10.1080/1177083X.2015.1068183
- Pollard, E. L., & Lee, P. D. (2003). Child well-being: A systematic review of the literature. *Social Indicators Research, 61*(April), 59-78.
- Pooley, J. A., & Cohen, L. (2010). Resilience: A definition in context. *The Australian Community Psychologist, 22*(1), 30-38.
- Pooley, J. A., & Cohen, L. (2012). Posttraumatic stress and posttraumatic growth and their relationship to coping and self-efficacy in Northwest Australian Cyclone communities. *Psychological Trauma: Theory, Research, Practice, and Policy, 5*(4), 1-8.
- Potter, S. H., Becker, J. S., Johnston, D. M., & Rossiter, K. P. (2015). An overview of the impacts of the 2010-2011 Canterbury earthquakes. *International Journal of Disaster Risk Reduction, 17*(1), 1-9. doi:10.1016/j.ijdr.2015.01.014
- Poulsen, K. M., McDermott, B. M., Wallis, J., & Cobham, V. (2015). School-based psychological screening in the aftermath of a disaster: Are parents satisfied and do their children access treatment. *Journal of Traumatic Stress, 28*(2), 69-72. doi:10.1002/jts.21987
- Power, T. G. (2004). Stress and coping in childhood: The parents' role. *Parenting Science and Practice, 4*, 271-317.
- Pratchett, L. C., & Yehuda, R. (2011). Foundations of posttraumatic stress disorder: Does early life trauma lead to adult posttraumatic stress disorder? *Development and Psychopathology, 23*(02), 477-491. doi:10.1017/S0954579411000186
- Prinstein, J., La Greca, A., Vernberg, E. M., Silverman, W. (1996). Children's coping assistance: How parents, teachers, and friends help children cope after a natural disaster. *Journal of Clinical Child Psychology, 25* (4), 463-475. doi:10.1207/s15374424jccp2504_11
- Proctor, I., Fauchier, A., Oliver, P. H., Ramos, M. C., Rios, M. A., & Margolin, G. (2007). Family context and young children's responses to earthquake. *Journal of Child Psychology and Psychiatry, 48*(9), 941-949. doi:10.1111/j.1469-7610.2007.01771.x
- Pujadas Botey, A., & Kulig, J. C. (2013). Family functioning following wildfires: Recovering from the 2011 Slave Lake fires. *Journal of Child and Family Studies. doi:10.1007/s10826-013-9802-6*
- Punamäki, R. L., Qouta, S., & El Sarraj, E. (2001). Resiliency factors predicting psychological adjustment after political violence among Palestinian children. *International Journal of Developmental Behaviour, 25*, 256-267.
- Punch, S. (2002). Research with children: The same or different from research with adults? *Childhood, 9*, 321-341.

- Pynoos, R. S., Steinberg, A. M., & Piacentini, J. C. (1999). A developmental psychopathology model of childhood traumatic stress and intersection with anxiety disorders. *Biological Psychiatry*, *46*, 1542–1554.
- 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 Behavioral Development*, *32*(4), 310–321. doi:10.1177/0165025408090973
- Repetti, R. L., Taylor, S. E., & Seeman, T. E. (2002). Risky families : Family social environments and the mental and physical health of offspring. *Psychological Bulletin*, *128*(2), 330–366. doi:10.1037//0033-2909.128.2.330
- Richardson, L. (2000). Writing: A method of inquiry. In N. K. Denzin, & Y. S. Lincoln (Eds.), *Handbook of qualitative research*. (2nd ed.), (p. 844). Thousand Oaks, CA: Sage.
- Riva Crugnola, C., Tambelli, R., Spinelli, M., Gazzotti, S., Caprin, C., & Albizzati, A. (2011). Attachment patterns and emotion regulation strategies in the second year. *Infant Behavior and Development*, *34*(1), 136–51. doi:10.1016/j.infbeh.2010.11.002
- Roberts, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: A meta-analysis of longitudinal studies. *Psychological Bulletin*, *132* (1), 1-25.
- Rolfsnes, E. S., Idsoe, T. (2011). School-based intervention programs for PTSD symptoms : A review and meta-analysis. *Journal of Traumatic Stress*, *24*(2), 155–165. doi:10.1002/jts.
- Ronan, K. R., Alisic, E., Towers, B., Johnson, V. A., & Johnston, D. M. (2015). Disaster preparedness for children and families: A critical review. *Current Psychiatry Reports*, *17*(7), 58. doi:10.1007/s11920-015-0589-6
- Ronan, K. R., Crellin, K., Finnis, K., Johnston, D. M., Paton, D., & Becker, J. (2008). Promoting child and family resilience to disasters: Effects, interventions, and prevention effectiveness. *Children, Youth and Environments*, *18*(1), 332–353. doi:10.7721/chilyoutenvi.18.1.0332
- 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.
- Ronan, K., & Towers, B. (2014). Systems education for a sustainable planet: Preparing children for natural disasters. *Systems*, *2*(1), 1–23. doi:10.3390/systems2010001
- Rood, L., Roelofs, J., Bögels, S. M., & Arntz, A. (2012). The effects of experimentally induced rumination, positive reappraisal, acceptance, and distancing when thinking about a stressful event on affect states in adolescents. *Journal of Abnormal Child Psychology*, *40*(1), 73–84. doi:10.1007/s10802-011-9544-0
- Rubin, G. J., Brewin, C. R., Greenberg, N., Simpson, J., & Wessely, S. (2005). Psychological and behavioural reactions to the bombings in London on 7 July 2005: Cross sectional survey of a representative sample of Londoners. *BMJ (Clinical Research Ed.)*, *331*(7517), 606. doi:10.1136/bmj.38583.728484.3A
- Russo, R., & Boman, P. (2007). Primary school teachers' ability to recognise resilience in their students. *The Australian Educational Researcher*, *34*(1), 17–32.

- Rutter, M. (1967). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57(3), 316–331. doi:10.1108/eb056998
- Rutter, M. (2006). Implications of resilience concepts for scientific understanding. *Annals of the New York Academy of Science*, 1094, 1–12.
- Rutter, M. (2012). Resilience as a dynamic concept. *Development and Psychopathology*, 24, 335–344.
- Rutter, M. (2013). Resilience – clinical implications. *Journal of Child Psychology and Psychiatry*, 4, 474–487. doi:10.1111/j.1469-7610.2012.02615.x
- Rutter, M., & Sroufe, A. (2000). Developmental psychopathology: Concepts and challenges. *Development and Psychopathology*, 12, 265–296.
- 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, 141–66.
- Salloum, A., & Lewis, M. L. (2010). An exploratory study of African American parent-child coping strategies Post- Hurricane Katrina. *Traumatology*, 16(1), 31–41. doi:10.1177/1534765609348240
- Salmon, K., & Bryant, R. A. (2002). Posttraumatic stress disorder in children: The influence of developmental factors. *Clinical Psychology Review*, 22, 163–188. <http://www.ncbi.nlm.nih.gov/pubmed/11806018>
- Samson, A. C., & Gross, J. J. (2012). Humour as emotion regulation: The differential consequences of negative versus positive humour. *Cognition and Emotion*, 26 (2), 375-384.
- Sameroff, A. J. (2000). Developmental systems and psychopathology. *Development and Psychopathology*, 12, 297– 312. doi:10.1017/S0954579400003035
- Sandler, I. (2001). Quality and ecology of adversity as common mechanisms of risk and resilience. *American Journal of Community Psychology*, 29(1), 19–61.
- Saylor, C. F., Cowart, B. L., Lipovsky, J. A., Jackson, C., & Finch Jr., A. J. (2003). Media exposure to September 11: Elementary school students' experiences and posttraumatic symptoms. *American Behavioral Scientist*, 46(12), 1622–1642. doi:10.1177/0002764203254619
- Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology*, 30(1), 1–10. doi:10.1016/j.jenvp.2009.09.006
- Scheeringa, M. S., & Zeanah, C. H. (2008). Reconsideration of harm's way: Onsets and comorbidity patterns of disorders in preschool children and their caregivers following Hurricane Katrina. *Journal of Clinical Child and Adolescent Psychology*, 37(3), 508–18. doi:10.1080/15374410802148178
- Scheeringa, M. S., Zeanah, C. H., Myers, L., & Putnam, F. W. (2003). New findings on alternative criteria for PTSD in preschool children. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42, 561-570.
- 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.

- Scheier, M. F., & Carver, C. S. (2003). Self-regulatory processes and responses to health threat: Effects of optimism on well-being. In J. Suls & K. A. Wallston (Eds.), *Social psychological foundations of health and illness*, (pp. 395–428). Malden, MA: Blackwell.
- Schiller, W., & Einarsdottir, K. (2009). Special issue: Listening to young children's voices in research-changing perspectives/changing relationships. *Early Child Development and Care*, 179(2), 125-130.
- Seale, C. (2010). Using computers to analyse qualitative data. In *Doing qualitative research*. (3rd ed.), D. Silverman, (Ed.), Los Angeles, CA: Sage.
- Seballos, F., Tanner, T., Tarazona, M., & Gallegos, G. (2011). *Children and disasters: Understanding impact and enabling agency*. CCC coalition, SCF & UNICEF. Institute of Developing Studies, Brighton.
- Seery, M. D., Holman, E. A., & Silver, R.C. (2010). Whatever does not kill us: Cumulative lifetime adversity, vulnerability, and resilience. *Journal of Personality and Social Psychology*, 99(6), 1025–41.
- Seiffge-Krenke, I., & Pakalniskiene, V. (2011). Who shapes whom in the family: Reciprocal links between autonomy support in the family and parents' and adolescents' coping behaviors. *Journal of Youth and Adolescence*, 40, 983-995.
- Sierksma, J., Thijs, J., & Verkuyten, M. (2014). Children's intergroup helping: The role of empathy and peer group norms. *Journal of Experimental Child Psychology*, 126, 369–83. doi:10.1016/j.jecp.2014.06.002
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5-14. doi: 10.1037/0003-066X.55.1.5
- Shek, D. T. L., Tang, V., Lam, C. M., Lam, M. C., Tsoi, K. W., & Tsang, K. M. (2003). The relationship between Chinese cultural beliefs about adversity and psychological adjustment in Chinese families with economic disadvantage. *The American Journal of Family Therapy*, 31(5), 427–443. doi:10.1080/01926180390228955
- Shiner, R. L., & Masten, A. S. (2012). Childhood personality as a harbinger of competence and resilience in adulthood. *Development and Psychopathology*, 24, 507–528. doi:10.1017/S0954579412000120
- Shinn, M., & Toohy, S. M., (2003). Community contexts of human welfare. *Annual Review of Psychology*, 54, 427-459.
- Silverman, D. (2000). *Doing qualitative research: A practical handbook*. Thousand Oaks, CA: Sage.
- Silverman, D. (2006) *Interpreting qualitative data* (2nd ed.), Thousand Oaks CA: Sage
- Simonelli, A. (2013). Posttraumatic stress disorder in early childhood: Classification and diagnostic issues. *European Journal of Psychotraumatology*, 4, 1-11.
- Skinner, E. A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin*, 129(2), 216-269.

- Skinner, E. A., & Zimmer-Gembeck, M. J. (2007). The development of coping. *Annual Review of Psychology*, 58, 119–144.
- Skinner, E. A., & Zimmer-Gembeck, M. J. (2009). Challenges to the developmental study of coping. In E. A. Skinner & M. J. Zimmer-Gembeck (Eds.), *Coping and the development of regulation: New directions for child and adolescent development*, (pp. 5–17). San Francisco: Jossey-Bass.
- Southwick, S., Bonanno, G., Masten, A., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: interdisciplinary perspectives. *European Journal of Psychotraumatology*, [S.l.], v. 5, ISSN 2000-8066. Available at: <<http://www.ejpt.net/index.php/ejpt/article/view/25338>>
- Spinrad, T. L., Eisenberg, N., Cumberland, A., Fabes, R., Valiente, C., Shepard, S. Guthrie, I. K. (2006). Relation of emotion-related regulation to children's social competence: A longitudinal study. *Emotion (Washington, D.C.)*, 6(3), 498–510. doi:10.1037/1528-3542.6.3.498
- Sprague, C. M., Kia-Keating, M., Felix, E., Afifi, T., Reyes, G., & Afifi, W. (2015). Youth psychosocial adjustment following wildfire: The role of family resilience, emotional support, and concrete support. *Child & Youth Care Forum*, 44(3), 433–450. doi:10.1007/s10566-014-9285-7
- Sprung, M., & Harris, P. L. (2010). Intrusive thoughts and young children's knowledge about thinking following a natural disaster. *Journal of Child Psychology and Psychiatry*, 51 (10), 1115–1124.
- Sroufe, L. A. (1997). Psychopathology as an outcome of development. *Development and Psychopathology*, 9, 251–268.
- Statistics New Zealand: <http://www.stats.govt.nz/>
- Stein, B. D., Tanielian, T. L., Eisenman, D. P., Keyser, D. J., Burnam, M. A., & Pincus, H. A. (2004). Emotional and behavioral consequences of bioterrorism: Planning a public health response. *The Milbank Quarterly*, 82(3), 413–55. doi:10.1111/j.0887-378X.2004.00317.x
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Beverley Hills, CA: Sage.
- Sumer, N., Karanci, A., Berument, S. K., & Gunes, H. (2005). Personal resources, coping self-efficacy, and quake exposure as predictors of psychological distress following the 1999 earthquake in Turkey. *Journal of Traumatic Stress*, 18, 331–342.
- Sunal, C. S., & Coleman, J. M. (2013). Social studies beginnings : Investigating very young children's prior knowledge of a disaster. *Social Studies Research and Practice*, 8(3), 21–42.
- Taylor, S. E., & Stanton, A. L. (2007). Coping resources, coping processes, and mental health. *Annual Review of Clinical Psychology*, 3, 377–403. doi:10.1146/annurev.clinpsy.3.022806.091520
- Taylor, Z. E., Eisenberg, N., Spinrad, T. L., Eggum, N. D., & Sulik, M. J. (2013). The relations of ego-resiliency and emotion socialization to the development of empathy and prosocial behavior across early childhood. *Emotion*, 13(5), 822–831. doi:10.1037/a0032894
- Teddle, C., & Yu, F. (2007). Mixed methods sampling: A typology with examples. *Journal of Mixed Methods Research*, 1(1), 77–100. doi:10.1177/2345678906292430

- 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.
- Tedeschi, R. G., Calhoun, L. G., & Cann, A. (2007). Evaluating resource gain: Understanding and misunderstanding posttraumatic growth. *Applied Psychology, 56*(3), 396–406. doi:10.1111/j.1464-0597.2007.00299.x
- Tennen, H., & Affleck, G. (2002). Benefit-finding and benefit-reminding. In C. R. Snyder & S. J. Lopez, (Eds.), *Handbook of positive psychology*, (pp. 584-597). NY, US: Oxford University Press
- Terranova, A. M., Boxer, P., & Morris, A. S. (2009). Factors influencing the course of posttraumatic stress following a natural disaster: Children's reactions to Hurricane Katrina. *Journal of Applied Developmental Psychology, 30*, 344–355. doi:10.1016/j.appdev.2008.12.017.
- Terranova, A. M., Morris, A. S., Myers, S., Kithakye, M., & Morris, M. D. S. (2015). Preschool children's adjustment following a hurricane: Risk and resilience in the face of adversity. *Early Education and Development, 26*(March), 534–548. doi:10.1080/10409289.2015.994463
- Theron, L. C., & Theron, A. (2013). Positive adjustment to poverty: How family communities encourage resilience in traditional African contexts. *Culture & Psychology, 19*(3), 391–413. doi:10.1177/1354067X13489318
- Tol, W. A., Patel, V., Tomlinson, M., Baingana, F., Galappatti, A., Panter-Brick, C.,...Van Ommeren, M. (2011). Research priorities for mental health and psychosocial support in humanitarian settings. *PLOS Medicine, 8*(9), 1–6. doi:10.1371/journal.pmed.1001096
- Tol, W. A., Song, S., & Jordans, M. J. D. (2013). Annual research review: Resilience and mental health in children and adolescents living in areas of armed conflict - A systematic review of findings in low- and middle-income countries. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 54*(4), 445–460. doi:10.1111/jcpp.12053
- Tolin, D. F., & Foa, E. B., (2006). Sex differences in trauma and posttraumatic stress disorder: A quantitative review of 25 years of research. *Psychological Bulletin, 132* (6) 959-992.
- Travis, H. J. (2014) Children and the human-animal bond: Minimizing pet loss during disasters. In M. R. Jalongo (Ed.), *Teaching compassion: Humane education in early childhood, educating the young child* Volume 8, (pp.133-145). Dordrecht, Germany: Springer Science. doi 10.1007/978-94-007-6922-9_9
- Tuckett, A. G. (2005). Applying thematic analysis theory to practice: A researcher's experience. *Contemporary Nurse, 19*, 75-87.
- Tudge, J. R. H., Mokrova, I., Hatfield, B. E., & Karnik, R. B. (2009). Uses and misuses of Bronfenbrenner's bioecological theory of human development. *Journal of Family Theory & Review, 1*, 198-210.
- Tufford, L., & Newman, P. (2010). Bracketing in qualitative research. *Qualitative Social Work, 1* (1), 80-96.

- Tugade, M. & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional arousal. *Journal of Personality Social Psychology*, 86, 320–333.
- Udwin, O., Boyle, S., Yule, W., Bolton, D., & O’Ryan, D. (2000). Risk factors for long-term psychological effects of a disaster experience in adolescence: Predictors of post-traumatic stress disorder. *Journal of Child Psychology and Psychiatry*, 41(8), 969-979.
- Ungar, M. (2008). Resilience across cultures. *British Journal of Social Work*, 38(2), 218–235. doi:10.1093/bjsw/bcl343
- Ungar, M. (2013). Resilience, trauma, context, and culture. *Trauma, Violence, & Abuse*, 14, 253–264.
- Ungar, M. (2014). Practitioner review : Diagnosing childhood resilience – a systemic approach to the diagnosis of adaptation in adverse social and physical ecologies. *Journal of Child Psychology and Psychiatry*, 4–17. doi:10.1111/jcpp.12306
- Ungar, M., Ghazinour, M., & Richter, J. (2013). Annual Research Review: What is resilience within the social ecology of human development. *Journal of Child Psychology and Psychiatry*, 4, 348-366. doi 10.1111/jcpp.12025
- United Nations. (1989). Convention on the Rights of the Child. *New York*, (November).
- Usami, M., Iwadare, Y., Kodaira, M., Watanabe, K., Aoki, M., Katsumi,...Saito, K., (2012). Relationships between traumatic symptoms and environmental damage conditions among children 8 months after the 2011 Japan earthquake and tsunami. *PLoS ONE* 7(1):e50721. doi:10.1371/journal.pone.0050721
- Uttervall, M., Hultman, C. M., Ekerwald, H., Lindam, A., & Lundin, T. (2014). After the flood: Resilience among tsunami-afflicted adolescents. *Nordic Journal of Psychiatry*, 68(1), 38–43. doi:10.3109/08039488.2013.767373
- US Geological Survey, <http://www.usgs.gov>
- Uzyska-Jarmoc, J. (2001). The image of a child in his parents’ minds and self-image of six-year-old children. *Early Child Development and Care*, 169(March 2014), 1–19.
- Van Manen, M. (1997). From meaning to method. *Qualitative Health Research*, 7 (3), 345-369.
- Van Wesel, F., Boeije, H., Alisic, E., & Drost, S. (2012). I’ll be working my way back: A qualitative synthesis on the trauma experience of children. *Psychological Trauma: Theory, Research, Practice, and Policy*, 4(5), 516–526. doi:10.1037/a0025766
- Vernberg, E. M., Silverman, W. K., La Greca, A. M., & Prinstein, M. J. (1996). Prediction of posttraumatic stress symptoms in children after hurricane Andrew. *Journal of Abnormal Psychology*, 105(2), 237–48.
- Vigil, J. M., & Geary, D. C. (2008). A preliminary investigation of family coping styles and psychological well-being among adolescent survivors of Hurricane Katrina. *Journal of Family Psychology*, 22 (1), 176-180.
- Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. In M. Cole & E. John-Steiner, V. Scribner, S. Souberman (Eds.), *Mind in society: The development of higher psychological processes* . (79–91). Cambridge, MA: Harvard University Press.

- Wagstaff, G. F., & Rowledge, A. M. (2001). Stoicism: Its relation to gender, attitudes toward poverty, and reactions to emotive material. *Journal of Social Psychology, 135*(2), 181-184. doi:10.1080/00224545.1995.9711421
- Walker, L. S., Smith, C. A., Garber, J., & Van Slyke, D. (1997). Development and validation of the pain response inventory for children. *Psychological Assessment, 9*(4), 392-405. doi:10.1037//1040-3590.9.4.392
- Walker, M., Whittle, R., Medd, W., Burningham, K., Moran-Ellis, J., & Tapsell, S. M. (2012). "It came up to here": Learning from children's flood narratives. *Children's Geographies 10*(2), 135-150. doi:10.1080/14733285.2012.667916
- Walsh, F. (2007). Traumatic loss and major disasters: Strengthening family and community resilience. *Family Process, 46*(2), 207-227.
- Weber, Max, (1920). [Die protestantische Ethik und der Geist des Kapitalismus] *The Protestant ethic and the spirit of capitalism/MaxWeber*] Stephen Kalberg.—(3rd Roxbury ed.), Los Angeles, CA: Roxbury
- Weems, C. F., & Graham, R. (2014). Resilience and trajectories of posttraumatic stress among youth exposed to disaster. *Journal of Child and Adolescent Psychopharmacology, 24*(1), 2-8. doi:10.1089/cap.2013.0042
- Weems, C. F., & Overstreet, S. (2008). Child and adolescent mental health research in the context of Hurricane Katrina: An ecological-needs-based perspective and introduction to the special section. *Journal of Clinical Child and Adolescent Psychology, 37*, 487-494.
- Weems, C. F., Russell, J. D., Banks, D. M., Graham, R. A., Neill, E. L., & Scott, B. G. (2014). Memories of traumatic events in childhood fade after experiencing similar less stressful events : Results from two natural experiments. *Journal of Experimental Psychology: General, 143*(5), 2046-2055. doi:http://dx.doi.org/10.1037/xge0000016
- Weems, C. F., Taylor, L. K., Cannon, M. F., Marino, R. C., Romano, D. M., Scott, B. G.,...& Triplett, V. (2010). Posttraumatic stress, context, and the lingering effects of the Hurricane Katrina disaster among ethnic minority. *Journal of Abnormal Child Psychology, 38* (1), 49-56. doi 10.1007/s10802-009-9352-y.
- Weems, C. F., Pina, A. A., Costa, N. M., Watts, S. E., Taylor, L. K., & Cannon, M. F. (2007). Predisaster trait anxiety and negative affect predict posttraumatic stress in youths after Hurricane Katrina. *Journal of Consulting and Clinical Psychology, 75*, 154-159.
- Wertz, F. J. (2005). Phenomenological research methods for counselling psychology. *Journal of Counselling Psychology 52* (2), 167-177.
- Westphal, M., Seivert, N. H., & Bonanno, G. A. (2010). Expressive flexibility. *Emotion, 10*(1), 92-100. doi:10.1037/a0018420
- Widyatmoko, C. S., Tan, E. T., Seyle, D. C., Mayawati, E. H., & Silver, R. C. (2011). Coping with natural disasters in Yogyakarta, Indonesia: The psychological state of elementary school children as assessed by their teachers. *School Psychology International, 32*(5), 484-497. doi:10.1177/0143034311402919

- Wilson, T. D., & Gilbert, D. T. (2005). Affective forecasting: knowing what to want. *Current Directions in Psychological Science*, *14*(3), 131–134. doi:10.1111/j.0963-7214.2005.00355.x
- Winnicott, D. W. (1971). *The Piggle: An account of the psychoanalytic treatment of a little girl*. London: Hogarth Press, [ISBN 0-140-1466-79](#)
- Winstanley, A., Hepi, M., & Wood, D. (2015). Resilience? Contested meanings and experiences in post-disaster Christchurch, New Zealand. *Kōtuitui: New Zealand Journal of Social Sciences Online*, *10* (2), 126-134. doi:10.1080/1177083X.2015.1066402
- Wolmer, L., Hamiel, D., Barchas, J. D., Slone, M., & Laor, N. (2011). Teacher-delivered resilience-focused intervention in schools with traumatised children following the second Lebanon war. *Journal of Traumatic Stress*, *24* (3), 309-316.
- WHO World Health Statistics 2010. WHOSIS
- Wooding, S., & Raphael, B. (2004). Psychological impact of disasters and terrorism on children and adolescents: Experiences from Australia. *Prehospital and Disaster Medicine*, *19*(1), 10-20.
- Wu, H. C. (2013). Protectors of indigenous adolescents' post-disaster adaptation in Taiwan. *Clinical Social Work Journal*, *42*(4), 357–365. doi:10.1007/s10615-013-0448-z
- Yardley, L (2000). Dilemmas in qualitative health research. *Psychology and Health* *15*, 215-228.
- Yelland, P., Robinson, P., Lock, C., La Greca, A. M., Kokegei, B., Ridgway, V., & Lai, B (2010). Bushfire impact on youth. *Journal of Traumatic Stress*, *23*(2), 274-277.
- Yu, X., Lau, J. T. F., Zhang, J., Mak, W. W. S., Choi, K. C., Lui, W. W. S.,...Chan, E. Y. Y. (2010). Posttraumatic growth and reduced suicidal ideation among adolescents at month 1 after the Sichuan Earthquake. *Journal of Affective Disorders*, *123*(1-3), 327–31. doi:10.1016/j.jad.2009.09.0
- Yu, S., Brackbill, R. M., Stellman, S. D., Ghuman, S., & Farfel, M. R. (2015). Evaluation of non-response bias in a cohort study of World Trade Center terrorist attack survivors. *BMC Res Notes*, *8*, 42. doi:10.1186/s13104-015-0994-2
- Yule, W., Perrin S., & Smith, P. (1999). Post-traumatic stress reactions in children and adolescents. In W. Yule (Ed.), *Post-traumatic stress disorders: Concepts and therapy* (pp. 35-50). Chichester, England: Wiley.
- Zalewski, M., Lengua, L. J., Wilson, A. C., Trancik, A., & Bazinet, A. (2011). Associations of coping and appraisal styles with emotion regulation during preadolescence. *Journal of Experimental Child Psychology*, *110*(2), 141–158. doi:10.1016/j.jecp.2011.03.001
- Zhang, W., Liu, H., Jiang, X., Wu, D., & Tian, Y. (2014). A longitudinal study of posttraumatic stress disorder symptoms and its relationship with coping skill and locus of control in adolescents after an earthquake. *PLOS One*, *9*(2), 1–8. doi:10.1371/journal.pone.0088263
- Zimmer-Gembeck, M. J., & Skinner, E. A. (2011). The development of coping across childhood and adolescence: An integrative review and critique of research. *International Journal of Behavioral Development*, *35*(1), 1- 17.

Zolkoski, S. M., & Bullock, L. M. (2012). Resilience in children and youth: A review. *Children and Youth Services Review, 34*, 2295-2303.

Appendices

Appendix A: Glossary of terms

Accommodative coping: coping strategies directed at adjusting to a situation and adjusting to available options.

Adaptation: a child functioning (adequately) in relation to developmental tasks, despite some stress reactions related to adversity. **Positive adaptation:** Capacity of a child to meet normal developmental milestones in school and in relationships, in a culturally relevant framework despite adversity. Adequate or positive adaptation is defined for the present study as successful performance on age-developmental tasks such as interpersonal competence, and behaviour at school.

Age turning points: ages at which developmental changes typically take place.

Agency: the capacity of a person to make choices and exercise active control over events that affect their lives. Linked with mastery.

Allostatic load: cumulative burden of adaptation to stress.

Benefit finding: finding positive effects resulting from an adverse event.

Bracketing: engaging with the phenomenon by laying aside or bracketing our experience in order to see a new or enhanced meaning.

Broaden and Build model: model developed by Fredrickson (2001) that the experience and expression of positive emotions promotes broadening the scope of attention and cognition towards producing patterns of thought that are flexible and effective. This can promote more effective coping with adversity.

Buffering: a person or object that reduces a shock in forming a barrier or shield between antagonistic people or potentially traumatic situations.

Collectivism: a social pattern consisting of closely linked individuals who see themselves as parts of one or more collectives (family, co-workers, tribe, nation).

Constructionism: holds that knowledge is constructed out of human engagement with objects that are already in the world rather than meaning being discovered or created anew by each person (Caelli, 2000). Constructionism views reality as socially constructed and ever changing.

Coping: defined by Compas et al. (2001, p. 89) as “the conscious volitional efforts to regulate emotion, cognition, behaviour, physiology, and the environment in response to stressful events or circumstances. These regulatory processes both draw

on and are constrained by the biological, cognitive, social and emotional development of the individual”

Coping assistance: actions taken by significant others to help children cope with stressful incidents or situation. Coping assistance can occur through modelling, coaching or teaching.

Coping socialisation: adults (e.g., parents, teachers, extended family) or peers helping children develop their own coping strategies so as to manage stressful events.

Developmental Systems theory: a theory that conceptualises how a person carries out transactions with their environment, and through that transaction how their biological, psychological, behavioural and environmental elements change or remain constant.

Disaster: “a potentially traumatic event that is collectively experienced, has an acute onset, and is time delimited” (McFarlane & Norris, 2006, p. 4).

Dose/Response effect: effect where greater exposure to a disaster, either in severity or cumulative exposure, is associated with more distress and poorer adjustment.

Effective coping: children able to employ coping strategies in a flexible and pertinent way so as to function at developmentally appropriate level despite adversity. Effective coping in the research has been understood as children able to function at an age appropriate level despite adversity.

Emotional regulation: "monitoring, evaluation, control and expression of emotion, especially in challenging circumstances” (Taylor & Stanton 2007, p. 379).

Empathy: a response that results from understanding another’s emotional state or condition.

Epistemology: the researcher’s theory of knowledge (Creswell, 2007). Gives the philosophical grounding for deciding what kinds of knowledge are possible, adequate and legitimate within a study.

Epoche: the process of suspending judgement and bracketing out the researcher’s own attitudes, beliefs and preconceptions within the research process and, at the same time, being open to whatever may emerge (Finlay, 2008).

Essence: analysis that attempts to understand the shared meaning or structure of what is being researched. In the present study: effective coping for the cohort.

Flexibility in coping: Ability to vary coping strategies in order to address challenges.

Inoculation: if a disaster is experienced effectively then children may show inoculation rather than sensitisation to further or future disaster events.

Mastery: Capacity to perform in a given domain. Mastery can influence self-reliance and has been linked to sense of self-efficacy and to positive adaptation.

Mediating elements: are elements that account for the relation between independent and dependent criteria. These elements have an impact on all levels of stress. For example, effective parenting is a mediating variable, having a definite effect on children's skill at emotional regulation.

Modelling: demonstrating actions through which children obtain awareness of specific behaviours.

Moderating elements: are elements that moderate and influence the impact of adversity when it occurs. For example parenting behaviour that buffers the child from danger influences the impact of adversity when it occurs.

Memory bias: recall of psychological states can be coloured by inaccuracies. Memory for disaster experience has been shown to be biased by current levels of distress (Levine, Whalen, Henker, & Jamner, 2005).

Ontology: concerns the researcher's assumptions about reality, about the questions of what exists. In the present study, the ontological perspective views reality as being constructed by persons in their life-world and the role of the researcher is one of interpretation of the various realities of this world.

Optimism: an intrapersonal resource where persons have positive expectancies regarding their future outcomes.

Pathways of adaptation: observable pattern, course or trajectory over time of adaptive functioning.

Place attachment: A multidimensional construct that links a person's emotional attachment to places. Place attachment can include place identity, place dependence, and place linked with social bonds.

Plasticity: the capacity of the children to adjust and adapt to changing circumstances and demands of their context.

Phenomenology: a qualitative research method that focuses on understanding a phenomenon (in the present study children's coping with a disaster) from the children's own perspectives and describing the world as experienced by them. The assumption is that reality is what the children perceive it to be.

Phenomenological approach: examining a phenomenon so as to give a rich description and through systematic analyses to write up what is essential (see

Essence) in the phenomenon for the group studied. Phenomenological research explores the way complex meaning is built out of simple units of direct experience. The researcher adopts an open phenomenological attitude (see *phenomenological reduction* and *epoche*) which initially refrains from importing external frame-works and sets aside judgements about the phenomenon.

Phenomenological reduction: attempt by the researcher to study the phenomenon as clearly as possible by bracketing the researcher's own attitudes, beliefs and preconceptions, and being open to what emerges from the data.

Positive appraisal and positive reframing: reinterpreting situations or incidents in a positive way. Gross (2002, p. 281) defines cognitive reappraisal as "changing how we think about a situation in order to decrease its emotional impact".

Post-Traumatic Growth (PTG): positive change that emerges from experiencing and struggling with adversity.

Promotive resources or factors: predictors of higher levels of positive outcomes for the children whatever their circumstances.

Protective resources or factors: have a special moderating effect when adversity is high. For example: buffering from parents.

Recovery: recovery in the present study will be understood to comprise the trajectory a child takes post-disaster, in order to adapt to, assimilate or actively manage their altered present, so that they are able to function adequately in their new circumstances (Norris, Tracy & Galea, 2009).

Referencing: Checking other's reactions to decide how one should react (see *social referencing*).

Reflexivity: acknowledgement by a researcher that their own experiences and background may have an effect on how the research is conducted and the data analysed. Consciousness of a researcher's or participants' cultural, political, social, linguistic and ideological origins in their perspective.

Resilience: in children facing adversity such as a disaster, it is demonstrated by positive development and adaptation despite exposure to significant stressors. The definition adopted in the study is: "a capacity of a dynamic system [the child] to withstand or recover from significant challenges that threaten its stability, viability or development" (Masten & Narayan, 2012 p. 231).

Scaffolding: supportive behaviours a parent or proximal other undertakes to enable a child to manage demanding situations. Effective scaffolding by parents occurs when parents adjust their level of supervision or protection to their child's capacities and needs.

Self-efficacy: Self-judgement of a sense of competence in performing tasks.

Self-enhancement: “a disposition to extremely positive self-evaluations” (Gupta & Bonanno, 2010, p. 83). Has been linked in adults to self-protection within a disaster context.

Self-esteem: refers to an individual's sense of his or her value or worth, or the extent to which a person values, approves of, appreciates, or likes him or herself.

Sensitisation: if a disaster is experienced ineffectively then children may show sensitisation to further or future disaster events.

Social capital: the combination of resources (e.g., from human and network contacts) linked to family and social networks. Ungar (2014) includes feelings of trust and cultural embeddedness in social capital.

Social Referencing: checking on others [by children]—especially significant others, so as to judge how to react to an event.

Social support: perception that extra-familial sources, such as teachers, friends, neighbours and community members are available and able to provide help and support.

Steeling effects: here exposure to manageable stress increases a child's capacity to address future stress; (Rutter, 2012). Capacities to cope successfully may stem from the effects of brief exposure to negative experiences in circumstances where the child's resources are not overwhelmed, and where they can therefore cope successfully with the challenge.

Stoicism: exercising emotional control or endurance. The endurance of pain or hardship without the display of feelings.

Transferability: allows researchers to evaluate the potential for transferring results to other contexts (Lincoln & Guba, 1985; Braun & Clarke, 2014).

Transactional stress model of coping: where appraisals of the stressor and of the capacities to respond are part of the coping processes. These cognitive processes “intervene between the encounter [the stressor] and the response [way of coping employed]” (Lazarus & Folkman, 1984, pp. 22-23).

Well-being: a multi-dimensional phenomenon that includes both hedonic (happiness) and eudemonic (life satisfaction) concepts such as meaning and self-realisation (Ryan & Deci, 2001). Subjective well-being is “how people evaluate their lives”(Navarro et al., 2015, p. 2)

Whanau: extended family group. Often translated as ‘family’, but its meaning is more complex. It includes physical, emotional and spiritual dimensions. Whānau relationships include those with whāngai (foster children) and those who have passed on. There are roles and responsibilities for individuals and for the collective.

Appendix B: Information sheets



MASSEY UNIVERSITY
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TE KURA PŪKENGĀ TANGATA

Childhood and caregiver post-disaster recovery following the Canterbury earthquakes of 2010 and 2011

FIVE YEAR OLD CHILD - INFORMATION SHEET

Parents, if you agree with your information sheet and consent to your child taking part in the study, could you please read this to your child. Thank you.

Who am I?

My name is Maureen Mooney. I am a psychologist and a Mother of two grown boys. I am studying what you, your parents and your teachers did that helped you after the earthquakes. My study looks at how we get over difficult situations so that we can get on with everyday life.

Why am I writing to you and your parents?

I would like you to listen to your Mum or Dad read you this and see if you would agree to have a chat with me about how life is for you at the moment and how it was for you when the earth shook last year. You can see me either in your home or in your school. I will see you where you and your parents feel the most comfortable.

What would you do and when would you do it?

If you say yes and your parents agree too, I would come to chat to you in your home or in your class, for about 30 minutes. This will not be at a time when you have lessons. My questions will be about what helped you get through the time when the earth shook.

Because it takes time for us to get over difficult times, I would like to chat with you again about a year later.

If you feel ok about this and your parents do too, please ask them to agree and sign the consent form they have and bring it back in the envelope to school.

I would like your parents and your teacher to join in the project too.

The Project

I will be listening to children, teachers and parents talk about how it has been for all of you since the earthquakes. I am doing this so we know what helps us to get through tough situations.

Apart from talking with you and your parents, I will be talking to older children in classes of nine and fifteen year olds as well to see how it has been for them.

At the end of the study, I will share the main results, but not your names or your school names. All that you, your parents or your teacher will say will be private.

If you want to share your story with me, there are some things you should know.

SOME THINGS YOU SHOULD KNOW:

- Both you and your parent/s need to agree before I can talk with you.
- No-one's names will be used in any of the documents.
- Your story will be kept in a secure and safe place and will only be looked at by myself and my supervisors who help me in the work.
- You don't have to be in this study. It is only if you want to.
- You can stop being in the study at any time.
- You can ask me any questions.

I will make sure you are as comfortable as possible when we chat and you can say 'no' to any question.

Thank you for listening and thank you to your parents for reading this to you too.

If you want to know any more about the study you and your parents can contact me or my supervisors.

Thanks for looking at whether you want to be in the project. I hope you can say 'yes'.

Maureen Mooney
School of Psychology
Massey University

Maureenmooney@gmail.com

Tel: 048015799 Ext 62551

Mob: 0276783730

Dr Sarb Johal
School of Psychology
Massey University

S.Johal@massey.ac.nz

Professor Douglas Paton
School of Psychology
University of Tasmania

douglas.paton@utas.edu.au

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 11/60. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799x8729, e-mail: humanethicsouthb@massey.ac.nz



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Childhood and caregiver post-disaster recovery following the Canterbury earthquakes of 2010 and 2011

NINE YEAR OLD CHILD INFORMATION SHEET - Canterbury

Parents, if you agree to your child taking part in the study, can you please read this with your child. Thank you.

Who am I?

My name is Maureen Mooney. I am a psychologist and a Mother of two grown boys. I am studying how you, your parents and teachers are coping with the earthquakes and the rebuild.

Please read the following information, or have someone like your parents read it to you, and think about whether you would like to be part of this project.

If anything is unclear in this information sheet, you can ask your parents about it. If you have any questions or you would like more information, you can contact me or my supervisors. The addresses are at the end of this sheet.

THE PROJECT

The 2010 and 2011 major earthquakes in Canterbury were difficult to deal with for many of us. I will be listening to children, your teachers and parents talk about how it has been for you since the earthquakes. I am doing this to find out what helps us to get over tough situations, i.e. to know how we cope and recover.

We know from other studies that most people who live through these times will eventually feel ok and be able to just get on with their lives. However, it is not so easy.

What would you do and when would you do it?

If you say 'yes' and your parents agree I will talk with around five children from your class. My questions will be about what you did that helped you cope. If you agree and are interviewed, it will take around 30 minutes. I will arrange with your teacher so that lessons are not interrupted, and that all this happens at a convenient time for you.

I would like your parents to join in the project as well. If they agree, they too will talk with me for around 30 minutes.

To see how everyone copes and recovers over time, I would like you to be interviewed again in 2013.

If you are ok about this and your parents are too, please ask them to sign the form they have and bring it back in the envelope to school.

Other participants in the study

In the project, I will be talking with some children and their parents in one class of five-year olds. I will also interview around 15 children and their parents in three classes of nine and three classes of fifteen-year olds. You would be one of the nine year olds in the study. In order to see how children and adults outside Canterbury cope, I will also talk with some

children in one class of nine-year olds and one class of fifteen-year olds in the Wellington region.

At the end of the study I will share the main results, but not your names or your school names. If you say 'yes' to being part of the study, you will have a number. In this way the information you give me will be private. At the end of the study, the overall results will be on the Massey University website. I am doing this project so that people in New Zealand can support themselves and others better in the future, and so they can make good plans in case we have other tough situations to get through.

If you want to share your story with me, there are some things you should know.

SOME THINGS YOU SHOULD KNOW:

- Both you and your parent/s need to agree before I can talk with you.
- No-one's name will be used in any of the documents.
- Your story will be kept in a secure and safe place and will only be looked at by myself and my supervisors. Our names are on the bottom of this sheet, and you or your parents can ask us any questions.
- You don't have to be in this study. It is only if you want to. You can stop the study at any time.
- You can ask me any questions that you want to.

There may have been some difficult things that happened to you or your family during the earthquakes and I am aware of this. I will try to make this as comfortable as possible for you. If you are interviewed, you will only be asked what you want to answer.

If you should wish to talk with someone about anything that is worrying you, contact information will be available for you or your parents.

Thank you for listening, and thank you to your parents for reading it with you.

If you want to know more about the study, you or your parents can contact me or my supervisors.

Thank you for thinking about whether you want to be in this project. I hope you will agree and can say 'yes'.

Maureen Mooney
School of Psychology
Massey University

Maureenmooney@gmail.com

Tel: 048015799 Ext 62551

Mob: 0276783730

Dr Sarb Johal
School of Psychology
Massey University

S.Johal@massey.ac.nz

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Childhood and caregiver post-disaster recovery following the Canterbury earthquakes of 2010 and 2011

NINE YEAR OLD CHILD INFORMATION SHEET - Wellington

Parents, if you agree to your child taking part in the study, can you please read this with your child. Thank you.

Who am I?

My name is Maureen Mooney. I am a psychologist and a Mother of two grown boys. I am studying how children, adolescents, parents and teachers are coping with difficult situations such as the Canterbury earthquakes.

I am doing this project so that people in New Zealand can support themselves and others better in the future, and so they can make good plans in case we have other tough situations to get through.

Please read the following information, or have someone like your parents read it to you, and think about whether you would like to be part of this project.

If anything is unclear in this information sheet, you can ask your parents about it. If you have any questions or you would like more information, you can contact me on my e-mail address which is at the end of this sheet.

The Project

The 2010 and 2011 earthquakes in Canterbury were difficult to deal with for many of us. I will be listening to children, teachers and parents talk about how it has been since the earthquakes and how they cope. I am doing this to find out what helps us to get over tough situations. I am especially interested in how we humans manage to cope and recover from life's difficult situations.

We know from other studies that most people who live through these times will eventually feel ok and be able to just get on with their lives. However, it is not so easy to live through a difficult situation.

What would you do and when would you do it?

If you say 'yes' and your parents agree I will talk with around five children from your class in a short interview. It will take about 30 minutes. The interview is looking at how you get on and cope with situations in your lives.

I will arrange with your teacher so that lessons are not interrupted, and that all this happens at a time that is best for you.

I would like your parents to join in the project too and would like around five parents to talk with me for around 30 minutes.

Having people like you in the Wellington region as part of the study as it allows me to see how different ages deal with some of the challenges in everyday life, and whether you deal with them differently from children in Canterbury who are coping with the earthquakes and the rebuilding of their city.

If you are ok about this and your parents are too, please ask them to sign the form they have with this sheet and bring it back in the envelope to school.

Other participants

In the project, in Christchurch, I will be talking with some children and their parents in one class of five year olds. I will also interview around 15 children and their parents in three classes of nine and three classes of fifteen year olds.

At the end of the study I will share the main results, but not your names or your school names. What you and your parents discuss will be kept private.

The main results will be on the Massey University website.

SOME THINGS YOU SHOULD KNOW

If you want to share your story with me, there are some things you should know:

- Both you and your parent/s need to agree before I can talk with you.
- No-one's name will be used in any of the documents.
- Your story will be kept in a secure and safe place and will only be looked at by myself and my supervisors. Our names are on the bottom of this sheet, and you or your parents can ask us any questions.
- You don't have to be in this study. It is only if you want to. You can stop the study at any time.
- You can ask me any questions that you want to.

There may have been some difficult things that happened to you or your family during over the last year. I will try to make this as comfortable as possible for you. If you are interviewed, you will only be asked what you want to answer and all replies will be kept private. If you should wish to talk with someone about anything that is worrying you, information on who to contact will be available.

Thank you for listening, and thank you to your parents for reading it with you.

Thank you too for thinking about whether you want to be in this project. I hope you will agree.

Maureen Mooney
School of Psychology
Massey University

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Massey University

S.Johal@massey.ac.nz

Professor Douglas Paton
School of Psychology
Tasmania University

douglas.paton@utas.edu.au

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 11/60. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799x8729, e-mail humanethicssouthb@massey.ac.nz



MASSEY UNIVERSITY
COLLEGE OF HUMANITIES
AND SOCIAL SCIENCES
TE KURA PŪKENGĀ TANGATA

Childhood and caregiver post-disaster recovery following the Canterbury earthquakes of 2010 and 2011

INFORMANT SHEET- YOUNG PERSON CANTERBURY

Who am I?

My name is Maureen Mooney. I am a trained psychologist who has worked in many disaster situations over the last 10 years, and a doctoral student (PhD) in the Joint Centre for Disaster Research, School of Psychology Massey University. I am studying how children, youth, parents and teachers cope and recover from difficulties such as a disaster situation like the Canterbury earthquakes and their consequences.

Please read the following information and consider whether you would like to participate in this project. If anything is unclear in this information sheet, you can ask your parents or someone else to read it with you. Also, feel free to ask me, if there is anything that is unclear or if you would like more information. You can contact me on the e-mail address marked at the end of this sheet.

The Project

The 2010 and 2011 earthquakes in Canterbury and their consequences have been a trying experience and have had an impact on all who live in the Canterbury region. This study aims to find and understand what can help coping and well-being, within you the young person and in children, the family and the school community.

We hope that the findings from this study will help us all, now and in the future, to know what elements allow us cope with tough situations and so improve responses. Studies show that most people will recover well after a difficult situation. However, living through difficult situations and during recovery can often be distressing or unpleasant.

What is involved for you?

The study uses interviews over eighteen months. If you agree to participate, five of you will be selected to have a short interview (around 30 minutes). In order to understand how recovery occurs over time, the interviews will take place again around 12 months after that.

The interviews will look at elements that help us cope. The interviews will take place at a time that will not disrupt the school curriculum or lesson time. I would like to ask your parents to participate too and their participation is explained in the following paragraphs.

All participants:

To understand how different ages cope, the study will look at several age groups. In Christchurch, In three classes of nine-year olds and three classes of fifteen-year olds like yourself, from different schools. Interviews will be given to a maximum of fifteen students in each age group.

In Wellington, interviews will apply to one Wellington class of nine-year olds and one class of fifteen-year olds. Interviews will take place with five students in the class of nine-year olds and five students in the class of fifteen-year olds. The Wellington group is a comparison group, to examine coping variables in a population of similar age who have not lived in a place that has experienced a disaster but who are dealing with the usual difficulties we face in life.

In both Christchurch and Wellington, teachers and parents who agree to participate will also be interviewed. In Wellington the five parents of the nine-year olds and five parents of the fifteen-year olds will be interviewed.

Also in Christchurch only, one class of five-year olds and their parents will be invited to participate, and around ten children and parents from this class will be interviewed.

I am aware that there may have been some difficult things that may have occurred to you or your family, so I will try to make your participation as comfortable as possible for you. You will only be asked what you want to answer and all replies will be kept confidential. If you feel the need to talk to someone about anything that is worrying you, information on referral contacts will be given orally to all who ask.

No names from students or parents will be noted. Each person will be given a number and confidentiality will be strictly kept.

A summary of the general findings from the study will be given to each school that participates and will be posted on the Massey web-site.

SOME THINGS YOU SHOULD KNOW:

In order to participate in this study, I will need your parent or caregiver's consent. I will also need your consent. Unless I have both consents, no young person or child can participate.

All data will be kept securely by me, the researcher, and only I and my supervisors will be able to see the information.

Please remember you are not under any obligation to participate. If you do decide to do so, you have the right to the following:

- not to answer any question in the interview unless you want to
- ask for the recorder to be turned off at any point during an interview
- stop being a participant in the study at any point
- ask any questions about the study at any time
- provide information on the understanding that your name will not be used.

If you want to know any more about the study, you or your parents can contact me or my supervisors.

Thank you for taking the time to read this. I hope you can be part of the project.

Maureen Mooney
School of Psychology
Massey University

Maureenmooney@gmail.com

Tel: 048015799 Ext 62551

Mob: 0276783730

Dr Sarb Johal
School of Psychology
Massey University

S.Johal@massey.ac.nz

Professor Douglas Paton
School of Psychology
University of Tasmania

douglas.paton@utas.edu.au

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Childhood and caregiver post-disaster recovery following the Canterbury earthquakes of 2010 and 2011

INFORMANT SHEET- YOUNG PERSON WELLINGTON

Who am I?

My name is Maureen Mooney. I am a trained psychologist who has worked in many disaster situations over the last 10 years, and a doctoral student (PhD) in the Joint Centre for Disaster Research, School of Psychology Massey University. I am studying how children, youth, parents and teachers cope and recover from difficulties such as a disaster situation like the Canterbury earthquakes and their consequences. Please read the following information and consider whether you would like to participate in this project. If anything is unclear in this information sheet, you can ask your parents or someone else to read it with you. Also, feel free to ask me if there is anything that is unclear for you or if you would like more information. You can contact me on the e-mail address marked at the end of this sheet.

The Project

The 2010 and 2011 earthquakes in Canterbury and their consequences have been a trying experience and have had an impact on all who live in the Canterbury region. This study aims to find and understand what can help coping and well-being within the young person, children, family and school community.

We hope that the findings from this study will help us all, now and in the future, to know what elements allow us cope with tough situations and so improve responses. Studies show that most people will recover well after a difficult situation. However, living through difficult situations can often be distressing or unpleasant.

What is involved for you?

The study uses interviews twice over an eighteen month period: one month after the start of the study and again around 12 months after that.

If you agree to participate, around five of you in your class would have a short interview. The interviews, for those who are interviewed, will take around thirty minutes. The interviews will look at elements that help us cope. The interviews will not take place at a time that will disrupt the school curriculum or lessons. I would also like to ask your parents to participate and their participation is explained in the following paragraphs.

All participants:

To understand how different ages cope, the study will look at several age groups. In Christchurch, Interviews will be given to a maximum of fifteen students in each age group: five year-olds, nine year-olds and fifteen year-olds. In Wellington, interviews, will apply to one Wellington class of nine-year olds and to you, in one class of fifteen-year olds. Interviews will take place with five students in the class of nine and five students in the class of fifteen-year olds.

The Wellington group is a comparison group, to examine coping variables in a population of similar age, who have not lived in a place that has experienced a disaster but who are dealing with the usual challenges we face in life.

In both Christchurch and Wellington, teachers and parents who agree to participate will also be interviewed. In Christchurch, fifteen parents of the nine-year olds and fifteen parents of

the fifteen-year olds will be interviewed. In Wellington five parents of the nine-year olds and five parents of the fifteen-year olds will be interviewed. Also in Christchurch only, one class of five-year olds and their parents will be invited to participate, and around ten children and parents from this class will be interviewed.

I am aware that some of you may be dealing with some difficulties in your lives, so I will try to make this participation as comfortable as possible for you. You will only be asked what you want to answer and all replies will be kept confidential. If you feel the need to talk to someone about anything that is worrying you, information on referral contacts will be given orally to all who ask.

No names from students or parents will be noted. Each person will be given a number and confidentiality will be strictly kept. A summary of the general findings from the study will be given to each school that participates and the final study summary will be posted on the Massey web-site.

SOME THINGS YOU SHOULD KNOW:

In order to participate in this study, I will need your parent or caregiver's consent. I will also need your consent. Unless I have both consents, no young person or child can participate.

All data will be kept securely by me, the researcher, and only I and my supervisors will be able to see the information.

Please remember you are not under any obligation to participate. If you do decide to do so, you have the right to the following:

- not to answer any question in the interview unless you want to
- ask for the recorder to be turned off at any point during an interview
- stop being a participant in the study at any point
- ask any questions about the study at any time
- provide information on the understanding that your name will not be used

If you want to know anything further about the study, you or your parents could contact me or my supervisors.

Thank you for taking the time to read this. I hope you can be part of the project.

Maureen Mooney
School of Psychology
Massey University

Maureenmooney@gmail.com

Tel: 048015799 Ext 62551

Mob: 0276783730

Dr Sarb Johal
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Childhood and caregiver post-disaster recovery following the Canterbury earthquakes of 2010 and 2011

PARENT INFORMATION SHEET CANTERBURY

Who am I?

My name is Maureen Mooney. I am a trained psychologist who has worked in many disaster situations over the last 10 years and am now a doctoral student (PhD) in the Joint Centre for Disaster Research, School of Psychology, Massey University.

I am studying how children, parents and teachers cope with and recover from disaster situations such as the Canterbury earthquakes and their consequences.

Please read the following information and consider whether you would want you and your child to participate in this project. Please ask me or my supervisors if there is anything that is not clear or if you would like more information. Contact details are given at the end of this document.

The Project

The 2010 and 2011 earthquakes in Canterbury have been an ongoing, stressful situation and have had an understandably important impact for the local population. This study aims to clarify what factors promote coping and enhanced well-being within the child, family and school community, during a recovery process.

It is hoped that the findings of the study will help understand the present situation, and improve and enhance both present and future disaster response. The project is supported by the Ministry of Education.

Participation of your child and yourself involves:

The study will use interviews over an eighteen month period to understand how participants are recovering. The project has been designed so that there is minimum time demanded of participants, and the interviews will be conducted in easily accessible places such as the child's school at times that do not disrupt daily life or interfere with lessons. Questions in the interviews will focus on coping.

People, including children, recover in different ways and use different styles of coping. It is thought that close adults can influence coping in children. Having parents and teachers as part of the study will allow us to better understand ways of coping. Parents' participation will take place at a time and place convenient for them.

The interviews should take around 30 minutes. Overall there will be 15 interviews of both selected nine and fifteen-year olds and their teachers and interviews with the same number of parents. The children will be interviewed with or without their parents according to the wishes of both.

In order to look at recovery over time, some interviews will be programmed twelve months after the project start.

Participants:

In Canterbury, participants in the study will include a class of nine-year olds and a class of fifteen-year olds, including their parents and teachers of these classes, in three locations.

In addition, one class of five year olds, their parents and their teacher will also be invited to participate in order to understand how younger children manage recovery. Ten parents and the teacher of this class will be invited to be interviewed.

In the Wellington region, a class of nine-year olds and fifteen-year olds will be invited to participate along with their teachers and parents to examine coping in everyday life. This is a comparison group in a comparable seismic region and age level.

There may be some things that have happened to you or your family during the earthquakes and the rebuild, which mean that this topic is difficult. I am aware of this and will make every effort to put you and your child at ease so that distress is minimal and you feel as comfortable as possible. If you are worried about any subject, I will have information about a local contact person, and you are more than welcome to ask me.

Both you and the children will only be asked what you want to talk about. Anything discussed will be kept confidential. No names will be used in the study. Numbers will be assigned to persons to protect confidentiality. Only the researcher and her supervisors will have access to information.

All information will be collected by the researcher and kept in a secure system. The data will ultimately be destroyed.

An overall summary of the study will be posted on the Joint Centre for Disaster Research Massey website and will be given to each participating school.

In order for a child to participate in this study they need your consent as a parent or caregiver. They also need to give their own consent. Without the consent of both parties, the children will not be able to participate. If you are a parent of a five or nine year old and wish to be present when I talk with your child, please note this on the consent form. Consent will also be sought from you for your participation. Consent forms are attached to your child's information sheet.

Please remember that you are under no obligation to accept this invitation for you or your child. If you decide to participate, you and your child have the right to:

- not answer any particular question in the interview
- ask for the recorder to be turned off at any point during an interview
- withdraw from the study at any point and ask any questions about the study at any time
- provide information on the understanding that your name will not be used
- be given access to a summary of the study findings when the research is concluded.

I appreciate any consideration you give to participating and allowing your child to participate.

Thank you for your time in reading this and helping explain the accompanying information sheet to your child. I hope you will agree to be part of the study.

Maureen Mooney
School of Psychology
Massey University
Maureenmooney@gmail.com

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Massey University
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Professor Douglas Paton
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University of Tasmania
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Childhood and caregiver post-disaster recovery following the Canterbury earthquakes of 2010 and 2011

PARENT INFORMATION SHEET WELLINGTON

Who am I?

My name is Maureen Mooney. I am a trained psychologist who has worked in many disaster situations over the last 10 years, and am now a doctoral student (PhD) in the Joint Centre for Disaster Research, School of Psychology, Massey University.

I am studying how children, parents and teachers cope with and recover from disaster situations such as the Canterbury earthquakes and their consequences.

Please read the following information and consider whether you would want you and your child to participate in this project. Please ask me or my supervisors if there is anything that is not clear or if you would like more information. Contact details are given at the end of this document.

The Project

The 2010 and 2011 earthquakes in Canterbury have been an ongoing, stressful situation and have had an understandably important impact for the local population. This study aims to clarify what factors promote coping and enhanced well-being within the child, family and school community, during a recovery process.

It is hoped that the findings of the study will help understand the present situation and improve and enhance both present and future disaster response. The project is supported by the Ministry of Education.

Participation of your child and yourself involves:

The study will use interviews to understand how participants are recovering or coping with everyday challenges. In Wellington, five selected parents and students of each class, as well as their teacher, will be interviewed on two occasions over an eighteen month period. Questions will focus on what helps us to cope and recover.

If you consent for your child to participate, the interviews will be conducted in easily accessible places such as the child's school at times that do not disrupt daily life or interfere with lessons.

People, including children, recover in different ways and use different styles of coping. It is thought that close adults can influence coping in children. Having parents and teachers as part of the study will allow us to better understand ways of coping. If you consent to participate yourself, participation will take place at a time and place convenient for you.

The project has been designed so that there is minimum time demanded of participants. The interviews should take around 30 minutes.

The interviews will be programmed one month after the project start, and around eighteen months later.

Participants overall:

In Christchurch, participants in the study will include selected students in a class of nine year olds and a class of fifteen year olds, including their parents and teachers of these classes, in three locations. In addition, one class of five year olds, their parents and their teacher will also be invited to participate in order to understand how younger children

manage recovery. Ten parents and the teacher of this class will be invited to participate in interviews.

In the Wellington region, a comparison class of nine year olds and fifteen year olds will be invited to participate along with their teachers and parents. Your group is included so that the study can examine how children of similar ages and their families, who have not lived through a disaster, cope with everyday challenges.

There may be some things in your life that mean that this topic could be upsetting. I am aware of this and will make every effort to put you and your child at ease so that distress is minimal and you feel as comfortable as possible. Both you and the children will only be asked what you want to talk about. Anything discussed will be kept confidential. If you are worried about any subject, I will have information about a local contact person.

In order for a child to participate in this study they need your consent as a parent or caregiver. They also need to give their own consent. Without the consent of both parties, the children will not be able to participate.

Consent will also be sought from you for your participation. The consent form is attached to your child's information sheet.

Confidentiality is an important component of the project and no names will be used in any documents. Numbers will be assigned to persons to protect confidentiality. Only the researcher and her supervisors will have access to information. All information will be collected by the researcher and kept in a secure system. The data will ultimately be destroyed.

An overall summary of the study will be posted on the Joint Centre for Disaster Research Massey website.

Please remember that you are under no obligation to accept this invitation for you or your child. If you decide to participate, you and your child have the right to:

- not answer any particular question in the interview
- ask for the recorder to be turned off at any point during an interview
- withdraw from the study at any point
- ask any questions about the study at any time
- provide information on the understanding that your name will not be used

I appreciate any consideration you give to participating and allowing your child to participate.

Thank you for your time in reading this and helping explain the accompanying information sheet to your child. I hope you will agree to be part of the study.

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Childhood and caregiver post-disaster recovery following the Canterbury earthquakes of 2010 and 2011

Information for Principal or Board of Trustees- Canterbury

Dear _____

My name is Maureen Mooney. I am a trained psychologist who has worked in many disaster situations over the last 10 years and am now doctoral student (PhD) in the Joint Centre for Disaster Research, School of Psychology, Massey University.

I am studying how children, parents and teachers cope with and recover from disaster situations such as the Canterbury earthquakes and their consequences.

The Project

The 2010 and 2011 earthquakes in Canterbury have been an ongoing, stressful situation and have had an understandably important impact for the local population. This study aims to clarify what factors promote coping and enhanced well-being within the child, family and school community, during a recovery process.

The study will primarily focus on children, youth, parents and teachers. People, including children, recover in different ways and use different styles of coping. It is thought that close adults can influence coping in children. The study will use interviews. Recovery takes place over time and so in order to measure evolution in coping, some interviews will be programmed one month after the project start, and at eighteen months.

The project has been designed so that there is minimum time demanded of participants, and the interviews will be conducted in easily accessible places such as the child's school at times that do not disrupt daily life, class lessons or the school schedule.

The interviews²⁵ should take around 30 minutes.

It is hoped that the findings of the study will help understand the present situation, and improve and enhance both present and future disaster response. The project is supported by the Ministry of Education.

I am very happy to provide you with more information about the project and can be contacted at the e-mail or phone number noted at the end of this document.

Participants

In Christchurch, participants in the study will include selected students in a class of nine-year olds and a class of fifteen-year olds, including their parents and teachers of these classes, in three locations. A total of fifteen nine-year olds and fifteen year olds will be interviewed. The same number of parents will be invited to give consent for interviews. Teachers, who play a vital role in children's lives, will also be invited to take part in interviews. Key informants' interviews will also be included and it is hoped to interview Principals. Questions in the interviews will focus on how participants cope with adverse situations.

In addition, one class of five-year olds, their parents and their teacher will be invited to participate in order to understand how younger children manage recovery. Ten parents and the teacher will be interviewed. Around ten of the five-year olds will be interviewed if

²⁵ Interviews will only be conducted with children where permission from them and from their parents has been received.

consent is obtained. The interviews will be adapted to age and developmental level. Parents will decide if they wish to be present during the discussion with their five and nine year-olds.

In the Wellington region, a comparison class of nine-year olds and fifteen-year olds will be invited to participate, to ascertain whether coping factors differ due to experience of living through a difficult situation and to have a comparable group of developmental coping. A total of five nine-year olds and five fifteen-year olds will be interviewed. The same number of parents and the teachers of both classes will be invited to give consent for interviews.

I am aware that this time has been distressing and will make every effort to put the participants at ease so that distress is minimal and they feel as comfortable as possible. The participants will have information on follow-up if they are worried or disturbed by a situation in their daily lives. I will ensure that support is available for any vulnerable participant.

Anything discussed will be kept confidential. All information gathered will be treated as strictly confidential. It will be used for this study only. Names and other identifying information will be changed.

It is hoped that findings from this project will inform and streamline future disaster preparation for children, young people, and schools as well as for families, by suggesting factors and interventions that facilitate and enhance positive functioning. A summary of findings will be shared with all schools participating in the study and posted on the Massey University website.

The purpose of this letter is to ask your permission for me as the researcher to work with the teacher and students of _____ class in your school.

If you agree, please sign the attached form and return it to me at the address on the attached envelope.

Thank you for your time in considering this request.

Date:

Maureen Mooney
School of Psychology
Massey University

Maureenfmooney@gmail.com

Tel: 048015799 Ext 62551

Mob: 0276783730

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Information for Principal or Board of Trustees- Wellington

Dear _____

My name is Maureen Mooney. I am a trained psychologist who has worked in many disaster situations over the last 10 years, and am now doctoral student (PhD) in the Joint Centre for Disaster Research, School of Psychology, Massey University.

I am studying how children, parents and teachers cope with and recover from disaster situations such as the Canterbury earthquakes and their consequences.

The Project

The 2010 and 2011 earthquakes in Canterbury have been an ongoing, stressful situation and have had an understandably important impact for the local population. This study aims to clarify what factors promote coping and enhanced well-being within the child, family and school community, during a recovery process.

The study will primarily focus on children, youth, parents and teachers. People, including children, recover in different ways and use different styles of coping. It is thought that close adults can influence coping in children. The study will use interviews.

It is hoped that the findings of the study will help understand the present situation, and improve and enhance both present and future disaster response. The project is supported by the Ministry of Education.

I am very happy to provide you with more information about the project and can be contacted at the e-mail or phone number noted at the end of this information sheet.

Participation

In Christchurch, participants in the study will include selected students from a class of nine-year olds and a class of fifteen-year olds, including their parents and teachers of these classes, in three locations. A total of fifteen nine-year olds and fifteen year olds will be interviewed. The same number of parents will be invited to give consent for interviews. Teachers, who play a vital role in children's lives, will also take part in interviews. Key informants' interviews will also be included and it is hoped to interview Principals.

In addition, one class of five-year olds, their parents and their teacher will also be invited to participate in order to understand how younger children manage recovery. The parents and teachers of this class will be invited to have interviews. Around ten of the five-year olds will be interviewed if consent is obtained. The interviews will be adapted to age and developmental level. Parents will decide if they wish to be present during the discussion with their five or nine year-olds.

In the Wellington region, a comparison class of nine-year olds and fifteen-year olds will be invited to participate, to ascertain whether coping factors differ due to experience of living through a difficult situation and to have a comparable idea of developmental coping. A total of five nine-year olds and five fifteen-year olds will be interviewed. The same number of parents and the teachers of both classes will be invited to give their consent to be interviewed.

The project has been designed so that there is minimum time demanded of participants, and the interviews will be conducted in easily accessible places such as the child's school at times that do not disrupt daily life, class lessons or the school schedule.

The interviews²⁶ should take around 30 minutes. Questions in the interviews will focus on how participants cope with adverse situations.

Recovery takes place over time and so in order to measure evolution in coping, some interviews will be programmed one month after the project start, and at eighteen months.

I am aware that coping with adverse events such as this situation can be distressing, even to children and families living outside the Canterbury region, and will make every effort to put the participants at ease so that distress is minimal and that they feel as comfortable as possible. The participants will have information on follow-up if they are worried or disturbed by a situation in their daily lives. I will ensure that support is available for any vulnerable participant.

All information gathered will be treated as strictly confidential. It will be used for this study only. Names and other identifying information will be changed.

It is hoped that findings from this project will inform and streamline future disaster preparation for children, young people, and schools as well as for families, by suggesting factors and interventions that facilitate and enhance positive functioning. A summary of the findings will be shared with all schools participating in the study.

The purpose of this letter is to ask your permission for me as the researcher to work with the teacher and students of _____ class in your school.

If you agree, please sign the attached form and return it to me at the address on the attached envelope.

Please don't hesitate to contact either me or my supervisors if you wish to have any further information. I would be very happy to discuss the project with you. Our details are noted below.

Thank you for your time in considering this request.

Yours sincerely,

Date:

Maureen Mooney

Maureen Mooney
School of Psychology
Massey University

Maureenmooney@gmail.com

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Te Kunenga
ki Pārehuroa

Joint Centre for Disaster Research

PO Box 756, Wellington 6140, New Zealand T +64 4 801 5799 F +64 4 801 4822 E jcdrenquiry@massey.ac.nz disasters.massey.ac.nz

²⁶ Interviews will only be conducted with children where permission from them and from their parents has been received.



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INFORMATION FOR TEACHERS - CANTERBURY

My name is Maureen Mooney. I am a trained psychologist who has worked in many disaster situations over the last 10 years and am now a doctoral student (PhD) in the Joint Centre for Disaster Research, School of Psychology, Massey University. I am studying how children, parents and teachers cope with and recover from disaster situations such as the Canterbury earthquakes and their consequences.

The Project

The 2010 and 2011 earthquakes in Canterbury have been an ongoing, stressful situation and have had an understandably important impact on the local population. This study aims to clarify what factors promote coping and enhanced well-being within the child, family and school community, during a recovery process. It is hoped that the findings of the study will help in understanding the present situation, and improve and enhance both present and future disaster response. The project is supported by the Ministry of Education.

The study will primarily focus on children, youth, parents and teachers and will use interviews. The project has been designed so that there is minimum time demanded of participants, and the interviews will be conducted in easily accessible places such as the child's school at times that do not disrupt daily life, class lessons or the school schedule. I will co-ordinate with you on whatever time you see as appropriate and the most convenient. I am very happy to provide you with more information about the project and can be contacted at the e-mail or phone number noted at the end of this information sheet.

Participation involves

In Christchurch, participants in the study will include a class of nine-year olds and a class of fifteen-year olds, including their parents and you, the teachers of these classes, in three locations. A total of fifteen nine and fifteen-year olds will be selected for interview. Interview questions will examine coping.

For all participants, the interviews will not exceed thirty minutes.

In addition, one class of five-year olds, their parents and their teacher will be invited to participate in order to understand how younger children manage recovery. Ten children, parents and the teacher will be interviewed. The interviews will be adapted to age and developmental level. Parents can decide to be present during the interview of their child. As with the above classes of nine and fifteen-year olds, the interviews will happen at a time convenient for the participants including you the teacher.

In the Wellington region, a comparison class of nine-year olds and fifteen-year olds will be invited to participate, to ascertain whether coping factors differ due to experience of living through a difficult situation and to have an idea of developmental coping.

Recovery takes place over time and so in order to measure evolution in coping, some interviews will be programmed one month after the project start, and around eighteen months.

I am aware that this time has been distressing and will make every effort to put participants at ease so that distress is minimal and they feel as comfortable as possible. The participants will only be asked about what they want to talk about. I will ensure that support is available for any vulnerable participant.

Consent forms will be sent to parents and only participants who have both consent of their parents and who consent themselves will take part in the study. All information gathered will be treated as strictly confidential. It will be used for this study only. Names and other identifying information will be changed.

It is hoped that findings from this project will inform and streamline future disaster preparation for children, young people, and schools as well as for families, by suggesting factors and interventions that facilitate and enhance positive functioning. The summary of findings will be shared with all schools participating in the study and posted on the Massey website.

Please ask either me or my supervisors if you wish to have any further information. Our details are noted below.

If you agree to this request, please sign the attached form and return it to me at the address on the attached envelope.

Thank you for your time in considering this request. I do hope you and your class agrees to participate.

Yours sincerely, _____
Maureen Mooney

Maureen Mooney
School of Psychology
Massey University

Maureenfmooney@gmail.com

Tel: 048015799 Ext 62551

Mob: 0276783730

Dr Sarb Johal
School of Psychology
Massey University

S.Johal@massey.ac.nz

Professor Douglas Paton
School of Psychology
University of Tasmania

douglas.paton@utas.edu.au

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 11/60. If you have any concerns about the conduct of this research, please contact Dr Nathan Matthews, Acting Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799x8729, e-mail humanethicsouthb@massey.ac.nz



MASSEY UNIVERSITY
COLLEGE OF HUMANITIES
AND SOCIAL SCIENCES
TE KURA PŪKENGĀ TANGATA

Childhood and caregiver post-disaster recovery following the Canterbury earthquakes of 2010 and 2011

INFORMATION FOR TEACHER - WELLINGTON

My name is Maureen Mooney. I am a trained psychologist who has worked in many disaster situations over the last 10 years, and am now a doctoral student (PhD) in the Joint Centre for Disaster Research, School of Psychology, Massey University. I am studying how children, parents and teachers cope with adversity, specifically the Canterbury earthquakes and their consequences.

The Project

The 2010 and 2011 earthquakes in Canterbury have been an ongoing, stressful situation and have had an understandably important impact on the local population. This study aims to clarify what factors promote coping and enhanced well-being within the child, family and school community, during a recovery process.

It is hoped that the findings of the study will help in understanding the present situation, and improve and enhance both present and future disaster response. The project is supported by the Ministry of Education.

I am very happy to provide you with more information about the project and can be contacted at the e-mail or phone number noted at the end of this information sheet.

Participation involves

The study will primarily focus on children, youth, parents and teachers. The project has been designed so that there is minimum time demanded of participants, and the interviews will be conducted in easily accessible places such as the child's school at times that do not disrupt daily life, class lessons or the school schedule. I will co-ordinate with you on whatever time you see as appropriate and the most convenient.

In **Christchurch**, participants in the study will include a class of nine-year olds and a class of fifteen year olds, including their parents and the teachers of these classes, in three locations. A total of fifteen nine and fifteen-year olds will be selected for interviews. The interviews will not exceed thirty minutes each. The same number of parents will be invited to give consent for interviews. I would like to interview the teachers.

In addition, one class of five-year olds, their parents and their teacher will be invited to participate in order to understand how younger children manage recovery. The parents and teachers of this class will be interviewed. Around ten of the five-year olds will be interviewed if consent is obtained. The interviews will be adapted to age and developmental level. Parents can decide to be present during the interview of their child. As with the above classes of nine and fifteen-year olds, the interviews will happen at a time convenient for the participants including the teacher. I will work in with the teachers and organise times that do not disrupt lessons.

In the **Wellington** region, a comparison class of nine-year olds and fifteen-year olds will be invited to participate, to ascertain whether coping factors differ due to experience of living

through a difficult situation and to have an idea of developmental coping. A total of 5 nine-year olds and 5 fifteen-year olds will be selected for interviews. The same number of parents, and you, the teachers of both classes, will be invited to give consent for interviews. Recovery takes place over time and so in order to measure evolution in coping, some interviews will be programmed one month after the project start, and at eighteen months.

I am aware that this study will look at coping which is sometimes stressful and will make every effort to put the participants at ease so that distress is minimal and they feel as comfortable as possible. The participants will only be asked about what they want to talk about. I will ensure that support is available for any vulnerable participant.

Consent forms will be sent to parents and only participants who have both consent of their parents and who consent themselves will take part in the study. All information gathered will be treated as strictly confidential. It will be used for this study only. Names and other identifying information will be changed.

It is hoped that findings from this project will inform and streamline future disaster preparation for children, young people, and schools as well as for families, by suggesting factors and interventions that facilitate and enhance positive functioning. The summary of findings will be shared with all schools participating in the study and on the Massey website.

Please ask either me or my supervisors if you wish to have any further information. Our details are noted below.

If you agree to this request, please sign the attached form and return it to me at the address on the attached envelope.

Thank you for your time in considering this request. I do hope you and your class agrees to participate.

Yours sincerely,

Maureen Mooney

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School of Psychology
Massey University

Maureenmooney@gmail.com

Tel: 048015799 Ext 62551

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Childhood and caregiver post-disaster recovery following the Canterbury earthquakes of 2010 and 2011

INFORMATION SHEET for KEY INFORMANTS

My name is Maureen Mooney. I am a trained psychologist who has worked in many disaster situations over the last 10 years, and a doctoral student (PhD) in the Joint Centre for Disaster Research, School of Psychology, Massey University.

I am studying how children, parents and teachers recover from disaster situations such as the Canterbury earthquakes and their consequences.

Please read the following information and consider whether you would like to participate in this project. Please ask if there is anything that is not clear or if you would like more information.

The Project

The 2010 and 2011 earthquakes in Canterbury have been an ongoing, stressful situation and have had an understandably important impact for the local population.

This study aims to clarify what factors promote coping and enhanced well-being within the child, family and school community, during a recovery process. The project is supported by the Ministry of Education. It is hoped that the findings of the study will help understand the present situation and improve both present and future disaster response.

Participant's involvement

The study will primarily focus on children, youth, parents and teachers. It will use interviews of participants to understand how participants are coping and recovering. The project has been designed so that there is minimum time demanded of participants - a total of thirty minutes for those interviewed. The interviews will be conducted in easily accessible places such as the child's school at times that do not disrupt daily life, school lessons or the school schedule.

In Christchurch, participants in the study will include a class of nine-year olds and a class of fifteen -year olds, including their parents and teachers of these classes, in three locations.

In addition, one class of five-year olds, their parents and their teacher will be invited to participate in order to understand how younger children manage recovery. People, including children, recover in different ways and use different styles of coping. It is thought that close adults can influence coping in children. Around ten of the five-year olds will be interviewed if consent is obtained. The interviews will be adapted to age and developmental level. The parents can decide to be with their child for the interview.

In the Wellington region, a comparison group of nine-year olds and fifteen-year olds, living in an area of comparable seismic risk, will be invited to participate. Overall ten students and parents will be invited to participate in interviews not exceeding fifteen minutes.

Recovery takes place over time and so in order to measure evolution in coping, some interviews will be programmed one month after the project start, around month six and at eighteen months.

Your involvement:

In order to obtain as much information as possible about the recovery process, I would like, in addition, to interview key informants such as yourself, who will have pertinent inputs, insight and perspectives to offer. These interviews would be approximately thirty minutes in length and can be organised at the most convenient time for you.

Studies show that most people will recover well after a difficult situation such as the Canterbury earthquakes disaster and their consequences. However, living through a recovery period is often distressing or unpleasant. There may be some things that happened to you or participants during the earthquakes or in your everyday lives that mean that this topic is upsetting to think about. I am aware of this and will make every effort to put you and participants at ease so that distress is minimal and you feel as comfortable as possible. I will ensure that support is available for any vulnerable participant.

All participants will only be asked about what they want to talk about. Anything discussed will be kept confidential.

IMPORTANT INFORMATION

In order for a child to participate in this study they need consent from parents or caregivers. They also need to give their own consent. Without the consent of both parties, the children will not be able to participate.

Consent will also be sought from yourselves for your participation.

Confidentiality is an important component of the study and no names of key informants will be used in any documents without their express permission. Only the researcher and her supervisors will have access to information.

All information will be collected by the researcher and kept in a secure system. The data will ultimately be destroyed.

Please remember that you are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- not answer any particular question in the interview
- ask for the recorder to be turned off at any point during an interview
- withdraw from the project at any point
- ask any questions about the project at any time
- provide information on the understanding that your name will not be used
- be given access to a summary of the project findings when the research is concluded.

I appreciate any consideration you give to participating. If you have any questions about the project at any time please contact me, or my supervisors.

Thank you for taking time to read this. I hope you will agree to participate.

Maureen Mooney
School of Psychology
Massey University

Maureenmooney@gmail.com

Tel: 048015799 Ext 62551

Mob: 0276783730

Dr Sarb Johal
School of Psychology
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Appendix C: Consent forms

Childhood and caregiver post-disaster recovery following the Canterbury earthquakes of 2010 and 2011

PARENTS of FIVE-YEAR OLD CHILD - PARTICIPANT CONSENT FORM

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

Please underline or circle your choices below:

For your child:

I agree/do not agree that my child can participate in this study

I wish/do not wish to be present at my child's interview.

I want the interview to take place at my home/at the child's school²⁷. (If you wish the interview to take place at home, could you please put in your address and contact telephone number? Thank you)

I agree/do not agree to the interview being sound recorded

I wish/do not wish to have the recordings returned to me

For yourself:

I agree/do not agree to participate in this study under the conditions set out in the Information Sheet. (If you agree, please give a contact telephone number so I can arrange a time with you).

I agree/do not agree to the interview being sound recorded

I wish/do not wish to have the recordings returned to me

Signature:

.....

Date:

.....

Full Name - printed

.....

²⁷ I am very happy to interview your child either in the home or the school setting – wherever you and your child are most comfortable. If the interview takes place at your child's school, it will not interrupt the school lessons.

**Childhood and caregiver post-disaster recovery
following the Canterbury earthquakes of 2010 and 2011**

**PARENTS of NINE YEAR OLD CHILD - PARTICIPANT
CONSENT FORM**

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

Please underline or circle your choices below:

For myself:

I agree/do not agree to participate in this study under the conditions set out in the Information Sheet²⁸.

I agree/do not agree to the interview being sound recorded

I wish/do not wish to have my recordings returned to me

For my child:

I agree/do not agree that my child can participate in this study

I wish/do not wish to be present at my child's interview²⁹.

I agree/do not agree to my child's interview being sound recorded if my child is interviewed

I wish/do not wish to have the recordings returned to my child

Signature:

Date:

Full Name - printed

²⁸ If you agree to participate, thank you and could you put a contact telephone number on this form.

²⁹ I am very happy to interview your child either in the home or the school setting – wherever you and your child are most comfortable. If the interview takes place at your child's school, it will not interrupt the school lessons.

**Childhood and caregiver post-disaster recovery
following the Canterbury earthquakes of 2010 and 2011**

**PARENTS of FIFTEEN YEAR OLD STUDENT - PARTICIPANT
CONSENT FORM**

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

Please underline or circle your choices below:

For your young person:

I agree/do not agree that my adolescent can participate in this study

I agree/do not agree to the interviews being sound recorded

I wish/do not wish to have my adolescent's recordings returned to him/her

For yourself:

I agree/do not agree to participate in this study under the conditions set out in the Information Sheet.³⁰

I agree/do not agree to the interviews being sound recorded

I wish/do not wish to have my recordings returned to me

Signature:

Date:

.....

Full Name - printed

.....

³⁰ If you agree to participate, thank you and could you put a contact telephone number on the form so I can arrange a meeting.

**Childhood and caregiver post-disaster recovery
following the Canterbury earthquakes of 2010 - 2012**

PARTICIPANT CONSENT FORM – YOUNG PERSON

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

Please underline or circle your choices below:

I agree to participate in this study under the conditions set out in the Information Sheet.

I agree/do not agree to the interview being sound recorded

I wish/do not wish to have my recordings returned to me

Signature:

Date:

Full Name - printed

**Childhood and caregiver post-disaster recovery
following the Canterbury earthquakes of 2010 and 2011**

Consent form - Principal/Board of Trustees

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

Please underline or circle your choices below:

I agree/do not agree to the study taking place in the school

I agree/do not agree to the interview being sound recorded

I wish/do not wish to have my recordings returned to me

Signature:

Date:

Full Name - printed

**Childhood and caregiver post-disaster recovery
following the Canterbury earthquakes of 2010 and 2011**

CONSENT FORM – TEACHERS

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

Please underline or circle your choices below:

I agree/do not agree to the study taking place with my class

I agree/do not agree to participate in this study under the conditions set out in the Information Sheet.

I agree/do not agree to the interview being sound recorded

I wish/do not wish to have my recordings returned to me

Signature:

Date:

Full Name - printed

**Childhood and caregiver post-disaster recovery
following the Canterbury earthquakes of 2010 and 2011**

CONSENT FORM – KEY INFORMANT

I have read the Information Sheet and/or have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

Please underline or circle your choices below:

I agree/do not agree to participate in this study under the conditions set out in the Information Sheet.

I agree/do not agree to the interview being sound recorded

I wish/do not wish to have my recordings returned to me

Signature:

Date:

Full Name - printed

Appendix D: Questions for semi-structured interviews Time 1 and 2

QUESTIONS: TIME ONE

QUESTIONS FIVE and NINE YEAR OLD CHRISTCHURCH CHILDREN

- Introduce myself; say I am interested in knowing a bit about them at the moment. That I would like to hear from them how it was since the earthquakes happened?

Option is to ask them to draw about them and the quakes and go from this drawing.

Prompts:

- What has been the most difficult/tricky thing to deal with?
- What works best when you have difficult things or manage?
- What has been the most helpful thing you did?
- What doesn't work well?
- Who could you ask for help? Or, Where could you go for help?
- In your school?
- In your neighbourhood or community?
- What has the community been like?
- When you see the children that are coping well, what are they doing?
- When you see ones that are not coping so well, how do you know that about them?
- What would you say to a group of people your age that would help them if they had a difficult situation to deal with?
- Are there moments when you are feeling great—how would you describe that/these times?

For parents/caregivers

Centering on their child

- How was it for your child over the last months? How has your child been faring?
- What have you noticed that your child has done to handle/deal with the situation?

Prompts:

- What seems to work best?
- Do you think that they can cope with difficulty now?
- Or, do you think they are more sensitive to difficult situations?
- Who could they go to talk or ask for help?
- What did you do that may have helped them?

Centering on themselves and their community

- Can you talk a little about how it has been for you since the earthquakes and their consequences?
- How was it for you to manage this?

Prompts:

- What worked best?
- What didn't work so well?
- How is it now?
- Who could you rely on?
- What did they do that was the most/least helpful?
- What did you find effective in those around you, or in your community? In the school?
- Can you imagine how things will be in a year?
If you had to talk to people outside who have not had to deal with this, what could you say to them so they could handle such a situation?

QUESTIONS **FIFTEEN YEAR OLDS CHRISTCHURCH**

Introduce myself; say I am interested in knowing a bit about them at the moment. That I would like to hear from them how it was since the earth-quakes happened?

Prompts:

- What has been the most difficult thing you had to deal with?
- What did you do to manage this?
- What worked best?
- Who could you ask for help? Or where could you go for help?
- What did they do that helped?
- What didn't help?
- When you see children that are coping well, what are they doing?
- If you had to deal with a tough situation again, how would you manage?
- What would you say to a group of people your age that would help them if they had a difficult situation to deal with?
- Are there moments when you are feeling great – how would you describe that/these times?

For parents/caregivers

Centering on their child

- How was it for your young person when the earthquakes happened?
- How do you feel your child/adolescent is lately?
- What have you noticed that your child has done to handle/deal with the situation?

Prompts:

- What seemed to work best?
- What have you noticed that your young person/child has done to handle/deal with the situation?
- Do you think that they can cope with more difficulty now?
- Or, do you think they are more sensitive to difficult situations?
- Who could they go to talk or ask for help?
- What did you do that may have helped them?

Centering on themselves

- Can you talk a little about how it has been for you since the earthquakes and their consequences?
- How was it for you to manage this?

Prompts:

- What worked best?
- What didn't work so well?
- How is it now?
- Who could you rely on?
- What did they do that was the most/least helpful?
- What did you find effective in those around you, or in your community? In the school?
- What seems to work the best?
- Did this change over the last months?
- Can you imagine how things will be in a year?
- Do you think that, having lived through last months, you could now deal with what life may bring?
- If you had to talk to people outside who have not had to deal with this, what could you say to them so they could handle such a situation?

QUESTIONS NINE and FIFTEEN YEAR OLDS WELLINGTON

When meeting the child or parent, introduce myself and say I am interested in knowing a bit about them at the moment. Sometimes we have difficult things that happen to us. I would like to ask you how you get through those times.

Questions for the [children](#):

When something difficult happens, what do you do to deal with it?

Prompts:

- What seems to work best?
- Who could you ask for help?
- What did they do that helped?
- What didn't help?
- Where could you go for help?
- When you see the children that are coping well, what are they doing?
- What would you say to a group of people your age that would help them if they had a difficult situation to deal with?

[For the parents](#)

Centering on their child/adolescent:

- When your child/adolescent has to deal with some difficulty, how does he/she cope?
- What works best?
- What doesn't seem to help?
- Who can they go to?

Centering on them:

- How do you manage difficulties?
- What works best for you?

When you have to deal with a situation, who can you ask for support?

[TEACHERS CHRISTCHURCH](#)

Can you tell me how long you have been teaching?

How long you have had this current class?

Analysis of situation:

- Can you tell me how the class is faring?
- What changes have you noticed?
- What especially have you noticed about the children?
- For the children coping the best, what have you noticed that makes you think that about them?
- For the children coping less well, what have you noticed that makes you think that about them?
- And the parents?
- What have you done in the class around working with this situation?

Themselves

How has it been for you? Last year? ...This year so far?

Prompts:

- How has the situation been for you personally?
- Do you think that, having lived through last year, you could now deal with what life may bring?
- What have you felt most positive about it?
- The least?
- What did you find effective in your community?
- What seems to work the least?
- What aspects of school interventions have you found helpful? Unhelpful?
- What do you think teachers need to help them cope with teaching after a disaster situation?
- What is their role?
- What do you think the needs are, at the moment?

TEACHERS WELLINGTON

Questions will focus on how children cope with difficulties in their everyday lives

- What have you noticed about how children/adolescents cope with difficulty, in your class?
- For the children coping less well, what have you noticed that makes you think that about them?
- For the children who cope best, what have you noticed that makes you think that about them?
- What do you try to do when you see students coping with difficulties?
- What aspects of school interventions have you found helpful? Unhelpful? In these circumstances?

KEY INFORMANT & PRINCIPALS CHRISTCHURCH

Prompts:

- What they notice about recovery of the participants and changes in their community, both positive and negative aspects.
- What they notice that children do to cope.
- What aspects do they notice when children or adults do not seem to be coping.
- Other questions will focus on what they feel the needs are; what they would change if a major situation were to occur again.
- What they did to manage the situation
- Finally, questions on what are the strengths or positive aspects existing in the present situation

PRINCIPALS WELLINGTON

Prompts:

- What they notice that children do to cope.
- What aspects do they notice when children or adults do not seem to be coping.
- What do they do to manage situations in their school

QUESTIONS FOR TIME TWO

- How are you getting on this last year?

Prompts:

- What has been hard/tricky/stressful to deal with?
- What did you do to deal with it?
- What did you do that seemed to work best?
- What didn't work so well?
- Did anyone else do anything?
- What was the most useful?
- If you were helping someone else your age deal with tricky situations like you have had, what would you say to them?

Appendix E: Update information for schools Time Two



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Getting through: Children's effective coping in the Canterbury earthquakes of 2010 and 2012 Information update

Date: 4th April 2014

This is a short update on the doctorate study by Maureen Mooney. I am studying how children cope with and recover from disaster situations such as the Canterbury earthquakes and their consequences. Firstly, I wish to **thank you again** for your participation in this doctorate study.

Participants: 2012

In Christchurch, participants in the study included a class of nine-year olds and a class of fifteen-year olds, including their parents and teachers of these classes, in each of five locations/schools. Questions in the interviews focused on how participants coped with adverse situations. In addition, one class of five-year olds, their parents and their teacher were invited to participate in order to understand how younger children manage recovery. In the Wellington region, a comparison class of nine-year olds and fifteen-year olds was invited to participate, to ascertain whether coping factors differ due to experience of living through a difficult situation and to have a comparable group of developmental coping.

2013

In Christchurch, a representative from each age group was interviewed with a parent present if requested. This interview focused on coping during recovery at a later time point. At first, the study was designed in such a way that all participants would be interviewed a second time, if they gave consent. However, the **information from the 2012 interviews was so rich and concentrated that it was only necessary to speak to a reduced number in the Time two interviews in 2013.** Again, thank you so much for your participation.

It is hoped that findings from this project will inform and streamline future disaster preparation for children, young people, and schools as well as for families, by suggesting factors and interventions that facilitate and enhance positive functioning. A summary of findings will be shared with all schools participating in the study. I will inform the schools when the doctorate study is completed.

Maureen Mooney
School of Psychology
Massey University
m.f.mooney@massey.ac.nz

Dr Sarb Johal
School of Psychology
Massey University
S.S.Johal@massey.ac.nz

Professor Douglas Paton
School of Psychology
University of Tasmania
douglas.paton@utas.edu.au

Dr Ruth Tarrant
School of Psychology
Massey University
r.a.tarrant@massey.ac.nz

Tel : 048015799 ext62551

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 11/60. Contact Dr N Mathews for concerns: e-mail humanethicsouthb@massey.ac.nz

Appendix F: United Nations Convention of the Rights of the Child

FACT SHEET: A summary of the rights under the Convention on the Rights of the Child (UNICEF)

For every child Health, Education, Equality, Protection
ADVANCE HUMANITY

Article 1 (Definition of the child): The Convention defines a 'child' as a person below the age of 18, unless the laws of a particular country set the legal age for adulthood younger. The Committee on the Rights of the Child, the monitoring body for the Convention, has encouraged States to review the age of majority if it is set below 18 and to increase the level of protection for all children under 18.

Article 2 (Non-discrimination): The Convention applies to all children, whatever their race, religion or abilities; whatever they think or say, whatever type of family they come from. It doesn't matter where children live, what language they speak, what their parents do, whether they are boys or girls, what their culture is, whether they have a disability or whether they are rich or poor. No child should be treated unfairly on any basis.

Article 3 (Best interests of the child): The best interests of children must be the primary concern in making decisions that may affect them. All adults should do what is best for children. When adults make decisions, they should think about how their decisions will affect children. This particularly applies to budget, policy and law makers.

Article 4 (Protection of rights): Governments have a responsibility to take all available measures to make sure children's rights are respected, protected and fulfilled. When countries ratify the Convention, they agree to review their laws relating to children. This involves assessing their social services, legal, health and educational systems, as well as levels of funding for these services. Governments are then obliged to take all necessary steps to ensure that the minimum standards set by the Convention in these areas are being met. They must help families protect children's rights and create an environment where they can grow and reach their potential. In some instances, this may involve changing existing laws or creating new ones. Such legislative changes are not imposed, but come about through the same process by which any law is created or reformed within a country. Article 41 of the Convention points out the when a country already has higher legal standards than those seen in the Convention, the higher standards always prevail.

Article 5 (Parental guidance): Governments should respect the rights and responsibilities of families to direct and guide their children so that, as they grow, they learn to use their rights properly. Helping children to understand their rights does not mean pushing them to make choices with consequences that they are too young to handle. Article 5 encourages parents to deal with rights issues "in a manner consistent with the evolving capacities of the child". The Convention does not take responsibility for children away from their parents and give more authority to governments. It does place on governments the responsibility to protect and assist families in fulfilling their essential role as nurturers of children.

Article 6 (Survival and development): Children have the right to live. Governments should ensure that children survive and develop healthily.

Article 7 (Registration, name, nationality, care): All children have the right to a legally registered name, officially recognised by the government. Children have the right to a nationality (to belong to a country). Children also have the right to know and, as far as possible, to be cared for by their parents.

Article 8 (Preservation of identity): Children have the right to an identity – an official record of who they are. Governments should respect children's right to a name, a nationality and family ties.

Article 9 (Separation from parents): Children have the right to live with their parent(s), unless it is bad for them. Children whose parents do not live together have the right to stay in contact with both parents, unless this might hurt the child.

Article 10 (Family reunification): Families whose members live in different countries should be allowed to move between those countries so that parents and children can stay in contact, or get back together as a family.

Article 11 (Kidnapping): Governments should take steps to stop children being taken out of their own country illegally. This article is particularly concerned with parental abductions. The Convention's Optional Protocol on the sale of children, child prostitution and child pornography has a provision that concerns abduction for financial gain.

Article 12 (Respect for the views of the child): When adults are making decisions that affect children, children have the right to say what they think should happen and have their opinions taken into account. This does not mean that children can now tell their parents what to do. This Convention encourages adults to listen to the opinions of children and involve them in decision-making -- not give children authority over adults. Article 12 does not interfere with parents' right and responsibility to express their views on matters affecting their children. Moreover, the Convention recognizes that the level of a child's participation in decisions must be appropriate to the child's level of maturity. Children's ability to form and express their opinions develops with age and most adults will naturally give the views of teenagers greater weight than those of a preschooler, whether in family, legal or administrative decisions.

Article 13 (Freedom of expression): Children have the right to get and share information, as long as the information is not damaging to them or others. In exercising the right to freedom of expression, children have the responsibility to also respect the rights, freedoms and reputations of others. The freedom of expression includes the right to share information in any way they choose, including by talking, drawing or writing.

Article 14 (Freedom of thought, conscience and religion): Children have the right to think and believe what they want and to practise their religion, as long as they are not stopping other people from enjoying their rights. Parents should help guide their children in these matters. The Convention respects the rights and duties of parents in providing religious and moral guidance to their children. Religious groups around the world have expressed support for the Convention, which indicates that it in no way prevents parents from bringing their children up within a religious tradition. At the same time, the Convention recognizes that as children mature and are able to form their own views, some may question certain religious practices or cultural traditions. The Convention supports children's right to examine their beliefs, but it also states that their right to express their beliefs implies respect for the rights and freedoms of others.

Article 15 (Freedom of association): Children have the right to meet together and to join groups and organisations, as long as it does not stop other people from enjoying their rights. In exercising their rights, children have the responsibility to respect the rights, freedoms and reputations of others.

Article 16 (Right to privacy): Children have a right to privacy. The law should protect them from attacks against their way of life, their good name, their families and their homes.

Article 17 (Access to information; mass media): Children have the right to get information that is important to their health and well-being. Governments should encourage mass media – radio, television, newspapers and Internet content sources – to provide information that children can understand and to not promote materials that could harm children. Mass media

should particularly be encouraged to supply information in languages that minority and indigenous children can understand. Children should also have access to children's books.

Article 18 (Parental responsibilities; state assistance): Both parents share responsibility for bringing up their children, and should always consider what is best for each child. Governments must respect the responsibility of parents for providing appropriate guidance to their children – the Convention does not take responsibility for children away from their parents and give more authority to governments. It places a responsibility on governments to provide support services to parents, especially if both parents work outside the home.

Article 19 (Protection from all forms of violence): Children have the right to be protected from being hurt and mistreated, physically or mentally. Governments should ensure that children are properly cared for and protect them from violence, abuse and neglect by their parents, or anyone else who looks after them. In terms of discipline, the Convention does not specify what forms of punishment parents should use. However any form of discipline involving violence is unacceptable. There are ways to discipline children that are effective in helping children learn about family and social expectations for their behaviour – ones that are non-violent, are appropriate to the child's level of development and take the best interests of the child into consideration. In most countries, laws already define what sorts of punishments are considered excessive or abusive. It is up to each government to review these laws in light of the Convention.

Article 20 (Children deprived of family environment): Children who cannot be looked after by their own family have a right to special care and must be looked after properly, by people who respect their ethnic group, religion, culture and language.

Article 21 (Adoption): Children have the right to care and protection if they are adopted or in foster care. The first concern must be what is best for them. The same rules should apply whether they are adopted in the country where they were born, or if they are taken to live in another country.

Article 22 (Refugee children): Children have the right to special protection and help if they are refugees (if they have been forced to leave their home and live in another country), as well as all the rights in this Convention.

Article 23 (Children with disabilities): Children who have any kind of disability have the right to special care and support, as well as all the rights in the Convention, so that they can live full and independent lives.

Article 24 (Health and health services): Children have the right to good quality health care – the best health care possible – to safe drinking water, nutritious food, a clean and safe environment, and information to help them stay healthy. Rich countries should help poorer countries achieve this.

Article 25 (Review of treatment in care): Children who are looked after by their local authorities, rather than their parents, have the right to have these living arrangements looked at regularly to see if they are the most appropriate. Their care and treatment should always be based on "the best interests of the child". (see Guiding Principles, Article 3)

Article 26 (Social security): Children – either through their guardians or directly – have the right to help from the government if they are poor or in need.

Article 27 (Adequate standard of living): Children have the right to a standard of living that is good enough to meet their physical and mental needs. Governments should help families and guardians who cannot afford to provide this, particularly with regard to food, clothing and housing.

Article 28: (Right to education): All children have the right to a primary education, which should be free. Wealthy countries should help poorer countries achieve this right. Discipline in schools should respect children's dignity. For children to benefit from education, schools must be run in an orderly way – without the use of violence. Any form of school discipline

should take into account the child's human dignity. Therefore, governments must ensure that school administrators review their discipline policies and eliminate any discipline practices involving physical or mental violence, abuse or neglect. The Convention places a high value on education. Young people should be encouraged to reach the highest level of education of which they are capable.

Article 29 (Goals of education): Children's education should develop each child's personality, talents and abilities to the fullest. It should encourage children to respect others, human rights and their own and other cultures. It should also help them learn to live peacefully, protect the environment and respect other people. Children have a particular responsibility to respect the rights their parents, and education should aim to develop respect for the values and culture of their parents. The Convention does not address such issues as school uniforms, dress codes, the singing of the national anthem or prayer in schools. It is up to governments and school officials in each country to determine whether, in the context of their society and existing laws, such matters infringe upon other rights protected by the Convention.

Article 30 (Children of minorities/indigenous groups): Minority or indigenous children have the right to learn about and practice their own culture, language and religion. The right to practice one's own culture, language and religion applies to everyone; the Convention here highlights this right in instances where the practices are not shared by the majority of people in the country.

Article 31 (Leisure, play and culture): Children have the right to relax and play, and to join in a wide range of cultural, artistic and other recreational activities.

Article 32 (Child labour): The government should protect children from work that is dangerous or might harm their health or their education. While the Convention protects children from harmful and exploitative work, there is nothing in it that prohibits parents from expecting their children to help out at home in ways that are safe and appropriate to their age. If children help out in a family farm or business, the tasks they do be safe and suited to their level of development and comply with national labour laws. Children's work should not jeopardize any of their other rights, including the right to education, or the right to relaxation and play.

Article 33 (Drug abuse): Governments should use all means possible to protect children from the use of harmful drugs and from being used in the drug trade.

Article 34 (Sexual exploitation): Governments should protect children from all forms of sexual exploitation and abuse. This provision in the Convention is augmented by the Optional Protocol on the sale of children, child prostitution and child pornography.

Article 35 (Abduction, sale and trafficking): The government should take all measures possible to make sure that children are not abducted, sold or trafficked. This provision in the Convention is augmented by the Optional Protocol on the sale of children, child prostitution and child pornography.

Article 36 (Other forms of exploitation): Children should be protected from any activity that takes advantage of them or could harm their welfare and development.

Article 37 (Detention and punishment): No one is allowed to punish children in a cruel or harmful way. Children who break the law should not be treated cruelly. They should not be put in prison with adults, should be able to keep in contact with their families, and should not be sentenced to death or life imprisonment without possibility of release.

Article 38 (War and armed conflicts): Governments must do everything they can to protect and care for children affected by war. Children under 15 should not be forced or recruited to take part in a war or join the armed forces. The Convention's Optional Protocol on the involvement of children in armed conflict further develops this right, raising the age for direct

participation in armed conflict to 18 and establishing a ban on compulsory recruitment for children under 18.

Article 39 (Rehabilitation of child victims): Children who have been neglected, abused or exploited should receive special help to physically and psychologically recover and reintegrate into society. Particular attention should be paid to restoring the health, self-respect and dignity of the child.

Article 40 (Juvenile justice): Children who are accused of breaking the law have the right to legal help and fair treatment in a justice system that respects their rights. Governments are required to set a minimum age below which children cannot be held criminally responsible and to provide minimum guarantees for the fairness and quick resolution of judicial or alternative proceedings.

Article 41 (Respect for superior national standards): If the laws of a country provide better protection of children's rights than the articles in this Convention, those laws should apply.

Article 42 (Knowledge of rights): Governments should make the Convention known to adults and children. Adults should help children learn about their rights, too. (See also article 4.)

Articles 43-54 (implementation measures): These articles discuss how governments and international organizations like UNICEF should work to ensure children are protected in their rights.