Resilience Classification Framework: An exploration of child resilience status in relation to school adjustment, parenting practices and family factors.

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed. I acknowledge the support I have received for my research through the provision of an Australian Government Research Training Program Scholarship.

Signed:

Annette Mutimer
9th September, 2018
Dissemination Information

Sections of this thesis have been disseminated as conference presentations and journal publications. The candidate has taken primary authorship on these presentations.


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Finally thank you to the kindergartens, teachers, and families in the North West region of Melbourne, Australia. Your participation over time to the research was remarkable. Early childhood is such an important time in a child and family’s life, and kindergarten is such a vital part of this time. It is hoped that the research has added to our understanding of resilience in relation to this key developmental stage.
Abstract

The Resilience Classification Framework (RCF) provides an innovative method to operationalise resilience. This instrument addresses the multitude of methodological issues in resilience research, through a unique combination of empirically selected constructs and statistically sound processes. The RCF identifies four key groups from the broader sample. These are labelled: Good Expected (Good Adaptation/Low Stress); Resilient (Good Adaptation/High Stress); Poor Expected (Poor Adaptation/High Stress); and the Vulnerable group (Poor Adaptation/Low Stress). This thesis aims to focus on two key previously unaddressed aspects in resilience research to date. Firstly, it utilises the RCF, developed by the author, to address the many methodological issues identified by key researchers. Secondly, it focuses on examining protective factors that are considered as ‘modifiable modifiers’, specifically parenting practices and family functioning. This enables the focus of resilience research to shift to intervention and proactive steps to increase a child and family’s ability to cope in times of high stress.

This thesis employed the RCF across three key studies, examining the stability of the RCF over a two-year time period, with multiple samples of preschool children. In each study the RCF utilised the Devereux Early Childhood Assessment – Clinical (DECA-C) as the measure of both positive adjustment and problem behaviour. Family stress was measured using a combination of daily hassles and stressful life events measures. The use of the RCF, enabled four distinct groups to be identified from the larger sample. Participants were classified in relation to the sample but also in relation to the broader population, using normed data, providing
a new development in resilience classification. In addition to evaluating the RCF, school adjustment and aspects of family functioning and parenting practices were examined in relation to the four key groups identified by the RCF.

The first study examined the stability of the RCF across time with a sample of preschool children (N=279). More than 65% of those classified at Time 1 retained their same classification at Time 2. Of note, a child’s adaptation classification remained very stable, with no significant change from Time 1 to Time 2. Stress classification was found not to be as stable and provided an explanation of the change in classification. The second study examined the four groups identified by the RCF in study 1 in relation to school adjustment. Resilient and Good Expected groups had a more positive transition to school. They were rated more highly by their teachers across key areas of development as well as social and academic aspects of school adjustment. The third and final study used the RCF with a separate sample of preschool children and their families (N=428), on a range of parenting and family functioning variables. The four RCF identified groups differed significantly on parenting practices and family functioning, particularly in relation to levels of involvement with their children and the use of Corporal Punishment. The Resilient group had parents who were more involved with their children and used lower levels of corporal punishment. In addition, they had a stronger parenting alliance and greater levels of parenting satisfaction and efficacy. The RCF provides a solid framework to operationalise resilience, providing a sound framework for study design as well as allowing for comparisons of results across studies. This thesis provides critical information about the
relationship between key aspects of family functioning and parenting practices in relation to resilience status of children. Results suggest that intervention, in relation to these aspects may well support children identified as at risk. Recommendations are made for screening of preschool children, using the RCF model as a proactive measure to support resilient outcomes for children and their families.
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Chapter One - General Introduction

This research was designed to form part of the next wave of resilience research. It aims to address a number of perceived gaps in the current body of literature. These gaps relate to three main areas. One, the many methodological issues identified through a critical review of previous studies (Bonanno, Romero, & Klein, 2015; Cowen, Wyman, Work, & Parker, 1990; Fee & Hinton, 2011; Luthar, 1991b, 2006; Luthar, Cicchetti, & Becker, 2000a; Masten & Labella, 2016; McConnell, Savage, & Breitkreuz, 2014; Mutimer, Reece, & Matthews, 2006; Pangallo, Zibarras, Lewis, & Flaxman, 2015; Poehlmann-Tynan et al., 2015; Prince-Embury, Keefer, & Saklofske, 2016; Sesma, Mannes, & Scales, 2006; Southwick, Bonanno, Masten, Panter-Brick, & Yehuda, 2014). Two, the need for a concurrent study of preschool aged children given the importance of early childhood as an area of focus in resilience research (Luthar et al., 2000a; Masten, 2011; Pangallo et al., 2015; Ungar, 2016). Three, a need to shift from the examination of stable traits to looking at variables in relation to resilience that are amenable to change (Ayoub, Bartlett, & Swartz, 2014; Gewirtz, Forgatch, & Weiling, 2008; Guajardo, Snyder, & Petersen, 2009; Gulliford, 2015; Masten, 2011; Prevatt, 2003). This chapter will briefly outline these three issues in relation to how they will be addressed in this dissertation.

This research in particular focuses on the development and testing of the Resilience Classification Framework (RCF), (Mutimer et al., 2006). The RCF was developed primarily by the author, in conjunction with colleagues in an attempt to address the myriad of methodological issues that have surfaced in resilience
research over the past three decades. These issues are explained in detail in Chapter Three of this dissertation.

The RCF is a statistically sound and theoretically based framework. It provides guidance in selecting appropriate constructs and results in the choice of psychometrically sound measures. The development of the RCF is outlined in detail in Chapter Four. The main aim of the RCF is to allow for rigour in the process of decision making in resilience classification status. The RCF identifies four main groups of interest from any larger sample: a Resilient group; a Good Expected group; a Poor Expected group, and a Vulnerable group. While the RCF was developed a number of years ago, it has now had some testing across a range of research situations. The purpose of this dissertation is to evaluate the RCF with different preschool populations, with a focus on investigating its validity and stability and identifying the benefits and any limitations of its use in resilience research.

The second focus relates to the concurrent study of preschool aged children. All key foundation studies consistently highlight the link between adult resilience status and key early childhood factors present within the child, family and broader environment. However, very few studies have examined this cohort in further study. In addition, the focus of this research appears to relate to a study of specific at-risk groups rather than general populations. While specific research provides an insight into how resilience presents within the context of specific risk such as trauma or divorce, there is little data to examine how children cope with general adversity and stress across the broader population. All studies within this
research concentrate on preschool aged children and their families in relation to exposure to general life stressors.

The third component focuses on a shift from examining more stable traits to exploring more ‘fluid’ factors in relation to resilience. Foundation studies have identified many stable traits such as socio-economic status, intelligence or aspects of a child’s temperament, as they relate to resilience status (Cowen et al., 1990; Rutter, 1987; Ungar, 2016; Werner & Smith, 1982). These aspects remain relatively stable over time. Key researchers and theorists in the resilience field, such as Luthar and Masten, highlight the shift in the research focus to those aspects that both play a role in a person’s ability to adapt and cope with adversity and those that are also amenable to intervention or change. The clinical implications are clear – if a link is shown between certain factors, for example behaviour management strategies and resilience, then interventions can be designed for those children not faring so well in the face of adversity. In relation to this research, it makes sense to examine the aspects of the child’s immediate environment, such as family functioning and parenting aspects. The final study in this research focuses in depth on a range of these variables, exploring their relationships to resilience status.

This thesis describes three main studies that focus on preschool aged children and their families, with each study utilising the RCF as the basis for investigating a range of variables of interest amongst the four groups identified by the RCF. These variables have been identified to address gaps in the research to date.
The following chapter, Chapter Two, provides a discussion of the historical context in terms of the development of resilience research. It provides a synthesis of the key findings from the major works in the area across three broad factors related to protective factors and resilient outcomes in children: child characteristics; family variables; and environmental factors.

Chapter Three critically explores the current collection of resilience research and identifies the main methodological issues. These include:

- problems in defining resilience as an operational construct,
- difficulties in selecting appropriate constructs that have a clear theoretical link to positive developmental outcomes appropriate to the age of the sample and,
- decision-making issues in classifying participants as resilient or not.

Chapter Four presents an in-depth discussion of the development of the RCF and its possible applications. Importantly, a rationale will be provided, outlining how the RCF addresses the identified methodological issues. Its development, properties and designed usage will be discussed in detail.

Chapter Five provides the overall aims and hypotheses underpinning this thesis.

Chapter Six presents the first study of the thesis. This study looks at the stability of family stress and child resilience status. In this study, the RCF is used in a short term longitudinal design, to test the framework with preschool participants and their families (n = 279) across a one year period.
Chapter Seven presents the second study which examines resilience status and its relationship to school adjustment. This study follows up with the cohort first examined in Study 1 as they enter formal schooling. This Study looks at the relationship between positive protective factors and school readiness and positive school adjustment. In addition, the study takes a case study approach, describing school transition and adjustment in detail for a selected group of participants from each of the four groups identified from the RCF.

Chapter Eight describes the final study of this thesis. This study recruited a new sample of preschool aged children (n=428). This chapter explores the ‘modifiable modifiers’ by examining family functioning and parenting practices and their relationship to child resilience status. Again, the RCF forms the basis of this study. It allows the identification of the aforementioned four groups and examines how a range of parenting factors, including family functioning and actual parenting practices differ amongst these groups. This study focuses on the actual processes within parenting and family dynamics including parenting alliance, parenting practices, social support and aspects of family functioning.

Chapter Nine presents an integrated discussion of the key findings across all three studies and provides a useful summary addressing the strengths and limitations of the RCF. This section also presents a possible conceptualisation process for future resilience research to address the issue of consistency across different studies. Finally, this chapter presents a summary of the findings in relation to parenting practices and family functioning, linking these findings to the clinical implications and then provides suggestions for future research directions.
Chapter Two - Key Research in Resilience

Over the past three decades, a growing number of researchers have focused on the effects of living in stressful, at-risk conditions on families and their children (Bayer & Rozkiewicz, 2015; Bell, Romano, & Flynn, 2015; Cowen et al., 1990; Fenning & Baker, 2012; Grotberg, 1996; Luthar, 1991a; MacPhee, Lunkenheimer, & Riggs, 2015; Masten, 2007; Rutter, 1987; Shulman, 2016; Smith & Prior, 1995; Werner, 1995; Wyman, Sandler, Wolchik, & Nelson, 2000). Initially, the nature of this research was based on a disease/deficit approach, focusing on understanding the factors that led to negative developmental outcomes for at-risk children (Engle, Castle, & Menon, 1996; Masten, 2007; Werner, 1995; Wyman et al., 1999; Yates & Masten, 2004). These risk factors can be described as hazards that exist within the child’s family or environment, and that can increase a child’s vulnerability to maladjustment. They can include adversities such as death of a family member, family instability, poor health or hospitalisation, exposure to abuse or violence and living in chronic poverty (Grotberg, 1995; Howell, Graham-Bermann, Czyz, & Lilly, 2010; MacPhee et al., 2015; Martinez-Torteya, Bogat, Von Eye, & Levendosky, 2009; O’Donnell, Schwab-Stone, & Muyeed, 2002; Rak & Patterson, 1996). Given the nature of our society, many children can be exposed to a combination of these risks. Studies have identified a range of outcomes associated with risk exposure. During childhood, the effects of exposure to these risk factors have been linked to low birth weight (when the exposure occurs in utero), malnutrition, developmental delay and the need for remedial services (Egeland, Carlson, & Sroufe, 1993; Fergusson & Lynskey, 1996; Werner & Smith,
Later in life, links have been found between long-term exposure to these adversities and unemployment, early school leaving, risk of mental illness, substance abuse, and juvenile delinquency (Fergusson & Lynskey, 1996; MacPhee et al., 2015; Shlonsky et al., 2016; Werner & Smith, 1982).

These early studies found that while many children did show negative outcomes linked to early adversity, (e.g. Werner & Smith, 1982), others did not. Some children achieved positive outcomes in spite of their exposure to a multitude of risks (Masten, 2007; Masten & Labella, 2016; Poehlmann-Tynan et al., 2015; Ungar, Ghazinour, & Richter, 2013; Werner, 2004). The research focus then moved to an examination of the factors that related to these children who appeared to ‘bounce back’ from adversity. The notion of resilience has been used to describe this process of achieving positive developmental outcomes in the face of adversity. Resilience can be defined as a child’s capacity to overcome or minimize the damaging effects of adversity (Grotberg, 1996). The identification of resilience in some children has led to a more proactive approach with the research focusing on factors within families, environments and in the children, themselves that could be identified as protective. It is these protective factors that influence a child’s capacity to develop resilience.

This interest led to many studies examining the mechanisms that may protect children living in identified high risk situations. (Ayoub et al., 2014; Bonanno et al., 2015; Bradley et al., 1994; Cowen et al., 1990; Engle et al., 1996; Kidwell et al., 2010; Luthar & Zigler, 1991; Murphy & Moriaty, 1976; Shulman, 2016; Tschann, Kaiser, Chesney, Alkon, & Boyce, 1996). Research in the area differs considerably.
in terms of the groups studied, age and socio-demographic status of participants, and in the methodologies used. Nonetheless, these studies have identified a range of common protective factors that facilitated resilient outcomes for children. Table 1 presents a summary of studies in relation to resilience in children.

This review will outline the historical context of the construct of resilience, discussing some of the key foundation studies from which interest in resilience developed. Risk factors will be discussed in detail. In relation to risk factors, differences between distal and proximal risks will be highlighted. The role of stress in understanding the resilience process will also be examined. Research consistently highlights a range of factors that are considered protective against adversity. These can be grouped into three main areas: characteristics within the child; aspects of their families, and broader environmental factors. Key findings from relevant studies will be analysed in relation to these areas. A comprehensive review of the body of resilience research was conducted using a cross search of multiple databases, including Psychology Database (ProQuest); PsychARTICLES (Proquest); Psych INFO (Proquest); PubMed and Science Direct (Elsevier). This search included the following search terms in multiple combinations: ‘resilience’; ‘preschool children’; ‘vulnerable’; ‘resilient’; ‘school adjustment’; ‘child adaptation’; ‘stressful life events’; ‘adversity’; ‘daily hassles’; ‘stress’; ‘parenting’; and ‘parenting styles’. In addition to the material being discussed in this and the following chapter, the key studies in relation to resilience and children have been summarised and presented (see Table 1).
Table 1. Summary table of child, family and environmental factors related to resilience

<table>
<thead>
<tr>
<th>Author, Year of Publication (Country)</th>
<th>Population under study</th>
<th>Child factors protective</th>
<th>Family protective factors</th>
<th>Environmental protective factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bayer &amp; Rozkiewicz (2015) (Australia)</td>
<td>283 at-risk infants (e.g. difficult temperament, domestic violence, etc.)</td>
<td>(not noted)</td>
<td>- Parenting interactions with low levels of harsh discipline</td>
<td></td>
</tr>
<tr>
<td>Bell, Romano &amp; Flynn (Bell et al., 2015) (Canada)</td>
<td>313 children in out of home care (foster family placements/kinship care) for one year or more</td>
<td>- Internal Developmental Assets</td>
<td>- Positive parenting (frequency of caregiver-child interactions) - Lower number of caregiver changes</td>
<td>- Lower number of children in the home - Child receiving psychological treatment</td>
</tr>
<tr>
<td>Bell, Romano &amp; Flynn (2013) (Canada)</td>
<td>531, 5 – 9 year old children living in out of home care</td>
<td>- Gender - Internal developmental assets</td>
<td>- Contact with biological parents - Foster family characteristics</td>
<td>- External developmental assets</td>
</tr>
<tr>
<td>Bradley et al., (1994) (USA)</td>
<td>243 Premature, low birthweight infants living in poverty</td>
<td></td>
<td>- Parental responsiveness &amp; acceptance - Availability of toys and learning materials - Variety of stimulation</td>
<td>- Safe play areas - Less crowded homes</td>
</tr>
<tr>
<td>Chi et al., (2016) (China)</td>
<td>195 Children with parents living with HIV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collishaw et al., (2016) (South Africa)</td>
<td>655 Children orphaned by AIDS</td>
<td>- Physical health</td>
<td>- Caregiving quality - food security</td>
<td>- Peer relationship quality - Lower exposure to violence - Bullying - Stigma</td>
</tr>
<tr>
<td>Cowen et al., (1990) (USA)</td>
<td>77 Fourth and sixth grade urban children who have been exposed to significant life stress</td>
<td>- Self-esteem/ self-worth - Empathy - Realistic control - Interpersonal problem solving skills - Easy temperament</td>
<td>- Absence of separation from primary caregiver - Childcare support - Parental self-esteem - Parental perception of support - Confidence in parenting ability - Parental perception of outcome</td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Sample Description</td>
<td>Findings</td>
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<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
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<tr>
<td>Fee &amp; Hinton (2011) (USA)</td>
<td>146 Children living with Duchenne Muscular Dystrophy</td>
<td>- Family support (e.g., low parent distress)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>- Social support (e.g., number/ of peer relations, involvement in activities)</td>
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<tr>
<td>Fenning &amp; Baker (2012) (USA)</td>
<td>50 Children with undifferentiated early developmental delay</td>
<td>- Mother-child interaction (maternal technical scaffolding and dyadic pleasure)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garmezy (1993)</td>
<td>Children of parents with a mental illness</td>
<td>- temperament</td>
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<tr>
<td></td>
<td></td>
<td>- family support</td>
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<td></td>
<td>- external support</td>
<td></td>
<td></td>
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<tr>
<td>Halevi, Djalovski &amp; Vengrober (2016) (Israel)</td>
<td>232 Children exposed to repeated wartime trauma</td>
<td>- Maternal factors</td>
<td></td>
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<td></td>
<td></td>
<td>- Sensorimotor</td>
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<td>- Attachment behaviour</td>
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<tr>
<td></td>
<td></td>
<td>- Lack of environmental stress</td>
<td></td>
<td></td>
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<tr>
<td>Howell et al., (2010) (USA)</td>
<td>56 Children aged 4 – 6 who have been exposed to intimate partner violence</td>
<td>- Parenting</td>
<td></td>
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<td></td>
<td></td>
<td>- Maternal Mental Health</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>- Less severe exposure to intimate partner violence</td>
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<td>Jordan &amp; Graham (2012) (Indo Asia)</td>
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2.1 Historical Content

Many children encounter various threats or risks across their childhood and adolescence. Research has demonstrated that children can emerge without negative developmental outcomes despite exposure to a range of risks (Garmezy, Masten, & Tellegen, 1983; Masten & Labella, 2016; Rutter, 1983; Werner & Smith, 1982). The main foundation studies in this area focused on a disease or deficit model, and have examined the developmental trajectory resulting from exposure to family and environmental factors such as a parent with serious mental illness (Masten et al., 1999; Masten & Labella, 2016), or parental alcohol or substance abuse, poverty and domestic violence (Werner, 1986; 2004).

In their pioneering longitudinal study, Werner and Smith (1982) followed 698 children over 40 years on the island of Kauai, Hawaii. The community of Kauai was selected as the area was known to have many socioeconomic issues affecting the inhabitants. All known births for one year were recruited and followed for the period of the study. These children and families experienced a range of issues including perinatal stress, family and community poverty and/or family instability (Werner & Smith, 2001). Originally, the study was designed to examine the contributing factors to negative developmental outcomes. The underlying premise and belief at the time was that exposure to multiple risk factors led to negative developmental outcomes.

Interestingly, this study found that some children appeared to achieve good developmental outcomes and became well adapted in spite of these conditions (Werner & Smith, 1982). In fact, one third of the children studied developed into
“competent, confident and caring adults” despite experiencing four or more serious risk factors (Werner, 1995, p.82), while others developed serious behavioural and/or learning problems (Werner). This then lead to investigations into the factors that may prove protective when faced with adverse events.

Like the Kauai study, Masten and colleagues (1994; 2003) studied a group of children from a specific risk group. Their longitudinal study titled Project Competence followed 191 children of mothers with schizophrenia over time. This study had specific aims and moved from a disease model, to examining the relationships between competence across a range of domains and protective factors within the child at different developmental points (Masten). Again, like the Kauai study, Project Competence found that a percentage of children did achieve positive developmental outcomes despite many threats to competence within their families and broader environment. This study was one of the first to look at a range of measures and multiple informants. In addition, it identified the importance of assessing competence differently depending on the age and stage of the focus child (Masten & Tellegen).

These key studies formed the basis for the emerging body of research focusing on resilience. Their findings have resulted in a shift from a deficit model to a focus on a more proactive, preventive approach to risk and threats to positive developmental outcomes. These early studies led to the current research focus on resilience.

2.1.1 Defining resilience. The Kauai study and Project Competence led to an examination of positive outcomes for children in the face of adversity. In early
studies, these children were often labelled as ‘invulnerable’ (Anthony, 1974). This label was soon questioned by researchers in the field as it suggested that children could be invincible across time in the face of multiple stressors. As research evolved it became clearer that stressors and risks can change over time and that the concept of adapting in the face of adversity related more closely to a process than an outcome. This led to the coining of the term resilience. This view of resilience has been used to describe positive developmental outcomes achieved by children in the face of adversity as illustrated in the foundation studies described previously. It is vital that any definition of resilience incorporate two fundamental aspects; a judgment of competence; and exposure to risk (Bonanno et al., 2015; Masten, 1994; Masten & Coatsworth, 1998; Masten & Labella, 2016; Pangallo et al., 2015). Therefore, resilience can best be defined as a child’s capacity to overcome, adapt to, or minimize the damaging effects of adversity (Grotberg, 1995). Some researchers have developed more specific definitions to delineate different aspects of resilience. Masten and colleagues (1990; 2016) describe three ‘types’ of resilience: overcoming the odds – referring to achieving good developmental outcomes when the opposite is expected; stress-resistant – referring to continuing competence when exposed to acute stress or risk; and finally recovery – going on to develop good outcomes after exposure to trauma. These three components provide a sound basis for researchers to articulate the type of process under examination. Regardless of the type of resilience, a common theme in the research is identifying those factors that have a protective function for
child outcome.

2.2 Protective Factors

Protective factors are those factors that have been shown to ameliorate the effects of risk (Luthar & Cicchetti, 2000). Research has consistently highlighted a range of attributes and characteristics that behave protectively in the face of adversity. These factors can be seen as influences across multiple levels and can be organized into three main categories – within the child, within the family, and within the broader environment.

2.2.1 Child factors. A range of child characteristics have been found to be relevant in the study of resilience. Many studies have found aspects of child temperament, social and communication skills, and intelligence to differentiate between resilient children and others. Child gender is a more contentious issue with varied findings across studies.

2.2.1.1 Child temperament. Child temperament and its relationship to the development of child behaviour problems has been the focus of much research (Barron & Earls, 1984; Bayer & Rozkiewicz, 2015; Cowen et al., 1990; Fagan, 1990; McConnell et al., 2014; Rutter, 1987; Shlonsky et al., 2016; Smith & Prior, 1995; Wolfson, Fields, & Rose, 1987). The predominant finding across many studies is that resilience is associated with the presence of an easy, good-natured temperament in the resilient child in the early years (Cowen et al., 1990; Engle et al., 1996; Grotberg, 1995; C. Martinez-Torteya et al., 2009; Rak & Patterson, 1996; Werner & Smith, 1982; Wolff, 1995). In relation to resilience, temperament has been found to be fundamental to whether children are classified as resilient or not.
resilient. Research has found that resilient children had temperament characteristics in infancy that elicited positive responses from, and attachments to, a wide range of caregivers. These children were described by their mothers as affectionate, easy to soothe and good-natured. Specifically, mothers described boys as ‘easy to deal with’ and ‘good natured’ and girls as ‘affectionate’ and ‘cuddly’ (Werner & Smith, 1982, p.58). Smith and Prior (1995) examined the role of temperament in resilience within families living in high stress conditions. They found that children with positive temperaments had better outcomes than their siblings living in the same at-risk conditions. It could be surmised that children with good attachment and positive interaction with caregivers have a higher chance of having their needs met even in the face of adversity. Whether those with easy temperaments are more likely to be protected from the adversity by their parents, or treated in a different way to their less "easy" temperament siblings is not clear. Alternatively, it may be that their temperament itself meant that they were less impacted by their adverse conditions.

2.2.1.2 **Other Non-Cognitive factors.** Gutman and Schoon (2013) in their wide scale literature review of non-cognitive skills summarised a number of factors across a range of studies that impacted positively in outcome for young people. Specifically these factors included self-control, school engagement and social skills (Gutman & Shoon). These were found to be associated with positive outcomes such as lower crime rates in adolescence and later adulthood, positive
academic outcomes and later financial stability.

Other factors present in resilient children included an internal locus-of-control, a positive self-concept, (Block & Block, 1980; Cowen et al., 1990; Engle et al., 1996; Grotberg, 1995; Rak & Patterson, 1996; Tschann et al., 1996; Werner, 1986; Wolff, 1995) and good communication and social skills (Block & Block, 1980; Cowen et al, 1990; Engle et al, 1996; Grotberg, 1995; Tschann et al, 1996).

2.2.1.3 **Intelligence.** In resilience research there are a number of identified factors that can behave differently depending upon the risk factors or population under study (Masten & Powell, 2003). A child’s intelligence quotient (IQ) is one such factor. White and colleagues (1989) found that higher IQ’s as measured in childhood were predictive of lower delinquency rates in adolescents for both boys and girls. Masten, Best and Garmezy (1990) in their Project Competence study, found that IQ was one of a number of variables that had a differential impact for different sub groups within their study. They found that children with higher IQ’s showed little difference in competence at both high and low stress levels. Conversely, children with lower IQ’s did less well at high stress than low stress. It would appear that in this study lower IQ is a risk factor under adverse conditions whereas high IQ is related to positive outcomes regardless of stress levels. Other studies found that cognitive ability had a positive relationship to better outcomes for children under risk conditions (Oades-Sese & Esquivel, 2006; Smith & Prior, 1995; Tiet et al., 1998)

2.2.1.4 **Gender and birth order.** Gender of the child and birth-order in families has been found to be relevant but variable in the study of resilience.
Across studies, girls were generally found to be more resilient than boys. (Bell et al., 2013; Masten, Best, et al., 1990; Osborn, 1990; Rutter, 1987; Werner & Smith, 1982; Wolff, 1995). On closer analysis, this finding varied according to the age or developmental stage of the child, with boys and girls being more ‘at-risk’ at different developmental stages. In infancy and early childhood, boys were found to be more at risk of negative developmental outcomes than girls (Werner, 2004). In the Kauai study, Werner found that boys were more at risk of developing learning difficulties, behaviour problems and had higher degrees of externalizing symptoms when compared with girls. Interestingly in this study, the researchers found that boys were more at risk during this period while the opposite was true in adolescence where girls were found to be at greater risk (Werner, 2004; Werner & Smith, 2001). The reasons for this shift are unclear and may be due to biological, social, or even emotional changes that occur with age that reverses the gender risk.

In relation to birth order, again the findings have been variable. Some studies found that later and middle-order children were more resilient than first-borns (Ergüner-Tekinalp & Terzi, 2016; Werner & Johnson, 2002). However other studies found that an interaction between birth order and other factors such as parenting style, or age gaps between siblings, or number of siblings, explained more about resilience status (Zakeri, Jowkar, & Razmjoee, 2010)

2.2.2 Family factors. In relation to family factors, the child/parent relationship has been found to be the most important factor for the development of resilience (Cowen et al., 1990; Fenning & Baker, 2012; Flouri, Tzavidis, & Kallis, 2010; Im & Kim, 2012; Kidwell et al., 2010; Masten & Monn, 2015; Vanderbilt-
Adriance & Shaw, 2008). To be considered resilient, a child needs a close bond with at least one caregiver (Bradley et al., 1994; Cowen et al., 1990; Engle et al., 1996; Tschann et al., 1996; Werner & Smith, 1982). Other important family factors in the development of resilience include aspects of parenting such as the quality and continuity of care (Wyman et al., 1999), parenting confidence, and discipline practices (Bayer & Rozkiewicz, 2015; Collishaw et al., 2016; Cowen et al., 1990; Grotberg, 1995; McDonald, Kehler, Bayrampour, Fraser-Lee, & ough, 2016). Moos and Moos (1986) found resilient children came from families with lower levels of conflict and greater expressiveness in family relationships. Children in at-risk situations were also more likely to have resilient outcomes if they had not experienced prolonged separation from their primary caregiver, and had reasonable limits and consequences set in their home environment (Cowen et al., 1990; Grotberg, 1995).

The family is most often the most immediate and consistent environment that the child experiences. The family and the processes and practices within it should be the focus of the next wave of resilience research (Ayoub et al., 2014; Luthar & Zigler, 1991; Masten & Monn, 2015). The clinical implications are evident. To improve resilience, it may be that a systemic family approach needs to be undertaken for intervention.

**2.2.2.1 Socio-Economic Status (SES).** Some studies have found that socio-economic variables, such as income and educational level of the parents, differentiate between resilient and non-resilient children (Bradley et al., 1994; Cowen et al., 1990; Luthar, 2015; Tschann et al., 1996). These studies found
that mothers of resilient children had significantly more education and higher levels of family income than mothers of non-resilient children. However, Werner (1995) and Grotberg (1995) found that protective factors and resilient outcomes transcended ethnic, social and geographic boundaries. It may be that there is some other variable at work in the apparent link between SES and resilience. That is, parents who study longer and earn a higher income may have other personal characteristics or parenting behaviours that are different to those with low SES or little education.

### 2.2.2.2 Parent/child relationship

The parent/child relationship has been found to be fundamental in a resilient outcome across a range of studies (Bernard, 1993; Bradley et al., 1994; Cowen et al., 1990; Easterbrooks & Graham, 1999; Egeland et al., 1993; Engle et al., 1996; Fergusson & Lynskey, 1996; Greeff & van der Merwe, 2004; Grotberg, 1996; Kim-Cohen, Moffitt, Caspi, & Taylor, 2004; Masten, Best, et al., 1990; Osborn, 1990; Wyman et al., 1999). In possibly the first of these studies, Werner and Smith (1982), found that amongst children who were exposed to four or more major risk factors, those who were more likely to achieve positive outcomes were those with a nurturing caregiver.

In another study, children with at least three protective care giving experiences were identified as resilient (Bradley et al., 1994). These care giving experiences included provision of a safe play area, age-appropriate learning materials, and access to a responsive caregiver. Children with less than three protective care giving experiences were rarely found to be resilient (in less than 1% of cases) (Bradley et al., 1994). Fenning and Baker (2012) examined the
mother/child relationship in relation to early developmental risk. Again with this study, the focus was on an at-risk population; identified developmental delay and intellectual disability. This study found that aspects of mother/child interactions, particularly shared pleasure in play activities and maternal scaffolding, predicted better outcomes in adaptive behavior for children (Fenning & Baker). In another study in the same year, Im and Kim (2012) found that parental warmth and acceptance was positively related to better outcomes in children. Again the study examined this in relation to an at-risk group (chronic illness).

2.2.2.3 Parenting. Early resilience research tended to focus on protective factors. The majority of these factors related to characteristics that were relatively stable and fixed; for example, gender of the child, temperament, culture, and socio-economic status, and so on. More recently the focus among researchers has seen a shift to factors that are open to change (Luthar, 2015; Masten & Labella, 2016). Luthar (2006) describes these as ‘modifiable modifiers’, and they can include parenting practices and other aspects of family functioning. Many researchers agree that it is these processes that should form the basis for future resilience research, given that they lend themselves to intervention (Masten, Best, et al., 1990). Research has identified a clear link between parenting practices and child behaviour and developmental outcomes (Bornstein, Tamis-LeMonda, Hahn, & Haynes, 2008; Campbell, Pungello, Miller-Johnson, Burchinal, & Ramey, 2001; Easterbrooks & Graham, 1999; Frick, Christian, & Wootton, 1999; Guajardo et al., 2009; Howell et al., 2010; Landry, Smith, Swank, & Guttentag, 2008; Luthar, 2015; Prevatt, 2003; Shelton, Frick, & Wootton, 1996; Zakeri et al., 2010). However,
fewer in number are studies examining resilience and parenting, despite clear theoretical links among the constructs (McDonald et al., 2016).

Most early studies of resilience and parenting followed the pattern of the foundation studies in the area, in that they focused on a deficit model. For example, most have examined negative parenting practices and styles and their subsequent negative outcomes for children (Armstrong, Birnie-Lefovitch, & Ungar, 2005).

Previous research examining the relationship between parenting and child outcomes has focused on parenting styles. Parenting styles are based on Baumrind’s model (1966). The model describes four main parenting styles: authoritarian; authoritative; permissive; and neglectful. Parenting style relates to parents’ attitudes and beliefs about parenting (Prevatt, 2003), rather than specific parenting behaviours or practices. These studies tended to use broad constructs such as ‘parenting competence’ or ‘parent-child relationship’ rather than specific parenting practice aspects (Armstrong et al., 2005; Guajardo et al., 2009; Prevatt, 2003; Shelton et al., 1996; Wyman et al., 1999; Zakeri et al., 2010). Since Baumrind’s seminal research on parenting style, there has been extensive research into many different aspects of parenting behaviours and their relationship to child outcomes. Results from research are unequivocal about the clear link between increasing parenting quality and child outcomes (Bekar et al., 2016; Beldavs, Forgatch, Patterson, & DeGarmo, 2006; Forgatch, 2006; Gulliford, 2015). However, there appears to be a lack of research investigating resilience and parenting. In terms of resilience, a thorough literature search by the author reveals
that the existing body of research is generally represented by papers of a theoretical nature that outline the importance of parenting in relation to resilience. Many of these papers have outlined theoretical frameworks for the study of parenting in relation to resilience, however very few experimental studies could be found, with very little evidence that these frameworks have been empirically tested (Armstrong et al., 2005; Gewirtz et al., 2008). Gewirtz et al (2008) go as far as to suggest that parenting practices are a neglected topic in the study of resilience. Masten (2016), in her most recent review, confirms that this remains the case to date. The following sections will review and discuss the information that does exist regarding factors involved in resilience from parenting and family research studies.

As the body of resilience research continues to grow, so does the focus on factors that are amenable to change. Once identified, these factors can then be incorporated into intervention that could provide a buffer against adversity and negative outcomes in children and families. As Masten et al. state (1999),

“parenting scores are markers of fundamental adaptational systems that protect child development in the context of severe adversity” (p.143).

Therefore, parenting practices need to be examined in order to identify key factors that impact on resilience.

2.2.2.4 Parenting practices. Parenting quality has been found to be a protective factor in child resilience and predictive of positive outcomes (Masten et al., 2004; Masten & Labella, 2016; Sher-Censor, Khafi, & Yates, 2016; Zakeri et al., 2010). Prevatt (2003) provided one of the first studies to explore the unique contribution of parenting practices in resilience research. Her study found that
positive parenting (defined as positive parenting and parenting involvement) as measured by the Alabama Parenting Questionnaire (Frick, 1991) was related to positive child outcomes in at-risk situations. Risk in this study was a composite stress measure combining family stress, family conflict, parental psychopathology and low SES (Prevatt. 2003).

A foundation longitudinal study conducted over more than ten years, the Rochester Child Resilience Project (Cowen et al., 1990) concluded that parenting qualities such as warmth and emphasising responsible behaviour in children were related to more positive outcomes for children in the face of adversity. Further, this study focused on variables that were reflective of specific aspects of parenting practices such as appropriate developmental expectations, consistency of parenting (e.g. applying consistent and reasonable consequences), and nurturant involvement. Grotberg (1995) found that resilient children had parents who utilised problem solving skills, set firm limits and applied consequences, and accessed appropriate services (e.g. medical, educational etc.) for their children when required. Negative aspects of parenting such as the use of corporal punishment and inconsistent discipline were found to be predictive of child behaviour problems (Shelton et al., 1996). The use of firm and consistent guidelines is a common theme in the limited research conducted to date (Bayer & Rozkiewicz, 2015; Grotberg, 1995; Luthar, 2006; Werner, 1986; Wyman et al., 1999; Wyman, Cross, & Barry, 2004; Wyman et al., 2000). Interestingly, a number of studies have found that particular aspects of parenting impact differently for diverse groups of children.
Self-efficacy has frequently been studied in the parenting literature. It has been identified as a relevant construct in resilience research in relation to children but not in relation to parents (Masten, 2011; Masten, Best, et al., 1990; McDonald et al., 2016). Self-efficacy can be defined as “the belief in one’s capabilities to organize and execute the courses of action required to manage prospective situations” (Bandura, 1995, p. 2). Therefore, parenting self-efficacy can be defined as beliefs in terms of their effectiveness in their role as a parent. Given the importance of the parent/child relationship, it would seem that examination of the role of self-efficacy in resilience research would be of theoretical and clinical significance. Intuitively, it makes sense to consider that parents with higher self-efficacy will produce more resilient children.

2.2.2.5 Family Functioning. Aspects of family functioning have long shown key links to child outcomes (Miller, Ryan, Keitner, Bishop., & Epstein, 2000). Due to the strong link between this and other favourable outcomes, significant research has been undertaken to determine the specific factors within families that influence effective family functioning (McCubbin & McCubbin, 1989). Family functioning can be defined as aspects of a family’s structure and organisation that influence and determine the behaviour of its members (Miller et al, 2000). McMaster and colleagues developed a model of family functioning based on years of clinical work with families (Miller et al, 2000). Their model identified six dimensions within families that have been found to differentiate between well-
functioning families and those experiencing difficulties (Miller et al.). These dimensions relate to problem solving; communication; roles; affective responsiveness; affective involvement and behaviour control. These dimensions once identified have been found to respond well to intervention. Aspects of family functioning could be seen then to fall into Luthar’s (2000) category of a ‘modifiable modifier’, yet little evidence of consideration of these could be found in a review of resilience research.

One study that has investigated family functioning, reported a significant and positive relationship between child adaptation and these family mechanisms (Mutimer, Reece, & Matthews, 2007). Children with good adaptation (good social and communication skills and an absence of problem behaviours) came from families who reported better family functioning across all areas investigated. It is interesting to speculate whether good family functioning facilitates good adaptation or whether the reverse is true. Certainly, literature is available to support either hypothesis. Sanders (1995) described the detrimental effects of child problem behaviour on family mechanisms. Other literature supported a more ‘environmental’ perspective of the family context affecting a child’s adaptation.

The studies described in the current thesis, provide further interest as they identified four groups (Resilient; Good Expected; Poor Expected and Vulnerable) from amongst the larger sample (Mutimer et al., 2007). This enabled comparison amongst these groups on aspects of family functioning, rather than simply comparison of children according to the presence or absence of resilience. The Good Expected group (low stress exposure & good adaptation) reported
significantly better family functioning in some areas, than either the Vulnerable group (low stress exposure & poor adaptation), or the Poor Expected group (high stress exposure & poor adaptation).

From these results, most aspects of family functioning appear to positively influence children in a 'protective-reactive' way regarding adaptation and exposure (Luthar et al., 2000a). Protective-reactive relates to a pattern where the mechanism provides advantages, but less so when stress levels are high rather than low (Luthar et al.).

2.2.3 Environmental factors. Environmental factors relate to aspects of the child and family’s broader environment. It includes aspects of social support, education settings, community support and services. These aspects and their relationship to resilience will be discussed in the following sections.

2.2.3.1 Social support. Social support is an important variable to consider with regard to child functioning (Armstrong et al., 2005; Jennings & Greenberg, 2009; Kurdek, 2003) and to resilience in particular. Families with a variety of external social supports had children who were more resilient than those without such support (Block & Block, 1980; Bradley et al, 1994; Cowen et al, 1990; Engle et al, 1996; O’Grady & Metz, 1987; Rak & Patterson, 1996; Werner & Smith, 1982; Wyman et al, 1999). In reviewing the resilience literature, little information is available on the amounts or quality of social supports needed to influence resilience, as research has identified only the types of supports used. These have included extended family, membership in a church or religious group, close friends,
and participation in neighbourhood groups.

A small number of researchers have attempted to address these issues in defining and measuring social supports in the resilience literature. Armstrong and colleagues (2005) describe two models of examining social support in the area of resilience. The first model looks at social support from a main effect perspective, that is, by examining the beneficial effects of social support regardless of stress levels or particular adversity being experienced. The second model looks at the buffering effect that social support has as a protection from harmful effects of the stressful event. Most researchers agree that it is the quality of the social support that provides the greatest clarity around how social support acts as a protective mechanism (Coyne, Ellard, & Smith, 1990). Therefore, research should be focused on a measure of satisfaction with the amount and types of social support utilized rather than simply a tally of the sources of social support available to the family. Coyne and colleagues recommend discovering more about a parent’s experience of social support rather than simply examining social support according to a quantitative perspective. A parent may have many different social supports available to them: however they may not find them helpful or positive.

### 2.2.3.2 The influence of schools, kindergartens and child care experiences

Research has clearly identified the role of educational and care environments as a protective factor in at-risk environments. In Project Competence, Masten and colleagues (1990) found that positive school experiences lessened the effects of a stressful home environment. Schools, kindergartens and quality child care experiences, provide a stable environment for
children where ideally positive role models show genuine interest in children and acknowledge their achievements (Werner, 2004). Bernard (1993) summarised three main categories of influence in relation to educational and care settings and resilience: 1) caring and supportive relationships; 2) positive and high expectations and 3) opportunity for meaningful participation. These can be seen as relating to some of the family characteristics discussed previously. It may be that even without these characteristics in the home (e.g. a positive, caring relationship with a caregiver), a teacher or someone within the educational or care environment can provide this protective factor for a child. Bernard goes further to explain the aspects of the school environment that foster resilience in children. Schools provide a structured, purposeful environment where children have the opportunity to develop independence and autonomy (Bernard, 1995). Effective teachers model and teach problem solving skills and foster effective social and communication skills.

While a considerable amount of data is available on the role of schools as a protective factor, little research has been conducted in relation to school adjustment. School transition or adjustment can be seen as one of the first significant psycho-social changes in a child’s life and thus represents an area of interest in the study of resilience. For many children, starting school can be an emotional stressor. A comprehensive review of the literature produced very few citations relating to early school adjustment or transition, and resilience in young children. A number of studies that were reviewed utilised specific populations, for example children at risk (Shields et al., 2001) or children with behaviour problems (Ladd & Burgess, 2001). Other studies focused on specific aspects of school
adjustment, for example intellectual competence (Sameroff, Seifer, Baldwin, & Baldwin, 1993), or emotional competence (Miller et al., 2003) or teacher-child relationship (Birch & Ladd, 1997).

One recent large scale study of general school adjustment however, identified that the major variance in school adjustment was accounted for at the child level (83.5%), as opposed to characteristics of the school, the individual classroom, or the teacher (van den Oord & Van Rossem, 2002). This suggests that characteristics of the child and aspects of behaviour and development should form the basis of an investigation into school adjustment.

Some earlier studies focused on academic achievement as the focus of successful school adjustment (Scheerens, Vermeulen, & Pelgrum, 1989). Later research has identified the importance of studying a range of aspects of behaviour and development when describing positive school adjustment (Frenz, Gresham, & Elliot, 1991; Guay, Biovin, & Hodges, 1999; van den Oord & Van Rossem, 2002). It is recommended that in future research, information be gathered about the child’s behaviour within the classroom, their social competence, level of problem behaviour and readiness for classroom learning as indicators of resilience.

2.2.3.3 Service access and usage. A number of studies have identified that parents of resilient children have access to greater support or resources to assist in their parenting than those of non-resilient children (Grotberg, 1996; Wyman et al., 1999). These resources included child care and kindergarten, health and wellness care for themselves and their babies, parenting support and information and medical services (Grotberg). Interestingly, these parents not only
had greater access to these services but actually had greater utilisation rates at relevant times for appropriate concerns (Wyman et al.). Given these findings, it would appear that services could be seen as a form of social support, for example kindergarten teachers providing advice on parenting or child development or a child care centre providing respite for a parent under difficult circumstances.
Chapter Three – Methodological Issues in Resilience Research

Methodological issues present the greatest challenge in this area of research. There is clear agreement across studies on the basic definition of resilience (Bonanno et al., 2015; Ergüner-Tekinalp & Terzi, 2016; Flouri et al., 2010; Grotberg, 1996; Henry, Sheffield Morris, & Harrist, 2015; Johnson, 2011; Joslyn, 2015; Luthar, 2006; Masten, 2011; Masten & Labella, 2016). Most researchers agree with the following definition of resilience – a capacity to function positively in the face of adversity. However, across the body of research this appears to be the sole common feature. Broad differences are apparent in the way resilience is operationally defined, resulting in difficulties in generalising findings across or between studies (Le Buffe & Naglieri, 2002). Despite agreement on the core notion of the construct, the methods for defining, measuring, and classifying resilience status vary considerably across the literature. Noteworthy researchers in the field have agreed upon the need for the development of consistent, clear, and uniform research practices (Luthar et al., 2000a; Masten, 2011; Yates & Masten, 2004). However, despite this, these issues remain unresolved.

Operationalising resilience appears to present a major difficulty in the existing research (Luther et al., 2000a). In broad terms, operationalising resilience refers to defining resilience in such a way as to enable it to be measured for research purposes. This involves identifying theoretical constructs that represent resilience for the population under investigation. The common definition described above identifies two explicit constructs – adaptation and adversity. To be considered a study of resilience, both these aspects need to be examined (Luthar,
Cicchetti & Becker, 2000). Ideally any definition should be based on two key elements:

- an understanding of the nature of the adversity experienced by the population under study, and
- a theoretical link between the age and stage of the population and the way adaptation is measured, considering the type of adversity experienced.

In terms of adversity, resilience research can be categorised into two main streams: those focusing on at-risk populations, for example children from divorced families (Greeff & van der Merwe, 2004); or research within the general population (Cowen et al., 1990). Each of these groups presents their own methodological challenges. Research from these two streams will be discussed in detail. Particular attention will be paid to the first stream – research with specific at-risk populations. The particular methodological issues relating to this stream will be identified and discussed. Specifically, these issues relate to defining the two main constructs in any resilience study: adaptation and adversity.

As previously mentioned, any operational definition of diversity should be based on a theoretical link between the age and stage of the population as well as the nature of the adversity experienced by that population, be it at-risk or general. In terms of adaptation, the definition needs to consider constructs that are theoretically and developmentally appropriate to the population under study. Most key researchers argue for the use of outcome constructs that are relevant to the population under study (Luthar & Cicchetti, 2000; Masten & Coatsworth, 1998). In
general populations, competence would be measured by more developmentally appropriate achievement in relevant areas, for example social competence. In specific populations, it may be more appropriate to select an outcome relevant to the risk exposure, for example absence of psychiatric distress in trauma conditions (Luthar & Cicchetti, 2000).

This chapter will focus on the largest group of studies in this literature – those examining resilience in at-risk groups. Tables 2 and 3 represent a summary of the relevant studies in relation to the study and classification of child resilience. In reviewing the literature, it was apparent that the studies fell into one of two categories; correlational or those that determined (classified) participants (children) in a particular manner. For ease of understanding, the review tables were split to reflect these two types of studies. Particular attention was paid to identifying the measures used for the correlational studies, particularly in relation to resilience and adversity (see Table 2). Table 3 presents child resilience studies where participants were ‘classified’ in relation to their child resilience status. The literature review was conducted in the same process as the initial review. A cross search of multiple databases, including Psychology Database (ProQuest); PsychARTICLES (Proquest); Psych INFO (Proquest); PubMed and Science Direct (Elsevier). This search included the following search terms in multiple combinations: ‘resilience’; ‘preschool children’; ‘vulnerable’; ‘resilient’; ‘methodological issues’; ‘stressful life events’; ‘adversity’; ‘daily hassles’; ‘stress’; ‘measurement’; and ‘resilience measures’.
Table 2. Summary of reviewed literature on child resilience using correlational methods

<table>
<thead>
<tr>
<th>Author, (Year) Type of study (Country)</th>
<th>N =</th>
<th>Population under study</th>
<th>Description of study</th>
<th>Resilience Measures</th>
<th>Adversity Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi et al., (2016) Retrospective Longitudinal data (correlational) (China)</td>
<td>N = 195</td>
<td>Children with parents living with HIV</td>
<td>This study investigated the correlation between perceived stigmatization and resilience of children with parents living with HIV. The study found a negative correlation between perceived stigma and resilience 'level'.</td>
<td>- Connor-Davidson Resilience Scale (Chinese version)</td>
<td>Adapted version of the Stigma Against Children Affected by AIDS Scale - Parents with HIV (determined through local education and social welfare data)</td>
</tr>
<tr>
<td>Fenning &amp; Baker (2012) Longitudinal (correlational) (USA)</td>
<td>N = 50</td>
<td>50 Children with early developmental delay</td>
<td>This study investigated the correlation between resilience measured as adaptive behaviour with factors such as mother-child interaction factors (shared pleasure and maternal scaffolding) impacting uniquely on the level of predicted ID at 3yrs.</td>
<td>- Child Behaviour Checklist (CBCL) - Vineland Adaptive Behaviour Scales</td>
<td>- Bayley Scales of Infant Development (BSID-II) at age 3 for developmental delay - Standardized Intellectual Disability Assessment at age 5 with the Stanford-Binet Intelligence Scale IV and Vineland Adaptive Behaviour Scales</td>
</tr>
<tr>
<td>Healey &amp; Fisher (2011) Retrospective study using longitudinal data (correlational) (USA)</td>
<td>N = 35</td>
<td>Preschool children in foster care</td>
<td>This study aimed to investigate the relationship between resilience (defined as emotional regulation and social competence) and foster care experience. The findings suggest that lower environmental stress in the foster home is positively correlated with positive developmental outcomes.</td>
<td>- Emotional Regulation Checklist - Walker-McConnell Social Competence &amp; School Adjustment</td>
<td>- Maltreatment was measured and coded using the Maltreatment Classification System with government records - Number of placement transitions determined from government records - Family Events Checklist - Parenting Scale</td>
</tr>
<tr>
<td>Howell et al., (2010) Cross sectional (correlational) (USA)</td>
<td>N = 56</td>
<td>Children aged 4 – 6 who have been exposed to intimate partner violence</td>
<td>This study investigated the relationships between resilience and the experience of intimate partner violence. Results suggest that maternal mental health, parenting performance and less severe violence exposure predicted more positive outcomes in children.</td>
<td>- Social Competence Scale</td>
<td>- Revised Conflict Tactics Scales</td>
</tr>
<tr>
<td>Authors</td>
<td>Year</td>
<td>Design</td>
<td>Sample Size</td>
<td>Sample Description</td>
<td>Methods</td>
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<tr>
<td>Im &amp; Kim</td>
<td>2012</td>
<td>Cross-sectional</td>
<td>N = 102</td>
<td>School-aged children with Atopic Dermatitis</td>
<td>Kim &amp; Yoo (2010) Resilience Scale for children with chronic illness</td>
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<td></td>
<td></td>
<td>(correlational)</td>
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<td></td>
<td>- Diagnosis of Atopic Dermatitis</td>
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<td></td>
<td>(Korea)</td>
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<td>- Duration of illness obtained from medical records</td>
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<td>- Disease severity measure by criterion proposed by Raska (1986)</td>
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<td></td>
<td></td>
<td>(correlational)</td>
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<td></td>
<td>- Diagnosis of cancer for longer than 6 months, currently undergoing treatment and who do not have central nervous system involvement. Participants were recruited from the paediatric oncology outpatient clinic</td>
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<td></td>
<td>(Korea)</td>
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<td></td>
<td>(Australia)</td>
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<td></td>
<td>- CBCL</td>
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<td>- Non-standardized family questionnaire for key demographic and family characteristics</td>
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<tr>
<td>O’Grady &amp; Metz</td>
<td>1987</td>
<td>Longitudinal</td>
<td>N = 109</td>
<td>Children who have experienced risk factors for adverse outcomes in infancy</td>
<td>Child Behaviour Checklist (CBCL)</td>
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<tr>
<td></td>
<td></td>
<td>Correlational</td>
<td></td>
<td></td>
<td>- Pupil Behaviour Rating Scale (PBRS)</td>
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<td></td>
<td></td>
<td>(USA)</td>
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<td></td>
<td>- Human Figure Drawings (HFD)</td>
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<td>Infant Risk Classification through risk assessment by questionnaire and medical chart review at 1 month of age</td>
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<td>- Children’s Life Events Survey</td>
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<td></td>
<td></td>
<td>- Children’s Social Support Questionnaire (CSSQ)</td>
</tr>
<tr>
<td>Stewart &amp; Sun</td>
<td>2004</td>
<td>Cross-sectional</td>
<td>N = 2580</td>
<td>Primary school students in rural, low SES areas</td>
<td>Modified version of the California Healthy Kids Questionnaire</td>
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<tr>
<td></td>
<td></td>
<td>(Australia)</td>
<td></td>
<td></td>
<td>- Participants attended primary school in a low socioeconomic area</td>
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<tr>
<td>Study</td>
<td>N</td>
<td>Sample Description</td>
<td>Findings</td>
<td>Measures</td>
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<tr>
<td>Tschann et al., (1996)</td>
<td>145</td>
<td>Preschoolers - problematic family functioning as a stressor</td>
<td>This study investigated the correlation between resilience and family functioning as a stressor. Results suggest that aspects of temperament are related to protective and vulnerability processes.</td>
<td>- Child Behaviour Checklist (CBCL)</td>
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<td>- Behavioural observations of free-play</td>
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<tr>
<td>Vanderbilt-Adriance &amp;</td>
<td>226</td>
<td>Males from infancy to early adolescents from low socioeconomic status backgrounds</td>
<td>This study examined the correlation between resilience and low socio-economic status. Low levels of antisocial behaviour and high levels of social skills measured by the positive social adjustment composite were used to operationalise resilience.</td>
<td>- Positive social adjustment composite derived using an adapted Self-report Antisocial Behaviour Questionnaire and Social Skills Rating System (completed by parent and teacher)</td>
<td></td>
</tr>
<tr>
<td>Zhao et al., (2013)</td>
<td>1625</td>
<td>Children orphaned by parental HIV/AIDS and children living with HIV positive parents</td>
<td>This study investigated the correlations between resilience and parent HIV-status and the role of protective factors. Resilience was determined through a comparison of resilience children with parents affected by HIV/AIDS and children with HIV-free parents</td>
<td>- Center for Epidemiological Studies Depression Scale for Children</td>
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<td>- Children’s Loneliness Scale (Chinese version)</td>
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<td>- Rosenberg Self-esteem Scale</td>
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<td></td>
<td></td>
<td>- Orphan and parental HIV/AIDS status was determined through village leaders and government-funded orphanages</td>
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<tr>
<td>Author (Year)</td>
<td>Population under study (Number classified)</td>
<td>Classification descriptors used</td>
<td>Resilience decision making method</td>
<td>Method of resilience classification</td>
<td>Resilience Measures</td>
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<tr>
<td>Bayer &amp; Rozkiewicz (2015) Longitudinal (Australia)</td>
<td>283 At-risk infants (e.g. difficult temperament, home violence, etc.) (178 classified)</td>
<td>- Resilient - Non-resilient - Neither</td>
<td>Normative ranges on the CBCL for internalizing and externalizing problems at 5 and 6 years of age.</td>
<td>- Score at or below normative mean (resilient) - Score at or above borderline-clinical range (non-resilient)</td>
<td>CBCL</td>
</tr>
<tr>
<td>Bell (2015) Longitudinal (Canada)</td>
<td>313 Children in out of home care (foster or kinship care for one year or more) (All classified)</td>
<td>- Resilient trajectories - Non-resilient trajectories</td>
<td>Statistical analysis using UK pop. norms to create clusters of individuals based on emotional and conduct problems (SDQ)</td>
<td>- Resilient if no/low stable conduct problems and no/low stable emotional problems.</td>
<td>SDQ</td>
</tr>
<tr>
<td>Bell, Romano &amp; Flynn (2013) N = 531 Cross-sectional (Canada)</td>
<td>5 – 9 year old children living in out of home care (All classified)</td>
<td>- Emotional resilience - Conduct resilience - Prosocial resilience - Social resilience - Academic resilience</td>
<td>Normative ranges from the UK general population on SDQ scales</td>
<td>- Scores on emotional problems/ conduct problems/ prosocial behaviour</td>
<td>SDQ - Academic performance items</td>
</tr>
<tr>
<td>Study</td>
<td>Sample Size</td>
<td>Sample Description</td>
<td>Study Type</td>
<td>Resilience Criteria</td>
<td>Measures</td>
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<tr>
<td>Collishaw et al., (2015)</td>
<td>655 children</td>
<td>Orphaned by AIDS (All classified)</td>
<td>Longitudinal (South Africa)</td>
<td>Mental health resilience</td>
<td>Cut-off points on each subscale of the self-report mental health screens</td>
</tr>
<tr>
<td>Cowen et al., (1990)</td>
<td>77 4th &amp; 6th Grade urban children exposed to significant life stress (All classified)</td>
<td>Stress Resilient, Stress Affected</td>
<td>Longitudinal (USA)</td>
<td>Ranking in adjustment rating from parents and teachers</td>
<td>Resilient if in the top third of adjustment ratings</td>
</tr>
<tr>
<td>Fee &amp; Hinton (2011)</td>
<td>146 Children living with Duchenne’s MD (all classified)</td>
<td>Resilient, At-risk</td>
<td>Cross-sectional (USA)</td>
<td>Total behaviour score on the CBCL</td>
<td>Resilient - Total behaviour scores below 67</td>
</tr>
<tr>
<td>Grotberg (1983)</td>
<td>Children across countries</td>
<td>Resilient, Somewhat resilient Vulnerable</td>
<td>(USA)</td>
<td>Statistical percentile ranks</td>
<td>Top 33% (resilient), Middle 33% (somewhat resilient), Bottom 33% (Vulnerable)</td>
</tr>
<tr>
<td>Study</td>
<td>Sample Size</td>
<td>Design</td>
<td>Exposure</td>
<td>Psychopathology</td>
<td>Measurement</td>
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<tr>
<td>Halevi, Djalovski &amp; Vengrober (2016) Longitudinal (Israel)</td>
<td>232 Children exposed to repeated wartime trauma (all classified)</td>
<td>Presence of psychopathology at any of the 4 assessments</td>
<td>Resilient if no psychopathology is present at all assessment points</td>
<td>Maternal Interview - direct observation Developmental and Wellbeing Assessment</td>
<td>Families living in Sredot, Israel which is exposed to continuous rocket attacks</td>
</tr>
<tr>
<td>Martinez-Torteya et al., (2009) Longitudinal (USA)</td>
<td>190 Children exposed to DV (all classified)</td>
<td>- Positively adapted - Negatively adapted</td>
<td>- Clinical score on the CBCL</td>
<td>Positively adapted if CBCL score &lt;60 at both time periods</td>
<td>CBCL - SVAW Scales - BDI - LES</td>
</tr>
<tr>
<td>Masten &amp; Garmezy (1994) N = 205 (USA)</td>
<td>Retrospective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oades-sese &amp; Esquivel (2007) Cross-sectional (USA)</td>
<td>207 Preschool children (All classified)</td>
<td>Cluster analysis to identify profiles of resilience</td>
<td>Not specified</td>
<td>ERC - SCBE-TRF - PIPPS - SBI - TABC - Woodcock</td>
<td>Student eligibility for reduced or free lunch to identify socioeconomic status</td>
</tr>
<tr>
<td>Poehlmann-Tynan et al. (2015) Longitudinal Correlational (USA)</td>
<td>173 Infants born preterm (all classified)</td>
<td>- Resilient - Socially Emerging - Calm Limited - Vulnerable</td>
<td>Latent Profile Analysis</td>
<td>Resilient if individual has low level symptomology with high levels positive</td>
<td>CBCL - Conners’ - CBQ - CSHQ</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Sample Description</td>
<td>Resilience Definition</td>
<td>Measurement Tools</td>
<td>Adversity Measure</td>
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<tr>
<td>Spaccarelli &amp; Kim (1995)</td>
<td>Cross-sectional</td>
<td>43 Females aged between 10-17 (sexual abuse) (all classified)</td>
<td>- Resilient if below clinical levels</td>
<td>- CBCL</td>
<td>- Self-report of sexual abuse. - Checklist of Sexual Abuse and Related Stressors</td>
</tr>
<tr>
<td>Tiet et al., (1998)</td>
<td>Cross-sectional</td>
<td>2570 Children (9-17 yrs of age (all classified)</td>
<td>- Presence of psychiatric diagnosis and score on CGAS</td>
<td>- NIMH Diagnostic Interview - (CGAS)</td>
<td>- 25 possible events occurring in the previous year the individual had no control over</td>
</tr>
<tr>
<td>Werner &amp; Smith, (1982)</td>
<td>Longitudinal</td>
<td>545 births in 1966 (at-risk population in Kaui)</td>
<td>Retrospective from adult outcomes.</td>
<td>- Specific at risk population (assumed high levels of risk and adversity)</td>
<td></td>
</tr>
</tbody>
</table>
Most resilience research has focused on specific risks, such as, living in poverty (see Werner & Smith, 1983) or being maltreated as a child (see Kinard, 1998 and Tables 2 & 3 for further examples). These studies serve an important clinical function. It is essential to identify factors that support, enhance, or produce good outcomes for children in the face of these all too common adversities. Identifying such factors in children, their families or their broader environments, enables a focus on interventions to assist children in coping in the face of adversity and risk. However, these studies present the greatest methodological challenges in maintaining rigor in the literature. These challenges have been identified as relating to three main issues: an absence of control groups; a determination of functioning prior to the adverse event; and the method of determining the nature of the experience of the adversity (Kinard, 1998; Luthar & Zigler, 1991; Masten & Coatsworth, 1998). In comparison, relatively few studies have been conducted within the general population (see Tables 2 & 3). A rationale for research in this area will be presented in this chapter.

A review of the varying methods of defining, assessing, and measuring adversity will also be undertaken in this chapter. An analysis of two perspectives on adversity in resilience research will be presented – stressful life events and daily hassles. A case will be made for a combined approach as the most informative approach to measuring adversity in the general population.

A review of decision making processes in classification of resilience status in participants in resilience studies will be analysed. This area provides great variability as each researcher appears to have a different method for determining
the resilience status of its participants. This results in difficulties in making generalisations or comparison across studies.

A framework for designing future resilience research will be presented in this chapter. This is offered as a linear process that researchers can work through to design a rigorous study, to avoid the many pitfalls outlined in this chapter. Finally, the methodological framework adopted by the research reported in this thesis, the RCF (Mutimer et al, 2007) will be presented. The RCF has been developed as a method to address the identified problems in classifying the resilience status of participants in studies. The RCF provides a strong theoretical and sound statistical basis for measuring resilience within studies. It provides guidance in terms of defining adversity and adaptation. To date it has been utilised mainly in research with preschool aged children. In addition, it outlines a method for decision making and classification of participants that is justified on theoretical and clinical bases. Importantly the RCF allows for the identification of four groups of interest from within the broader sample. These are labelled: Resilient; Good Expected; Poor Expected, and Vulnerable groups. The process of the development of the RCF will be described in detail in this chapter. As it forms the basis for all studies in this thesis, an in-depth explanation of the RCF, its components and usage across a range of research applications will be provided.

3.1 Resilience Research with Specific At-risk Groups

Adversity or stressful life events are key constructs in resilience research. Given that most definitions of resilience perceive the construct as a response to adversity, it would seem that without a measure of family stress or stressful life
events, a study cannot purport to be measuring resilience, but instead be purely measuring child adaptation (Luthar, Cicchetti & Becker, 2000).

A review of the key resilience studies revealed that adversity within specific at-risk groups is viewed from one of two main perspectives: general or individually focused (see Tables 2 & 3). The general perspective looks at distal risks such as living in an at-risk population. The Werner and Smith study (1986) is a classic example of general or distal risk. In this study, a specific sample of 698 children from the wider population was studied due to their exposure to levels of risk associated with living in the Kauai community. Some of the risks associated with this community included poverty, substance abuse, and domestic violence (Werner & Smith, 1982). In this study, the risks were apparent within the child’s immediate environment, however not directly experienced by the child themselves, for example, parental unemployment. In this study, it is difficult to determine the level of exposure to the risk in individual environments. For example, in the Kauai study all participants were recruited because they lived in a geographical area. This area was known to have low socioeconomic status, high levels of unemployment, higher rates of substance abuse and domestic violence per capita. Children within the study may not necessarily experience the same types of risks or the same levels of risk. These types of risk or levels of adversity are not directly experienced by the child and the level of impact, while well researched, cannot be directly determined.

The second perspective focuses on specific adversities. These can be considered as proximal risk. These are most often directly experienced by the child
themselves or within the child’s immediate environment (see Tables 2 & 3 for specific examples). For example: children of low birth weight (Wyman et al., 1999), or children who were maltreated (Kinard, 1998). Participants are recruited due to their exposure to the adversity. Both the distal and proximal risk studies are useful in identifying protective factors and therefore possible interventions for these specific populations. However, these studies provide the most challenges from a methodological perspective. These challenges include the absence of control groups, the inability to compare findings across other similar at-risk groups/studies, determining functioning prior to the adverse event(s) and determining the nature of the experience of the adversity (Luthar & Zigler, 1991). Each of these challenges will be discussed in detail with examples from specific studies.

3.1.1 Absence of control/comparison groups. From a research perspective, few studies reviewed here included a control or comparison group. The inclusion of a comparison group would serve as an important function. It would enable a determination of the effect of the risk and would provide a baseline from which to make a judgment of the child’s resilience status, in relation to the risk by comparing to their matched unaffected peers. For example, Greff and colleagues (2004) conducted a study of resilience in children of divorced parents. In this study, children were classified as resilient or not based on a within-sample comparison on a range of competence measures. In the absence of a matched “comparison” group, it is difficult to determine these children’s actual level of competence or adaptation to the risks. In this study, a “resilient” child may simply be one who is doing better than a more affected peer. A comparison group would enable a
judgment about the adaptation when compared to matched unaffected peers.

While the difficulties in ‘matching’ a sample are apparent, the lack of a comparison group means that there is no comparative sample to judge the level of competence of those classified as resilient. Therefore, it is difficult to determine whether a resilient child in an at-risk sample is comparable to a competent child in the general population (Luthar & Zigler, 1991). It may well be that children who experience an adverse event are systematically different from their peers. In the divorce example, it may be that prior to the adverse event (divorce) the child's parents were under significant stress for a long period of time, and may have parented the child differently. Therefore, this child may have already shown significant differences in their mental health, emotional wellbeing, and social functioning. This will be further discussed in the next section.

3.1.2 Determining prior functioning. In resilience research designed around examining adaptation within specific adversity, a significant difficulty arises in determining a child’s functioning prior to the adverse event. Most participants are recruited because of their exposure to a specific event, for example divorce or maltreatment (see Tables 2 & 3). Kinard (1998) highlights an interesting point that presents a conundrum for resilience researchers. Without an assessment of a child’s prior functioning (that is, a pre-test measure) it becomes almost impossible to determine the effect of the adverse event. This is best illustrated through an example. Kinard found that maltreated children have greater cognitive deficits than non-maltreated children. If a study uses a measure of cognitive or academic competence, then these maltreated children may never be classified as resilient.
However, if data around prior functioning were available then maltreated children who maintain their level of academic competence, regardless of the level, while exposed to maltreatment, should in fact be considered resilient (Kinard). A similar issue arises with children with behaviour problems in specific adversity studies. In most studies, children with externalizing behaviour problems would not be considered resilient (Bradley et al., 1994; Cowen et al., 1990; Masten & Tellegen, 2012; Werner, 1995; Wyman et al., 1999). However, some of these externalizing behaviours may have developed due to the child’s adverse environment and some may have existed prior to the adversity. This can be seen as a timing issue, whereby a one-time-only measurement of competence may not provide researchers with a true picture of a child’s competence in relation to the adverse event (Kinard).

The importance of knowing prior functioning is now clearly apparent as it would allow researchers to confidently determine change that has occurred after an adverse event. This difficulty is best addressed by longitudinal studies where data are available for children across the long term to determine changes in competence from a baseline, considering the specific adversities to which individual children and families are directly exposed e.g. Werner & Smith, 1982.

3.1.3 Nature of the adverse events. The nature and effect of a specific adverse event is particularly difficult to determine for individual participants. Taking the example of divorce as an adverse event, the inherent nature of divorce is that two people in a relationship separate. However, in reality, that broad, general definition may be the only commonality in the experience of divorce as a stressor.
Many differences are apparent: the age of the child; the context of the separation; the level of parental conflict before and after separation; other possible confounding variables such as maternal or paternal mental illness, substance abuse, domestic violence; level and quality of continuing parental relationship; living circumstances and so on. In terms of assessing a child’s adaptation to this stressor (a key focus in resilience), the level of adaptation may depend on the individual nature of the divorce and other family variables.

These three issues (absence of a comparison group; lack of information regarding prior functioning, and nature of the adverse event) highlight some of the main challenges apparent in resilience studies with specific adversity groups and highlight the difficulties in comparing findings across similar at-risk groups. The nature of the risk, the way it is defined for measurement purposes, the actual individual experience of the risk, and the way child adaptation is determined makes generalisation almost impossible.

3.2 Resilience Research with General Populations.

Less prevalent in the resilience area are studies within the general population. This more general view of resilience allows for a broader examination of stress and adversity and child adaptation. Tschann and colleagues (1996) called for more research within the general population to provide insight into how child and family characteristics react and change with stress. Research that includes varied levels of stress enable researchers to look at the relationship between stress and adaptation. Tschann and colleagues termed this the ‘stress-adjustment link’ (p. 60). Garmezy and colleagues (1983) added to the understanding of this process
by proposing a model for understanding how particular characteristics behave within the stress-adjustment process. Garmezy, et al (1995) proposed that many child and family characteristics can perform a protective function or a vulnerability function. This is best illustrated with an example. Consider two children, Child A and Child B. Child A comes from a family with high levels of problem solving skills, and Child B, from a family with low levels of the same skill. If Child A maintains good adaptation in the face of high levels of stress and Child B, poor adaptation, then problem solving skills would be considered as performing a protective function. Conversely, if Child B has poor adaptation regardless of the level of stress, then poor family problem solving skills would be considered a vulnerability function (Tschann et al).

Tschann et al (1996) highlight the importance of looking within the general population to determine relationships amongst the variables related to resilience. The focus on general populations as opposed to specific at-risk groups is important as predicting the types of stress or adversity families are likely to experience is difficult, if not impossible. Specifically, the function of the variables under study presents the opportunity to inform other specific research with at-risk populations.

3.3 Defining and Measuring Adversity

Within these aforementioned studies, risk or adversity has been measured in a number of ways (see Tables 2 & 3). Studies of stressful life events have provided a strong foundation in the research on adversity and resilience (Compas, Howell, Phares, & Williams, 1989). Clear links have been found across most studies between stressful life events and negative child and family outcomes
(Luthar, 2006). The study of stressful life events poses a major issue for researchers in that a simple count of stressful events experienced by a child or family gives little information about the severity of the impact of the events (Luthar, 2006; Luthar, Cicchetti, & Becker). Early measures of stressful life events were limited in that they measured purely a presence or absence of an actual event. Many stressful life events, for example, divorce or separation can have positive or negative outcomes on families. While there are well documented cases where divorce has a strong negative impact on families, it may be the case that divorce or separation is ‘positive’ as it ends the day-to-day conflict or violence to which a child might be exposed. It is then important to consider the impact of these events along with an indication of the family’s experience of the severity of the event (Luthar, 2006). Later versions of stressful life events measures were more rigorous, including a measure of the direction of the effect. This allowed participants the opportunity to rate the effect of the life event (Henry et al., 2015; Lazarus & Folkman, 1984).

Masten and colleagues (1990) approached the measurement of risk as a continuous variable. Their study took scores from different risk scales and standardised them to form a composite measure of risk. This multifaceted view provided a more detailed or in-depth view of the stress and risk experienced by participants. Other researchers suggest that a composite measure allows for a more accurate reflection of real life risk profiles (Gutman, Sameroff, & Cole, 2003; Luthar, 2006).
Researchers have more recently suggested that daily hassles or more minor day-to-day stressful events may play a key role in understanding family stress (Compas et al., 1989). Daily hassles can be defined as conditions of daily living (i.e. roles and relationships) that can provide frustration, irritation, or distress (Lazarus & Folkman, 1984). Empirical evidence has shown that daily hassles are a stronger predictor of negative outcomes than stressful life events (Kanner, Coyne, Schaefer, & Lazarus, 1981; Lavee & Ben-Ari, 2008). Kanner and colleagues examined both stressful life events and daily hassles and uplifts in a sample of 245 adult participants and found the latter provided a better prediction of psychological symptoms. Luthar (2000a) goes further to recommend a composite measure of stress that includes both daily hassles and stressful life events. It seems that the literature suggests that a more accurate ‘picture’ of the levels of adversity experienced by families could be gained from a composite measure both of the levels and types of daily hassles experienced by the family and the severity of impact of a range of stressful life events.

3.4 Defining and Measuring Child Adaptation

In resilience research, positive child adaptation appears to be defined for research purposes by a number of criteria: an absence of psychopathology; achievement of age-appropriate developmental tasks, and subjective wellbeing (Wright & Masten, 2005). In some studies, these criteria have been examined individually and in other studies they have been considered in combination (Wright & Masten) (see Tables 2 & 3). Wright and Masten describe resilient children as
those who have ‘typically negotiated....developmental tasks with reasonable success, despite significant risks and adversities’ (p. 21).

Developmental theory suggests that good functioning in early developmental tasks promotes future positive developmental outcomes (Berk, 2012). Berk suggests that this process works via the early developmental tasks providing the building blocks for future adaptation and developmental achievement. A review of the relevant literature identifies a range of characteristics or determinants for different age groups (Bradley et al., 1994; Kaufman, Cook, Arny, Jones, & Pittinsky, 1994; Luthar & Zigler, 1991; Tschann et al., 1996; Werner, 2004). In line with developmental theory, these determinants, when grouped according to developmental stages, show a ‘building block’ approach as each stage includes those determinants from previous stages and becomes more multi-dimensional as the child develops (see Figure 1).
Figure 1. Determinants of positive child adaptation by developmental stage

This figure illustrates a summary of relevant research findings across many of the more prominent studies (Luthar, 2006; Luthar et al., 2000a; Luthar & Zigler, 1991; Masten & Tellegen, 2012; Sesma et al., 2006; Werner, 2006; Yates & Masten, 2004). It provides a summary of the key developmental outcomes suggestive of competence at each developmental stage. As a child ages their competence becomes more multi-faceted as early development tasks continue to
remain relevant to each future stage. For example, sociability can be defined as a child’s ability to engage caregivers in positive interactions to assist in getting their needs met (Berk, 2012). Sociability has been found to be a key characteristic of resilient infants (Berk). While this is a key developmental outcome in infancy, it is also thought to be an important building block for social competence as the child ages.

In early resilience research, resilience was initially defined operationally as an absence of pathology (O’Dougherty & Masten, 2006). As described in Chapter 2, this fitted with the medical-disease model at a time when much research was based on a deficit model or problem approach. As research in the area developed, the focus shifted from the deficit model to an examination of positive aspects of development (Naglieri & Le Buffe, 2006). Competence or positive adaptation can be defined as achievement of developmentally appropriate milestones or skills (Luthar & Zigler, 1991). Luther’s definition raises some important considerations in developing an operational definition of adaptation for measurement purposes. In measuring positive adaptations, it is important to consider the presence of positive developmental aspects, in addition to the absence of problem behaviour or negative development outcomes. An important distinction needs to be made; a child can have an absence of problem behaviours and still not be doing well in terms of achieving developmental milestones. In research, this translates to both the presence of positive adaptation as well the absence of negative adaptation. A child cannot accurately be characterised as resilient with only one condition being met (Naglieri & Le Buffe, 2006). For example, when considering behavioural
competence, there would need to be the presence of positive aspects of behaviour in young children (e.g. initiative) in addition to the absence of negative behaviour problems such as aggression.

In reviewing the main determinants of positive adaptation in young children, it appears that there are three main constructs: behavioural, social, and cognitive competence (Bradley et al., 1994; Kaufman et al., 1994; Luthar & Zigler, 1991; Tschann et al., 1996). In pre-school aged children, cognitive competence is perhaps the most difficult to determine. First, a distinction needs to be made between cognitive ability and academic competence. A measurement of cognitive ability may simply provide a reflection of genetic capabilities rather than a measure of the child’s current level of achievement (Kinard, 1998). Academic competence provides a more accurate measure of a child’s performance in the area of cognitive competence. However, in a preschool aged child this is probably the most difficult to determine, because they are not yet likely to have measurable literacy or numeracy skills. Positive developmental outcomes in preschool aged children may best be defined for measurement purposes in terms of behavioural and social competence.

In the current literature, positive adaptation has been defined and measured by a broad range of variables (Masten & Gewirtz, 2006; Naglieri & Le Buffe, 2006). Many different measurement tools have been used (see Tables 2 & 3). Most researchers justify their use of a particular measurement tool or combination of tools on theoretical grounds. In many instances researchers have selected standardised tools such as the Child Behaviour Checklist (CBCL) (Achenbach,
1991) to measure aspects of temperament or levels of problem behaviour, or both. Clear links have been demonstrated between this instrument and the constructs it purports to measure (Achenbach). The CBCL clearly identifies problem behaviours and provides information on the clinical level of these behaviours. The difficulty arises in locating measures that assess the presence of positive aspects of development and behaviour. The very nature of the concept of resilience implies an emphasis on positive attributes. The Devereux Early Childhood Assessment – Clinical Form (DECA-C) was developed to be used in intervention and treatment of children (Le Buffe & Naglieri, 2002). The DECA-C provides two main subscales: Total Protective Factors and Total Behavioural Concerns. This measure is accompanied by norms and clinical cut-off scores. It provides a useful role in resilience research as it enables statistical decisions to be made on both positive and negative aspects of adaptation. In addition, the clinical, normed information provides the opportunity to verify the validity of the statistical decision-making; in other words, both norm-reference and criterion-referenced assessment can be considered. This should ensure that participants are classified accurately in terms of adaptation. Without clinical data, there is a risk that subjects may be labelled as ‘good adapters’ when in fact they may be only doing well in comparison within their sample.

3.5 Decision Making in Resilience Classification

There is much debate as to decision making processes in resilience research (Luthar, 2006; Masten 2007). A key aspect of resilience research is the process of making a judgment about a participant’s adaptation in the face of
adversity. This decision-making process by researchers within studies is a key focus of this thesis. Differences in decision making processes found in studies provide perhaps the greatest variability amongst studies (see Tables 2 & 3). Most studies have identified two main groups in their samples: resilient and non-resilient (or vulnerable). However, the methods for identifying these two groups vary immensely. There appears to be two main methods for making decisions about classifying the resilience status of participants. These methods relate to statistical methods, such as median splits or percentiles, and/or clinical cut-off scores in standardised measures (Kinard, 1998).

Grotberg’s (1995) International Child Resilience (IRP) study used percentiles to classify participants. In this study, a range of measures was used to determine resilience, including a parental self-report of the child’s resilience as well as standardised measures. In classifying participants, the top 33% were considered ‘resilient’, the middle third ‘somewhat resilient’, and the bottom third ‘not resilient’. Using this method all participants within the sample are classified. The difficulty occurs in determining the differences between the 33rd percentile and the 34th percentile, whereby the former is considered ‘not resilient’ and the later ‘somewhat resilient’. If these groups are used for analysis with different variables, results would need to be interpreted with caution. This highlights the need for a theoretical basis to decision making rather than an arbitrary process. An arbitrary within-sample process as described in the IRP study, results in a child’s resilience status varying according to the characteristics of the particular sample under study. This could mean that a child classified as “resilient” in one
sample could be classified as “vulnerable” in another. Their status is dependent on the adaptation levels of their sample peers rather than on their own adaptation to the risk experienced. This example highlights many of the methodological issues described in the preceding sections. Furthermore, this emphasises the difficulty in comparing findings across resilience studies when arbitrary decision making processes are utilised. If researchers cannot use a consistent approach to defining groups, then a child in one sample may be classified very differently to an identical child in another study.

Some argue that decisions about resilience and non-resilience status should be made statistically rather than clinically (Von Eye & Schuster, 2000), While others argue for the use of clinical cut-off scores (Kinard, 1998). Bradley et al (1994) used clinical cut-off scores on measures such as the CBCL to determine resilience or poor coping. In this study, children who were found to be in the clinical range for externalizing behaviour were considered as ‘poor copers’. Those children below the clinical range were considered resilient.

Masten (2007; 2003) argues that identification of a subset of the population allows for the most robust inferences to be made. It would make sense to assume that some participants within a general sample are not experiencing either high or low levels of adversity, or experiencing developmental outcomes outside the typical range. Masten also argues that by having a simple dual classification system - resilient or not, we miss out on the opportunity to learn about other vulnerable subsets within the study population, for example, those children doing poorly in the face of very little stress or adversity.
Having identified the key methodological issues in resilience research, the author developed the RCF in an attempt to address these issues. This framework and its rationale are described in Chapter 4.
The RCF was initially conceptualised in 2004. It was developed by the author in an attempt to address the multitude of methodological issues present in resilience research. The aim in developing the RCF was to devise a statistically sound and empirically based model to classify individuals in resilience research. At the time of development, a number of notable researchers were detailing the many methodological issues and the impact on the fund of research. These issues were discussed in detail in the previous chapter (Chapter 3), however can be summarized as relating to both the definition and measurement of the key areas of adaptation and adversity, and subsequently the decision-making process in resilience classification. A review of research suggested vast differences in the way resilience was defined, the way it was measured and the classification process (see Table 2 and Table 3). The review suggested that research could be categorized into two main categories, one longitudinal studies that classified participants retrospectively (see Table 3), and two, studies that examined correlations between aspects of resilience/resilience status and a range of factors (Table 2). Despite the dual classifications, the review highlighted the differences in all aspects of research: the measures; the population under study; the determinants of resilience and the classification methods. A detailed discussion of the differences in classification methods can be found in the previous chapter. These differences meant that comparison and contrast across resilience studies was almost impossible. Luthar (2006) and Masten (2007), two key researchers in the resilience field have called for some agreed consistency in measurement and
methodology in resilience research. Masten (2003) has argued for some time that research should focus on a range of groups not just those who are classified as resilient. Her model and that of the RCF identifies groups on the basis of adaptation and stress levels (Masten, 2007), which allowed comparison of the different groups across a range of predictor variables. In addition, Masten argued for a rigorous classification system rather than a simple ‘split’ of the sample into dichotomous categories such as ‘resilient’ and ‘non-resilient.

The RCF (Mutimer et al, 2006) initial project aim was to develop and then evaluate a novel method to operationalize resilience, providing a statistically sound method for classifying individuals as to their resilience status. The RCF enabled the statistical identification of four sub groups: Resilient (high stress, good adaptation); Good Expected (low stress, good adaptation); Poor Expected (high stress, poor adaptation); and Vulnerable (low stress, poor adaptation) (see Figure 2) (Mutimer et al.). A key foundation in the development of the RCF was the inclusion of three main areas in data collection that underpin the classification process. These have been identified as the presence of positive aspects of adaptation; as well as the absence of problem behaviours or negative aspects of development and includes a measurement of adversity and stress. The RCF is based on the notion that resilience includes the presence of positive adaptation as well as the absence of negative adaptation. Therefore, the adaptation construct consisted of two components, one measuring the presence of positive constructs and the second measuring the absence of negative constructs, in the context of stress.
Figure 2. The Resilience Classification Framework

4.1 Preliminary Considerations

In the initial phase of the RCF, separate measures were used to measure positive aspects of development, and problem behaviour. Initially, it was hoped that this would result in the two separate aspects being measured independently, with the rationale to avoid the presence of one reflecting the absence of the other, thereby measuring the same construct in positive or negative means. A review found few instruments measuring aspects of positive behavior in children. One such measure was the Social Skills Rating System (SSRS) (Gresham & Elliott, 1990). The SSRS was used in the initial phase as a measure of social competence (positive adaptation) (Mutimer et al, 2006). The Child Behaviour Check List (Achenbach, 1991) was used to measure problem behavior. In this phase, raw data from these two measures were examined. The total Problem score from the CBCL was converted to a t-score. The total score from the SSRS was also converted to a t-score. The t-scores from the CBCL were corrected using a reciprocal transformation, resulting in high scores reflecting an absence of problem behaviours. Scores from both measures were then transformed to z-scores. These
were then examined using quartile splits. The top 25% and bottom 25% of both are labelled (High & Low). To receive a classification of ‘Good adaptation’, participants must be labelled ‘high positive’ and ‘low negative’ (Mutimer et al). Exposure to stress was treated similarly.

In line with current thinking around stress measures, the RCF used a composite measure of stress exposure that includes a measure of daily hassles and a measure of stressful life events (Davis, Luecken, & Lemery-Chalfant, 2009; Fletcher & Sarkar, 2013; Mutimer et al., 2006). In the initial phase and all subsequent phases, the top 25% and bottom 25% of scores from this composite measure were assigned labels of ‘High Stress’ and ‘Low Stress’. Participants were then classified according to their particular combination of stress and adaptation (see Figure 2). This provided four separate groups through statistical analysis. Two of the groups classified had not previously been identified in resilience research; the ‘Good Expected’ and Vulnerable’ groups. The Good Expected group provided an interesting ‘baseline’ for those participants yet to experience any significant levels of stress. This previously unstudied group provides an interesting study across a longitudinal investigation to add to the literature on the role of adaptation in stress, and ultimately resilience status. The first phase of the RCF test development identified a main issue with the classification system: that classification through statistical analysis (quartile splits) meant that classification was only relevant to the sample under study. In addition, despite two separate measures being utilised, the correlation in the initial phase was higher than expected ($r = -.67$) (Mutimer, et al, 2006). Data reported by Gresham and Elliot
(1990), suggested a significant but moderate correlation between the two measures should be expected \( r = -0.34 \), (Gresham & Elliott, 1990). The stronger correlation found in the initial study was consistent with findings from other studies whereby the correlation between the two measures was found to be between -.54 and -.68. It could be argued that such a strong correlation could be interpreted as the measures accessing constructs that could in fact, be providing similar information in either a positive or negative form. Research suggested that a strong correlation (above -/+ .6) could make one measure redundant (Kutner, Nachtsheim, & Neter, 2003; Miles & Shelvin, 2001). This led to further review of research to determine if another more suitable measure of positive aspects of behavior and development might be found.

Further investigation returned the DECA-C (Le Buffe & Naglieri, 2002), as a composite measure. This measure was initially developed after a stringent review of resilience literature (Le Buffe & Naglieri). The DECA-C contains two subscales relating to protective factors and another relating to emotional and behaviour concerns. Initial development and subsequent usage has shown the correlation between the protective factors subscale and the problem behaviours subscale to be significant, ranging between \( r = -0.34 \), in the validation study to -.38 in other studies (Le Buffe & Naglieri). Furthermore, the measure underwent a large-scale standardization study (Le Buffe & Naglieri) These sub-scales have proved useful as they contain normed information.

In the next phase, modifications were made to the RCF based on the highlighted limitations in the initial phase. The DECA-C was used as the measure
of adaptation using both subscales: Protective Behaviours and Behavioural Concerns as the measures of positive and negative aspects of adaptation respectively. The t-scores from both subscales were again examined using quartile splits, with the top and bottom 25% labelled as high low positive behaviours, and high/low problem behaviours, dependent on the respective scale. This meant that some participants gained a classification in both aspects of adaptation. Interestingly in this phase, some participants gained a classification in only one aspect of adaptation. In addition, t-scores were examined against the normed data provided by the measure. This enabled the researcher to clinically check the validity of their statistical, quartile split judgments on adaptation. Further this enabled clarity in the classification of ‘resilient’ as a child who is doing well, not just in comparison with the population under study but also against broader population norms. All scores in the quartile splits were deemed in the clinical range, suggesting the ability to classify ‘good’ or ‘poor’ adaptation, for example against a broader population in addition to the sample under study. Participants with good or poor positive or problem behavior t-scores (as judged against the normed data), were also classified. Participants were then classified to an RCF group if the following conditions were met: Good Adaptation (High Positive and Low Problem Behaviour); Poor Adaptation (Low Positive/ High Problem behavior). Those participants with a High or Low Stress classification in addition to an Adaptation classification were allocated to their appropriate group (see Figure 2). Initial data screening revealed a moderate, negative correlation between the Protective Behaviours subscale and the Behavioural Concerns subscale ($r = -0.34$). This is
consistent with the correlation reported in the DECA-C standardization sample (LeBuffe & Naglieri, 2002). This suggests that while the measures are significantly correlated, the correlation is moderate, suggesting that the measures are measuring related but different concepts. It is this model of the RCF that has been utilised across all studies in this thesis.

The final component in the development of the RCF was to derive a formula to aid in the research development phrase. The author developed a decision making process that would allow researchers to follow a consistent model in relation to the development of future resilience (see Figure 3).

Figure 3. Resilience Decision Making Model

The first step in the decision-making process, outlined above is to define resilience in a way that allows it to be measured for research purposes. The definition needs to include clear definitions of adversity and adaptation. Key researchers agree, that it is vital that any definition of resilience incorporate these
two fundamental aspects 1) a judgment of competence and 2) exposure to risk (Infurna & Luthar, 2016; Masten, 1994; Masten & Coatsworth, 1998). Competence or positive adaptation should be defined as achievement of developmentally appropriate milestones or skills, as well as an absence or minimal level of negative behaviours and functioning (Luthar & Zigler, 1991). Adversity will need to be defined according to the specific risk factor of interest in each research study. Therefore, researchers will need to ensure their definition of Resilience is specific to the population in question.

The second step is to demonstrate clear theoretical links to the elements of the definition relevant to the population under investigation (see Figure 3). This involves understanding the nature of adversity and how this will be measured using valid and reliable assessment tools. Also, the functioning of the population under question needs to be clearly linked to both theoretical and clinical application. Depending on the population, the type of adaptive functioning and adversity that are measured should differ. Researchers should be cognizant at this stage that to be considered a study of resilience, both these aspects need to be examined (Luthar et al, 2000). As identified in the earlier literature review, the theoretical links made and resulting definitions used should be based on two key elements:

- an understanding of the nature of the adversity experienced by the population under study, and
- a theoretical link between the age and developmental stage of the population and the way adaptation is measured, considering the type of adversity experienced.
As such, researchers may use Figure 1, which summarises the main developmental outcomes suggestive of competence at each developmental stage based on past research (Luthar, 2006; Luthar et al., 2000a; Luthar & Zigler, 1991; Masten & Tellegen, 2012; Sesma et al., 2006; Werner, 2006; Yates & Masten, 2004). As a child ages their competence becomes more multi-faceted as early developmental tasks continue to remain relevant to each future stage, therefore measurement may involve more diverse areas as the age of the population increases. This should then be followed by the selection of instruments that adequately measure the aforementioned variables, with a focus on measures that are reliable and valid and lend themselves to statistical analysis. Often this will involve multiple measures in order to comprehensively cover the aspects of adversity and adaptation relevant to the research in question.

Finally, the resilience status of the participants needs to be determined through sound statistical practices that allow for clear cutoff between groups and for meaningful comparisons to be made. Previous research has often relied on a dual classification system (resilient, not resilient), however Masten (2001) argues that by using such a classification process, an opportunity is missed to learn about other vulnerable subsets within the study population, for example, those children doing poorly in the face of very little stress or adversity. Therefore, the RCF provides the classification structure to allow a clear identification of four groups of interest within the resilience research. The RCF and the Decision-Making model identified above allows researchers to utilise a consistent approach to research
and allows for meaningful comparisons and statistically sound processes to be followed across studies.

Since its initial inception, the RCF has been utilised across a range of studies, particularly those including preschool aged children (Mutimer et al., 2006, 2007). The utility of the RCF has grown in more recent times, with it being applied across a range of studies with a variety of different populations under study, including adults, adolescents, college students, and chronically ill children (Johnson, 2011; Tollit et al., 2015; Wade & Reece, 2006). It has also been used in resilience research with different cultural groups (Katooa, 2014; Thomas & Reece, 2006).
Chapter Five - Overview of the Current Research

Research in the resilience area has been prolific over the past three decades. Now that more is known about the construct of resilience, a number of key researchers have identified issues that need to be addressed in the next wave of research in this area (Ayoub et al., 2014; Infurna & Luthar, 2016; Kinard, 1998; Luthar, 2006; Luthar et al., 2000a; Masten, 2011; Masten & Powell, 2003; Southwick et al., 2014). The preceding literature review (Chapter 2) highlighted the common findings of previous resilience research. Many of these findings relate to factors within children or families that are relatively stable. Few studies have focused on factors within children, their families, or their broader environment that are amenable to change. The second section of the preceding review (Chapter 3) looked at the multitude of methodological issues apparent in the design and study of resilience. The broad aims of this study are not to replicate existing research but to make a significant contribution to the body of research by addressing some of these identified gaps in resilience research to date. These relate to three main areas: addressing methodological issues within the current literature; moving from examining stable and fixed variables to focus on mechanisms or processes within families that are open to change, in particular focusing on aspects of parenting behaviours and finally, a focus on preschool children, a population often neglected in resilience research.

The RCF provides a possible solution to the identified methodological issues in resilience research. This study attempted to use the RCF to investigate some key constructs that address identified gaps in this literature. Specifically, the
study was conducted in three parts with two large and separate samples of preschool aged children and their parents. This population has rarely been studied concurrently as much of the research involving preschool children has been carried out retrospectively.

The RCF allows for the identification of four groups of interest from the larger sample. As highlighted in the previous chapter, many studies have identified two main groups (resilient and non-resilient). These studies often miss the opportunity to study two other interesting groups, labelled here as the ‘Good Expected’ and the ‘Vulnerable’ groups. These little studied groups represent children who are experiencing very little family stress, however parents of these children are reporting poor adaptation (low positive behaviours and high negative behaviours) for their children and conversely good adaptation in light of low stress.

A significant focus of this research was to examine variables within families that are amenable to change. Specifically, the project looks at parenting practices and family functioning in relation to child resilience status. Significant findings in these areas provide opportunities for clinical intervention to assist children to achieve positive outcomes. This thesis will explore the clinical implications and recommendations for intervention in the final chapter.

The objectives of the current study are to:

1). use the RCF to identify four specific groups of interest from within the larger sample. The four groups: Resilient (high stress, good adaptation); Good Expected (low stress, good adaptation); Poor Expected (high stress, poor adaptation) and Vulnerable (low stress, poor adaptation) will
be examined across a range of variables that have attracted minimal attention in the literature;

2). to examine the stability of the RCF group classification across time,

3). to examine how school adjustment differs amongst the four identified groups, and

4). to examine differences between the four groups on a range of parenting and family variables.

Based on these objectives the following hypotheses were made:

1). there will be a significant positive correlation between stress exposure levels at Time 1 and Time 2 (12 months apart), and between adaptation levels at Time 1 and Time 2.

2). The RCF will provide a relatively stable classification of a subset of participants across time. The members of each of the four groups will remain stable from Time 1 to Time 2, with the hypothesised exception of the Vulnerable group. This group represents a group doing poorly in the face of minimal stress exposure. It is anticipated that some members of this group will change if there is an onset of stress between Time 1 to Time 2.

3). There will be a significant difference between the Resilient group and both the Poor Expected and Vulnerable groups on school readiness, school adjustment levels, and positive and negative behaviours. It is expected that the Resilient group will show high levels of school readiness and school adjustment levels. It is expected that their teachers will rate them as having higher levels of
positive behaviours and less problem behaviours than their Poor Expected and Vulnerable peers.

4). There will be a significant difference between the Resilient group and both the Poor Expected and Vulnerable groups on a range of parenting and family variables including:

i. Better family functioning
ii. Higher levels of positive parenting and involvement
iii. Lower levels of harsh parenting aspects including the use of corporal punishment,
iv. Greater parenting alliance between both parents
v. Higher levels of satisfaction with the amount and types of social support
vi. Higher levels of parenting confidence and satisfaction.

The following three chapters present each of the three studies that are the basis of this thesis. Chapter six introduces the first study which examines the stability of resilience classification over time.
Aside from the larger longitudinal studies previously mentioned, little is known about how resilience status behaves over time, particularly in relation to stability and change, especially in pre-school children. This study examines the changes across time in terms of child adaptation and family stress in preschool children and their family context across a twelve-month period. This chapter includes a rationale for the current study. The rationale highlights the important contribution of this study to the body of the literature and provides a justification for its inclusion. The method of the study is then described, including participant recruitment and detailed information about the measures used. The results are presented describing the findings from this study. The chapter concludes with a discussion section, examining the findings of this study and linking them to relevant literature.

6.1 Rationale

This study was designed to address a number of gaps in the current resilience literature. It examines resilience within a general population as opposed to a specific at-risk population. The sample is drawn from a general kindergarten population in Victoria, Australia. As noted in Chapter 2’s review of previous literature, many studies in this area have focused on at-risk populations. Little is known of resilience in the general population, and how stress and resilience interact within a non-clinical sample. In the past, research focused on an absence of negative behavioural, emotional, and social problems as indicating resilience
(O’Dougherty & Masten, 2006), however it is now recognized that resilience involves the inclusion of positive functioning.

Resilience research has often been conducted retrospectively, with judgments made based on reported past status. Asking adults to recollect information from their childhood is problematic as there can be historical bias, recall issues, and issues surrounding current emotional state of memory recall (Maughan & Rutter, 1997).

This study examines resilience in young children. Much previous research has alluded to the early childhood period as a key marker for the development of resilience (see Chapters 2 and 3 for review). Longitudinal studies are limited in the research on resilience and those studies that have been conducted (e.g. Werner & Smith, 1982) suggest that resilient adults possessed several characteristics as children that could be used as a predictor of later resilience. Of the existing research, many previous studies have examined resilience in young children from a retrospective position, deciding on resilience at later points in a child’s development and then looking back to factors present in their early childhood as precursors to the latter resilience status (Chi et al., 2016; Healey & Fisher, 2011; Werner & Smith, 1982). It would be more methodologically sound to be able to identify resilience status at the time of interest, through directly measuring a child’s functioning and then examining how this changes over time (Masten, 2011; Masten & Powell, 2003). This study looks at preschool children prospectively, addressing a gap in the research to date and allowing the researcher to be able to more
sensitively measure when change occurs in this group of children, by having multiple data points.

As previously mentioned, children are exposed to family and environment stressors that may require resilience to adapt and function positively. Measuring a family’s stress over time, while also measuring child resilience provides information about how child adaptation occurs, and what factors are protective against these stressors. Researchers have suggested that in addition to stressful life events, daily hassles or more minor day-to-day stressful events may play a part in understanding family stress (Compas et al., 1989; Lazarus & Folkman, 1984). Research studies have found that daily hassles are a stronger predictor of negative outcomes than stressful life events (Kanner et al., 1981; Lavee & Ben-Ari, 2008). Measuring resilience in the face of both stressful life events and daily hassles provides a more complete picture of family stress.

As already mentioned, this study also looks at changes in resilience status over time across the child’s preschool year. Little is known about how resilience status changes over time, as previous research has generally used a retrospective research design that does not track change, but rather attempts to identify resilience status at a specified time. Specifically, this study will look at resilience classification changes over a twelve-month period. Of particular interest is the stability of the identified variables for preschool-aged children. Changes to a child’s resilience classification will allow exploration of the factors that contribute to this change. From a research perspective, this will add to the knowledge of the chosen measures and constructs in terms of their validity over time. In order to do this, a
research framework that allows for classification of resilience status is needed. The RCF will be used for this purpose.

This study makes a significant contribution to the existing literature through the testing of the RCF (see Chapters 2 and 4 for detailed explanation) for assessing resilience. Many key researchers in the resilience area have noted the need for a more robust and consistent method of measuring resilience. The RCF provides for a theoretically driven and statistically sound method for operationalising resilience. In particular, it enables decisions to be made regarding a child’s resilience status, using more than either a resilient/not resilient categorisation. Little is known about how resilience classification changes over time, and whether children might move from one RCF category to another.

Prospective research will provide information about whether resilient children can be identified at an early age. Perhaps more importantly, if vulnerable children can be identified at an early age, then this provides a platform for possible prevention or early intervention.

The aim of this study, is to use the RCF to examine key variables in child resilience over a 12 month period. By using the RCF, four subgroups of children (Resilient, Good Expected, Poor Expected, and Vulnerable) will be identified from the larger population. These four subgroups can then be studied simultaneously, and over time to determine whether there is stability in resilience status.

In addition, this study aims to examine key resilience indicators over a period of twelve months, in a group of preschool children moving into school. Such
a psychosocial change would be likely to be a stressor for some children and families, and its relationship with resilience status will be examined.

The anticipated results are those indicated in the previous general rationale section and are repeated here:

Based on these objectives the following hypotheses were made:

1). there will be a significant positive correlation between stress exposure levels and adaptation levels at Time 1 and Time 2.

2). The RCF will provide a relatively stable classification of a subset of participants across time. The members of each of the four groups will remain stable from Time 1 to Time 2, with the hypothesised exception of the Vulnerable group. This group represents a group doing poorly in the face of current minimal stress exposure.

3). It is anticipated that some members of this sample may change from Time 1 to Time 2, particularly in relation to the Vulnerable group.

4). There will be a significant difference between the Resilient group and both the Poor Expected and Vulnerable groups on school readiness, school adjustment levels, and positive and negative behaviours. It is expected that the Resilient group will show high levels of school readiness and school adjustment levels. It is expected that their teachers will rate them as having higher levels of positive behaviours and less problem behaviours than their Poor Expected or Vulnerable peers.
5). There will be a significant difference between the Resilient group and both the Poor Expected and Vulnerable groups on a range of parenting and family variables including:

i. Better family functioning
ii. Higher levels of positive parenting and involvement
iii. Lower levels of harsh parenting aspects including the use of corporal punishment,
iv. Greater parenting alliance between both parents
v. higher levels of satisfaction with the amount and types of social support
vi. higher levels of parenting confidence and satisfaction.

6.2 Method

6.2.1 Procedure. Kindergartens from two local government areas within the Northern region of Melbourne (N = 42) were invited to assist in the distribution of study packages to parents of children attending their centres. Initially, a letter was sent to the teachers and to the committees of management of each pre-school briefly explaining the study. From this point, 24 kindergartens expressed interest and made contact via reply-paid post.

1004 questionnaire packages were distributed to parents at the 24 centres. The questionnaire packages included a questionnaire booklet, a consent form and a reply-paid envelope for return. Consent was implied through the return of the booklet with the completed consent form. Kindergarten teachers were left with a reminder notice and asked to place this next to the kindergarten’s sign-in book two
weeks after handing out the packages. Parents are required to sign their children in and out each day at kindergarten and it was felt that this would provide the clearest reminder. A total of 280 completed questionnaire booklets were returned. Of the returned packages, all participants provided their consent and relevant contact details.

Twelve months later a second questionnaire booklet was sent to the participants via the contact address they had supplied. Initially, 181 Time 2 booklets were returned within the first three weeks. Ten packages were returned unopened by Australia Post as ‘return to sender’ or ‘not deliverable at this address’. One month later a reminder letter was sent to families seeking their support in completing the second booklet. An additional 67 booklets were received within 6 weeks of the initial mailing date. A follow up additional copy of the booklet was sent to the remaining participants yet to complete at this time. A further 11 booklets were received within ten weeks of the initial mail out. This resulted in a response rate of 92.8% of the original participants (N = 279) who completed the questionnaire package at Time 2 (N = 259).

6.2.2 Participants. 279 families returned their questionnaire booklet. Participant children were evenly divided between girls and boys, and were aged between 2 years, 4 months and 6 years, 6 months (M = 5 years, 3 mths, SD=5.9mths). 90% of families were two-parent families. The majority of respondents were mothers (more than 95%).

6.2.3 Materials. Each participant completed a questionnaire booklet that included questions relating to demographic information and a measure of child
behaviour and two stress measures. These will be outlined in detail below.

6.2.3.1 Child Adaptation measures. Child adaptation was measured by DECA-C. Section 1 of the questionnaire booklet consisted of the 61 items from the Deveraux Early Childhood Assessment – Clinical (DECA-C) (LeBuffe & Naglieri, 1999). The DECA-C is a standardized norm-referenced measure, relating to both social-emotional resilience and social-emotional and behavioural concerns in preschool children, 2 – 5 years. The measure consists of two scales: the Protective Factors scale and the Behavioural Concerns scale. The Protective Factors scale measures positive child behaviours and consists of three subscales (27 items): Initiative, Self-Control and Attachment. Initiative items are thought to assess the child’s ability to independently meet his/her needs, with items such as ‘do things for him/herself’ or ‘keep trying when unsuccessful’ (Le Buffe & Naglieri, 2002). Self-Control items are designed to measure the child’s ability to experience emotions and express them in age appropriate and socially acceptable ways, with items such as ‘control his/her anger’ or ‘cooperate with others’. The Attachment subscale assesses the child’s relationship with significant others (e.g. parent, care giver etc.), with items such as ‘show affection to familiar adults’ or ‘seek help when necessary’. Respondents are asked to rate the frequency of the child’s behaviour for each item over the past four weeks on a Likert type scale consisting of ‘Never’, ‘Rarely’, ‘Occasionally’, ‘Frequently’ and ‘Very Frequently’ (Le Buffe & Naglieri, 2002). The Behavioural Concerns scale consists of four subscales (37 items): Attention Problems; Aggression; Withdrawal/Depression and Emotional Control Problems. Attention Problems items are designed to measure a
child’s ability to focus on a task, with items such as ‘get easily distracted’. Aggression items measure the frequency of aggressive acts directed at others, with items such as ‘fight with other children’. The DECA-C demonstrates good internal reliability with Cronbach Alphas at .91 for Total Protective factors and .71 for Behavioural concerns. A significant negative correlation was reported at .34 between the two subscales (Le Buffe & Naglieri, 2002).

**6.2.3.2 Stress measures.** Section 2 & 3 of the booklet consisted of stress measures. Two instruments were used to provide a measure of family stress – the Daily Hassle Scale – Revised (DHS-R), (Holm & Holroyd, 1992), and the Life Experiences Survey (LES), (Sarason, Johnson, & Siegel, 1978). The DHS-R is a 63-item self-report inventory designed to measure everyday sources of stress and annoyance over a one-month period. It provides a measure of occurrence and severity of stress and annoyance. The scale is reported to have good internal consistency, with a Cronbach Alpha of .80 (Holm & Holroyd, 1992). The LES is designed to measure recent stressful life events. It contains two subsections. Respondents firstly are required to indicate whether they experienced an event from the list in the past 12 months. For each experienced event, they need to provide an appraisal of the event. The appraisal is registered via a Likert scale: The LES is reported to have good construct validity and internal consistency, with an alpha of .78 (Sarason, Johnson & Siegel).

**6.2.4 Data Analysis.** All responses were collected in one dataset and imported into the SPSS Statistics software for Windows, version 16.0 for all analyses conducted in this study. Descriptive statistics are used to present the
general demographic structure of the sample including child gender, age and parental respondent characteristics. All data were screened for normality, data entry errors and distribution. Cases with missing data were excluded from analysis. Transformations were completed for variables with substantial skew.

In order to address the research question of change over time, the mean scores of the DECA subscales were calculated. Then paired samples t-tests were conducted to determine any differences in scores between Time 1 and Time 2. Assumptions were checked and showed to withhold. Cohen’s d was used to calculate effect size.

Correlational analysis was conducted to determine the relationship amongst variables, and particularly to explore the unique contribution of positive aspects of development and behavior concerns in relation to child adaptation.

Resilience was operationalized using the RCF. This process has been outlined in depth in Chapter 4 and detailed specifically in relation to this study in the following Results section: 6.3.5. Stability of the RCF was examined using percentage change in classification status, with each group (Resilient, Good Expected, Poor Expected and Vulnerable) analysed separately in relation to stability and change.

6.3 Results

This section outlines the data analysis and results for the first study of this thesis. Resilience was then operationalized using the statistical and standardised information from the above analysis and then the RCF process was conducted as per the procedure outlined in Chapter 4.
6.3.1 Initial data screening and exploration. All continuous variables were screened using exploratory data analyses to assess for normality, data entry errors, and notable distributions of results. Both the Daily Hassles Scale (DHS) and the Stressful Life Events (SLE) – effects scores exhibited substantial skew. After attempting several transformations, a Log10 transformation led to the best result for the DHS scores and a square root transformation performed best for the SLE effects scores. Descriptive statistics for all main variables under investigation have been summarised (see Table 4). These will be discussed in the section 6.3.3.

6.3.2 Sample demographic characteristics. A response rate of 28% was achieved (N = 279). Target children were between 28 and 78 months of age (M = 63.25 months, SD = 5.96). An almost even numbers of boys (49.4%) and girls (50.5%) were represented in the sample. The majority of children lived in two parent families (married & de facto combined – 90.1%). In relation to family make-up, 42.7% were the youngest child in the family and 38.7% the oldest. The majority of children were from two-child (60.9%) or three child families (27.4%), with only 9.1% being only children.

Respondent mothers had all completed some secondary schooling; with 17.6% having completed a diploma, 21.2% a degree, and 23.8% had gained a postgraduate qualification. The mean level of maternal education was 14.4yrs (SD = 2.39). More than half were in part time employment (59.1%), with 40.8% not working outside the home, and a small percentage working full time.
Table 4. Mean scores on adaptation and stress variables at Time 1 and Time 2

<table>
<thead>
<tr>
<th>Variables</th>
<th>Time 1 (n = 279)</th>
<th>Time 2 (n = 259)</th>
<th>Paired sample t-test statistics (df=257)</th>
<th>Mean difference (CI, 95%)</th>
<th>Effect size (Mean difference)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>t</td>
</tr>
<tr>
<td>DECA subscales</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initiative</td>
<td>31.59</td>
<td>5.05</td>
<td>32.26</td>
<td>4.90</td>
<td>-2.59</td>
</tr>
<tr>
<td>Self-Control</td>
<td>21.22</td>
<td>3.73</td>
<td>21.68</td>
<td>3.9</td>
<td>-1.5</td>
</tr>
<tr>
<td>Attachment</td>
<td>27.44</td>
<td>3.24</td>
<td>27.35</td>
<td>3.04</td>
<td>1.19</td>
</tr>
<tr>
<td>Total Protective Factors</td>
<td>80.25</td>
<td>9.93</td>
<td>81.41</td>
<td>10.14</td>
<td>-1.94</td>
</tr>
<tr>
<td>Withdrawal/Depression</td>
<td>5.9</td>
<td>3.9</td>
<td>5.15</td>
<td>3.71</td>
<td>3.57</td>
</tr>
<tr>
<td>Emotional Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems</td>
<td>12.96</td>
<td>4.93</td>
<td>11.79</td>
<td>4.74</td>
<td>3.96</td>
</tr>
<tr>
<td>Attention Problems</td>
<td>9.32</td>
<td>3.97</td>
<td>8.93</td>
<td>4.23</td>
<td>1.6</td>
</tr>
<tr>
<td>Aggression</td>
<td>7.77</td>
<td>4.03</td>
<td>7.05</td>
<td>3.94</td>
<td>3.44</td>
</tr>
<tr>
<td>Total Behavioural Concerns</td>
<td>35.95</td>
<td>12.99</td>
<td>32.94</td>
<td>13.32</td>
<td>4.56</td>
</tr>
<tr>
<td>Stress Measures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Hassles Scale</td>
<td>116.33</td>
<td>34.57</td>
<td>114.58</td>
<td>37.38</td>
<td>.54</td>
</tr>
<tr>
<td>Stressful Life Events</td>
<td>5.22</td>
<td>3.67</td>
<td>4.48</td>
<td>3.44</td>
<td>2.96</td>
</tr>
<tr>
<td>Stressful life Events –</td>
<td>17.34</td>
<td>15.32</td>
<td>14.95</td>
<td>14.53</td>
<td>2.68</td>
</tr>
</tbody>
</table>

* Indicates significant difference between Time 1 and Time 2
6.3.3 Changes in adaptation and stress between Time 1 and Time 2.

Paired samples t-tests were conducted to compare adaptation and stress scores between Time 1 and Time 2 (see Table 1). In terms of adaptation, a significant difference was found between a child’s total Behavioural Concerns at Time 1 (M = 35.95, SD = 12.99) and Time 2 (M = 32.94, SD = 13.32), t(257) = 4.56, p<.001. These results suggest that parents reported significantly less child behavioural concerns, particularly in less depressive symptoms, less emotional control problems and lower levels of aggression. In relation to positive aspects of adaptation, no overall significant differences were found (Time 1: M = 80.25, SD = 9.93; Time 2: M = 81.41, SD = 10.14), t(257) = -1.94, p=.054), however a significant difference was found in relation to one aspect of Protective Factors. A significant difference was found between a child’s score on Initiative at Time 1 (M = 31.59, SD = 5.05) and Time 2 (M = 32.26, SD = 4.90), t(257) = -2.59, p=.010. These results suggest that whilst there is no overall change in positive aspects of a child’s adaptation, there is a specific increase in their initiative as per parental report.

In relation to stress scores, no significant difference was found between the level of Daily Hassles reported by families at Time 1 and Time 2. In terms of Stressful life events, a significant difference was found between the number of stressful Life events at Time 1 (M = 5.22, SD = 3.67) and Time 2 (M = 4.48, SD=3.44), t(257) = 2.96, p=.003. A corresponding difference was found in the rating of the effect of the Stressful life events between Time 1 (M = 17.34, SD = 15.32) and Time 2 (M = 14.94, SD = 14.53), t(257) = 2.68, p=.008. These results suggest that families experienced significantly less stressful life events at Time 2,
than at Time 1 and also reported less negative effects from these events at Time 2.

6.3.4 Correlations between adaptation and stress variables. Correlational analysis of the adaptation variables and the stress variables showed significant relationships in both areas at both Time 1 and Time 2. Strong, significant correlations were found between subscale scores on the DECA at both Time 1 and Time 2 (see Table 5 and Table 7 respectively). A significant negative correlation was also found between the Total Protective Factors subscale scores and the Total Behavioural Factors scores, \( r = -0.49, p<.001 \) (Time 1) and \( r = 0.54, p<.001 \) (Time 2). Even though these correlations were significant, the corresponding \( r^2 \) figures of 24% and 29% indicated considerable unique variability being contributed by each measure. This adds weight to the argument supporting the inclusion of a composite measure of adaptation. This result suggests that the presence of positive attributes, and absence of the negative can be seen as two separate concepts not simply a measurement of the opposite of each construct.

Strong significant correlations were also found between all three stress measures at both Time 1 and Time 2. As expected, a significant positive correlation was found between scores on the DHS and the LES – effects scores, \( r = 0.49, p<.001 \) (Time 1) and \( r = 0.52, p<.001 \) (Time 2). While these correlations are significant, the corresponding \( r^2 \) figures of 24% and 27% indicated considerable unique variability being contributed by each measure. Again, this supports the argument for a composite measure of stress.
In relation to the stability research question, analysis showed significant correlations between Time 1 and Time 2 variables, suggesting that the measures and therefore variables are stable across the 1 year time period.

Table 5. Correlation matrix for adaptation variables at Time 1

<table>
<thead>
<tr>
<th>N=280</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Initiative</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Self-Control</td>
<td>.47*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Attachment</td>
<td>.56*</td>
<td>.52*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Total Protective Factors</td>
<td>.87*</td>
<td>.78*</td>
<td>.81*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Withdrawal/depression</td>
<td>-.39*</td>
<td>-.26*</td>
<td>-.37*</td>
<td>-.42*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6. Emotional Control Problems</td>
<td>-.24*</td>
<td>-.52*</td>
<td>-.23*</td>
<td>-.39*</td>
<td>.43*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Attention problems</td>
<td>-.35*</td>
<td>-.43*</td>
<td>-.24*</td>
<td>-.41*</td>
<td>.41*</td>
<td>.47*</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Aggression</td>
<td>-.17*</td>
<td>-.39*</td>
<td>-.22*</td>
<td>-.31*</td>
<td>.36*</td>
<td>.53*</td>
<td>.55*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>9. Total behavioural concerns</td>
<td>-.37*</td>
<td>-.53*</td>
<td>-.34*</td>
<td>-.49*</td>
<td>.7*</td>
<td>.82*</td>
<td>.78*</td>
<td>.79*</td>
<td>-</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.01 level (2-tailed).

Table 6. Correlation matrix for stress variables at Time 1

<table>
<thead>
<tr>
<th>N=280</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Stressful Life Events</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Stressful Life Events – Effect score</td>
<td>.85*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>3. Daily Hassles Score</td>
<td>.43*</td>
<td>.49*</td>
<td>-</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.01 level (2-tailed).
Table 7. Correlation matrix for adaptation variables at Time 2

<table>
<thead>
<tr>
<th>N=259</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Initiative</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Self-Control</td>
<td>.55*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Attachment</td>
<td>.62*</td>
<td>.59*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Total Protective Factors</td>
<td>.87*</td>
<td>.82*</td>
<td>.83*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Withdrawal/depression</td>
<td>-.44*</td>
<td>-.38*</td>
<td>-.36*</td>
<td>-.47*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Emotional Control Problems</td>
<td>-.33*</td>
<td>-.57*</td>
<td>-.24*</td>
<td>-.45*</td>
<td>.48*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Attention problems</td>
<td>-.38*</td>
<td>-.49*</td>
<td>-.31*</td>
<td>-.47*</td>
<td>.49*</td>
<td>.56*</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Aggression</td>
<td>-.25*</td>
<td>-.48*</td>
<td>-.19*</td>
<td>-.36*</td>
<td>.42*</td>
<td>.55*</td>
<td>.6*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>9. Total Behavioural Concerns</td>
<td>-.44*</td>
<td>-.61*</td>
<td>-.34*</td>
<td>-.54*</td>
<td>.73*</td>
<td>.83*</td>
<td>.83*</td>
<td>.8*</td>
<td>-</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.01 level (2-tailed).

Table 8. Correlation matrix for stress variables at Time 2

<table>
<thead>
<tr>
<th>N=259</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Stressful Life Events</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Stressful Life Events – Effect score</td>
<td>.55*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>3. Daily Hassles Score</td>
<td>.44*</td>
<td>.52*</td>
<td>-</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.01 level (2-tailed).

Table 9. Correlations between variables at Time 1 and Time 2

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pearson correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiative (Time 1 – Time 2)</td>
<td>.648*</td>
</tr>
<tr>
<td>Self-Control (Time 1 – Time 2)</td>
<td>.630*</td>
</tr>
<tr>
<td>Attachment (Time 1 – Time 2)</td>
<td>.637*</td>
</tr>
<tr>
<td>Total Protective Factors (Time 1 – Time 2)</td>
<td>.722*</td>
</tr>
<tr>
<td>Withdrawal/depression (Time 1 – Time 2)</td>
<td>.643*</td>
</tr>
<tr>
<td>Emotional Control Problems (Time 1 – Time 2)</td>
<td>.645*</td>
</tr>
<tr>
<td>Attention problems (Time 1 – Time 2)</td>
<td>.691*</td>
</tr>
<tr>
<td>Aggression (Time 1 – Time 2)</td>
<td>.714*</td>
</tr>
<tr>
<td>Total Behavioural Concerns (Time 1 – Time 2)</td>
<td>.745*</td>
</tr>
<tr>
<td>Stressful Life Events – number of events (Time 1 – Time 2)</td>
<td>.469*</td>
</tr>
<tr>
<td>Stressful Life Events – effect score (Time 1 – Time 2)</td>
<td>.571*</td>
</tr>
<tr>
<td>Daily Hassles Scale (Time 1 – Time 2)</td>
<td>.759*</td>
</tr>
</tbody>
</table>
6.3.5 Operationalising resilience. Resilience status was determined using the RCF (Mutimer et al., 2007). The RCF requires the adaptation score to be calculated from measures representing positive and negative attributes relating to the child (Mutimer et al., 2006). In this study, adaptation was determined using the scores from the two main subscales of the DECA. Scores falling below the 25th or above the 75th percentiles for Protective Behaviours and Behavioural Concerns were allocated a high or low positive or high or low negative label. To be considered for classification under the RCF, a participant child needed a label under both conditions, for example: high positive/low negative = good adaptation or low positive/high negative = poor adaptation. In the current study, 15% received a label of good adaptation (n = 42) and 12% a label of poor adaptation (n = 34). In addition, normed information was examined and any participant who had a score that was considered clinically high or low was also classified as above.

Stress scores were obtained from scores from the DHS–R and the LES. The raw transformed effect score from the LES and the raw score from the DHS-R were transformed to z-scores and added to provide a measure of exposure to stress and adversity. Percentile ranks were then examined for the exposure scores, with the top 25th percentile being labelled - high stress exposure and the bottom 25th–labeled low stress exposure.

Participants who received a label under both the adaptation and stress exposure conditions were classified under the RCF procedure (Mutimer et al., 2006). Participants with high levels of stress and adversity and poor adaptation were identified and labelled ‘Poor Expected’. Participants with high levels of stress
and adversity and good adaptation were labelled ‘Resilient’. Participants with low levels of stress and adversity, and good adaptation were labelled ‘Good Expected’, and participants with low levels of stress and adversity and poor adaptation were labelled the ‘Vulnerable’ group.

In addition, participants labelled high stress or low stress (as indicated by the 25th & 75th percentiles) were examined in relation to their adaptation scores. Any participants experiencing positive levels of adaptation (i.e., above the mean in protective behaviours and below the clinical range in negative behaviours) or negative adaptation (i.e., below the mean in protective behaviours and above the clinical cut-off for negative behaviours) were also included for analysis, using the RCF. This classification system is based on the notion that a normal adaptation result for a child would still be considered as positive in light of an experience of very high levels of familial stress and adversity (Masten & Coatsworth, 1998; Robinson, 2000). Based on the RCF, participants were classified accordingly (see Table 10). Approximately 22% of the total participant pool were classified into one of the four groups at Time 1 (n = 63).

Table 10. Classification of participants using the Resilience Classification Framework (RCF) at Time 1

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Good</th>
<th>Poor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (Resilient)</td>
<td>14</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>Low (Good Expected)</td>
<td>22</td>
<td>13</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>27</td>
<td>63</td>
</tr>
</tbody>
</table>
The same procedures, as outlined above were used with data from Time 2. This resulted in similar numbers to Time 1, with 14.3% receiving a label of good adaptation (n = 37) and 7.7% a label of poor adaptation (n = 20). At Time 2, Participants receiving a classification in both the stress and adversity categories were then classified as per Time 1 (see Table 11). At Time 2, 22% of the total participant pool were classified into one of the four groups (n = 57).

Table 11. Classification of participants using the RCF at Time 2

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Good</th>
<th>Poor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>18</td>
<td>14</td>
<td>32</td>
</tr>
<tr>
<td>(Resilient)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>19</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>(Good Expected)</td>
<td></td>
<td>(Vulnerable)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>20</td>
<td>57</td>
</tr>
</tbody>
</table>

6.3.6 Stability of the RCF: comparison of Time 1 and Time 2 classifications. Across Time 1 and Time 2, 120 participants were classified using the RCF, 63 participants at Time 1 and 57 participants at Time 2. Of the initial 63 participants classified at Time 1, 3 participants did not return their questionnaire booklet at Time 2. 65% or 39 of the remaining 60 participants received the same classification at Time 2. An additional 15 participants received a first time classification at Time 2. These participants did not receive a classification at Time 1. Therefore 21 of the initially classified participants did not receive a classification at Time 2. This change of status of participants is somewhat complex. Figure 4 represents a summary of the changed status of participants from Time 1 to Time
2. The arrows represent the direction of the move and the variable ‘responsible’ for the change. For example: five participants stress exposure decreased at Time 2, however their adaptation status remained unchanged. This resulted in no resilient classification at Time 2.

![Diagram showing changes in resilience status from Time 1 to Time 2]

* Percentage of participants classified at Time 1 and Time 2

Figure 4. Changes in resilience status from Time 1 to Time 2

The Good Expected group proved the most stable with 81.8% of participants receiving the same classification at Time 1 and Time 2. Conversely the Vulnerable group demonstrated the greatest variability between Times 1 and 2, with less than half the group receiving the same classification at Time 2. Manual examination of the participants who did not receive a classification at Time 2 and those newly classified at Time 2 provided some reasons for the change.
Interestingly for each change in classification status either at Time 1 or Time 2, a single change in either adaptation or stress exposure accounted for the change in resilience status. This can best be illustrated through a group by group analysis.

Of the original 14 (Time 1) in the resilient group, nine participants received a resilient classification at both times. Five participants reported a lower level of stress at Time 2 resulting in a stress level below the top 25th percentile. Adaptation did not change for these participants with good adaptation still in the top 25th percentile. As per the RCF they no longer receive a classification due to their reported lower stress exposure. Nine previously unclassified participants received a classification at Time 2. For these participants, their stress exposure increased at Time 2, placing their reported stress levels in the top 25th percentile, resulting in a classification. As with the previously described participants, their levels of adaptation remained stable from Time 1 to Time 2.

As described previously the Good Expected group proved to be the most stable with a large percentage receiving the same classification at Time 1 and Time 2. As with the Resilient group, a change in stress exposure accounted for the change in classified participants from Time 1 to Time 2. To receive a classification of Good Expected, participants needed to be experiencing stress in the bottom 25th percentile. Four participants no longer qualified for a classification due to an increase in stress exposure, above the bottom 25th percentile. Adaptation classification did not change for any participants at Time 1 or Time 2. One participant had a decrease in stress exposure resulting in a classification of Low stress and therefore a classification of Good Expected at Time 2.
The Poor Expected group (High stress, poor adaptation) did not represent the most variability from Time 1 and Time 2, however participants’ classification changed for a broader variety of reasons. Fifty percent of participants received the same classification at both measurement points. Six participants who received a classification at Time 1 did not qualify at Time 2. Four of these participants experienced a change in stress exposure which explains their omission from the classification process at Time 2. Two participants demonstrated no change in stress exposure however analysis revealed a decrease in negative behaviour and an increase in positive behaviour. This change resulted in these participants scoring above the bottom 25th percentile of adaptation scores, consequently receiving no classification at Time 2. Five participants were newly classified as Poor Expected at Time 2. Analysis revealed that four of these five reported an increase in stress exposure at Time 2. The other participant received a classification due to an increase in negative behaviours (in the top 25th percentile).

The Vulnerable group demonstrated the least stability between Time 1 and Time 2. Like the Poor Expected, these classified participants showed the greatest variability in reasons for the change in resilience status from Time 1 to Time 2. Three participants moved from the low stress group to above the bottom 25th percentile of stress exposure. Further analysis revealed one participant demonstrating an increase in positive adaptation and one showing a decrease in negative behaviour.
In summary, the major change in classification change can be seen as environmental or external to the child. Little change was noted in relation to child adaptation.

6.4 Discussion

This section will discuss the main results to emerge from this study. The overall sample changes between Time 1 and Time 2 will be discussed to enable comparison between the overall population changes and specific changes amongst the four identified groups from the RCF. Specifically, the classification outcomes using the RCF will be discussed. Changes in the key variables used in the RCF between Time 1 and Time 2, particularly stress variables will be explored. Findings will be discussed in relation to the key literature and finally, limitations of the study and implications for future research will be highlighted and discussed.

The main results to emerge from this study can be summarised as follows: a child’s level of adaptation remained reasonably stable across the twelve-month period. For the majority of participants, if a child showed good adaptation (high positive factors and low behavioural concerns) at Time 1, then it was highly probable that they would continue to show positive adaptation levels at Time 2. Across the sample, behavioural concerns were significantly lower at Time 2 than at Time 1. Family stress levels were the area that demonstrated the greatest variability across the twelve-month period. In general changes in the level of stress exposure was the most consistent reason for the changes in classification status. These main results will be discussed in detail in the following section.
6.4.1 Stress exposure changes between Time 1 and Time 2. In this study, family stress was operationalised by a combination of daily hassles and stressful life events. While daily hassles remained stable over time, stressful life events showed significant variability between measurement at Times 1 and 2. A significant reduction in stressful life events was noted at Time 2, when compared with Time 1. The nature of the measure used could provide a partial explanation for the change. The Stressful Life Events checklist measures the occurrence of a range of stressful life events over the past twelve months. The very nature of some of these events means they are unlikely to occur twice in a two-year period, (e.g. death of a spouse or death of a parent). While this is true in relation to measurement of these events, it will also be important to consider incorporating a stress management/coping component into any intervention.

A measure like the SLE is unlikely to provide a stable measure of stress across time. It is more likely to measure a family’s stress exposure at the point of measurement. This has implications for resilience research using a distinct measure of significant events as a sole indicator of stress. For this reason, the number of events that occurred was not used in the composite measure of stress. Instead the effect score (a participant’s rating of the effect of the event) was used. Research is clear that a person’s rating of the severity of the event provides the most accurate measure of the impact of the stressful life event (Luthar, 2006). The variability of the event score adds weight to this argument. Overall a family’s level of daily hassle stress did not change significantly from Time 1 (M = 116.33) to Time 2 (M = 114.58). This indicates that the measure is more stable across time. Again,
this is consistent with findings from the stress literature, which suggests that daily hassles provide a more accurate level of stress (Lazarus & Folkman, 1984).

It is evident from this study, that when measuring adversity in families, it is important that both daily stress (hassles) are included, along with measures of stressful life events as both will have an impact on family and child functioning, and the effect is likely to be cumulative. If only stressful life events are measured, then it may appear that a family is not experiencing significant adversity as by their very nature the events measured are unusual and occur quite infrequently. Daily hassles, on the other hand are common and can be quite significant when numerous hassles are combined. For example, a family where there is financial stress, a new baby, increased cost of living, reduced income, and a child with a disability is going to be under a lot of stress on a day to day basis. When measuring resilience over time, it was important to determine whether these daily hassles are increasing, decreasing or remaining stable.

6.4.2 Adaptation changes between Time 1 and Time 2. Interestingly a child’s adaptation remained far more stable across time. A child who showed good adaptation at Time 1 was very likely to show similar levels at Time 2. Where changes occurred in categorization on the RCF, these changes were more related to stress. That is, a child’s classification generally stayed stable with regard to their adaptation (good or poor), however the level of stress they experienced was where change occurred most frequently (with stress either increasing or decreasing). This variability in stress appeared to relate to changes in major stressful life events
rather than changes in daily hassles.

Across the sample population, a significant difference was found across most behavioural concerns between Time 1 and Time 2, with the level of behavioural concerns lower at Time 2. Interestingly for the four identified groups of interest, only 3 participants changed classification due to a reduction in behavioural concerns (Poor Expected = 2, Vulnerable = 1). This reduction in behavioural issues may be the result of changes in the child's circumstances. All children in the study moved into primary school between Time 1 and Time 2. It is possible, that as more time is spent at school and less time at home, parents do not have to spend so much time and effort managing behaviours. In turn, this may lead to them reporting less problems. Alternatively, as the children matured, they may have been more capable of controlling their behaviour and impulses and may have actually had less behaviour problems. This also has implications for intervention, where at a pre-school level, it would be beneficial to identify those children with clinical levels of behavioural concerns and provide intervention in relation to parenting, and child management strategies to these families.

6.4.3 Changes in resilience classification status between Time 1 and Time 2. Where a child’s resilience classification changed, it was more likely due to the level of family stress rather than aspects of the child’s development or behaviour. For a small number of participants, a reduction was shown in behavioural concerns. Due to the study design, no information was available to determine causational links for the reduction. Two particular participants showed a combination of a reduction in behavioural concerns and an increase in positive
developmental aspects. Literature would suggest that a reduction in behavioural concerns in the clinical range would tend to be related to some form of behavioural intervention (Sanders, 1999, 2008; Ştefan & Miclea, 2010). In addition, an increase in positive factors within these children would also support the assumption that a form of behavioural intervention such as a parenting program may have been accessed by these families. In future research, it would be useful to gather further information from families to more robustly infer reasons for change in children’s levels of behaviour and development at this age. A short survey and perhaps a parent interview would provide useful information on these changes.

The categorization of children into four "resilience" groups is a significant contribution to the existing literature. Previous researchers in the field have agreed upon the need for the development of consistent, clear, and uniform research practices (Luthar et al., 2000a; Yates & Masten, 2004). The RCF meets these needs, and has clear clinical utility.

The RCF was used successfully to operationalise resilience quantitatively on the basis of scores derived from well-established measures of stress, adversity, behaviour and development. This RCF not only provided a method for reliably operationalising resilience, it also produced three other interesting groups of participants. Of particular interest is the Vulnerable group. This group is experiencing relatively poor adaptation to on very low exposure to stress and adversity. This group presents as clearly at-risk and warrants further investigation. As far as can be established, this is the first time that resilience has been operationalised in this way, particularly with young children. These children in the
Vulnerable group are those whose stress levels were low, but whose adaptation was poor. In simple terms, these children were not being exposed to high stress or high risk situations, and yet were still functioning at a lower level than their peers and scoring poorly across a range of measures of adaptation. This classification group of children is one that has not received much attention in the research, and yet there is clear clinical importance in examining further why these children are doing poorly despite not being in high stress environments. The factors that are contributing to their lack of “thriving” have not been identified and may reflect an underlying issue such as developmental delay; or another unmeasured contributing factor. More detailed investigation of this group may provide the opportunity to provide intervention direction for this group.

Most previous research on resilience has focused on adaptation to stress and adversity in older children under particular conditions of adversity (e.g. divorce, poverty). In the present study, children came from a ‘typical’ range of families experiencing varying levels of stress. The participants were also preschool children, a previously neglected population. Early intervention has been repeatedly emphasized both theoretically and clinically as the most efficient way to deal with psychological and behavioural issues. By identifying at risk groups during the preschool years, there is opportunity to improve their resilience through intervention programs. The RCF clearly allows for this identification to occur.

**6.4.4 Conclusions and limitations.** This study has provided a useful framework for operationalising resilience with young children. Four groups were identified from within the larger sample. These children were identified in
comparison to their sample peers. Due to the robustness of the RCF, cautious conclusions can be made about the validity of these classifications, as the measures chosen to use with the RCF were norm-referenced and as such statistical decisions were able to be checked clinically.

The RCF showed good stability in its classification system with a large proportion of participants retaining their classification from Time 1 to Time 2. Stress levels provided the main explanation for change in classification status. A participants' adaptation status changed little across the twelve-month period. From a clinical perspective, this framework will be very useful in identifying at-risk children and families for intervention and provide the opportunity for researchers and clinicians to measure changes pre and post intervention. Given the developments in resilience research since this study, it would be useful to add a specificity and sensitivity analysis to any future usage of the RCF, and possibly and odds or risk ratio analysis. These types of analysis will further strengthen the predictive validity of the RCF and well as add weight to the inclusion of the four separate group classifications.

Findings of this study relate to a particular age group (children 4 to 6 years) and the socio-demographic combination of the sample, which while reflective of the population of the geographic area, may not have been a genuine cross-section of the broader population. This sample could be described as predominately two-parent families and thus findings may have limited external validity. Additionally, there was no method of gathering information from the individuals who chose not to respond to the questionnaire, to determine how they differed from the participant
group, and as such no way of determining if the sample was representative of the population. Although the aim of this study was not to gather a normative sample but to test the predictive validity of the RCF. Further, in this study, data were collected by means of self-report, and were reliant on parent report for both adaptation and exposure levels. Finally, there was no information gathered about services or other linkages that families may have accessed across the year. Future research will need to include this information. It would have been important in examining the changes in stress and adaptation from a clinical intervention perspective.
Chapter Seven - Study 2. School Adjustment and Resilience Status.

The transition to formal schooling represents one of the most significant psychosocial changes experienced by a child (Gower, Lingras, Mathieson, Kawabata, & Crick, 2014). While there is a wealth of data examining the components of a successful transition to school, very little is known about resilience and school transition. This study examines children's transition to school from the perspective of their classified resilience status. The majority of the cohort from Study 1 transitioned to school between Time 1 and Time 2 of data collection in the previous reported study of Chapters Five and Six. It utilised the four identified groups from the previous study: Resilient; Good Expected; Poor Expected; and Vulnerable groups (see Chapter 6). In particular, this study outlined how the teachers of these children perceive the challenges and successes of their transition as well as a judgment of their functioning in the major development areas, including cognitive, language, social, emotional and physical skills. This chapter provides a rationale for the study, outlining the research in the area of school transition, adjustment and resilience. The method of the study is then described, including participant recruitment and detailed information about the measures used. The findings from this study are then presented. The chapter concludes with a discussion section, examining the findings of this study and linking them to relevant literature. Particular attention is paid to the descriptive elements of the qualitative data collected from teachers. Themes from each of the four classified groups are examined in relation to the teacher's qualitative observations of school adjustment.
The transition to formal schooling presents new and often challenging demands on children (Goos, Van Damme, Onghena, Petry, & de Bilde, 2013; Gower et al., 2014; Kiuru et al., 2016). In this country, school starters are expected to attend a new environment, with new adults, new learning experiences and expected to understand and self-regulate behaviour to comply with different behavioural expectations (Reed-Victor, 2004). A review of the school adjustment literature identifies many studies examining the relationship between risk factors and school adjustment problems (Ackerman, Brown, D'Eramo, & Izard, 2002; Ackerman, D'Eramo, Umylny, Schultz, & Izard, 2001; Duncan & Brooks-Gunn, 2000; Fergusson & Horwood, 1999). Like the early resilience studies, much of this research appears to focus on a deficit model, examining the possible negative effects such as externalizing behaviour or social rejection, related to particular risk factors such as living in poverty (Reed-Victor). In relation to resilience, Werner (1985) and Masten (1990) were possibly the first to shift focus away from the deficit model. They found that factors at schools can promote good outcomes for children despite exposure to adversity or risk factors. They found that a positive teacher/child relationship was predictive of latter resilience as was academic achievement. It could also be proposed that some of the positive early temperament characteristics linked to resilience may also play a part in the teacher/child relationship and adjustment to new situations. It would be anticipated that a child with an easy going, good natured temperament would elicit positive responses from teachers, thus strengthening the teacher/child bond.
A comprehensive review of the literature produced very few studies relating to early school adjustment or transition, and resilience in young children. A number of studies that were reviewed examined specific populations, for example children at risk (Shields et al., 2001) or children with behaviour problems (Ladd & Burgess, 2001; Williams, Nicholson, Walker, & Berthelsen, 2016), or specific aspects of school adjustment such as intellectual competence (Sameroff et al., 1993), or emotional competence (Miller et al., 2003) or teacher-child relationship (Birch & Ladd, 1997). Study 2 provides a potentially new direction in the school adjustment literature. School adjustment is important in the study of resilience as poor school adjustment has been found to be predictive of later problems such as low socio-economic status, psychopathology and attrition rate or school drop-out (Parker, 1987; Reynolds, 1992; Stoeckli, 2010).

School adjustment can be defined as having a number of components. One key researcher in the area of school adjustment, (Ladd, 1990) described three main components to positive school adjustment. These include meeting academic demands, positive peer relationships, and the ability to conform behaviourally to aspects of the school routine and expectations of teachers (Ladd). Other authors in the field agree (Goos et al., 2013; Gower et al., 2014; Kiuru et al., 2016), and Reed-Victor (2003) adds a fourth component in her definition, which includes relationship with the teacher.

Some earlier studies focused on academic achievement as an important indicator of successful school adjustment (Scheerens et al., 1989). Later research has identified the importance of studying a range of aspects of behaviour and
development when describing positive school adjustment (Frenz et al., 1991; Guay et al., 1999; van den Oord & Van Rossem, 2002). With this in mind, more recent studies have broadened the study of school adjustment to examine more than just academic competence. These more recent studies included the examination of a range of behavioural and developmental aspects in relation to school adjustment (Goos et al., 2013; Gower et al., 2014; Kiuru et al., 2016).

One recent large scale study identified that the major variance in school adjustment was accounted for at the child level (83.5%), as opposed to characteristics of the school (6%), the individual classroom or the teacher (10%) (van den Oord & Van Rossem, 2002). In this study, school adjustment was measured through a combination of variables such as academic performance, behaviour problems, and sociability. Characteristics of the school and teacher included variables such as teacher warmth, class size, and physical arrangement of the classroom (van den Oord & Van Rossem). This supports the notion that aspects of behaviour and development of the child should form the basis of an investigation into school adjustment and predictors of successful transition into the school environment, as opposed to the nature of the classroom or simply examining academic achievement. With this in mind, more recent studies have broadened the study of school adjustment to examine more than purely academic competence. These studies included the examination of a range of behavioural and developmental aspects in relation to school adjustment (Reed-Victor, 2004). One such study followed 179 school starters across the first three years of school looking at positive child attributes and their relationship to school adjustment.
(Nelson, Martin, Hodge, Havill, & Kamphaus, 1999). They found that parent ratings of temperament and behaviour, prior to school entry, were found to predict later school adjustment at age eight. Specifically, the child’s ability to regulate their attention and behaviour at age 5, was directly related to school performance (Nelson et al). The study also found that at age eight, children who were rated as having high levels of sociable behaviour and also expressed positive emotions by their teachers, were the children who had good academic performance.

Another study found similar results in that a child’s prior behaviour was found to be predictive of later school adjustment (Ladd & Price, 1987), with children who had problem behaviours (aggression and negative peer relationships) being found to have more negative teacher ratings in their first year of school on both social behaviours and aggression. This study, like many in the area, did not have a resilience focus. The focus of studies to date was on child factors. More recent studies have begun to examine positive aspects of behavior and development in conjunction with behaviour problems (Stoeckli, 2010).

Knowing a child’s resilience status prior to school entry would provide researchers the opportunity to examine whether resilient children fare better than their non-resilient counterparts in an educational setting. In addition, this identification would allow the directing of scarce resources to the children who were most in need, those in the Vulnerable and Poor Expected groups. A recent study conducted on preschool American children (under the age of 6), found that there was a strong negative correlation between resilience as measured by the DECA-C and behavioural concerns (Nesheiwat & Brandwein, 2011). It does appear that
children who are not high on resilience are likely to also show difficult behaviours, whether this is evident across settings now needs addressing.

When considering child adjustment in the educational setting, it is important to gather information from both parents and teachers. As a child moves into school, their day to day functioning at school is observed closely by teachers, and as such, become useful informants about a child’s behaviour, adjustment, and achievement. It is well documented that children’s behaviour (both positive and negative) can differ quite significantly across home and school. For example, Achenbach, McConaughy, and Howell (1987) researched the agreement levels of parents and teachers, in the diagnosis of behaviour disorders. In their meta-analysis of 119 studies, a mean correlation of .27 was reported between parents and teachers. This relatively low level of agreement has been reported in other more recent studies as well (De Los Reyes, Thomas, Goodman, & Kundey, 2013; Little, Hudson, & Wilks, 2000). Whether key indicators of resilience are consistent across settings is an area in need of investigation. It may be that some children show good resilience characteristics at home, but these characteristics are not generalized to the school setting.

The RCF provides a methodologically sound classification system that could be used to categorise children prior to school entry (Mutimer et al., 2007). These children could then be assessed on a range of outcome variables relevant to adaptive school functioning. For the purposes of the present study, information will be gathered about the child’s behaviour within the classroom, their social competence, level of problem behaviour, and readiness for classroom learning.
The aim of this study is to examine parent and teacher ratings of behaviour, school readiness and school adjustment of children in the four groups identified using the RCF as the independent variable (Mutimer et al., 2007). Based on this aim, the following hypotheses were made:

1). There will be a significant difference between the Resilient group and both the Poor Expected and Vulnerable groups on school readiness, school adjustment levels, and positive and negative behaviours.

2). The Resilient group will show higher levels of school readiness and school adjustment levels, when compared to either the Poor Expected and/or Vulnerable groups.

3). The Resilient group will show significantly higher levels of positive behaviours and less problems behaviours (as rated by their teachers) than their Poor Expected or Vulnerable peers.

4). There will be a significant difference between the Resilient group and both the Poor Expected and Vulnerable groups in relation to their school readiness. It is expected that the Resilient group will rate more highly on school readiness measures than either of the aforementioned groups.

5). There will be a significant trend in relation to adjustment to school for the Poor Expected and Vulnerable groups, with the qualitative data showing the Poor Expected and Vulnerable groups experiencing significantly more challenges in the adjustment to school.
7.1 Method

7.1.1 Participants. In this study, 57 participants from Study 1 were identified for follow up based on their classification status using the RCF. These 57 were from the larger sample (N = 276 children). These 57 participants were those classified using the RCF (Mutimer, et al., 2007). Of these 57 participants, 21 completed the requirements for Study 2.

7.1.2 Materials and procedure. The 57 classified participants were sent a school readiness questionnaire to complete. This questionnaire contained three measures, a teacher measure of positive and negative childhood behaviours, a school readiness measure and a measure of school adjustment. These measures are described in detail in the following section. Teachers returned the questionnaires via a reply-paid envelope. The parent report data from study 1 was used again in this study.

Teacher perception of the child’s positive and negative behaviour was measured using the Deveraux Early Childhood Assessment – Teacher version (DECA-T) (Le Buffe & Naglieri, 2002). The DECA-T measures positive child behaviours in pre-school aged children 2 – 6 years, and also provides a problem behaviour screener. The DECA-T is reported to have good internal reliability with Cronbach Alphas ranging between .8 and .9 across all subscales (Le Buffe & Naglieri, 2002). It is similar in make up to the DECA, which has been described in detail in the previous chapter.

Teacher perception of the child’s school readiness was assessed using the Gumpel scale (Gumpel, 1999). This scale was used to assess aspects of readiness
for classroom learning. It is a short six-item scale. The scale demonstrates good reliability (Cronbach Alpha = .86) (Gumpel). The scale also has been shown to discriminate between groups of Australian children who have had a kindergarten experience and those who have not (Gumpel).

School adjustment was measured using the Teacher Rating Scale of School Adjustment (TRSSA) (Birch & Ladd, 1997). The TRSSA is designed to measure several constructs relevant to school adjustment in young children. It contains five subscales: (1) independent participation, (2) cooperative participation, (3) teacher’s perception of children’s school liking, (4) teacher’s perception of children’s school avoidance, and (5) teacher’s perception of children’s interest/comfort with the teacher (Birch & Ladd). The TRSSA is reported to have good internal reliability with Cronbach Alphas for subscales ranging between .74 and .92 (Birch & Ladd).

Lastly the questionnaire pack included a list of questions relating to the teacher’s perception of the challenges and strengths of the transition period for the child. In addition, teachers were asked to rate the child’s performance compared to that of their peers in a number of developmental areas, including cognitive skills, language skills, social competence, emotional regulation and physical skills. Teachers were asked to quantify this rating by indicating ‘above average’, ‘average’ or ‘below average’.

7.1.3 Data Analysis. Data from Study 1 was utilised for this study. A subset of participants who had been classified into a group category by the RCF (see Chapters 4 and 6 for specific information) were selected for this study. Preliminary
data analysis was conducted on the school adjustment variables and descriptive statistics are presented. Pearson correlations were conducted to determine the relationship amongst variables, and particularly to explore the relationships between parent and teacher ratings of children using the DECA.

Unfortunately, the response rate from the four identified groups was low, with the overall sample size being only twenty-one participants. This meant that it was not possible to statistically analyse the school adjustment data in relation to the four identified groups. Instead, trends and themes are discussed in relation to school adjustment (from the qualitative responses from teachers), in relation to the four classified resilience-related groups. The themes that emerged from analysis of the qualitative data from teachers, presents some interesting trends amongst the four groups. Importantly, it is crucial to interpret these with caution due to the small numbers of participants in some classified groups.

7.2 Results

This section outlines the four phases of data analysis and the results of this second study.

7.2.1 Sample demographic characteristics. A response rate of 36.84% was achieved (N = 21), with 21 of the identified 57 participants responding. Response rates from the four groups differed. Interestingly, the participants with poor adaptation (low positive behaviour, high negative behaviour) provided the best response rate. The best response rate was from the Vulnerable group with 66.7% responding (4/6 participants). The Poor Expected group had a 50% response rate, with 36.8% and 16.7% of the Good Expected (7/19) and Resilient
(3/18) groups responding, respectively. Meaningful analysis is hampered by the low response rate and the small sample size. Results therefore, need to be interpreted with caution.

**7.2.2 Initial data screening and exploration.** All continuous variables were screened using exploratory data analyses to assess for normality, data entry errors, and notable distributions of results. Descriptive statistics for all school adjustment variables under investigation have been summarised (see Table 12). In addition, comparative descriptive statistics on DECA measures for parent and teacher report have also been presented (see Table 13).

<table>
<thead>
<tr>
<th>Table 12. Mean scores for school adjustment variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>School adjustment variables</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Gumpel Scale</td>
</tr>
<tr>
<td>TRSSA</td>
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<tr>
<td>Cooperative Participation</td>
</tr>
<tr>
<td>Self Directedness</td>
</tr>
<tr>
<td>School Liking</td>
</tr>
<tr>
<td>School Avoidance</td>
</tr>
<tr>
<td>Comfort with teacher</td>
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</table>
Table 13. Mean scores on DECA variables for parent and teacher report

<table>
<thead>
<tr>
<th>DECA subscales</th>
<th>Parent (n = 21)</th>
<th>Teacher (n = 21)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Initiative</td>
<td>32.33</td>
<td>6.76</td>
</tr>
<tr>
<td>Self-Control</td>
<td>21.1</td>
<td>5.67</td>
</tr>
<tr>
<td>Attachment</td>
<td>27.43</td>
<td>3.91</td>
</tr>
<tr>
<td>Total Protective Factors</td>
<td>80.76</td>
<td>14.51</td>
</tr>
<tr>
<td>Withdrawal/Depression</td>
<td>5.10</td>
<td>5.26</td>
</tr>
<tr>
<td>Emotional Control Problems</td>
<td>11.1</td>
<td>6.07</td>
</tr>
<tr>
<td>Attention Problems</td>
<td>8.43</td>
<td>5.91</td>
</tr>
<tr>
<td>Aggression</td>
<td>8.05</td>
<td>5.36</td>
</tr>
<tr>
<td>Total Behavioural Concerns</td>
<td>32.33</td>
<td>19.93</td>
</tr>
</tbody>
</table>

From a visual analysis of the data in Table 13, it can be seen that parents appear to rate their children higher on the negative child behaviours of aggression, attention problems, emotional control problems, and overall behavioural concerns when compared with the teacher reports.

7.2.3 Correlations between DECA and school adjustment variables.

Correlational analysis of the school adjustment variables and the DECA subscale scores showed significant relationships with both the DECA Protective factors and the DECA Behavioural concerns and most school adjustment variables. Specifically, the DECA Protective factors were positively correlated with the Gumpel Scale and most TRSSA subscales, particularly Cooperative participation, Self-Directedness and School Liking (see Table 14). Not unexpectedly, the DECA Behavioural Concerns subscale was negatively correlated with the same variables.
(see Table 14).

<table>
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</thead>
<tbody>
<tr>
<td></td>
<td>-</td>
<td>-.57**</td>
<td>.75**</td>
<td>.70**</td>
<td>.66**</td>
<td>.55**</td>
<td>-.002</td>
<td>.52*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-.58**</td>
<td>-.56**</td>
<td>-.44*</td>
<td>-.45*</td>
<td>.02</td>
<td>-.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.71**</td>
<td>.72**</td>
<td>.61**</td>
<td>.33</td>
<td>.15</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.60**</td>
<td>-.12</td>
<td>.30</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.56**</td>
<td>.07</td>
<td>.36</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.11</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.01 level (2-tailed).

**Correlations between teacher and parent reports on the DECA.**

Correlational analysis between the teacher and parent report of the DECA variables was not significant for any subscale of the DECA, with the exception of the Initiative subscale (see Table 11). A significant positive correlation was found between parent and teacher ratings, \( r = .48, \ p= .028 \) (see Table 15). This result suggests that teachers and parents rated the children differently. However, the results need to be interpreted with caution given the small sample size.
Table 15. Correlations between parent and teacher ratings on the DECA

<table>
<thead>
<tr>
<th>DECA variables</th>
<th>Correlation</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Initiative</td>
<td>.48*</td>
<td>.028</td>
</tr>
<tr>
<td>2. Self Control</td>
<td>.19</td>
<td>.41</td>
</tr>
<tr>
<td>3. Attachment</td>
<td>.20</td>
<td>.39</td>
</tr>
<tr>
<td>4. Total Protective Factors</td>
<td>.37</td>
<td>.05</td>
</tr>
<tr>
<td>5. Withdrawal/depression</td>
<td>.31</td>
<td>.18</td>
</tr>
<tr>
<td>6. Emotional Control Problems</td>
<td>.11</td>
<td>.63</td>
</tr>
<tr>
<td>7. Attention problems</td>
<td>.33</td>
<td>.08</td>
</tr>
<tr>
<td>8. Aggression</td>
<td>.16</td>
<td>.48</td>
</tr>
<tr>
<td>9. Total behavioural concerns</td>
<td>.24</td>
<td>.29</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.01 level (2-tailed).

It can be seen that there was a significant negative correlation between the TRSSA protective factors and behavioural concerns, r = -.57, p < .007. There was a significant positive correlation between the Gumpel Scale and the TRSSA protective factors score, r = .75, p < .001. There was also a significant negative correlation between the TRSSA behavioural concerns score and the Gumpel Scale score r = -.58, p = .006.

7.2.5 Qualitative data from teachers. Due to the low response rate and particularly to the small sample size, it was determined that meaningful analysis of the quantitative data could not be conducted with any statistical rigour. As discussed earlier in this section, responses from teachers were instead examined for all participants from the same classified group. These were compared to determine if any themes existed that could be used with qualitative descriptions to highlight the themes. While interesting, it should again be noted that these
comparisons are somewhat subjective, need to be interpreted with caution and may not be reflective of the larger classified groups.

**7.2.6 RCF Classification and school adjustment.** Of the Vulnerable children identified in Study 1, approximately four out of five children (82%) repeated their Kindergarten year. Given the small number of participants in each RCF category who participated in the second part of the study, meaningful statistical analysis could not be conducted to make comparisons between the groups. However, there are interesting observations from the data that will be provided descriptively. The teacher reports regarding child adjustment will be described according to the categories that were provided to the teacher for their perception of each child’s school transition and adjustment. These are ‘settling differences’, ‘child strengths and challenges’, and ‘developmental ratings’.

**7.2.6.1 Settling differences.** Teachers of participant children were asked to describe how the particular child settled into school, noting any particular differences between the target child and their peers. The Resilient and Good Expected children were more likely to be described as settling into school well, compared with the Poor Expected and Vulnerable children. These descriptions of positive transitions illustrated aspects of positive social adjustment to school.

“made new friends easily”

“spoke to new children from Day One”

“established positive relationships with others”

In addition, Resilient or Good Expected children were described as enjoying the academic side to school:
“enjoys …. being challenged in his studies”

“settled extremely well … on task quickly”

“eager to learn”

Resilient and Good Expected children also appeared to adjust more quickly to the environment and behavioural expectations, than the Vulnerable or Poor Expected children:

“able to comply with class routines and expectations”

Children from the Poor Expected group or Vulnerable groups were not described as positively overall in terms of adjustment by their teachers, as were the Good Expected and Resilient children. Some particular social and emotional components to adjustment were noted in this group, that was not identified in with either of the other two groups.

" learning and doing new things often made (the child) nervous and anxious"

"(the child) did not initiate any conversation with me until approximately October of his prep year".

“difficulty maintaining contact with other children in play"

"…difficulty coping with unpredictable situations"

Two children from the Resilient group were noted as having some minor emotional settling issues, however these were noted by the teachers as resolving quickly:

" initially cried when mum left him each morning, but usually settled in within 10 – 15 minutes. This only lasted for the first two weeks"
7.2.6.2  *Child strengths and challenges.* Teachers were asked to list the child’s strengths and the challenges they faced with regard to school adjustment. These questions were deliberately kept broad so that teachers could respond relating to their perception of the child, rather than defined areas to which to respond. All teachers were able to respond with information about strengths for all children, regardless of their classification. No common theme could be found amongst the groups, with all children having strengths across a range of areas. In terms of challenges, very few challenges were noted by teachers for the Resilient or Good Expected children. When they were mentioned, they appeared relatively minor:

“communicating only at appropriate times”

“sometimes he found it difficult to stop a conversation. This was not frequent, nor serious in any way though”.

The Poor Expected and Vulnerable group had many challenges noted for them across a range of issues. Many of these related to on task behaviour:

“concentrating and persisting”

“development of listening skills”

“participating in group games – difficult coping with unpredictable situations”

“sitting still”

Teacher’s perception of children’s level of development. In this section, teachers were asked to rate each child’s development across a range of developmental areas, including cognitive, language, social competence, emotional development and physical skills. Teachers chose from “Below Average”, “Average”
and “Above Average”. Interestingly, social competence ratings appeared to be the best differentiator between the groups (see Table 16). As expected there appeared to be no pattern of ratings amongst the groups on physical skills nor on cognitive skills (see Table 17 and Table 18 respectively).

Table 16. Teacher ratings of social competence

<table>
<thead>
<tr>
<th>RCF classified groups</th>
<th>Social Competence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Below Average</td>
</tr>
<tr>
<td>Resilient</td>
<td>0</td>
</tr>
<tr>
<td>Good Expected</td>
<td>0</td>
</tr>
<tr>
<td>Poor Expected</td>
<td>2</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 17. Teacher ratings of Physical skills

<table>
<thead>
<tr>
<th>RCF classified groups</th>
<th>Physical skills</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Below Average</td>
</tr>
<tr>
<td>Resilient</td>
<td>0</td>
</tr>
<tr>
<td>Good Expected</td>
<td>1</td>
</tr>
<tr>
<td>Poor Expected</td>
<td>0</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 18. Teacher ratings of Cognitive skills

<table>
<thead>
<tr>
<th>RCF classified groups</th>
<th>Cognitive Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Below Average</td>
</tr>
<tr>
<td>Resilient</td>
<td>0</td>
</tr>
<tr>
<td>Good Expected</td>
<td>0</td>
</tr>
<tr>
<td>Poor Expected</td>
<td>1</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>0</td>
</tr>
</tbody>
</table>

7.3 Discussion

This section will discuss the main findings to emerge from this study. The relationship between school adjustment variables will be discussed. Of interest, is the nature of the relationship between the parent and teacher reports of problem behaviours and positive attributes. This will form the next part of the discussion. These findings will be analysed in relation to findings from the key literature. As mentioned previously, the teacher’s perception of school adjustment, in terms of challenges and successes will be discussed. In addition, teacher ratings of child functioning across a range of developmental areas will be discussed in relation to the four identified groups. Finally, limitations of the study and implications for future research will be highlighted and discussed.

The results of this study demonstrate that there is a significant relationship between school adjustment and school readiness measures. Those children who had higher scores on school readiness, were also those whose teachers rated them higher on protective factors. It is evident from this that using a broader variety of measures of school adjustment (rather than just positive and negative behaviour) is valid in determining functioning as these provide a related but more
comprehensive perspective of child functioning. In addition, this study provides the RCF with construct validity. Previous research has stressed the importance of studying a range of aspects of behaviour and development when examining positive school adjustment (Frenz, Gresham & Elliot, 1991; Guay, Biovin & Hodges, 1999; van den Oord & Rossem, 2002).

Categorisation using the RCF revealed a trend for those in the Resilient and Good Expected groups. They were found to be performing at an appropriate or even above average level on key areas, and were described in positive terms by their teachers, particularly in terms of social, environmental and academic areas of school adjustment. This suggests that those children who are identified at a young age as being resilient, or likely to do well, appear to be independently rated at a key life transition period (starting formal education) as coping well and adjusting appropriately. This is supportive of previous research that has shown a child's prior behaviour is predictive of later school adjustment (Ladd & Price, 1987). Therefore, children who are not identified as resilient are generally those with negative behaviours, and reduced positive behaviours. The RCF allows for clinical utility in providing a method to identify these children prior to school entry and ensure that intervention is provided to the family and the child to support their successful transition to school. These children in this current study, were also the ones at later school transition with more reported negative adjustment compared with their Resilient or Good Expected peers.

As previously discussed, and in light of the current study, knowing a child's resilience status prior to school entry would provide researchers and clinicians with
the opportunity to identify children at risk of poorer outcomes and to assist them in improving their transition to the school environment. Children in the current study who were Vulnerable or Poor Expected, tended to have more social difficulties and emotional problems. This is consistent with a study conducted on preschool American children (under the age of 6), which found that there was a strong negative correlation between resilience as measured by the DECA-C and behavioural concerns (Nesheiwat & Brandwein, 2011). Social difficulties, emotional problems and behavioural issues are areas that early intervention could assist in improving, through social skills training and individual therapy (Ackerman et al., 2002; Nix, Bierman, Domitrovich, & Gill, 2013; Schonert-Reichl et al., 2015).

The focus on a number of key areas (Cognitive, Social, Physical, Language and Emotional Development) provided a more comprehensive perspective on school adjustment than many previous studies. It was interesting to note that the trend was generally for children to have similar levels reported for the main areas. Previous research has stressed the importance of studying a range of aspects of behaviour and development when describing positive school adjustment, and this study has allowed a comparison across areas for children in various RCF classifications, albeit with small numbers of participants (Frenz, Gresham & Elliot, 1991; Guay, Biovin & Hodges, 1999; van den Oord & Rossem, 2002). As previously mentioned, school adjustment is critical in the study of resilience as poor school adjustment is predictive of later problems such as low socio-economic status, psychopathology and school drop-out (Parker, 1987; Reynolds, 1992). Therefore, achieving early identification of those children who are at risk of poor
school adjustment (i.e. those in the Poor Expected or Vulnerable groups) would allow for early intervention to alter the expected trajectory for these children.

This study was clearly limited by the poor teacher rate of return from the initial larger sample. As a small sample size, all results in relation to the four classified groups, were presented as being descriptive only. A much larger sample would allow for meaningful statistical comparisons of the groups to determine whether the aforementioned trends translate into significant differences. The methods used in this current study allow for replication with other samples from the wider population.

Another focus for future research would be to follow a similar group of children over a longer period of time to determine whether the protective factors that have resulted in children being categorized as resilient, continue to have long term positive effects.

The results of this study demonstrated that there is a significant relationship between school adjustment and school readiness measures. Those children who had higher scores on school readiness, were also those whose teachers rated them higher on protective factors. It is evident from this that using a broader variety of measures of school adjustment (rather than just positive and negative behaviour) is valid in determining functioning as these provide a related but more comprehensive perspective of child functioning. This study has provided useful information about resilience and school adjustment, albeit within a small sample. Further research with larger sample is required to further investigate this link.
Despite the small number of participants with data that allowed categorization using the RCF, it is evident that there was a trend for those in the Resilient and Good Expected groups to be performing at an appropriate or even above average level on key areas and be described in positive terms by their teachers. This suggests that those children who are identified at a young age as being resilient, or likely to do well, appear to be independently rated at a key life transition period (starting formal education) as coping well and adjusting appropriately. This is supportive of previous research that has shown a child's prior behaviour is predictive of later school adjustment (Ladd & Price, 1987). Therefore, children who are not identified as resilient are generally those with negative behaviours, and reduced positive behaviours. These children in this current study, were also the ones at later school transition with more reported negative adjustment compared with their Resilient or Good Expected peers.

In light of the current study, knowing a child's resilience status prior to school entry would provide researchers and clinicians the opportunity to identify children at risk of poorer outcomes and assist in improving their transition to the school environment. Intervention, in the form of parenting programs and clinical intervention with children, would ensure that better adaptation and increased management of family stress would be addressed prior to school entry. Children in the current study who were Vulnerable or Poor Expected, tended to have more social difficulties and emotional problems. These are areas that early intervention could assist in improving, through social skills training and individual therapy.
This study also examined parent and teacher agreement on key areas of child functioning. Only the DECA variable of Initiative showed a significant positive correlation. All the other DECA variables showed non-significant correlations between parent and teacher responses on the same children. Total behaviour problems had a correlation of just .24, which is very similar to the findings of Achenbach and colleagues (Achenbach, 1991) and Little et al. (2000). Total protective factors had a relatively low level of agreement (.37), which suggests that how a child is perceived across home and school in areas of behaviour, and perhaps even resilience differs depending on the respondent. The implication is not that one reporter (either parent or teacher) is less accurate in their assessment of the child, rather it is likely that a range of variables are at play, such as the child presenting differently in each of the settings. It is well established that children learn to differentiate and adapt to different environments and to different methods of management. It may be that characteristics of resilience also are variable depending on the setting. A child who at home may show little self-control, emotional regulation, problem solving and so forth may be able to demonstrate these behaviours at school. The difference may be due to peer influence, more effective behavior management at school, or a larger comparison group. In families where children are exposed to ineffective parenting strategies, coupled with high stress and adversity, school may become an environment that provides them with some respite from the stress, with predictable routines, and support. Examining the functioning of children exposed to adversity across home and school settings
may provide more information about whether school can provide a buffer against some of the more negative outcomes associated with exposure to adversity.

This study has shown that resilience status and school adjustment are linked, with children who score higher on resilience measures also scoring higher on positive adjustment variables. Parents and teachers seem to be reporting different behaviours across home and school, suggesting that using multiple informants across different settings, allows researchers and clinicians to identify areas of concern and areas of strength for each child. From a clinical perspective, if a child is functioning well at school but poorly at home, then it is clearly only one setting that requires intervention. Rather than having a “one size fits all” approach that targets all settings with children at risk, it is possible to identify settings and behaviours of concern and target these specifically.
Chapter Eight - Study 3. Family Functioning and Parenting Factors and their Relationship to Child Resilience Status

The previous two studies have established that preschool children can be categorised according to their resilience status. Previous analysis demonstrated that the four identified sub-groups show differences in their functioning dependent on their classification status, particularly in the area of school adjustment. How a child develops a particular level of resilience is of interest to researchers, parents, teachers and clinicians concerned with young children. If factors that differentiate between classifications can be identified, then interventions can be directed at those contributing factors. In young children, the factors that are of interest include aspects of the family environment that may be impacting on a child's resilience. Parenting practices have been identified as one such area of importance when investigating child resilience status (Luthar, 2006; Masten, 2001, 2011; Masten & Monn, 2015; Southwick et al., 2014). In resilience research, few studies have examined the importance of specific parenting practices and their influence on children's resilience. This study examines differences in parenting practices and family functioning factors amongst four identified subgroups from a larger sample. Parents of preschool children provided information on child behaviour; levels of family stress, including daily hassles and stressful life events; and a range of parenting practices and family factors. This chapter includes a review of specific parenting literature in relation to resilience. This review provides a rationale and context for the current study, outlining its contribution to the existing literature. Finally, the aims of this study are outlined. The methods used in this study are
presented in the next section of this chapter. A considerable number of parenting variables are examined in this study. The measures used are described in detail. An analysis of the data and findings are presented in the next section. Next, the key findings from this study are discussed in relation to findings from other studies.

The resilience research described previously tended to focus on protective factors. The majority of these factors related to characteristics that were relatively stable and closed to change; for example, gender, temperament, culture, socio-economic status, and so on. The more recent focus among researchers has been a shift to factors that are open to change. Luthar (2006) describes these as ‘modifiable modifiers’, and they can include aspects such as parenting practices and aspects of family functioning. Many researchers agree that it is these processes that should form the basis for future resilience research, given that they lend themselves to intervention (Armstrong et al., 2005; Luthar, 2015; Masten, Best, et al., 1990; Zakeri et al., 2010).

Rutter (1995) conducted a review of the literature and identified a range of protective mechanisms that ameliorate the effects of risk. He identified two of these mechanisms as relating to increasing positive chain reactions and positive experiences that counter the effects of risk. The parenting experience, if positive and effective could be considered as an element of these two mechanisms. Like Luthar (2006), Masten (1999), and Armstrong et al (2005) have identified the need to examine ‘malleable variables’ in resilience research. They identify parenting quality as one such variable for examination. The behaviours that constitute quality parenting are those that have been identified in previous research as being
effective in providing an adaptive environment for children, where positive child behaviours are enhanced, and negative child behaviours minimized through specific parenting practices.

Research has identified a clear link between parenting practices and child behaviour outcomes (Ayoub et al., 2014; Belsky, 1984; Frick et al., 1999; Guajardo et al., 2009; Gulliford, 2015; Sanders, 2008; Shelton et al., 1996), however, fewer studies have examined resilience and parenting, despite clear theoretical links among the constructs (Armstrong et al., 2005; Hipke, Wolchik, Sandler, & Braver, 2002; Luthar, 2015; Zakeri et al., 2010). Previous research examining the relationship between parenting and child outcomes has focused on parenting styles. Parenting style relates to attitudes and beliefs about parenting (Prevatt, 2003), rather than specific parenting behaviours or practices. As the body of resilience research grows, so does the focus on factors that are amenable to change. These factors can then be incorporated into intervention, which could provide a buffer against adversity and negative outcomes in children and families.

There is a vast body of research that has investigated parenting behaviours and child outcome. It has been well documented that poor parenting practices are strongly associated with poor child outcomes. For example, Hann and Borek (2001) found that inconsistent discipline, lower levels of parental engagement and harsh discipline were identified as being related to child externalizing behaviour problems. In a similar vein, Patterson, De Baryshe and Ramsey (1989), found that ineffective parents do not recognise positive behaviours when they occur in their children and do not utilise effective parenting strategies for negative behaviours.
The resulting impact of such parenting behaviours is poorer child behaviour and outcomes.

8.1.1 Parenting and child outcomes. It has been clearly established that parenting behaviours do have an impact on child behaviour and child functioning. Specifically, Wyman et al, (2000) in a review of the literature found that specific elements of parenting practices impacted on child outcomes. These elements were child supervision, consistent discipline and active involvement. These are factors that have also been shown to be able to be taught to parents, making them modifiable behaviours. The relationship between these parenting behaviours and resilience is less clear as this is an emerging area of research.

Grolnick and Ryan, (1989) and Reid (1993) all found that the quality of parenting mediated the effects of risk factors on resilience in children. These studies provide some evidence that parenting practices and the use of practices that are considered effective and appropriate can provide a buffer against potential stressors in children.

8.1.2 Parenting and Resilience. Parenting quality has been found to be a protective factor in child resilience and predictive of positive outcomes (Luthar, 2015; Masten et al., 2004). A foundation longitudinal study, the Rochester Child Resilience Project (Cowen et al., 1990) found that parenting qualities such as warmth and emphasising responsible behaviour in children were related to more positive outcomes for children in the face of adversity. Grotberg (1995) found that resilient children had parents who utilised problem solving skills, set firm limits and applied consequences and accessed appropriate services (e.g. medical,
educational etc.) for their children when required. Negative aspects of parenting such as the use of corporal punishment and inconsistent discipline were found to be predictive of child behaviour problems (Shelton et al., 1996). Interestingly, a number of studies have found that different aspects of parenting behaved differently for different groups of children (Cicchetti & Blender, 2004; Luthar, 2006; Masten, Best, et al., 1990). Therefore, it is not simply a function of specific parenting practices leading to particular outcomes, but rather it may be a complex interaction between internal child factors such as temperament and parenting behaviours.

The child-parent relationship has been found to be the most important factor for the development of resilience. For example, research has shown that to be considered resilient, a child needed a close bond with at least one caregiver (Cowen et al., 1990; Engle et al., 1996; Tschann et al., 1996; Werner & Smith, 1982). Other important factors in the development of resilience include aspects of parenting such as the quality and continuity of care (Wyman et al., 1999), parenting confidence, and discipline practices (Cowen et al., 1990). Moos and Moos (1986) found resilient children came from families with lower levels of conflict and greater expressiveness in family relationships. Children in at-risk situations were also more likely to have resilient outcomes if they had not experienced prolonged separation from their primary caregiver, and had reasonable limits and consequences set in their home environment (Cowen et al., 1990; Grotberg, 1995).

A recent study by Gewirtz, Forgatch and Wieling (2008) further examined the relationship between family characteristics and child resilience. These
researchers identified that the family is the key social environment for children in supporting positive adjustment. This supports a clear theme evident in the existing research that how a child is raised, with regard to parent behaviour and family characteristics, does have an impact on child behaviour and child outcome. Gewirtz and colleagues hypothesised that teaching skills to parents that increase their capacity to access available resources (supports) and promote positive interactions both within the family and broader relationships will lead to more positive child adjustment. These researchers report that positive parenting is the key to promoting healthy adjustment, and positive parenting includes skill encouragement, limit setting, monitoring, problem solving skills and positive involvement. They argue that “parenting practices are ... the next salient target of intervention in promoting child resilience” (Gewirtz et al.).

One study that has investigated the impact of teaching parenting behaviours on child resilience, is the research by Fisher, Gunnar, Chamberlain and Reid, (2000). These researchers studied a group of children in foster care who had experienced maltreatment in their family of origin. The researchers designed an intensive intervention to teach positive parenting strategies to foster carers. The study included a waitlisted control group. Comparison between the children in treatment group and the control group demonstrated considerable difference in outcomes. The treatment group showed significant behavioural improvement when compared to the control group. Interestingly, this study also measured cortisol levels in children in both groups, pre and post intervention. While no significant difference was found in cortisol levels pretest, the treatment group showed a
significant reduction in cortisol levels after intervention. Cortisol levels are one physiological marker of stress, therefore it may be that post intervention, the children whose carers were now using more effective and quality parenting strategies were showing lower stress levels, and greater resilience.

Interestingly, parental stress has been shown to have a negative relationship with the effectiveness of parenting interventions (Hipke et al., 2002). Therefore, it may not be sufficient to teach positive parenting strategies in order to improve child behaviour in families where there is significant parental distress. Concomitant intervention to manage parental stress is likely to be necessary in order to maximize the likelihood of intervention being effective. Hipke and colleagues found that in families that experienced divorce, the effects of intervention were dependent on maternal functioning and resources prior to the stressful life event. Clearly, intervention programs do not work in isolation, but rather there is an interactional effect of background and individual factors on success.

Caution must be exercised when interpreting research that reports on intervention effectiveness on the basis of parental report. Interestingly, some studies have determined that while teacher and observer report improvement in child’s behaviour, stress affected mothers are more likely to report less improvement in their child’s behaviour (Forehand & Furey, 1985; Kazdin, 1995). Therefore parents who are stressed may be either hypervigilant when focusing on child behaviour (i.e. magnifying negative child behaviour), or less alert to positive changes than a non-parent observer (i.e. teachers). Such findings highlight the
need for multiple informants when investigating child functioning, including resilience. A systematic investigation into parenting practices and their relationship to resilience would shed light on what aspects are pivotal in this relationship to increase the likelihood of positive child adaptation.

8.1.3 Social support and resilience. Social support is another variable that has been shown to impact on parenting behaviours, and in turn on child behaviour. Belsky (1984) notes that the marital relationship is the main support system for parents generally. Other forms of support generally accessed include extended family, membership in a church or religious group, close friends, and participation in neighbourhood groups. Previous research has reported that families who have a diverse range of social supports have children who are more resilient than those without such supports (Block & Block, 1980; Bradley et al, 1994; Cowen et al, 1990; Engle et al, 1996; O’Grady & Metz, 1987; Rak & Patterson, 1996; Werner & Smith, 1982; Wyman et al, 1999). There have also been studies that have not found such a relationship. For example, Quittner, Glueckauf and Jackson (1990) found that social support did not provide a buffering effect as expected, however it was found to mediate maternal stress, in their study of mothers caring for a child with a hearing impairment. It is important to note that in many studies social support is measured through types of support, rather than the quality of the support.

Examining the quality of supports allows researchers to determine whether all social support is equally effective, or whether particular types and levels are more useful. Many researchers agree that it is the quality of the social support that
provides the greatest information regarding how social support acts as a protective mechanism (Coyne et al., 1990). Therefore, research would benefit from utilising a measure of satisfaction that incorporates both the amount and types of social support utilized rather than a tally of the sources of social support. Parents may have many different social supports available to them, however they may not find them helpful or positive. Manetti and Schneider (1996) found that the perceived helpfulness of social support was largely unrelated to the amount (numbers) of actual supports utilized. This finding clearly supports the notion that it is not sufficient to simply have a range of supports available, but that these supports also need to be perceived as valuable.

Armstrong, Birnie-Lefovitch and Ungar, (2005) noted the importance of social support when examining resilience. However, these researchers recognise that there is no current framework to support the understanding of the relationship between social support and child resilience. This is clearly an emerging area in the resilience research that merits further investigations. Social support has consistently been demonstrated to reduce the impact of stressors on functioning and adaptation, however how it impacts on child resilience is yet to be examined. Social support may have an effect on parent stress levels, parenting and caregiving behaviours, and as a result on child outcomes. Social supports impact on resilience, however, is likely to be mediated by the nature of the stressor, personality characteristics and attributes of the individual and the support person, and whether the support is perceived as helpful and effective (Armstrong et al.,). Coyne, Ellard and Smith (1990) highlight the need for qualitative methodology, as
well as quantitative research to obtain more useful information regarding the effectiveness of social support.

Clearly parenting factors, family environment, and social support may all have some impact on child resilience. Research is needed to fill the gaps in the existing literature regarding how social support and other parenting factors relate to child outcome and child adaptation in the face of adversity. Whether specific parenting behaviours have different effects on resilience needs to be investigated in order to develop interventions that target behaviours that will actually then impact directly on child functioning. Conducting this research with preschool age children allows for investigation of early parenting behaviours (i.e. first five years of a child’s life) before school and peer influence becomes more dominant.

8.2 Aims of the Current Study

The current study aims to examine aspects of parenting practices in relation to resilience status in preschool children. Specifically, social supports, family characteristics and parenting behaviours will be examined in relation to child resilience variables. Based on these aims, the following hypotheses were formulated:

1). There will be a significant difference between the parents of the Resilient group and the parents of both the Poor Expected and Vulnerable groups on a range of parenting and family variables including:

   i. Better family functioning

   ii. Higher levels of positive parenting and involvement

   iii. Lower levels of harsh parenting aspects including the use of
corporal punishment,

iv. Greater parenting alliance between both parents

v. higher levels of satisfaction with the amount and types of social support

vi. higher levels of parenting confidence and satisfaction.

8.3 Method

8.3.1 Participants. Participants (N = 428, response rate 40.2%) were families recruited from 21 kindergartens across the western region of Melbourne, Australia. Respondents were mainly mothers (96.5%). Target children were aged between 36 and 72 months of age (M = 59.5 months, SD = 6.72). An almost even numbers of boys (51%) and girls (49%) were represented in the sample. The majority of children lived in two parent families (married & de facto combined – 90.7%). More than half the respondent children came from two child families (54.4%), with less coming from three child families (25.2%) and only 10.7% being only children.

Respondent parents had all completed some secondary schooling; with 21.6% having completed a diploma, 21.1% a degree, and 7.5% had gained a postgraduate qualification. A little more than half the mothers were not working outside the home (57.4%), while 30.1% were working part time and the remainder were in fulltime employment.

8.3.2 Materials and procedure. To assess resilience status three parent report questionnaires were used in the current study. Child Adaptation was assessed using the Devereux Early Childhood Assessment (DECA) (Le Buffe &
As previously described, the DECA is designed to measure positive child behaviours in pre-school aged children 2 - 6 years, and also provides a problem behaviour screener. The DECA is reported to have good internal reliability with Cronbach Alphas ranging between .8 and .9 across subscales (Le Buffe & Naglieri, 2002).

Two instruments were used to provide a measure of family stress – the Daily Hassle Scale – Revised (DHS-R), (Holm & Holroyd, 1992) and the Life Experiences Survey (LES), (Sarason et al., 1978). The DHS-R is designed to measure everyday sources of stress and annoyance over a one-month period. The scale is reported to have good internal consistency, with an Alpha of .80 (Holm & Holroyd, 1992). The LES is designed to measure recent stressful life events, and also provides a measure of the parents’ appraisal of the event. It has good construct validity and internal consistency, with an acceptable Cronbach Alpha of .78.

Aspects of parenting practices were measured using the Alabama Parenting Questionnaire (APQ) (Frick, 1991). The Alabama Parenting Questionnaire (APQ) (Frick, 1991) is a 42 item scale designed to measure parent report of parenting practices. The APQ contains six subscales, five of which are used in the current study: Parental involvement, use of positive parenting techniques, inconsistent discipline, Corporal punishment and other discipline practices. It is reported to have sound reliability and internal consistency with Cronbach Alphas ranging from .67 to .8 (Shelton, Frick & Wootton, 1996). The
Monitoring subscale was not used in this study due to the items not being relevant to parents of preschool-aged children.

Social support was measured using the Inventory of Social Support (Dunst, Trivette, & Deal, 1988). This measure assesses the frequency of contact with support persons as well as the types of support received. It presents a list of social supports and participants are required to select those that they have had access to over the past month. They are then asked to rate the helpfulness of the accessed support. Although the technical data on this scale are limited, it has promising reliability and validity (Brassard & Boehm, 2011).

Aspects of family functioning were measured using the Family Assessment Device (FAD) (Epstein, Baldwin, & Bishop, 1983). The FAD is a 60-item questionnaire, with a 4-point response scale (strongly agree, agree, disagree & strongly disagree). The FAD contains seven inter-correlated subscales: Problem Solving, Communication, Roles, Affective Responsiveness, Affective Involvement, Behaviour Control and General Functioning. It is reported to have sound reliability and internal consistency with Cronbach Alphas ranging from .7 to .9 (Epstein et al., 1983)

The degree to which parents align with each other in parenting was assessed using the Parenting Alliance Measure (PAM) (Abidin & Konold, 1999). The PAM is a 20-item scale is a self-report measure examining the degree of commitment and cooperation between two parents in terms of the parenting role and child rearing practices. It has been described as appropriate for a range of
parenting partnerships (e.g. married, separated or divorced, etc.). It is reported to
have sound reliability with a Cronbach Alpha of .97 (Abidin & Konold).

The Parenting Sense of Competence scale (Johnson & Mash, 1989) is a 16
item scale assessing parents’ perceptions of their efficacy and satisfaction with
their parenting role. This scale reports sound reliability with alphas for the two sub
scales of .75 (Satisfaction) and .76 (efficacy) and an overall scale Alpha of .79
(Johnson & Mash). The PSOC is a scale that provides a measure of parental
competence on two dimensions: (1) Efficacy - defined as the parent’s perceived
competence in the parenting role and problem solving ability and (2) Satisfaction -
defined as the extent to which parents are satisfied with the parenting role as
reflected by their level of anxiety and frustration (Gibaud-Wallston & Wandersman,
1978). The PSOC consists of statements about parenting efficacy or satisfaction
to which the parent must rate how much they agree or disagree with the statement
on a six-point scale. For example, item 5 states, My parents were better prepared
to be a good parent than I am. The six-point scale ranges from SA representing
‘strongly agree’ to SD, which represents ‘strongly disagree’. Of the 16 items, items
2, 3, 4, 5, 8, 9, 12, 14, and 16 measure parental satisfaction and the remaining
eight (1, 6, 7, 10, 11, 13 & 15) measure parental efficacy. Items are totalled, with
SA being a score of 1 and SD being a score of 6, to provide a Satisfaction score
and an Efficacy score. The higher the scores obtained on the PSOC scale, the
greater the parent’s sense of satisfaction or efficacy. Scores of 31 and below on
the Satisfaction scale are in the clinical range (i.e., very dissatisfied), and scores
of 19 and below on the Efficacy scale are in the clinical range (i.e., very low
perceived efficacy). The PSOC has been found to have internal reliability coefficients of .82 and .70, for the Satisfaction and Efficacy scales, respectively (Gilmore & Cuskelly, 2008). In a study of 512 parents of 4 to 9-year-old children, Johnston and Mash (1989) found the overall internal consistency of the PSOC to be .79, with a Cronbach Alpha of .75 for the Satisfaction factor and .76 for the Efficacy factor. Other studies have demonstrated good internal consistency, ranging from .77 to .82 for fathers on the Efficacy scale, .80 on the Satisfaction scale and .77 to .80 on both scales for women (Ohan, Leung, & Johnston, 2000). Moreover, these authors also investigated the PSOC’s factor structure and demonstrated that the Satisfaction and Efficacy scales assess distinct aspects of parenting self-esteem. Hence, the scale can be considered to be a valid and reliable measure of parental efficacy and satisfaction.

8.3.3 Data analysis. All responses were collected in one dataset and imported into the SPSS Statistics software for Windows, Version 16.0 for all analyses conducted in this study. Descriptive statistics are used to describe the general demographic structure of the sample including child gender, age and parental respondent characteristics. Data were screened for normality, data entry errors and distribution of results. There were four phases to the data analysis for this study. As in the first two studies, the RCF was used to operationalise resilience. First, the score from the child adaptation behaviour and family stress measures were used as per the RCF to form the four resilience-related groups. Second, preliminary data analysis was conducted and then Pearson correlations were performed to determine the relationships among the parenting variables.
under investigation, as well as the relationship between these parenting variables and measures of child adaptation and also stress. Thirdly, aspects of parenting practices and family functioning were used as dependent variables and were analysed in relation to the four classified resilience-related groups, using a 2x2 factorial multivariate analysis of variance (MANOVA) was conducted using the two factors of exposure to stress and adversity (high & low) and adaptation (good & poor). For significant main effects, further single-factor MANOVA’s were conducted using the four group classifications as a single between-subjects factor. This was undertaken to facilitate a more detailed analysis of the four groups, in relation to parenting and other family functioning variables. Given the small response to the parenting data component, a power analysis was conducted to determine the power required to detect differences amongst the four groups. Analysis suggested a required sample size of N = 122 (current study sample size N = 129)

8.4 Results

This section outlines the data analysis and results for the final study of this thesis.

8.4.1 Initial data screening and exploration. All data were initially screened using exploratory data analyses to assess for normality, data entry errors, and notable distributions of results. None of the continuous variables exhibited a distribution of scores that precluded the use of parametric procedures. Descriptive statistics for all main variables under investigation are summarised (see Table 19).
Table 19. Descriptive Statistics for all parenting variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Statistics (n = 165)</th>
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<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
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<tr>
<td>Family subscales</td>
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<tr>
<td>General Functioning</td>
<td>43.66</td>
<td>5.08</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>18.99</td>
<td>2.25</td>
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<tr>
<td>Communication</td>
<td>21.62</td>
<td>2.76</td>
</tr>
<tr>
<td>Roles</td>
<td>25.31</td>
<td>3.35</td>
</tr>
<tr>
<td>Affective Involvement</td>
<td>25.30</td>
<td>3.27</td>
</tr>
<tr>
<td>Behavioural Control</td>
<td>33.22</td>
<td>3.96</td>
</tr>
<tr>
<td>Affective</td>
<td>22.86</td>
<td>3.22</td>
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<tr>
<td>Responsiveness</td>
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<tr>
<td>Parenting Sense of Competence</td>
<td></td>
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<tr>
<td>Satisfaction Scale</td>
<td>39.8</td>
<td>8.35</td>
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<tr>
<td>Efficacy scale</td>
<td>32.3</td>
<td>5.51</td>
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<tr>
<td>Parenting Alliance Measure</td>
<td>85.1</td>
<td>15.03</td>
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<tr>
<td>Social Support Inventory</td>
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<tr>
<td>Number of social supports</td>
<td>13.48</td>
<td>3.78</td>
</tr>
<tr>
<td>Level of helpfulness</td>
<td>3.22</td>
<td>2.19</td>
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<tr>
<td>Alabama Parenting Questionnaire</td>
<td></td>
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<tr>
<td>Involvement</td>
<td>41.13</td>
<td>4.24</td>
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<tr>
<td>Positive Parenting</td>
<td>26.71</td>
<td>2.35</td>
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<tr>
<td>Inconsistent Discipline</td>
<td>13.72</td>
<td>3.43</td>
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<tr>
<td>Corporal Punishment</td>
<td>4.94</td>
<td>1.64</td>
</tr>
<tr>
<td>Other Discipline</td>
<td>21.79</td>
<td>3.22</td>
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</tbody>
</table>
8.4.2 Correlations between main variables. Significant relationships were found between most parenting variables and the child adaptation measures. As expected, significant negative correlations were found between the Positive Behaviour scale and the Problem Behaviour subscale scores. These findings are consistent with those found in the first study in this thesis. Other notable patterns to emerge included significant positive correlations between the Positive Behaviour Scale (DECA) and parenting variables. Conversely, significant negative relationships were demonstrated between the parenting variables and the Total Problem Behaviour scale (see Table 16 for all results). Further analysis of the correlation between different parenting variables revealed a number of interesting results. A significant negative correlation was found between the Total Problem behaviour score and the level of stress (composite measure). A significant negative correlation was found between the parent’s level of parenting satisfaction (PSOC) and both the Problem behaviour score (DECA) and the level of stress (composite score).

Analysis revealed a significant positive correlation between Parenting Alliance and Total Positive child behaviour (DECA), and a significant negative correlation with stress. This suggests that families with parents who align closely in their parenting, have lower levels of stress and children with higher levels of positive behaviour. Significant correlations were also found between the use of corporal punishment and positive behaviour ($r^2 = -0.17, p<.001$). In addition, the use of corporal punishment was positively correlated with both total behaviour problems ($r^2 = -0.17, p<.001$) and stress levels ($r^2 = -0.17, p<.001$), this suggested
that the higher the levels of stress and total behaviour problems, the more likely parents were to report the use of corporal punishment.
Table 20. Correlation matrix for parenting variables

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<tr>
<td>N=423</td>
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<tr>
<td>1. DECA – Positive Behaviour</td>
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<td>19. APQ – Corporal Punishment</td>
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<td>.2’</td>
<td>.16’</td>
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** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is =significant at the 0.05 level (2-tailed).
8.4.3 Operationalising resilience. Resilience status was determined using the Resilience Classification Framework (RCF) (Mutimer et al., 2007). This procedure was conducted as described in Chapter Four using the scores from the DECA (Le Buffe & Naglieri, 2002) as the measure of child adaptation, with this new sample. Stress scores were computed as a composite measure from scores from the DHS – R (Holm & Holroyd, 1992) and the LES (Sarason et al., 1978).

Table 21 shows the outcomes of the classification; 30.1% of the total participant pool were classified into one of the four groups (N = 129). Children were then placed in one of four categories as seen in Table 21, where they met the criteria of being in either the top or lower quartile for both Adaptation and Exposure. This resulted in a total of 129 children being classified according to the RCF, 30.1% of the total participant pool.

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Good</th>
<th>Poor</th>
<th>Total</th>
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<tr>
<td>(Resilient)</td>
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<tr>
<td>Low</td>
<td>35</td>
<td>27</td>
<td>62</td>
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<tr>
<td>(Good Expected)</td>
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<tr>
<td>Total</td>
<td>70</td>
<td>59</td>
<td>129</td>
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</table>
8.4.4 Analysis of exposure and adaptation groups on parenting variables. A 2 x 2 factorial multivariate analysis of variance (MANOVA) was conducted using the two factors of exposure to stress and adversity (high & low) and adaptation (good & poor) with all of the parenting variables as the multiple dependent measures. The multivariate interaction was not significant, Wilks’ $\Lambda = .86$, $F(7, 59) = 1.40$, $p = .22$, $\eta^2 = .14$ (.00, .22). A significant multivariate main effect for stress and adversity was found, Wilks’ $\Lambda = .72$, $F(7, 59) = 3.28$, $p = .005$, $\eta^2 = .28$ (.03, .38). A significant multivariate main effect was also found for adaptation, Wilks’ $\Lambda = .59$, $F(7, 59) = 6.12$, $p < .001$ $\eta^2 = .42$ (.16, .51). For the stress and adversity main effect, significant univariate results were found for four of the seven dependent measures: Problem Solving, $F(1, 65) = 4.51$, $p = .038$, $\eta^2 = .07$ (.00, .20); Roles, $F(1, 65) = 8.16$, $p = .006$, $\eta^2 = .11$ (.02, .26); Affective Involvement, $F(1, 65) = 19.93$, $p < .001$, $\eta^2 = .24$ (.08, .39); and General Functioning, $F(1, 65) = 7.49$, $p = .008$, $\eta^2 = .10$ (.01, .25).

Examination of the marginal means for the stress and adversity main effect showed that participants with low scores on exposure to stress and adversity scored higher on all aforementioned subscales (see Table 22).

For the adaptation main effect, significant univariate results were found for all seven dependent measures: Problem Solving, $F(1, 65) = 21.73$, $p < .001$, $\eta^2 = .25$; Communication, $F(1, 65) = 12.27$, $p = .001$, $\eta^2 = .16$; Roles, $F(1, 65) = 11.46$, $p = .001$, $\eta^2 = .15$; Affective Responsiveness, $F(1, 65) = 10.20$, $p = .002$, $\eta^2 = .14$; Affective Involvement, $F(1, 65) = 9.99$, $p = .002$, $\eta^2 = .13$; Behaviour Control, $F(1, 65) = 28.80$, $p < .001$, $\eta^2 = .31$; and General Functioning, $F(1, 65) = 18.67$, $p <$
.001, \( \eta^2 = .22 \). Examination of the marginal means for the adaptation main effect showed that participants with good adaptation had higher scores on all subscales than those with poor adaptation (see Table 23).

Table 22. Mean scores on parenting variables as a function of exposure level

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<td>( SD )</td>
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<td>26.32</td>
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<td>( SD )</td>
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Table 23. Mean scores on family functioning subscales as a function of adaptation level

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<tr>
<td>Involvement</td>
<td>M 42.85</td>
</tr>
<tr>
<td></td>
<td>SD 3.6</td>
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<tr>
<td>Positive Parenting</td>
<td>M 27.31</td>
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<td></td>
<td>SD 2.11</td>
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<tr>
<td>Inconsistent Discipline</td>
<td>M 12.96</td>
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<td></td>
<td>SD 3.77</td>
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<tr>
<td>Corporal Punishment</td>
<td>M 4.44</td>
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<td></td>
<td>SD 1.34</td>
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<tr>
<td>Other Discipline</td>
<td>M 21.1</td>
</tr>
<tr>
<td></td>
<td>SD 2.48</td>
</tr>
</tbody>
</table>
8.4.5 Comparison of groups on aspects of family functioning and parenting practices variables. Due to the absence of any meaningful interaction between exposure to stress and adversity and adaptation, a further single-factor MANOVA was conducted using the four group classifications as a single between-subjects factor. This was undertaken to facilitate a more detailed analysis of the four groups.

![Mean score on General Functioning subscale for the four identified groups](image)

Figure 5. Mean score on General Functioning subscale for the four identified groups

Visual examination of the results demonstrates a consistent pattern amongst these three FAD variables, whereby the Resilient group and the Good Expected group score significantly higher than the Poor Expected groups. The Resilient group scored significantly higher in General Functioning that the Poor Expected group with a mean difference of 6.11 (95CI, 2.28,9.93), $p = .001$. The
Good Expected group also demonstrated a similar pattern with the Poor Expected group, with a mean difference of 8.011 (95CI, 3.93, 12.1), \( p = <.001 \) (see Figure 5). This pattern of results was repeated with the Problem Solving scale of the FAD with the Resilient (mean difference = 3.53, (95CI, 1.68, 5.38), \( p = <.001 \)) and the Good Expected groups (mean difference = 3.53, (95CI, 1.56, 5.51), \( p = <.001 \)) having a higher mean than the Poor Expected group (see Figure 6). A similar result was found for Affective Involvement with both the Resilient (mean difference = 3.51, (95CI, 1.25, 5.78), \( p = .001 \)) and Good Expected groups (mean difference = 5.25, (95CI, 2.83, 7.68), \( p = <.001 \)) presenting with a significantly higher mean when compared with the Poor Expected groups (see Figure 7).

![Figure 6. Mean score on Problem Solving subscale for the four identified groups](image_url)
Figure 7. Mean score on Affective Involvement subscale for the four identified groups.

Figure 8. Mean scores on APQ Involvement subscale for the four identified groups.
Another notable pattern emerged with two other subscales: Roles and Behavioural Control (FAD). The Good Expected group had significantly higher scores on these two subscales than the Poor Expected group (see Figure 9 and Figure 10). The mean differences between the Good Expected and Poor Expected groups were FAD – Roles, 3.03 (95CI, .14, 5.91), \( p = .037 \), and FAD – Behaviour Control, 5.87 (95CI, 1.79, 9.94), \( p = .002 \).

Figure 9. Mean scores on FAD Behavioural Control subscale for the four identified groups
Interestingly, these subscales show no significant difference between the Resilient group and the Poor Expected groups as found with the previously mentioned subscales. Also of note, is that the Resilient group does not differ significantly from the Good Expected group.

The only subscale that differentiated between groups but did not conform to either pattern was APQ – Corporal Punishment. On this subscale, the Resilient group scored significantly lower than the Poor Expected group (see Figure 11). Mean difference = -1.57 (95CI, -3.05, -0.79), \( p = .035 \). This suggests that parents of the Poor Expected group are reportedly using significantly more corporal punishment than parents of the Resilient group children.

Figure 10. Mean scores of FAD Roles subscale for the four identified groups.
Figure 11. Mean scores of APQ Corporal Punishment for all four identified groups.

**8.4.5.1 Parenting sense of competence.** A single-factor between-subjects MANOVA was conducted with the two subscales scores of the PSOC – Satisfaction and Efficacy as the dependent measure found a significant main effect, \( F(21, 183) = 2.88, p < .001, \eta^2 = .24 \ (\ .07, .27) \).

Significant univariate results were found for groups on both subscales: Satisfaction, \( F (3, 65) = 3.55, p = .021, \eta^2 = .18 \ (\ .05, .27) \) and Efficacy, \( F (3, 65) = 5.05, p = .004, \eta^2 = .24 \ (\ .08, .39) \).

Subsequent post-hoc testing using Tukey’s HSD on the significant univariate test results revealed a significant difference between the Good Expected group and Poor Expected group on the Parenting Sense of Satisfaction, with
parents of Good Expected (low stress exposure/good adaptation) children expressing significantly more satisfaction with their parenting role than the parents of Poor Expected (High stress exposure/ poor adaptation) children, mean difference = 8.06, (95CI, 1.04, 15.07), \( p = 0.19 \) (see Figure 12).

![Figure 12. Mean scores of PSOC Satisfaction scale for the four identified groups.](image)

In terms of parenting sense of efficacy, parents of Vulnerable children expressed a significantly lower sense of competence than the parents of Resilient (Mean difference = -6.85 (95CI, -12.77, -0.93), \( p = .017 \)) and Good Expected children (Mean difference = -7.07 (95CI, -12.24, -0.89), \( p = .019 \)) (see Figure 13).
8.4.5.2 Parenting Alliance. Analysis of the MANOVA results for Parenting Alliance revealed a significant difference amongst the four groups, $F(3, 65) = 5.05, p = .004, \eta^2 = .24$. Subsequent post-hoc testing using Tukey’s HSD on the significant univariate test results revealed a significant difference between the Good Expected group and Poor Expected group (Mean difference = 18.94 (95CI, 2.09, 35.78), $p = .022$). Parents of Good Expected (low stress exposure/good adaptation) children reported higher levels of parenting cohesion than the parents of Poor Expected (High stress exposure/ poor adaptation) children (see Figure 14).
8.4.5.3 **Social supports.** A single-factor between-subjects MANOVA was conducted with the both measures of social support and the four classified groups. No significant difference was found between the groups and either the number of available social supports or their perceived helpfulness.

### 8.5 Discussion

This section will discuss the main findings to emerge from this study. The relationship between resilience status and aspects of parenting and family functioning will be discussed. Of note is the nature of the relationship between the parenting variables and the Resilient group, when compared to both the Poor Expected and Vulnerable groups. The relationships that were found between these groups and variables will be examined and interpreted within the body of existing...
literature. Finally, limitations of the study and implications for future research will be highlighted and discussed. Implications and recommendations for interventions arising from this study will also be discussed in the final section of this chapter.

It was found that there were significant differences between parenting stress and family functioning, in terms of child outcome but not between parenting practices and child outcome. As noted previously, there is little research on actual parenting practices in relation to stress and child outcomes, although there was a significant volume of studies relating parenting styles to child outcome (Guajardo et al., 2009). Participants with high exposure to stress scored lower on all family functioning variables when compared with those with low stress. Research suggests that aspects of family functioning such as family cohesion can mediate the effect of significant daily hassles (Sheidow, Henry, Tolan, & Strachan, 2014). While no causal relationship can be determined from this study, it is likely that there is a bidirectional effect occurring in these high stress families. Where families have experienced significant and ongoing stress, it is likely that their capacity as a family to be cohesive, affectionate, and communicate well is diminished. Focus may be placed more on getting through each day in a practical sense, rather than enhancing family cohesiveness. In addition, where families are experiencing a lack of affective involvement, responsiveness, and poor problem solving and communication then this may contribute to feelings of greater stress. There may be a sense of disconnectedness within the family, which may make parents feel a lack of understanding and emotional support.
Interestingly, with regard to actual parenting behaviour, in this study no difference was found between the use of parenting practices and levels of participant/parent stress. The use of specific parenting behaviours in this study was not found to be linked with stress levels. It would generally be anticipated that the use of more "negative" parenting practices, such as corporal punishment and inconsistent discipline strategies might be more characteristic of parents who are under stress, however in this sample this was not the case. Past research has demonstrated that parental stress is associated with higher use and approval of corporal punishment (Crouch & Behl, 2001; Gershoff, 2002). Given the negative attention that such parenting practices have received in the media, perhaps parents in this sample were less likely to report such behaviours due to social desirability and therefore the lack of relationship with stress is the result of response bias rather than a lack of an actual relationship. As none of these measures contained a social desirability bias adjustment, it would be clinically important to develop one.

Participants with higher levels of stress exposure reported lower levels of parenting satisfaction than those with low stress, however there was no difference between a parent’s sense of parenting efficacy and stress levels. It appears that feeling satisfied with the parental role is linked to generally feeling less stressed. Perhaps when parents have a significant area of their life (being a parent) that they perceive is working well, it acts as a buffer against additional stress. Alternatively, when a parent is experiencing significant stress they may be less able to find satisfaction in a range of areas, including their role as a parent. Past research has
shown that parenting stress increases as stress increases, and that these changes seem to occur in unison (Kurdek, 2003). In addition, in families with lower levels of stress, parents were more aligned in their parenting. This may reflect a source of social support that is being used to reduce stress. That is, when parents feel that their partner would make the same parenting decisions and is consistent and supportive of their own parenting behaviours, they may perceive this as a form of support and thus this reduces their overall stress levels. Certainly, marital satisfaction and stress are shown to be linked with each other (Achenbach, 1991; Kurdek, 2003), and satisfaction is likely to be higher when a parent feels their partner shares their values and supports their decisions when parenting. Therefore, while there was no relationship found between social support and stress, when looking at families and child behaviour in particular, it is evidently important to investigate parental alliance, as this may be working as a form of intimate social support that does reduce stress levels. A prospective study that looked at increasing parental alliance, and then examined the changes in stress levels would allow researchers to more confidently make causal direction statements.

When considering child adaptation and family functioning, a significant difference was found between the child’s level of adaptation and most family functioning variables. Children with good adaptation came from families who scored more highly on all aspects of family functioning. Therefore, families who had good levels of affective responsiveness and involvement, communication, problem solving and behavioural control had children who were more well-adjusted
in terms of presence of positive behaviour and lower negative behaviours. Consistent with the findings of the current study are those of Wyman et al, (2000), who, from their review of the literature concluded that specific elements of parenting practices impacted on child outcomes. These elements were child supervision, consistent discipline and active involvement. These are similar to the variables assessed in the Alabama Parenting questionnaire and may have some overlap with the Family Functioning measure. It is likely that in families where there is connectedness and engagement from parents, children respond to this with improved behaviour. In addition, when children’s behaviour is problematic there is a coercive cycle that can develop leading to poorer parenting choices, and perhaps also lower levels of family functioning. Once again making a directional attribution is difficult, as it is likely that there is an interactional effect occurring between child adaptation and family functioning.

Aspects of parenting practices were also found to differ between families with children with good or poor adaptation. Children with good adaptation came from families where parents were more involved, used more positive parenting strategies (such as clear and logical consequences, rewards for appropriate behaviour etc.) and significantly less corporal punishment. It has repeatedly been shown that parenting behaviours are linked to child behavior, with positive parenting associated with positive child behaviour. For example, Shelton et al (1996) found that negative parenting practices, such as corporal punishment, were predictive of problem child behaviour. Other researchers have found that inconsistent discipline, lower levels of parental engagement and harsh discipline
were linked to child externalizing behaviour problems (Hann & Borek, 2001). Resilience has also been shown to be linked to parenting practices in past research. As an example, Moos and Moos (1986) found resilient children came from families with lower levels of conflict and greater expressiveness in family relationships. Parenting practices firmly fit into the category of modifiable modifiers (Luther, 2006), and therefore by providing parents with access to interventions that specifically build up positive parenting behaviours, there is likely to be an impact on child resilience. As with most interventions, the earlier this occurs the more beneficial it becomes as resilience is seen to develop at a very young age.

The main result to emerge from this study can be summarised as follows: analysis revealed a significant difference across the four resilience groups (Resilient, Good Expected, Poor Expected and Vulnerable) on parenting practices as a whole. More specific analysis revealed significant differences on Involvement and Corporal Punishment amongst the groups. In general, children with more positive overall adaptation came from families with parents who reported being more involved with their children and who reported using less corporal punishment than those parents with a child identified as having poor adaptation. Further, the four classified groups: Resilient, Good Expected, Poor Expected and Vulnerable were compared across all five subscales of the APQ. Interestingly, the parents of the Resilient group scored higher on all positive parenting practices than any other group. However, this difference only reached significance for the Resilient group when compared with the Poor Expected group on Involvement and Corporal Punishment. In addition, the Resilient group did not differ significantly from the
Good Expected group on any aspect of parenting. The resilient group appeared to have experienced parenting practices such as parenting involvement and lack of corporal punishment that may well have provided a buffer against poor outcomes. Interestingly, those aspects differentiated between families with good and poor adaptation, whereas others, such as Positive Parenting, Inconsistent Discipline and Other Discipline, did not.

While no causal relationship can be established on the basis of these results, it is interesting to consider whether different aspects of parenting have different relationships with child adaptation or outcomes. Do good parenting practices facilitate good adaptation or is the reverse true? This is vigorously debated amongst parenting researchers (Shelton et al., 1996). It may be that positive child adaptation (absence of problem behaviours and presence of positive behaviours) affects the relationship between parent and child. For example, a child with good adaptation may more easily engage an adult in conversation, quality time (e.g., playing together) and involvement in their daily organised activities (Involvement). Conversely, parental involvement as described above may provide a buffer to the level of adversity experienced, and support the development of more positive adaptation. Rather than considering this relationship as an “either-or”, there may be a reciprocal relationship. Research seems to support this view. Werner (1985) described child characteristics and their impact on resilience. She described resilient children as having a strong bond with one adult caregiver and having temperament characteristics that illicit positive responses from adults (Werner, 1985). Conversely, family mechanisms and relationships have been
described as crucial in children developing strong positive social and behavioural functioning (Sheridan, Eagle, & Dowd, 2005)

In relation to corporal punishment, the parents of resilient children were less likely to use corporal punishment than the parents of children in the Poor Expected group. Shelton et al (1996) found that negative parenting practices, for example, corporal punishment, were predictive of problem child behaviour. Sanders (2008) found that parents who used smacking as a discipline measure had fewer positive behaviour management strategies available to them. It may be that other more positive strategies used by parents of resilient children (in the absence of smacking) also impact on the child’s positive adaptation. Masten (2001) suggests that risk factors are often on a continuum with positive ends having positive outcomes, and negative ends having negative outcomes. The example she uses is of parenting, with good parenting lending itself to more positive outcomes for children. However, as Masten points out this may be the result of “good” parents who “may produce fewer stressful family life events (risks), choose to live in neighbourhoods with low crime rates (risks), can access good community resources (assets), and be more likely to hire tutors for their children (assets)” (p. 228). This study demonstrates that the relationship between family factors and resilience is as Masten suggests, a complex one. Further, this current study was novel in demonstrating a link between specific parenting practices, and family functioning and resilience with children. Interestingly, this research found that social support was not related to resilience, unlike results from many past studies.
It was anticipated that there would be significant differences in the number and quality of social supports when comparing resilience groups. There was in fact no difference found, and social supports were in fact found to be positively correlated with behaviour problems. That is the higher the perceived helpfulness of social supports the more likely parents were to report behaviour problems in their children. This was not an anticipated result, and this is not consistent with previous research. It may be that social support actually forms part of the caregiver variables and is linked more to the parenting alliance variable. That is, given that research has shown that the marital relationship is the main support utilized by parents (Belsky, 1984), and this study actually measured how aligned parents are, it may be that the current research is tapping into the main social support used through the alliance variable.

This is the first study investigating social support within a four group resilience classification model, and results indicate that social support did not differentiate amongst the groups. This may not necessarily mean that social support is not a key variable in resilience, but rather may be the result of the measure not tapping into the relevant aspects of social support. While the helpfulness of social supports was measured, there was not information that allowed the researcher to determine the impact of stress on the actual use of social support. Future research may benefit from more investigation into the qualitative aspects of social support. Coyne, Ellard and Smith (Coyne et al., 1990) have previously highlighted the need for qualitative methodology regarding the effectiveness of social support, and such data in the current study would have
perhaps allowed the researcher to understand why social support was not linked to resilience status.

It is of interest to note that for both High Exposure and Low Exposure groups both had similar levels of social support, however the perceived helpfulness of the supports showed a trend towards the High exposure group having greater variation in the perceived helpfulness measure. This may be the result of some outliers in the data, and a larger sample size may provide more consistent findings with regard to level of satisfaction with social support.

8.5.1 Limitations. While research has suggested a strong correlation between the APQ and actual parenting practices (Shelton et al., 1996), it is important to note that the findings of this study were based on a parent self-report measure of parenting practices. For comparison, it would be useful to include some direct observation of parenting practices in future research. It is well recognised that response bias can occur in self-report research methodology (Parent et al., 2014). The findings of this study are also correlational only. True experimental designs, longitudinal studies using a cross lagged design would address this issue and allow causational findings to be presented.

The response rate for the study was noted as a good return rate, at a little more than 30%. However, no information is available about those families who chose not to respond. The region from which the sample was drawn contains a large number of NESB families. While the sample is large, it may not be fully representative of the area.
8.5.2 **Clinical Implications.** The findings from this study present the opportunity to address resilience from a clinical perspective. Given the strength of the correlation between aspects of parenting behaviour and resilience status, it would make sense to address these clinically. In particular, the Vulnerable and Poor Expected groups present the greatest opportunity for early intervention. It would be beneficial to provide an empirically based parenting program for families from these groups for a number of reasons. Empirically based parenting programs, such as the Positive Parenting Program (Sanders, 2008) are now adding modules to the ‘base’ program, after research had clearly identified the clinical benefits (Ayoub et al., 2014; Guajardo et al., 2009; Gulliford, 2015; Hipke et al., 2002; Sanders, 2008; Shlonsky et al., 2016). Utilising the RCF has a screening tool would allow the identification of the most vulnerable children and families. This could be utilised through the Maternal and Child Health screenings for all children at key developmental times. In times of limited resources, this would allow those resources to target the most susceptible children.

8.5.3 **Conclusions.** This research makes an important contribution to the resilience literature. First, it considers parenting processes within families drawn from a ‘typical’ range rather than a clinical population. This allows inferences to be drawn across families rather than from one specific, atypical group. Second, provides a comparison group for future studies of preschool children. This is a key criticism of the resilience literature to date. Thirdly, it examines processes (i.e., parenting behaviours) rather than products (i.e., behavioural outcomes) to enable information to be collected to inform intervention. The findings relating to two
important aspects of parenting practices, involvement and corporal punishment, could be incorporated into an intervention; in fact, there are several existing parenting interventions that address these issues (Ayoub et al., 2014; Sanders, 1996). It will be important to discover what impact intervention addressing these factors would have on more at-risk children (i.e., the Poor Expected and Vulnerable children identified in the current study).

Masten (2001) concludes that resilience consists of “ordinary rather than extraordinary processes” (p. 227). This study demonstrates that families of resilient children are not performing “extraordinarily” different parenting behaviours, but rather are families that are more cohesive, involved, interested and communicative. Masten argues that where human adaptational systems are functioning well, then in the face of adversity, development is “robust”.
Chapter Nine - General Discussion

This thesis presented the RCF, a framework designed primarily by the author to address the multitude of methodological issues present in resilience research to date. The RCF was utilized across three studies investigating various aspects of resilience in preschool and early school age children. The first study investigated the changes across time in terms of child adaptation and family stress in preschool children and their family context across a twelve-month period. A particular focus of this study was to determine the stability of classification with the RCF over time. The second study, following up with the same sample twelve months later, examined school adaptation of children previously categorized using the RCF. A particular focus centered on whether this classification status was associated with particular patterns of adjustment in the transition to school. The third and final study examined the factors within the family and parenting practices that were associated with child resilience status, using a new, larger sample of preschool children and their families. The studies were strategically planned to address gaps in the current research body on resilience and aimed to assist both researchers and clinicians with a focus on resilience, with an investigation of variables amenable to change.

This chapter will begin with a brief summary of the findings of each of the studies, with an examination of the implication of these results. This will be followed by an examination of the theoretical issues and implications of the results, including how the RCF can be used to guide future research. This will be followed by an examination of the methodological issues pertinent to the three studies that form
the overall thesis. Clinical implications will then be presented, with a focus on how the findings of these studies can be applied to intervention programs. Finally, directions for future research are suggested, along with overall conclusions.

This thesis investigated a number of areas related to child resilience in preschoolers, and then investigated school adaptation in a subsample of children who were able to be categorized into one of four child resilience groups: Resilient (high stress, good adaptation), Good Expected (low stress, good adaptation); Poor Expected (high stress, low adaptation) and the Vulnerable group (low stress, poor adaptation). This thesis first outlined the development of the RCF and its utility in addressing the many methodological issues identified across research over many years. The first study used the RCF to categorise child resilience and to attempt to address the identified limitations of previous research. The RCF was shown to be a methodologically sound, and has created a theoretically relevant classification system that can be used by future researchers to further examine resilience. The first study demonstrated the effectiveness of the RCF at classifying children into one of four resilience categories (Resilient, Good Expected, Poor Expected and Resilient). It was found that a child’s classification according to the RCF, remained reasonably stable across the twelve-month period of the study. For the majority of participants, if a child showed good adaptation (high positive factors and low behavioural concerns) at Time 1, then they were more than likely to show positive adaptation levels at Time 2. In addition, behavioural concerns were significantly lower at Time 2 than at Time 1 across the sample. Children who varied did so due to levels of family stress. The Vulnerable group of children showed the greatest

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variability across the twelve-month period, in comparison to the other groups investigated. Although a child’s classification rarely varied across time, when it did differ, this was most often attributed to changes in level of family stress exposure.

Study 2 examined the school adjustment of children categorized into one of the four RCF groups. This study was limited by the relatively low response rate making the results difficult to examine statistically. Consistent with previous research, parent and teacher agreement was generally low on a variety of child variables. It was found that children classified in the Good Expected and Resilience groups tended towards more positive school adjustment on a range of developmental areas, when compared with the Vulnerable and Poor Expected children. Interestingly, almost all of the children identified as Vulnerable in Time 1, repeated their kindergarten year. This indicates that the RCF classification of vulnerable children at preschool may present a reliable and valid predictor of lack of readiness for transition to school. School readiness was linked to high levels of protective factors, such as initiative, higher levels of self-control and better emotional regulation skills, (in relation to positive adaptation), suggesting that resilience is linked to success at adapting to school, albeit within a small sample.

Study 3 investigated aspects of family functioning and parenting behaviours that were associated with resilience in children. The aim of this study was to examine whether there are modifiable factors that may be able to be addressed in order to improve the ability of children to cope in adverse circumstances. Negative correlations were found between parenting stress and positive parenting behaviours, and problem behaviour in children. Parenting alliance (how aligned
parents are in their parenting) was positively correlated with positive child behavior. Interestingly, unlike previous research, social support was not found to be related or predictive of child resilience status.

The theoretical implications of these results will now be examined in light of past research and within the context of current theories of resilience.

9.1 Theoretical issues

It has previously been identified that resilience is more than just an absence of negative behaviours. This dissertation has demonstrated that there is a clear relationship between the presence of positive behaviours and an absence of negative behaviours when considering whether a child is resilient. The resilient children in this series of studies were those who were functioning adaptively across a range of settings. This highlights the need for resilience research to utilise multiple informants, a broad range of statistically sound and valid measures, and the use of a broad sample of the population of interest.

9.1.1 The Resilience Classification Framework (RCF). The RCF was developed by the author to address an identified need in the existing research and to provide rigour in decision making in resilience classification status. As has been previously discussed, differences in the way resilience has been operationally defined in the existing literature has resulted in difficulties in generalising findings across or between studies (Infurna & Luthar, 2016; Le Buffe & Naglieri, 2002; Luthar, 2015). Despite there being agreement on the basis of the construct, the methods for defining, measuring, and classifying resilience status vary considerably across the existing research. Key researchers in the field have
agreed that there is a need for the development of consistent, clear, and uniform research practices in the area of resilience (Infurna & Luthar, 2016; Luthar et al., 2000a; Masten & Labella, 2016; Shulman, 2016; Ungar, 2016; Yates & Masten, 2004). The RCF meets this need by providing a novel, statistically sound and clinically valid method for operationalising resilience.

The RCF has begun to be utilised by other researchers in the field of resilience (Katooa, 2014; Thomas & Reece, 2006; Wade & Reece, 2006). This dissertation has demonstrated its effectiveness with different preschool populations, and also investigated its stability across time. This is the first known theoretical framework in the area that can be used to inform and guide future research methodology. The RCF provides guidance in selecting appropriate constructs and resulting in psychometrically sound measures. The RCF identifies four main groups of interest from the larger sample: a Resilient group; a Good Expected group; a Poor Expected group, and a Vulnerable group. The derivation of four groups through the use of the RCF attempts to provide a solution to the identified debate around the decision-making processes in resilience research (Luthar, 2006; Masten 2007). With the diversity of decision making processes in the literature, generalising across studies or even comparing studies has been almost impossible. Researchers and clinicians could now access this assessment tool.

These groups were determined through sound statistical procedures that allow for clear distinctions to be made without the need for researchers to decide their own cut off points or have cut offs that do not clinically distinguish between
groups. As has been identified, previous studies such as Grotberg’s (1995) International Child Resilience (IRP) study have used percentiles to classify participants. Grotberg classified participants whereby the top 33% were considered ‘resilient’, the middle third ‘somewhat resilient’, and the bottom third ‘not resilient’. One advantage of using this method is that all participants within the sample are classified. However, the challenge that then presents is in determining the differences between the 33rd percentile and the 34th percentile, whereby the former is considered ‘not resilient’ and the later ‘somewhat resilient’. Any results based on group differences would then need to be interpreted with caution.

As has been argued in the introduction to this dissertation, an arbitrary within sample process such as that used by Grotberg, then results in a child’s resilience status varying according to the characteristics of the particular sample under study. Potentially, a child classified as “resilient” in one sample could be classified as “vulnerable” in another as their status is dependent on the adaptation levels of their sample peers (rather than on their own adaptation in relation to the levels of risk experienced or their adaptation levels in relation to the broader population). The use of the RCF reduces the likelihood of inconsistency in classification, and would therefore allow studies to be more accurately compared.

While most studies have identified two main groups in their samples: resilient and non-resilient (or vulnerable), there are other clusters of children who have not been considered, but who clearly are relevant to the study of resilience. These are the groups of children who have low stress and good adaptation (Good Expected) and those with low stress and poor adaptation (Vulnerable). It seems
logical to assume that some participants within a general sample are not experiencing either high or low levels of adversity, or experiencing developmental outcomes outside the typical range. Masten (2011; 2003) argues that by having a simple dual classification system - resilient or not; the opportunity will be lost, to learn about other vulnerable subsets within the study population, for example, those children doing poorly in the face of very little stress or adversity.

The classification status of the children identified in this dissertation as fitting into one of the four resilience groups remained relatively stable across a period of twelve months. The children in this series of studies were studied prior to school entry, and then after they had entered school both through parent report and teacher report. While the sample size at the follow up time 2 (first year of formal schooling) was small, it was evident that those resilience classifications suggested differentiation between outcomes for children. That is, those children who were in the positive resilience categories (Good Expected, Resilient) had descriptions from their teachers that indicated good functioning at school, appropriate adjustment, and functioning in key areas that was at or above expected levels. This suggests that the RCF has good construct validity, in that it is in fact describing the theoretical construct of resilience. Those children in the less positive categories (Poor Expected, Vulnerable) had teacher reports that clearly indicated more challenges adjusting to school, and less well developed abilities in key areas. Therefore, the RCF would appear to have some predictive validity as a measure of differentiating those children whose resilience is less well developed from those who are more resilient. Due to the small sample size under study here, future
research should reexamine this within a larger sample to determine the extent of the predictive validity of the RCF.

**9.1.2 Resilience research in the general population.** Previous research on resilience, particularly in children, has focused on at-risk populations or participants who have gone through a specific adverse event. A thorough review of the research has shown that there are limited studies on resilience in the general population. Using a sample of children recruited from the wider population allows for a broader examination of stress and adversity and child adaptation. Many key researchers strongly argue for further research within the general population to examine how child and family characteristics react and change with stress (Ergüner-Tekinalp & Terzi, 2016; Henry et al., 2015; Joslyn, 2015; Shulman, 2016).

One of the aims of this dissertation was to address this highlighted issue by using a sample of children drawn from the general population, and examining the relationship between stress (both daily hassles and stressful life events) and a number of child variables. Tschann et al. (1996) highlight the importance of looking within the general population to determine relationships amongst the variables related to resilience. As has been found in the research conducted as part of this dissertation, there is a relationship between family stress and child functioning in the general population.

Masten (2016) argues strongly that resilience is in fact a rather ordinary and common phenomenon that is influenced by child and family environment factors that seem to correlate consistently with positive outcomes. These include connectedness to parents and family, cognitive and behaviour control skills,
positive self-esteem and motivation to function well. The current research studies have demonstrated that resilience does appear to be related to relatively ordinary parenting and family variables, such as feeling connected, being able to communicate and problem solve, and using positive parenting behaviours. In addition, it seems that children, who are resilient, are also likely to have less difficulty with academic tasks and to be able to adapt to school more readily than their non-resilient peers.

The studies conducted as part of this research did not utilise an at-risk sample. Therefore, there is the potential to use this sample as a form of comparison group for other studies. In fact, the identification of the Good Expected and Vulnerable groups could provide an opportunity to use these groups as a form of ‘control’ to determine what occurs as the child experiences different levels of stress and adversity. As has been previously discussed, few studies from the resilience literature have included a control/comparison group. An identified issue in the existing research is that it is difficult to determine whether a resilient child in an at-risk sample is comparable to a competent child in the general population (Luthar & Zigler, 1991). It is evident that having a control against which to compare results allows researchers to more effectively determine the effect of the adverse event or risk on overall resilience. Future research utilising children from a similar population to the one used in the first study of this dissertation may be able to compare results in order to examine whether the at-risk sample is significantly different to a sample drawn from the general population.
The RCF is well placed to assist in the development of a community screening of the general preschool population. This could enable early identification of children at risk, prior to or during significant stressors. Currently, in Victoria, preschool children are screened for achievement of developmental milestones regularly through the Maternal and Child Health reviews. However, little formal assessment is conducted of the broader context of the child’s environment, e.g. stress and adversity and levels of daily hassles. Adding this type of assessment, would further enable the provision of early intervention to address the possibility of ameliorating negative outcomes later in life. This will be discussed in greater detail in section 9.6.

9.1.3 Examination of modifiable variables in resilience research. The existing resilience research described previously has had a tendency to focus on protective factors that includes those variables that work to mediate the effect of any adversity on outcome (behaviour and functioning). The majority of these previously investigated protective factors (e.g. gender, temperament, culture, socio-economic status) have involved characteristics that are relatively stable and closed to change. In more recent research, investigators have shifted towards examining factors that are amenable to change, such as parenting behaviour, social support, discipline measures etc. Luthar (2006) describes these as ‘modifiable modifiers’. Examples of such variables in child resilience research include areas such as parenting practices and aspects of family functioning. Many researchers agree that it is these processes that should form the basis for future resilience research, given that they lend themselves to intervention (Masten, Best,
et al., 1990). The final study in this dissertation contributed to the theoretical body of work by providing such an examination. This study found that children with more positive overall adaptation came from families with parents who reported being more involved with their children and who reported using less corporal punishment than those parents of children with poor adaptation. Further, the Resilient group scored higher on all positive parenting practices than any other group. Positive parenting is a set of behaviours that parents’ use that are considered appropriate, constructive and not damaging to the child. In relation to this study, these included positive parenting behaviours, such as use of praise; and conversely, aspects of discipline such as inconsistent practices as well as use of corporal punishment; and lastly, levels of parental involvement (Sanders, 2008). Such parenting behaviours are modifiable as there is an abundance of evidence to demonstrate that intervention to target specific parenting behaviours (namely increasing positive parenting practices) results in a change in actual parent behaviour, and as a result a positive change in child behaviour (Gewirtz et al., 2008; Gulliford, 2015; Hipke et al., 2002; Shlonsky et al., 2016).

9.2 Methodological issues

This research was conducted with samples recruited from the general population, with the specific aim of examining stability over time. As a result, longitudinal research methods were utilised. As has been repeatedly demonstrated over many past research studies, the major problem with longitudinal studies is participants not completing all stages of the research. This was an issue in this study, despite the time frame being only a period of twelve months. For future
research, it would be crucial to maintain an unobtrusive regular contact with participant families, e.g. by way of newsletter or subscription to a project website.

Increasing the difficulties in conducting statistical analysis in Study 2 was the small number of children who met the criteria to be included in one of the four classification categories. As a result, many children were not categorised and this resulted in their data not being utilised for quantitative analysis. With a larger sample, the number of children classified into one of the four RCF categories would allow for meaningful statistical analysis to be conducted and group differences examined.

The samples utilised in this study were from a limited range of geographical locations, thus presenting a further issue of generality of the results. Children in Study 3 for example came from predominantly two parent households (just over 90%), which is not reflective of the general prevalence of single parent households (approximately 20% according to ABS 2008). Additionally, the surveys were written in English and therefore families from Non English Speaking Backgrounds (NESB) may have had difficulty participating in the study. Whether the same findings would be found with children from divorced/single/blended families, more diverse cultural backgrounds and lower SES levels is unclear and in need of further investigation. The next wave of research could include a large representative sample so that normative data can be collected on both the RCF and the rates of differing classification in the general community.

Additionally, the use of parent and teacher reports provided a sound comparison between parent and teacher views of children, at the critical stage of
school entry. For future research, it would be beneficial to include objective, blind observers of child behaviours at home and at school, to validate data and address any reporter-bias.

9.3 Clinical implications

The results from this dissertation provide evidence for the need to identify children whose resilience status puts them at risk of negative outcomes (Poor Expected and Vulnerable) as these children were also identified by their teachers as having more problematic adjustment to school. By identifying these children prior to school entry, early intervention and support can be provided to reduce the likelihood of these negative early outcomes. The RCF could be used to develop a simple community based screening tool. This would involve an initial large scale standardisation study to be conducted, so that Australian norms for the RCF would be available. This could be utilised at a key entry point for young children, such as the three year old developmental check at the Maternal and Child Health service or upon entry to a funded kindergarten program. Masten (2015) suggests that interventions to develop resilience should focus on enhancing assets, as well as reducing risks. Assets are protective variables that have been shown to be linked with better outcomes (e.g. academic competence, coping skills, positive parenting behaviours etc.). Study 2 demonstrated that non-resilient children showed lower levels of academic functioning than their resilient peers, and this may be an area that can be addressed to improve child outcome. For example, additional literacy and numeracy support may benefit these children to ensure their academic functioning keeps pace with their peers. In addition, these children may need...
assistance in developing coping skills to deal with stressful school situations, and their parents may need strategies to deal with negative child behaviour, for example see the work of Gulliford and colleagues (2015).

Masten’s (2001) contention that resilience develops as the result of ordinary processes, along with the results of the present research, support the idea of focusing intervention on “efforts that protect or restore the efficacy of these basic systems” (p.235). This thesis identified some key aspects of parenting behaviours and family functioning that differentiated between groups of classified children. Intervention needs to be targeted dependent on group classification. It may be that dependent on the RCF classification, families could be provided specific intervention to target either adaptation and/or stress management. At the family level, this may involve working with at risk families to improve their cohesiveness, communication, positive parenting behaviours, and sense of alliance, through using an existing empirically-based program such as Triple P (Sanders, 1999). At the child level, it may involve providing problem solving training, social skills training, confidence building, and academic tutoring. This could occur as an adjunct to a parenting program or as a stand-alone program that could be incorporated in a universal service such as kindergarten. A targeted specialist program could be developed relating to key aspects of resilience that could be utilised by specialists such as psychologists working in schools. Research suggests a clear link between many different parenting programs and better outcomes for children (Armstrong et al., 2005; Ayoub et al., 2014; Gulliford, 2015; Luthar, 2015; Sanders, 2008; Shelton et al., 1996; Sher-Censor et al., 2016;
Shlonsky et al., 2016; Zakeri et al., 2010). Currently, researchers and clinicians are using the formula of developing specific modules to be ‘tacked on’ to existing, empirically based parenting programs (Ayoub; Gulliford; Sanders). Initial research suggests good outcomes for participants in the targeted areas. To date, none of these modules or add-ons have been tested within a resilience framework. Given the ability of the RCF to identify four groups of interest, the next step would be to trial these modules with and without a generic parenting program to determine efficacy for the specific group. Ultimately, it will be critical to be able to provide a ‘prescription’ based on a child’s and family’s classification based on the RCF. If a child’s resilience status is as stable as this research suggests, then providing intervention in early childhood provides the keys to later resilient outcomes regardless of the threats or stressful life events that may occur across the child’s life span.

There is also a group of children identified in this research who have received little research focus and who are in need of attention both from a research perspective and from a clinical perspective. The children who are identified as falling into the “Vulnerable” category, had very low exposure to stress and yet their adaptation was described as poor. The implication is that despite living in families where there is minimal stress, these children are not functioning adaptively or in a manner that is likely to protect them from any future stress. It would be predicted that if this group is exposed to stress or adversity, then they would be considered ‘at-risk’. Given that these are children who are already not showing good levels of adaptive functioning, they may then fall into a critical low level of functioning. The
reasons behind the Vulnerable group’s lower level of functioning have not been examined in this research, and one can only hypothesise about the possible causes of a lack of adaptation in the face of limited stress. When considering the measures of adaptation, it is clear that these cover both positive behaviors, including initiative, self-control and attachment, and also, negative behaviours, including attention problems; aggression; depression and emotional control problems. Children who don’t have a high level of stress in their lives but who are showing low levels of these positive behaviours and high levels of the negative behaviours may have an underlying developmental issue that needs to be identified and addressed. This could possibly be a specific developmental delay or psychological issue of childhood (e.g. anxiety, ADHD, behavioural disorder) that requires assistance and intervention in order to boost the child’s adaptation. By improving a child’s adaptation, there may be the opportunity to protect them from more adverse outcomes if they are exposed at some later date to stressful life events or ongoing daily stress. Given that external family stressors was the least stable aspect under study, it may be beneficial to provide additional support to families, e.g. social workers and community support services to support good outcomes in children and families.

9.4 Suggestions for future research

Using the RCF in future Resilience Research: The RCF clearly provides a strong basis for future resilience research to overcome many of the previously identified issues in research methodology. By following a consistent process, future research would then be more open to comparison across samples, and allow
for statistical analysis and interpretation of results to be more universal. As this becomes possible, it will allow more stringent recommendations to be made clinically. In addition, future research should utilise the Resilience Decision-Making model (as outlined in Chapter four) to ensure that future research was developed using a common model to enable comparison across resilience research and amongst resilience studies. Future research is needed to examine the effectiveness of the model and prescribed procedures across a range of populations of interest.

In order to gain the full clinical benefit of the RCF, a large-scale normative study should be conducted. This will provide relevant and current Australian norms to enable researchers and clinicians to make clear clinical judgments about a child’s resilience status. The standardisation of the RCF will then allow norms to be developed to support the screening of all preschool children as described in the previous section. This could occur at the three-year-old developmental screening conducted by Maternal and Child Health services in Victoria.

One area for future research is the investigation of whether intervention to develop positive parenting behaviours results in increased resilience in children. The RCF can be used as both, initially as a screening tool, then post study as a program evaluation tool. There is a vast body of research to show that positive parenting interventions lead to positive changes in child behavior (Gewirtz et al., 2008; Hipke et al., 2002; Prevatt, 2003; Sanders, 2008; Shelton et al., 1996; Zakeri et al., 2010) however whether it also results in generalisation or maintenance of the child’s resilience status is still to be determined. Whether a child is able to
become more resistant to life’s stressors if their parents use different parenting methods would be of interest both theoretically and clinically. It is important to discover what impact interventions addressing parenting factors would have on more at-risk children (i.e., the Poor Expected and Vulnerable children identified in the current study). Parent training using behavioural intervention techniques is an effective and proven way of altering the management strategies parents use with their children (Ayoub et al., 2014; Sanders, 1999, 2008). Future research would also benefit from longitudinal studies with larger samples of children that investigate resilience status in the general population over time, to examine whether a child’s resilience status remains constant over a longer period of time (compared with the 12 months outlined in Study 2). It would also be beneficial to follow children from a younger age in order to examine the relationship between parenting and child resilience, as it is still unclear whether child resilience status impacts on parenting behaviours or vice versa. By following children from very early in life it will allow for causal inferences to be made.

Given these methodological issues related to sampling, it is important that the studies presented in this dissertation are replicated with larger representative samples in order to assess the issues raised in this section. This would also address the limitations of some of the smaller sample sizes in these studies.

9.5 Final Summary

This dissertation has utilised a model of resilience classification (RCF) that can now be used to provide consistency in the way in which resilience is classified and examined in future research. The four classification groups have been shown
to systematically differ on a range of variables, from parenting practices and family factors through to school adaptation measures. Resilient children clearly have what Masten (2001:2015) defines as “assets” that result from basic resources that work to enhance their adaptive processes. These “assets” are often modifiable factors that can be enhanced through intervention. Reassuringly, resilient children are not extraordinary, nor do they possess skills or competencies that are unattainable by their less resilient peers. Indeed past research in a range of areas has clearly demonstrated that these modifiable factors can be successfully taught. Areas such as positive parenting, family functioning, academic functioning, social skills and problem solving are all modifiable assets that can be improved through focused intervention. There are existing, empirically supported intervention programs for all of these variables that have demonstrated efficacy and generalisability. Future research will now be able to use the RCF to further examine other possible contributors to both adaptation and risk in order to identify all key variables involved in the development of resilience.

With the move towards positive psychology, resilience fits firmly within this approach to the study of human functioning (Masten, 2001:2015). Resilience clearly develops from an early age, in part as a result of internal attributes of the child and also as a result of the environment in which the child is raised. The current research studies presented as part of this dissertation have aimed to address the identified gaps in the existing research body, and provide a significant contribution to future research in this area.
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