

**TITLE**

Parental Psychological Flexibility in Parenting of Adolescents

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**DEGREE**

Doctor of Philosophy (PhD)

**YEAR**

2013



## ABSTRACT

Parenting interventions that adopt a Parent Management Training approach have consistently been shown to reduce behavioural difficulties in children and to reduce the use of coercive and ineffective parenting practices. However, results from programs with parents of adolescents have produced mixed findings and challenges with engagement and retention. Given the important protective role that parents play in the lives of their adolescent children, further research into how to improve outcomes from parenting interventions is required. Interventions that seek to increase psychological flexibility (the ability to take action that keeps the state of their relationship and/or the wellbeing of their child in mind even when doing so is linked to difficult internal experiences for the parent) such as those that take a contextual-behavioural approach (e.g., Acceptance Commitment Therapy) may provide a way forward. To-date, no research has focused on the role of parental psychological flexibility on outcomes for parents and adolescents during the teenage years. This is an important step that will begin to answer the question as to whether adding contextual-behavioural approaches to current evidence-based parenting interventions would enhance outcomes for families.

This thesis therefore aimed to investigate a model of parenting that proposed that parental psychological flexibility would be related to parental self-efficacy and satisfaction (sense of competence), parenting practices and adolescent behaviour. Two studies were undertaken as part of the project. The first aimed to address a gap in the measurement of the parental psychological flexibility construct by developing a questionnaire applicable for a general parenting context. The second study refined this measure and tested the relationships between parental psychological flexibility, parent and adolescent outcomes.

Results indicated that parental psychological flexibility was directly related to parents' sense of competence and was related to parenting practices both directly and indirectly via its effect on parents' sense of competence. As expected, parental psychological flexibility was indirectly related to adolescent

behaviour via its effects on parents' sense of competence and parenting practices, however direct relationships were also found. These results provide important initial evidence of the relevance of parental psychological flexibility in parenting adolescents. Additionally, the project resulted in the development a measure, the Parental Psychological Flexibility Questionnaire, with a stable factor structure and sound psychometric properties. Outcomes from this research add to our understanding of factors with potential to strengthen the parent-adolescent relationship and reduce the risk for behavioural difficulties during the adolescent years.

## ACKNOWLEDGEMENTS

This thesis commenced as a personal learning opportunity for me. I have immensely enjoyed the process and cannot count the ways in which I think I have benefited from the experience. Of course, this would not have been possible without the input and support from the many people (and little fur babies) in my life.

First I must acknowledge the generosity of the hundreds of parents that took the time to participate in this research and to the experts who provided feedback during Study 1. Without you there was no project! Thanks also to the many colleagues and organizations that helped to promote the study. In particular, thank you to the Parenting Research Centre staff (especially Maria B) and executive for their support with recruitment.

Gigantic thanks go to my supervisor Emeritus Professor Susan Moore, for so very many things, but particularly her unwavering optimism and the magical ability to have me leave her office feeling inspired after every single meeting. I feel very blessed to have had the opportunity to be your last PhD student. Thank you for your generosity, your support, feedback and time.

Big thanks also to my co-supervisor, Professor Denny Meyer. One of the most important things I have learnt in doing this research is Structural Equation Modelling. I do not know how I would have made it through the final months without Denny and her endless patience with me.

Thanks also to my mum and dad for supporting me in the idea to drop to part-time work and return to study when it perhaps wasn't so clear why I needed to. Thanks for your support and encouragement along the way and for being great recruiters. Thanks also to Michael, Sonya, Aidan and Lachlan for their support, love and encouragement as well as for assistance with recruitment. Thanks also must go to my puppies (Siggi, Gus and Odie) who were a reminder for me to get up from the computer once in a while and who kept me moving with their demands for attention and walks.

Thanks to Julie, Phat, Angelina, Georgie and Tiana for their love and support. They were always there with a great meal and glass of wine when I

needed it. Thanks Julie for always being interested in what I was doing, for your amazing lifelong friendship and also for your help with endnoting my out of control references.

I have worked with some amazing people across the years but there are two who deserve mention in relation to this research. Associate Professor Jan Matthews has been a mentor for me for almost 20 years. Thank you for believing I had the skills to go back and do this thesis and for your ongoing support, integrity and kindness. I have learnt so much from you through the years. Warren Cann introduced me to the Parenting Research Centre and gave me the opportunity to co-author the ABCD parenting young adolescents program with him. Warren also introduced me to the area of acceptance, first via Neil Jacobson's couples work and then via the opportunity to be trained in Acceptance and Commitment Therapy (ACT). Thank you for your enthusiasm for parenting and for life-long learning.

Thanks also to Robyn Walser (ACT trainer and practitioner extraordinaire) for being an amazing mentor and collaborator. From being trained by you, to writing with you and for our late night (your time) skype calls, thank you for your beautiful soul and generosity. I feel blessed to have had the opportunity to meet and work with you. I have learnt so much about psychological flexibility from you – I hope I have done it justice with this work.

Thank you all!

## **STUDENT DECLARATION**

This thesis contains no material which has been accepted for the award of any other degree or diploma in any University, except where due reference is made in the text of the examinable outcome. To the best of my knowledge, this thesis contains no material previously published or written by another person except where due reference is made in the text of the examinable outcome. I further declare that the ethical principles and procedures specified by the Swinburne University Human Research Ethics Committee have been adhered to throughout the conduct of this research.

Kylie Burke:

Date:





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## CHAPTER 1

### Introduction

- ❖ *A parent is listening to the crying of her obviously upset 12 year old daughter who has had a fight with her best friend because they “like” the same boy. The parent says “it doesn’t matter, you’ll get over it. You’ll like someone new by next week”*
- ❖ *Whilst cooking dinner, his 15 year old son asks “Can I go to Kevin’s on Friday night”. Without looking up Dad says “No, it’s been a long week. You need to stay at home”.*
- ❖ *A parent is frustrated to hear yet again more complaining as her daughter takes the rubbish out to the bin. She growls “Would you stop the whining and just do it!”*
- ❖ *A teen cuddles up to mum on the couch (which happens infrequently these days). Mum says “Will you get off me – it’s too hot”*

These scenarios represent just some of many everyday interactions between parents and adolescents that I have heard and seen across almost twenty years of working with parents. Over this time I have come to recognize a number of traps that parents fall into that get in the way of their relationship with their adolescents and that can lead to responses that are not helpful to them or their children. Here are just a few:

- Parents can become focused on the content of their conversations with their children and miss attending to the emotions behind their children’s words;
- Parents feel pressure to be able to answer and “fix” all their children’s problems and unacceptable behaviour immediately;
- Parents may look for perfection on skills or behaviours that their adolescents are just learning or beginning to change.
- Parents seek to avoid experiencing difficult or unpleasant thoughts, feelings and even physical sensations (fear, worry, disappointment, pain, discomfort) and therefore may avoid addressing important issues or overreact to issues to shut them down;

- Parents seek to avoid their children experiencing difficult or unpleasant feelings, which can result in overprotective behaviour or behavior that limits the adolescent's opportunities to develop autonomy and learn from the challenges that life presents.

These traps are neither ill-willed nor intentional and parents typically act with best intentions for their children. However, the implication of these “traps” is that parents may inadvertently miss or undermine their efforts to promote their adolescent's wellbeing and to remain a relevant and important influence in their child's life. Let's look again at some of the scenarios above. In the first scenario, the parent may very-well be trying to be supportive of her daughter and is sharing her “wisdom” of the realities of the passing nature of teenage crushes. However, from the perspective of a young girl who is experiencing the “crush” her parent's reaction may feel dismissive and she may end up feeling misunderstood. In the second scenario, the dad may respond with an immediate “no” because it is “easier” than having to find out the relevant information and negotiate and potentially argue with his son. Alternatively, the “no” may be related to the parent assuming that risk will be associated with the activity (i.e., alcohol or other drugs) and wanting to avoid feelings of worry that accompany that risk. The third scenario is an example of a parent expecting perfection from their child – in this case, both compliance with chores and a good attitude about it. When this occurs the parent misses the opportunity to further encourage the behaviour they like (i.e., the compliance) and instead have probably accidentally reinforced the behaviour they didn't like (i.e., the whining). Finally, in the fourth scenario, the parent is responding to their internal physical sensations (i.e., being hot or uncomfortable) and is missing the point that her teen is seeking closeness and connection with her.

What each of these scenarios has in common is the potential impact they may have on the parent-adolescent relationship or to the adolescent's longer-term wellbeing. In isolation no single instance of these interactions would do lasting damage, however, if they represented examples of the ways in which the parent and adolescent typically interact then they can have a significant impact. Each of the scenarios presented an opportunity for the parent to demonstrate

interest in their adolescent's life and to become involved with them either by showing warmth and empathy or by assisting them to become better decision-makers. By doing so, the parent would have also had the opportunity to demonstrate to their adolescent that they are a good source of support and advice for the future. However, in each situation the parent missed these opportunities and over time this may result in fewer positive interactions and/or higher conflict between the parent and adolescent, both factors that have been shown to be important for the wellbeing of adolescents.

So why do some parents fall into these, and other, parenting traps more than other parents do? Are there ways in which practitioners can assist parents to avoid the traps and respond more effectively? Part of these questions have already been answered by the wealth of parenting literature that describes the practices and approaches to parenting most likely to lead to effective outcomes for children and adolescents and the evidence that has been garnered for parenting interventions. However, there is still work to do in understanding the mechanisms underlying why some parents are able to respond effectively in the face of difficult thoughts, feelings and other internal experiences (to be referred to as private events from here on) and others are not. It is these questions that inspired this thesis.

Let's look at one more parent-adolescent scenario and the ways in which a parent's private events may influence their capacity to respond effectively:

- ❖ *A teenager arrives home from a friend's house at 11pm, 1 hour later than her curfew. Her mother has been frantically pacing the house and looking through the window whilst imagining all the horrible things that might have happened (e.g., she's drunk and fallen down and broken something; she's been in a terrible car accident; she's been assaulted or kidnapped).*

This is a situation that may face many families as their adolescent children strive for increased autonomy, participate in activities that don't involve parents, and face increased potential for risk to their wellbeing. What would be the most effective way for the parent to respond in this situation? What factors will influence her ability to respond effectively? Let's consider two potential alternative responses:

- *Response 1: As the teen walks through the door her mother says angrily: “Where the #\*\*# have you been? Do you know what time it is? You are so irresponsible! That’s it! You are grounded for the rest of the term. How could you do this to me?”*
- *Response 2: As the teen walks through the door her mother calmly says “Ellie, I am so glad you are home! I was so worried something awful had happened to you. We need to talk about this. It is late now and I am still upset so I think we should go to bed and talk about it tomorrow. Please don’t make any plans for after school tomorrow – we will talk about it then”.*

In the first response, the parent has fallen into the trap of trying to “fix” or respond to problems immediately. In this case, this means she is responding whilst angry and without time to have considered how she would best like to handle it. The consequence she has imposed is potentially an over-reaction that is likely to be withdrawn before it is over and to result in higher conflict with her daughter. In contrast, the parent in the second response managed to remain calm. Whilst letting her daughter know they would be addressing the problem she bought herself some time to calm down and consider how to respond. The second response is likely to be more effective in keeping the mother’s relationship with her child on track and to produce a solution and consequence that will work to reduce the chances that the problem will occur again. But why, were the responses so different? What leads to such variation in parenting responses? It appears as if the parent in the first scenario was so caught up in her thoughts and feelings that she could not separate her parenting responses from her private events, resulting in an angry reaction that was likely to lead to further conflict and poor behaviour from her adolescent. In the second response, the parent appeared able to obtain some distance from the worries and negative thoughts she had experienced earlier and placed her focus on her broader goals for her teenager and their relationship, as evidenced by her calm reaction and decision to delay the discussion. This thesis will seek to explore whether, this second, more “flexible” way of relating to difficult private events facilitates the implementation of more effective parenting practices.



### **1.1. General Aims of Thesis**

The aim of this study was to explore the relationship between parental psychological flexibility, aspects of parental wellbeing, parenting practices and adolescent outcomes. The term “psychological flexibility” refers to a series of processes that work together to facilitate the capacity to make choices and take action even when those choices/actions are accompanied by difficult/painful thoughts, memories, emotions or sensations. A person who is psychologically flexible will have a broad array of strategies (both physical and cognitive) that they are able to choose between and implement according to the demands of a situation and their own values. It is proposed that psychological flexibility in a parenting context will assist parents in responding to their child in ways that take the context into account while promoting child autonomy, relationship security and quality yet still enabling parents to set appropriate boundaries, and to monitor their children’s behaviour appropriately.

Specifically, this study explored a model of parenting (see Figure 1.1) that proposed that parents with higher levels of psychological flexibility would also report higher levels of self-efficacy and satisfaction in their parenting role (termed ‘parents’ sense of competence’) and would be likely to adopt more positive and fewer ineffective parenting strategies than parents with lower levels of psychological flexibility. The model further proposed that this approach would be positively related to adolescent outcomes both directly and via its effect on parents’ sense of competence and parenting practices. Results from this project have the potential to advance the parenting support literature by offering a new approach to parent education that can be used to augment the effects of currently available evidence-based parenting interventions.



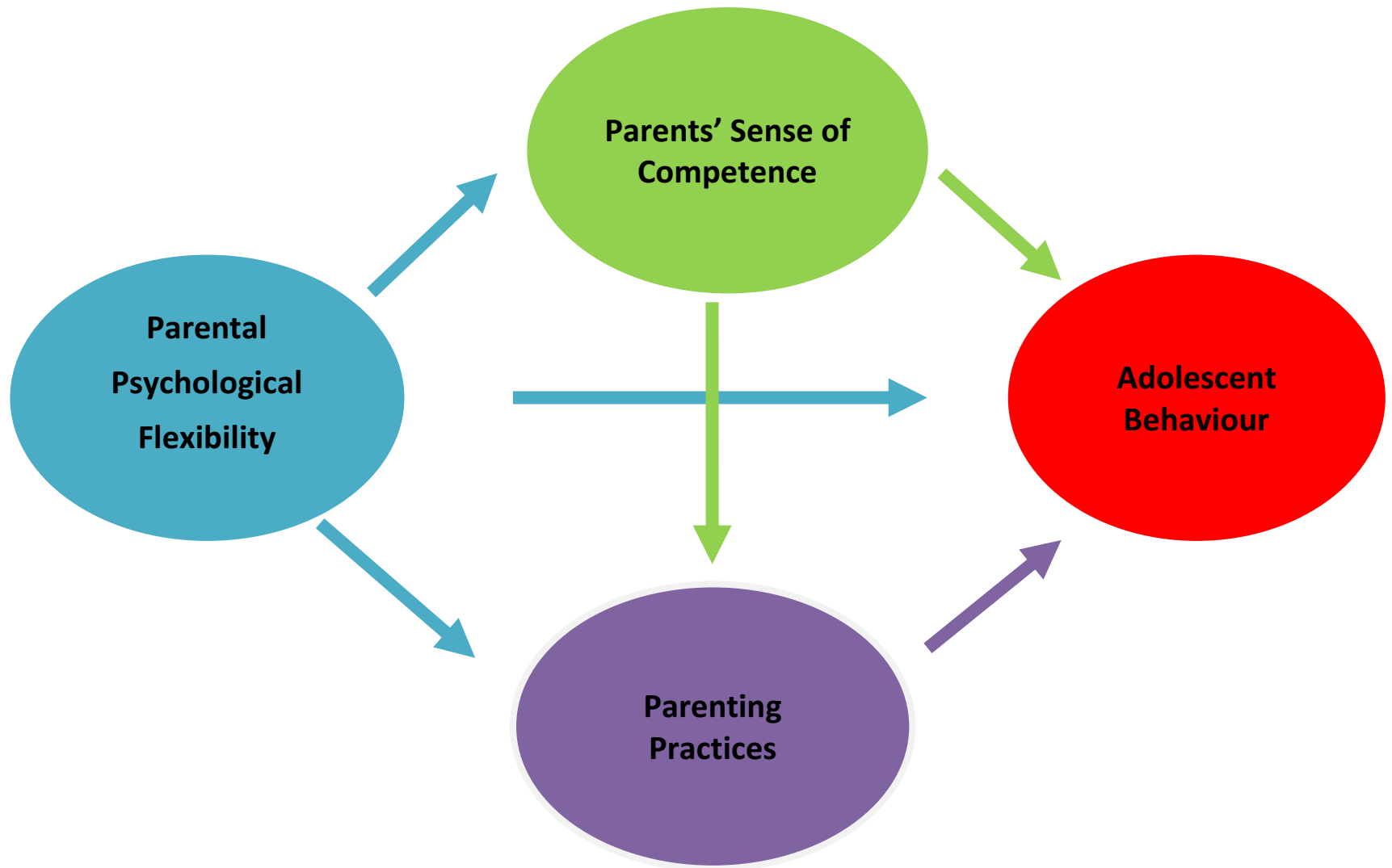


Figure 1.1

*Conceptual model of the predicted relationships between parental psychological flexibility, parent and adolescent outcomes*



## 1.2. Scope of the Problem

Parents are one of the primary influences on their children and this influence continues into adolescence (Roth & Brooks-Gunn, 2000). Parenting has been shown to be related to positive adolescent outcomes such as academic engagement and achievement (Juang & Silbereisen, 2002; Nye, Turner, & Schwartz, 2006), development of self-regulation (Purdie, Carroll, & Roche, 2004) and effective coping and resilience (Ben-Zur, 2003). Effective parenting has also been shown to be a key protective factor mediating risk across a range of child outcomes, such as premature sexual experience, drug use, truancy and behavioural difficulties (Wang, Dishion, Stormshak, & Willett, 2011).

Parenting interventions have been shown to increase the use of effective parenting practices, to reduce difficult child behaviours and to increase adaptive child behaviours, parent competence and wellbeing (Dretzke et al., 2009; Kazdin, 1997; Serketich & Dumas, 1996). The most effective programs tend to use a Parent Management Training (PMT) approach (Brestan & Eyberg, 1998; Reid & Webster-Stratton, 2001) which is based on Social Learning Theory (Bandura, 1991) and incorporates direct instruction, modeling and rehearsal of parenting strategies within sessions. To date, parenting interventions have been shown to work best for parents with children aged three to ten years (Webster-Stratton & Taylor, 2001). Recent literature has focused on parenting programs for parents raising adolescents, with evaluations of these programs showing mixed results. Whilst programs have demonstrated reductions in factors such as adolescent behavioural problems and parent stress, as well as improvements in parent competence and confidence (Burrus et al., 2012; Dretzke et al., 2009), programs targeting the adolescent years have also been reported as having difficulties with engagement and retention of participants (Baker, Arnold, & Meagher, 2011; Spoth & Redmond, 2000). Despite the important impact that parenting interventions have had on families, they have not been effective for everyone with reviews of parenting research indicating that they lead to improvements in about 70 - 80% of participating families (Dumas, 2005; Serketich & Dumas, 1996).

The aforementioned difficulties of achieving positive changes in some participating parents as well as the problems of engaging and retaining parents

of adolescents in parent interventions suggest that the parenting field still has work to do to better support families of adolescents. One potential avenue is to more creatively explore aspects of parent functioning not yet incorporated into current programs, with emphasis on factors that might allow parents to be more attuned to the context in which they are living and parenting.

One such aspect that has not received significant attention from developers of parent interventions is the role that parent cognitions and emotions play in facilitating effective parenting practices. Parental cognitions and emotions have been shown to effect child wellbeing and development via the impact that they have on parental self-efficacy and mental health (Teti & Gelfand, 1991). When a parent is struggling with negative thoughts and feelings about themselves, their parenting and their children, they are less able to respond flexibly and sensitively to their child's needs. These difficult private events can result in the parent withdrawing from interactions with their child and/or overreaction to their behaviour. This can compromise the parent-child relationship and/or lead to the development of dysfunctional parent-child interactions. Given the significance of the impacts from negative private experiences in parents there has been a call for interventions to be developed that directly target cognitions as they occur in "moment-to-moment" parenting" (Teti & Cole, 2011). Interventions that seek to increase psychological flexibility such as those that take a contextual-behavioural approach may provide a way to do this.

Contextual-behavioural approaches are therapeutic interventions that target internal private events (thoughts, feelings and other internal experiences) that interfere with an individual's capacity to live an effective life (Hayes, 1988; Hayes, Jacobson, Follette, & Dougher, 1994). Specifically, contextual-behavioural approaches aim to assist the individual to adopt strategies that increase their repertoire of effective responses and to implement those strategies in contexts that are personally challenging (Hayes et al., 1994). It is possible that a combination of Parent Management Training (PMT) and contextual-behavioural psychology may lead to further improvements in the effectiveness of interventions for parents of adolescents. Perhaps by assisting parents to develop

greater psychological flexibility they will be more able to respond to challenging adolescent behaviour and other complex parenting situations even when those situations involve feelings of anger, worry, disappointment and thoughts involving worst case scenarios or of their own incompetence.

The exploration of the role of psychological flexibility in parenting and with children has only recently commenced, with early signs that the construct has relevance within a child and family context. For example, Greco and colleagues (2005) explored the relationship between distress and mothers' attempts to avoid the negative thoughts, feelings and sensations (labelled Experiential Avoidance) associated with having a child born prematurely and cared for within a neo-natal unit. Sixty-six mothers participated in the study, with results indicating that mothers who were higher on Experiential Avoidance were also more likely to experience higher levels of distress and to be vulnerable to ongoing distress related to their parenting and memories of the circumstances of their child's birth well after they had taken the child home.

To-date, no research has focused on the role of parental psychological flexibility on outcomes for parents and adolescents during the teenage years. This is an important step that will begin to answer the question as to whether adding contextual-behavioural approaches to current evidence-based interventions would enhance outcomes for families. The purpose of this thesis is therefore to explore the contribution that parental psychological flexibility makes to factors already demonstrated to influence health and behavioural outcomes for adolescents, namely, parenting practices, parents' beliefs in their self-efficacy and satisfaction in the parenting role. Additionally, the study will explore whether parental psychological flexibility is associated with adolescent behaviour either directly or via its role in influencing parenting self-efficacy and satisfaction (sense of competence) and parenting practices. Figure 1.1 presents a model outlining the ways in which parental psychological flexibility is expected to relate to parents' sense of competence, parenting practices and adolescent behaviour. This model will be tested in two separate but related studies. The first (Study 1) will address the gap in measurement of the construct of parental psychological flexibility by developing a measure of psychological flexibility

applicable to the general parenting context. Study 1 will also test the reliability and validity of the developed measure. The second study (Study 2) will further assess the psychometric properties of the measure of parental psychological flexibility and will use that measure to investigate the relationships described in Figure 1.1.

### **1.3. Structure**

The thesis is divided into eleven chapters, beginning with a review of the literature pertaining to the main constructs under consideration, followed by a brief description of the overall thesis plan, aims, research questions and hypotheses. The two studies that comprise the thesis are then presented separately in the subsequent chapters with a general discussion to draw together the findings from both studies presented in the final chapter.

#### **1.3.1. Literature Review and Project Overview**

Chapters 2, 3 and 4 provide an overview of the literature relating to adolescence, parenting and psychological flexibility. Chapter 2 provides a description of the developmental period of adolescence, the role of parenting in adolescence, what is known about effective parenting and a brief overview of the effectiveness of parenting interventions aimed at parents of adolescents. Chapter 3 provides a brief overview of the role of cognitions and emotions in parenting and how psychological flexibility may be a useful approach for improving the outcomes of parenting interventions for parents of adolescents. Chapter 3 provides a more detailed description of parental psychological flexibility and describes the theoretical and clinical underpinnings of the construct. This chapter concludes by discussing the ways in which it is expected that parental psychological flexibility will influence parents' sense of competence, parenting practices and adolescent behaviour (as described in Figure 1.1.). Chapter 4 describes the measurement of the construct, psychological flexibility, and the state of the evidence for measurement of the construct to date. The need to develop a measure suitable for use in a general parenting context is noted and an overview of the measure development process is provided. Chapter 5 presents an overview of the thesis method, including the



overall aims, research questions, hypotheses and plan for analysis across the two separate studies.

### **1.3.2. Study 1**

Chapters 6 and 7 present the method and results for Study 1, which focused on developing the “Parental Psychological Flexibility” (PPF) questionnaire using an Exploratory Factor Analysis approach to identifying the factor structure of the measure. The scale properties including internal consistency, construct (convergent and discriminant), concurrent and content validity are reported.

### **1.3.3. Study 2**

Chapter 8 then provides the aims, hypotheses and method specific to Study 2. Chapters 9 and 10 set out the results from Study 2. Chapter 9 describes the results from a Confirmatory Factor Analysis of the Parental Psychological Flexibility Questionnaire (PPF) and provides details of the final scale structure and psychometric properties. Chapter 9 also provides results from measurement modelling of the Mindfulness Attention Awareness Scale and explores its relationship to the PPF. Results from testing the full structural model are presented in Chapter 10.

### **1.3.4. General Discussion**

The results of the studies are discussed in their respective chapters. However, a more general discussion is presented in Chapter 11. This chapter draws together the findings from both Study 1 and Study 2, regarding the development of the Parental Psychological Flexibility Questionnaire and the relationships between factors in the hypothesised model. This final chapter also describes limitations of the overall study, a discussion of the implications of the model and suggestions for future research.



## **CHAPTER 2**

### **Parenting and Adolescence**

#### **2.1. Introduction**

Prior to considering the factors that may assist parents to respond effectively to the challenges of adolescence it is useful to consider why this area warrants investigation. This chapter will provide an overview of adolescence and the challenges it presents for the adolescent and their family. The role of parents during this developmental period will be described including consideration of the ways in which parents and parenting have been shown to promote adolescent wellbeing. The impact of parenting interventions in supporting parents with the task of raising adolescents will be briefly covered and the chapter concludes by proposing that further work to enhance outcomes for parents of adolescents is required within the parent education sector.

#### **2.2. Adolescence**

Adolescence is a developmental period that has received a lot of attention from researchers, policy makers and educational and health professionals alike. Much of this attention has centred on attempts to understand, prevent, reduce and treat adolescent behavioural difficulties and potential adverse consequences from risk-taking activities (such as alcohol and other drug use, unsafe and underage sexual activity, reckless driving, stealing, violence and school truancy and dropout). Evidence indicates that rates of behavioural and mental health difficulties are rising for adolescents across the globe (Collishaw, Maughan, Goodman, & Pickles, 2004; Rutter & Smith, 1995) with the Australian Temperament Project (Vassallo et al., 2002) finding that prevalence rates for antisocial or health risk behaviours among 17-18 year-olds vary from 10-20% (theft & vandalism) through 19% (marijuana use), 39% (smoking); 43% (truancy) to 85% (alcohol use). Behavioural difficulties and risk-taking behaviours are typically interrelated (Dekovic, Janssens, & Van As, 2003) and potentially cumulative in their effects (Atzaba-Poria, Pike, & Deater-Deckard, 2004; McGue & Iacono, 2005; Smart et al., 2005). For example, alcohol consumption can be a gateway drug to illicit substances and both of these are

linked to unsafe sexual practices and reckless driving in adolescents (Hayes, Smart, Toumbourou, & Sanson, 2004; Smart, 2008). Additionally, antisocial behaviours and conduct disorder have been shown to have high levels of comorbidity with substance use disorders (Reebye, Moretti, & Lessard, 1995).

The impacts of adolescent risk taking and behavioural problems are far-reaching, with negative effects that encompass adolescents, their families, communities and even society as a whole. Adolescents with behavioural problems are more likely to have problems at school, be more highly influenced by their peers and experience more conflict at home (Smart, 2008; Smart et al., 2005) thereby increasing their vulnerability to further poor behavioural and health outcomes.

For adolescents with behavioural difficulties and those who engage in dangerous risk-taking activities the consequences can be immediate, such as teenage pregnancy, substance addiction, accident and serious injury, mental illness, learning and other school difficulties; and even involvement in the juvenile justice system. Adolescence is also a time in which children are likely to struggle with self-image, and be susceptible to mental health difficulties, particularly anxiety and depression. When coupled with other risk taking behaviours such as drug use, severe mental health disorders such as psychosis may be seen. The consequences can also last well into adulthood (McGue & Iacono, 2005; Smart, 2008; Smart et al., 2005). For example, adolescents who consume alcohol and other drugs are significantly more likely, as adults, to develop addictions (Clapper, Buka, Goldfield, Lipsitt, & Tsuang, 1995) and engage in criminal behaviour (Farrington, 1995; Kosterman, Graham, Hawkins, Catalano, & Herrenkohl, 2001). Similarly, involvement in the juvenile justice system is often linked to engagement in future criminal activities and later incarcerations as an adult whilst engagement in risk taking has been linked to early marriage and higher rates of divorce (Moffitt, Caspi, Harrington, & Milne, 2002). Other adult consequences of teenage conduct difficulties and risk-taking behaviour include higher likelihood of repeated periods of unemployment, higher risk for

relationship breakdown and higher risks for mental health problems (McGue & Iacono, 2005; Steinberg, 2001; 2008).

Whilst the direct consequences for adolescents are in themselves worthy of the focus of governments, researchers and health professionals, there are also many broader effects. For example, the adolescent's family can experience major disruptions such as parental stress and depression, serious parent – adolescent conflict, increased potential for family violence and breakdown and greater risk that siblings will also experience difficulties with risk-taking and/or mental health problems (East & Khoo, 2005). Then, at a community level, some adolescent risk-taking can affect families other than the adolescents', as well as communities in general. For example, when adolescents are involved in serious motor vehicle accidents these frequently result in injury or death to others, thereby impacting multiple families, the respective school communities and the broader community. Stealing is another example in which the consequences reach beyond the adolescent, with economic impacts for the victims of the theft along with changes to how communities operate (increases in rules and regulations around adolescent behaviour – such as “no bags to be brought into shops”). Teenage pregnancy and mental health difficulties add to the pressure on already overburdened community and social services. Finally, at a societal level, many millions of dollars in government and charitable funding are spent each year in attempts to deal with the consequences. Funding is required to maintain criminal justice and mental health systems, the hospital accident and trauma services and alcohol and other drug treatment services for both adolescents and for the adults whose problems commenced during their adolescent years.

Of course, only a minority of adolescents experience the serious consequences described above, with the vast majority (approximately 75%) of adolescents traversing this period relatively unscathed (Henricson & Roker, 2000; Paikoff & Brooks-Gunn, 1991; Smart, 2008). However, given that the effects for those that do experience problems are frequently serious in nature and that adolescents have been shown to engage in higher levels of risk-taking overall than adults (Steinberg, 2008), it is understandable that the focus has turned to

preventative and early intervention efforts as a way to reduce the personal, social and economic burden created by problematic adolescent behaviours and risk-taking activities (Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999).

In considering how best to prevent or reduce the negative effects of adolescent problems, researchers and program developers have attempted to describe the reasons that adolescents are more likely to engage in negative behaviours (Steinberg, 2008). The roles of the processes and timing of adolescence have been central areas of investigation, with research exploring risk and protective factors for adolescence also important.

### **2.2.1. Adolescent development**

During the period between approximately 10 and 18 years of age, children experience significant physical, social and cognitive changes, not least of which are the onset of puberty and rapid brain development. Across this time adolescents will not only radically change in size, shape (girls will add about 24cm and 17 kg; boys will grow approximately 25 cm and add 19 kg) and appearance, but will experience significant changes in the way they think about and process information (Stassen & Thompson, 1995). Neural developments during this time (including the development of the prefrontal cortex, limbic brain regions, myelination; white matter and reward circuits) also influence abilities such as the capacity to regulate behaviour, emotions and cognitions (Blakemore, 2008; Spear, 2000). Adolescents become more able to apply logic to their reasoning and problem solving efforts and are able to evaluate the short and long term consequences of their own and others' actions. Research has demonstrated that by the age of sixteen years, adolescents have a similar capacity for information processing and logical thinking as adults (Steinberg, 2008). Along with these new thinking powers comes an increased ability to reflect on, monitor and regulate their own thinking which provides the adolescent with the skills to question their own thoughts and feelings as well as those of others (e.g., their parents and friends). There is also a relatively slow and linear development of impulse control and response inhibition accompanied by a non-linear and often hyper-responsive development of the reward system

(Blakemore & Robbins, 2012). This means that whilst adolescence is a time in which capacity for more complex thinking and decision-making develops this ability is vulnerable to other emotional and social processes. Adolescent decision-making ability and capacity for empathy may for example be overridden in contexts that involve high levels of emotion or high peer influence making them vulnerable to engagement in health compromising risk taking (Blakemore & Robbins, 2012; Steinberg, 2008).

These developments in abstract, hypothetical and deductive thinking during adolescence are also related to an increase in adolescent self-scrutiny. This self-scrutiny generally centres on efforts to understand how they are viewed and fit in with others (friends, parents, school) and with attempts to predict the future and determine who they want to be. Whilst these physical and cognitive changes are occurring, adolescents' social world also undergoes transformation. During adolescence, children begin to spend more time away from their family either in extracurricular activities or with their friends (Collins, 1988; Larson, Richards, Moneta, Holmbeck, & Duckett, 1996). In early adolescence children look to their peers for support and a sense of belonging (Scholte & van Aken, 2006). Adolescents develop their social interests, beginning to define the type of person they want to be and the people and activities they want to engage in (Stassen & Thompson, 1995).

It is the interaction of these physical, cognitive and social changes that contributes to the vulnerability of some adolescents. For many these changes represent an exciting and positive time in their lives. However, for some, they represent a time in which the effects of problems from earlier in childhood or from within their families become clearer (Smart, 2008). For these children, adolescence will be a time of turmoil, in which the physical and cognitive changes may result in a negative sense of self and be linked to a sense of disconnection from family and school (Smart, 2008). Peers experiencing similar difficulties will often become the group in which a troubled adolescent identifies with and finds a place to "belong" (Smart, 2008). Together, disconnected

adolescents are more likely to engage in risk-taking activities (Smart, 2008; Zweig, Phillips, & Lindberg, 2002).

## **2.2.2. Risk and protective factors for adolescent behavioural problems and risk-taking**

### **2.2.2.1. Risk**

Risk factors have been defined as the individual or contextual variables that increase the likelihood of compromised physical, social and emotional health and wellbeing for the adolescent (Jessor, Van Den Bos, Vanderryn, Costa, & Turbin, 1995). Developmental processes are not the only factors linked to adolescent problems and risk. A number of other challenges have the potential to influence whether a child will experience difficulties during adolescence.

First, there are a number of risk factors that relate to the individual characteristics of the child. Temperament is one such factor, particularly when accompanied by high activity levels, low impulse control (Shedler & Block, 1990) and attraction to sensation seeking (Greene et al., 2000; Steinberg, 2008). Learning or school adjustment difficulties and poor social skills (Smart, Vassallo, Sanson, & Richardson, 2003), as well as early oppositional and defiant behaviours or initiation to alcohol and other drug use or sexual activities (Hawkins, Graham, Maguin, Abbott, & Catalano, 1997) have also been linked to increased problems later in adolescence and adulthood (Hawkins, Catalano, & Miller, 1992).

Secondly, school and peer difficulties such as academic failure or a low connection to school, bullying, having peers who engage in problem behaviours and/or alcohol and drug use (Fite, Coldera, & O'Connora 2006; Hawkins et al., 1992), increase the adolescents' potential for risk taking and behavioural difficulties.

Thirdly, community factors such as poverty, neighbourhood safety and crime levels, the availability of drugs, community disorganisation and lack of social and support services also increase the likelihood that adolescents will engage in antisocial and risky behaviours (Wright, Bobashev, & Folsom, 2007).



Finally, a number of risk factors have been specifically linked with the role of the family. These include: living in an unstable family environment which features high levels of family or marital conflict and divorce, parent alcohol or substance addictions and parental mental illness (Biederman, Faraone, Monuteaux, & Feighner, 2000; De Micheli & Formigoni, 2002; Dishion, Capaldi, Spracklen, & Li, 1995; Hawkins et al., 1992; McGue & Iacono, 2005; Steinberg, 2001). Research has pointed to the influence of parents on adolescent outcomes such as academic achievement (de Bruyn, Dekovic, & Meijnen, 2003; Purdie et al., 2004), truancy and school drop-out (Rumberger, Ghatak, Poulos, Ritter, & Dornbusch, 1990), conduct difficulties (Patterson, Reid, & Dishion, 1992) engagement in unsafe drinking (Foxcroft, Ireland, Lister-Sharp, Lowe, & Breen, 2005), mental health problems (Hurd, Wooding, & Noller, 1999), and/or sexual practices (Boislard-Pepin, Poulin, Kiesner, & Dishion, 2009). In particular, negative adolescent outcomes such as early initiation to alcohol and other drugs, early and unsafe sexual practices, suicidal ideation and conduct problems including aggression and violence have been associated with factors such as poor quality parent-adolescent relationships, poor parental monitoring, parent rejection and harsh or inconsistent discipline practices including a lack of parent-provided boundaries and limits around adolescent behavior (Chilcoat & Anthony, 1996; Dishion & McMahon, 1998).

#### **2.2.2.2. Protection**

Protective factors are the variables that reduce the likelihood that the adolescent will engage in problem or health compromising behaviours. Protective factors can both promote adolescent health and wellbeing and moderate the relationship between risk factors and adolescent behaviour (Jessor et al., 1995; Turbin et al., 2006). Roth and Brooks-Gunn (2000) in their social policy report on the needs of adolescents suggested that healthy adolescent development requires a focus on more than just problem reduction and instead highlighted the need to promote adolescent wellbeing. Healthy development has been defined as including five key attributes: academic, social and vocational competence; self-confidence; connection to family, friends and community;

character (positive values and morals); and caring and compassion for others (Lerner, 2001; Lerner, 2002). To effectively build programs and approaches that promote these attributes researchers have identified a range of protective factors that are associated with healthy development and lower levels of risk. Many of these factors relate to the characteristics of the individual child (e.g., their values, attitudes and beliefs), their relationship with their peers (e.g., friends who do not engage in risk taking activities such as alcohol or drug consumption), and to their relationship with their school and community (e.g., sense of belonging or connectedness; having someone outside the family who believes in them; a sense of achievement and commitment to education).

The family is another key area identified as having a key protective role in building resilience in children and promoting the successful transition from childhood to adulthood (Cohler & Musick, 1983; Dishion & Kavanagh, 2003; Kazdin & Weisz, 1998). Zweig, Phillips and Lindberg (2002) identified four risk profiles amongst adolescent boys and girls. They found that adolescents with the lowest risk profile reported higher quality, closer relations with their parents and an associated higher level of expectation from parents regarding their completion of school. These findings are consistent with those of parenting researchers across the past several decades (Baumrind, 1971; Patterson, DeBaryshe, & Ramsey, 1989; Reid, Patterson, & Synder, 2002; Steinberg, 2001). The presence of factors such as experiencing feelings of love and respect, having a warm relationship with at least one parent, living in a safe, affectionate environment that includes the setting and enforcing of reasonable rules and boundaries and/or experiencing effective problem solving during childhood and adolescence has been linked to reduced risk (Kim & Rohner, 2002; Nash, McQueen, & Bray, 2005; Purdie et al., 2004; Rayner & Montague, 2000; Smart et al., 2005). Additionally, effective parental problem solving and parental monitoring during childhood and early adolescence can delay or prevent risk taking behaviors such as initiation to alcohol and other drug use, and early commencement of sexual activity (Dishion & McMahon, 1998; Fuller, McGraw, & Goodyear, 2000; Howard & James, 1996; Nash et al., 2005).

### **2.3. Parenting**

Parenting is well documented as a mediating factor for the health and wellbeing of young people (Sheldon, 2003). Parents are one of the primary influences on their children and despite popular views to the contrary, this influence continues into adolescence (Roth & Brooks-Gunn, 2000). In fact, parenting has been shown to be related to positive adolescent outcomes such as better self regulation (Purdie et al., 2004), higher engagement in school, and better academic outcomes (Juang & Silbereisen, 2002). The development of effective coping resources and resilience (Ben-Zur, 2003) has been associated with factors such as high quality, warm and loving parent-adolescent relationships (Ackard, Neumark-Sztainer, Story, & Perry, 2006; Kim & Rohner, 2003); involvement and support from parents for their adolescent's educational and other activities (Juang & Silbereisen, 2002); and effective parental monitoring and setting of boundaries during childhood and early adolescence (Dishion & McMahon, 1998; Kumpfer & Turner, 1990). Additionally, when parents have clear expectations and rules regarding alcohol and sex it has been shown to delay adolescent engagement in these potentially risky activities (Nash et al., 2005).

Despite these clear implications for parental influence on adolescent wellbeing, the parenting field has focused most of its attention on preventing problems of childhood and adolescence by targeting early childhood (Webster-Stratton & Taylor, 2001). And indeed this is a critical aspect of addressing behavioural problems and risk-taking associated with adolescence and early adulthood, with research demonstrating that it is in the years prior to the development of problems that the greatest difference can be made (Vassallo et al., 2002; Webster-Stratton & Taylor, 2001). Until recently, it was considered that parents have little influence or role in reducing problems with children once they reach adolescence. The popular belief was that adolescents are primarily influenced by their peers with parental influence waning during this time. This is not the case, with research demonstrating that the influence of parents remains high during this period (Hayes, Smart, et al., 2004; Wood, Read, Mitchell, &

Brand, 2004) and evaluations of parenting interventions addressing adolescence showing positive outcomes for parents and adolescents (Burke, Brennan, & Cann, 2012; Hawkins et al., 1999; Woolfenden, Williams, & Peat, 2001). However, despite this recent increase in the understanding of parental influence, many educational and prevention programs have specifically targeted adolescents in settings outside the family context, frequently the school setting (Steinberg, 2008). Steinberg (2008) calls into question the effectiveness of sole-reliance on this approach, with outcomes from programs demonstrating better efficacy at improving knowledge than in changing adolescent behaviour. Certainly the fact that adolescents are still more likely to participate in dangerous risk-taking at greater rates than adults (Smart et al., 2005) provides some basis for placing greater emphasis on bolstering the focus on parents and parenting as a way to enhance efforts to reduce and prevent problems for adolescents.

A starting place then is to explore the role of parents in the parent-adolescent relationship.

### **2.3.1. The role of parents**

It is widely agreed that the role of parents is to promote children's development and help them to become fully functioning, productive members of their society (Bornstein, 2005). Parents are charged with the task of providing children with a safe, loving, secure, and supportive environment that enables them to develop the values, morals, knowledge and skills they will need to fit in and contribute to society as adults (Lerner, 1995, 2002). It is also clear that there is no one right way for parents to perform this critical task of "parenting" with different approaches needed to effectively parent in different contexts and with different children (Centre for Community Child Health, 2004). Adults vary considerably in terms of the behaviours and attitudes they adopt in raising their children and in relation to the contexts in which they must perform their parenting duties (Lerner, 1995). Some parents must do so in very difficult circumstances, affected by factors such as extreme poverty, homelessness, intergenerational violence, mental illness and substance addictions (Azar & Cote, 2002; Centre for Community Child Health, 2004). Whilst these factors clearly

impact on parents' resources (both internal and external) and are, as previously discussed, risk factors for poor child outcomes, they do not in themselves prevent parents from being effective in their parenting role (Azar & Cote, 2002), as evidenced by the findings that not all parents with substance addictions go on to maltreat or neglect their children.

The Australian Federal Government's "Parenting Information Project" (Centre for Community Child Health, 2004) defined effective parenting practices as "actions that best achieve the goals of parenting a particular child in a particular context" (Centre for Community Child Health, 2004, p. 56). According to this definition, parents are being effective if they are able to adapt and respond flexibly to the changes that occur as their children develop and as the environment they live in changes. In her seminal work on child maltreatment, Azar (2002) described effective parents as those individuals who approach interactions with their children with sensitivity and accuracy regarding their child's capabilities and their own role in how to assist the child to meet developmental challenges. Further, effective parents have a broad repertoire of parenting strategies and are able to flexibly apply these strategies according to the specific demands of the varied developmental and parenting situations they face with each of their children (Azar & Cote, 2002).

### **2.3.2. Theoretical approaches to parenting**

Just as there is no one right way to parent there is also no "grand unifying theory" of parenting (O'Connor, 2002, p. 555). Whilst there isn't a definitive and universally agreed upon theory of effective parenting many researchers have attempted to identify approaches to parenting that produce good outcomes for children. Such approaches have focused on parenting in particular contexts (e.g., like poverty or where parents have mental health, learning or substance use difficulties) or approaches to parenting that produce specific child outcomes such as maltreatment (Azar & Cote, 2002), alcohol misuse (Hawkins et al., 1992) and anti-social and conduct behaviours (Woolfenden et al., 2001). O'Connor (2002) in his review of the effects of parenting on child problems noted that the theories of parenting have tended to focus on specific elements of parenting

practice, specific child problems or the mechanisms by which they influence child social and emotional development. Two theoretical approaches to understanding what constitutes effective parenting have predominated in the parenting field, Parenting Styles (Baumrind, 1971; Maccoby & Martin, 1983; Steinberg, 2001); and Coercive Family Cycles (Patterson, 1982). Below is a brief explanation of each and its implications for promoting the wellbeing of adolescents.

### **2.3.2.1. Parenting styles**

One of the most well known theories of parenting is perhaps that of “parenting styles”, first described by Baumrind (1971) and later revised by Maccoby and Martin (1983). This theory comes from a social-emotional research perspective, with parenting styles defined as the larger context or emotional climate in which parenting behaviours are expressed (Darling & Steinberg, 1993). Darling and Steinberg (1993) suggest that parenting styles have the broadest influence on a child’s behaviour because they set the tone in which parenting practices are delivered and whether they will be accepted or rejected by the child. They differentiate “styles” from “practices”, defining parenting practices as the more context specific goal-directed behaviours parents use to achieve particular ends (e.g., reinforcement, rules, monitoring, limit setting).

The literature has focussed on classifying specific “styles” of parenting with some being seen as more functional than others. Baumrind (1971) identified a number of patterns to parenting with three main styles emerging: (a) permissive; (b) authoritarian; and (c) authoritative:

(a) Permissive parenting is characterised by high levels of warmth and acceptance for children combined with low levels of involvement and control. Permissive parents provide their children with little direction, largely allowing them to regulate their own behaviour and activities. Children of permissive parents are likely to be very involved in decision making and their parents use explanations and reasoning to encourage desirable behaviours rather than setting limits and using discipline practices.

(b) Authoritarian parenting is described as parenting that involves high levels of control, accompanied by restrictive, punitive and potentially rejecting behaviours. Authoritarian parents are reportedly highly directive and tend to expect unquestioning obedience from their children. Parents who adopt this style of parenting are also considered to be less warm and to have less positive involvement with their children. They believe there is a “right” way to behave and that it is important for children to respect authority, work and tradition. When children step outside the parents beliefs parents are likely to use forceful discipline approaches to correct the child (Baumrind, 1968, 1971). This style tends to be inflexible and governed by adherence to rules irrespective of situational or contextual cues.

(c) Authoritative parenting is defined as parenting that is characterised by high levels of parental warmth, involvement, sensitivity, reasoning, control and encouragement of autonomy. Authoritative parents are described as providing their children with clear, firm direction that is balanced by warmth, flexibility and verbal reciprocity. Authoritative parents provide set rules and limits for their children’s behaviour, generally accompanied with reasons for their decisions. At the same time, the authoritative parent allows their child autonomy to explore their own interests and to develop their own sense of self. Behaviour considered inappropriate is dealt with using discipline implemented with kindness and understanding. This style is considered to fall between the permissive and authoritarian styles and is widely considered the “optimal” parenting style (Baumrind, 1971; Maccoby, 1992; Steinberg, Lamborn, Dornbusch, & Darling, 1992).

Maccoby and Martin (1983) further developed the theoretical understanding of parenting styles by proposing that parents vary in relation to the level of responsiveness (sensitivity and warmth) and demandingness (control and expectations) that they demonstrate in relationship to their children. These two dimensions resulted in further development of Baumrind’s three styles, with the Permissive category divided into two separate groups: indulgent parents (who are high in responsiveness and low in demandingness), and neglectful

parents (who are low in both responsiveness and demandingness). The former refers to parents whose laxness relates to an ideological orientation towards trust, democracy and indulgence. This style does not involve low levels of warmth. The latter style, in contrast, relates to parents who are disengaged from their parenting role and is more likely to be accompanied with lower warmth and acceptance of the child (Lamborn, Mounts, Steinberg, & Dornbusch, 1991). Following this, the work of Steinberg and his colleagues (Darling & Steinberg, 1993; Lamborn et al., 1991), further refined the characteristics of parenting styles, by adding the dimension of “psychological autonomy granting” to Maccoby and Martin’s (1983) responsiveness – demandingness theory. Psychological autonomy granting refers to the encouragement of children to develop their own ideas and opinions, even when those opinions might differ from the parents’ own. This dimension was found to be particularly characteristic of authoritative parents (Lamborn et al., 1991).

Recent research has tended to investigate the role of Baumrind’s original three styles on parent and child outcomes (Alizadeh, Abu Talib, Abdullah, & Mansor, 2011; Buri, 1991; Coolahan, McWayne, Fantuzzo, & Grim, 2002), with some also adding Maccoby and Martin’s (1983) framework. Findings from this research suggest that children who have authoritative parents are more committed to and successful at school (Steinberg et al., 1992) and develop better self-regulation (Purdie et al., 2004) than children of either authoritarian or permissive (neglectful and indulgent) families. Additionally, adolescents from authoritative and authoritarian families have lower levels of alcohol and other drug use than adolescents from neglectful and indulgent permissive families (Adalbjarnardottir & Hafsteinsson, 2001; Baumrind, 1991; Fletcher & Jefferies, 1999; Lamborn et al., 1991).

One of the primary challenges for the utility of parenting styles theory is the difficulty in identifying a set of parent attributes that remain stable over time, as the child ages from infant, to toddler, child to adolescent (Maccoby, 1992). An additional difficulty is that currently the evidence related to the applicability of Baumrind’s parenting styles in families from culturally diverse



and/or low socio-economic circumstances is lacking (Azar & Cote, 2002) and where present, has produced mixed results with assertions on the one hand that the styles are applicable beyond white, middle class families (Lamborn et al., 1991) and on the other hand, concerns that they are not (Coolahan et al., 2002; Kim & Rohner, 2002). Azar and Cote (2002) further question the parenting styles model assumption that all parents have the same resources available to them, meaning that all parenting can take place in the same way. They assert that the model does not consider the influence of the family's context (e.g., being a single parent in a high crime neighbourhood versus being a single mother living in a middle-class suburb) on the appropriateness or effectiveness of parenting practices for child wellbeing and development. Despite this, the parenting styles literature has been instrumental in exploring ways in which the parent-child relationship impacts child development, providing important information about the aspects of parenting that set up a "quality" relationship or "emotional climate" (Darling & Steinberg, 1993) in which parenting practices are likely to be more successful (Fletcher & Jefferies, 1999).

#### ***2.3.2.2. Coercive family process***

Azar and Cotes (2002) suggested that behavioural and cognitive approaches may offer a more useful approach to assessing effective parenting since these approaches avoid some of the criticisms of the parenting styles model. Rather than classifying individuals as belonging to a particular class, behavioural and cognitive approaches are more functionally based, focusing on the unique contingencies that impact the individual parent, child and family unit. They also take account of parental and child learning histories, skills, personal goals and the context in which parenting must occur.

The Coercive Family Process approach, first described by Gerald Patterson (1982) comes from the behavioural psychology perspective and relates to the ways in which family members shape and control one another's behaviour. This theory postulates that the development of negative behaviours and interactions within families is largely explained by the use of coercive and often aversive behaviours by parents and children to mutually train one

another's behaviour. For example, consider a child who is non-compliant to a parent request: in a coercive family cycle, the parent would then demand compliance, which in turn would result in the child escalating their non-compliance to more aversive behaviour such as aggression. The continued non-compliance and aggression by the child are then met by the parent escalating their demands further, also using more aversive behaviour (e.g., yelling, threats, aggression) before the parent ultimately gives in to the child's behaviour, tacitly reinforcing the child's non-compliant behaviour and use of aggression to avoid complying with parental demands and even, perhaps modelling the use of aggression as an effective way to get what you want. Equally, the parent's behaviour is reinforced to expect that they will need to use these aversive strategies to obtain their child's compliance in the future or that it is better not to make requests of their child so that they do not experience conflict.

The Oregon Social Learning Clinic has been investigating the links between coercive family processes and the development of antisocial behaviours such as aggression, oppositional and conduct behavioural difficulties since the 1970's (Reid et al., 2002). Findings from these studies demonstrate that members in families of children with behavioural difficulties tend to engage in frequent, reciprocal coercive interactions with one another (Patterson et al., 1989). Additionally, the coercive processes used tend to be of high intensity and duration. Researchers also discovered that the use of coercive behaviour is associated with whether it is effective in stopping the efforts of other family members to change or control their behaviour. In this way coercive behaviours are negatively reinforced (Snyder & Patterson, 1986, 1995). For example, if an adolescent stands over his much smaller mother demanding that she stop nagging him to do his chores and his mother subsequently stops asking him to do chores, the adolescent's aggressive behaviour is negatively reinforced and there is therefore a greater likelihood that the adolescent will use aggression again in the future.

Coercive Family Processes is an approach that has attempted to take context into account (see Figures 2.1a and 2.1b below), noting that the developmental changes in the types of child problem behaviours are generally accompanied by significant changes in the emotions, attributions and beliefs that family members have about one another, along with a range of broader contextual variables such as parental stress and depression, divorce and poverty (Reid et al., 2002). It is suggested that these contextual variables indirectly affect outcomes for children by changing the ways in which their parents interact with them.

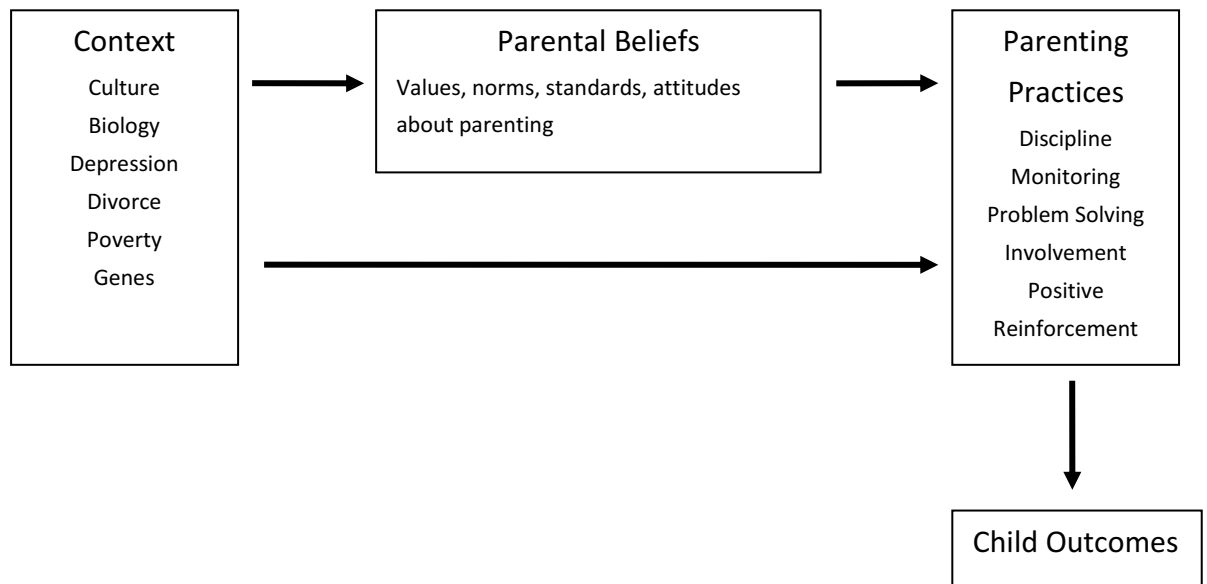


Figure 2.1a

*Contextual Model Effects of Parental Beliefs on Parenting Practices and Child Outcomes (Reid, Patterson & Snyder, 2002)*

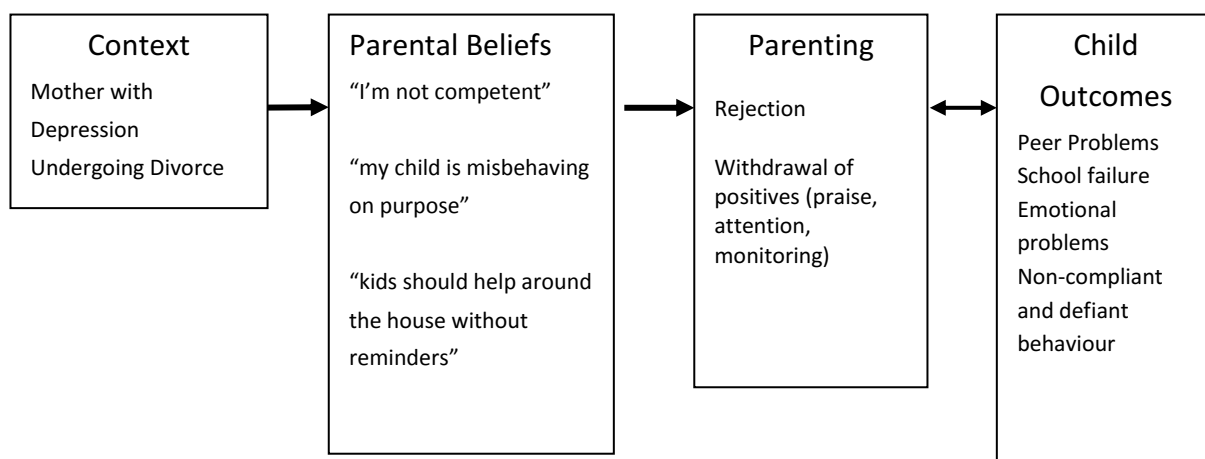


Figure 2.1b

*Example of Contextual Model Effects of Parental Beliefs on Parenting Practices and Child Outcomes*

By the time a child reaches adolescence many years have passed in which the parent and adolescent have shaped the ways in which they will interact. Many of these shaping behaviours will now be automatic and done without parent or adolescent conscious awareness and so are likely to be habitual and difficult to modify (Reid et al., 2002). The development and maintenance of coercive family processes has been shown to be linked to ineffective parenting practices such as the absence of positive reinforcement for appropriate child behaviour and/or a lack of consequences for inappropriate behaviour (Patterson et al., 1989). Despite the difficulties with modifying these habitualised parent-adolescent interactions, outcomes from programs designed to teach parents more adaptive and effective parenting strategies have demonstrated that modification is possible via the implementation of parenting interventions designed specifically to target coercive family processes. Such programs provide parents with strategies to teach their children how to behave and interact with others (according to social rules and norms), and to develop the skills to communicate, problem solve and resolve conflict (Brestan & Eyberg, 1998; Kazdin, 1997).

The Coercive Family Cycles approach can be seen to have much to offer for the development of effective, evidence-based parenting interventions. It facilitates a functional assessment of factors contributing to and maintaining

problems in adolescent behaviour and family relationships, whilst also considering these factors within a contextual framework (see Figures 1a and 1b). It offers specific, operationally defined strategies or “parenting practices” (e.g., positive reinforcement; monitoring, and discipline – see Section 2.3.3 for details) that promote optimal outcomes in children and adolescents and it has further advanced our understanding of how antisocial and aggressive behaviours develop in children and adolescents.

The Coercive Family Processes literature has focused on exploring the strategies that parents use to effectively fulfil their parenting role, along with a focus on factors that impact on parents’ capacity to implement these strategies. However, given that parenting interventions that are influenced by this approach are not effective for all parents (Dumas, 2005), it is clear that there is still a piece of the “effective parenting” puzzle missing.

Prior to considering this missing piece further, it is important to consider which parenting practices do provide protections for young people. These strategies and the clinical processes resulting from the theory and practice developments from Coercive Family Cycles have formed the basis of many of the most evidence-based parenting interventions available to date, namely, The Incredible Years (Reid, Webster-Stratton, & Hammond, 2003), Parent Management Training (Forgatch & Patterson, 1989) and the Triple P: Positive Parenting Program (Sanders, 1999).

### **2.3.3. Effective parenting practices**

Parenting practices, as previously mentioned are the specific, goal-direct parenting behaviours (Fletcher & Jefferies, 1999) that are frequently the target of parenting interventions aimed at preventing or treating child and adolescent behavioural and health difficulties. Patterson and colleagues (Reid et al., 2002) from the Oregon Social Learning Clinic identified a number of key parenting strategies that have helpful effects on parent and child wellbeing and behaviour, including: positive reinforcement, discipline, monitoring, and involvement. Other researchers have added the importance of parental acceptance (Cavell, 2000, 2001; Pelegrina, Garcia-Linares, & Casanova, 2003).

### **2.3.3.1. Positive reinforcement**

Ensuring that children know when their behaviour is acceptable or not has long been shown to be an important aspect in encouraging children to learn and repeat behaviours associated with positive social and emotional development. Positive reinforcement refers to any action or event that occurs immediately following a behaviour that increase the likelihood that the behaviour will occur more frequently. In parenting, positive reinforcement is often in the form of a reward (e.g., attention, activity, treat) or verbal praise. Positive reinforcement can however, reinforce undesirable behaviours as well. For example, if a parent gives in and buys their adolescent a pair of new shoes when the adolescent nags loudly in the shopping centre, the parent has “positively reinforced” their child’s use of “nagging” as a strategy for obtaining parental acquiescence. Positive reinforcement works best when used alongside strategies such as “planned ignoring” and “time-out” that remove attention from undesirable behaviours (Reid et al., 2002; Webster-Stratton, 1989). In parenting interventions, positive reinforcement is generally explained and illustrated via the teaching of strategies such as “descriptive praise,” “positive attention” and the use of “reward charts” (also called behaviour charts), with parents taught when and under what circumstances to apply the strategy (Sanders & Dadds, 1993).

### **2.3.3.2. Acceptance**

Parental acceptance has invariably been defined as the degree to which a parent is loving and responsive to their child (Pelegriana et al., 2003). Parental acceptance is characterized by displays of warmth, affection, approval and support that create an environment in which children can safely develop a sense of security, confidence, trust and positive regard for others. It has been frequently contrasted with parental rejection (Rohner, 2004; Varan, 2005). Attachment theory suggests that children who experience their parents as caring and comforting are more likely to develop a view of the world that they will be accepted in other relationships in their adult lives and a view of themselves as worthy of love and support (Turner, Sarason, & Sarason, 2001).

The notion of parental acceptance has been extensively included in the scientific literature as an essential feature of positive parent-child relationships. Parental rejection on the other hand, refers to the absence or withdrawal of warmth, love, or affection by parents toward their children (Rohner, 2004). Parental acceptance or rejection have been implicated in the development of children's self-esteem and self-confidence (Berenson, Crawford, Cohen, & Brook, 2005 pp 100; Maccoby & Martin, 1983), a child's ability to adjust to stressful situations (Kliewer, Fearnow, & Walton, 1998), as well as to the academic performance of adolescents (Lamborn et al., 1991; Pelegrina et al., 2003; Steinberg et al., 1992) and to the incidence and management of child behavioural difficulties (Stern, Rohner, & Sacks-Stern, 2007).

### ***2.3.3.3. Involvement/connectedness***

As children develop greater autonomy and move into and through adolescence they begin to spend less time with their family (Larson et al., 1996). Remaining connected to and involved in an adolescent's life can represent a significant challenge for parents during this period. Many of the activities in which parents were previously involved either no longer occur or they are done independently by the adolescent. As such parents need to adapt their parenting to these naturally occurring shifts in family time and activities (e.g., young people spending more time studying in their bedroom and/or with peers) so that they continue to find ways to spend time with their adolescent and to keep their adolescent engaged in the broader family context. Parents who are able to adjust to the social changes in their child's life and who maintain an involvement in their child's schooling and activities and thus a high degree of connectedness are more likely to be able to maintain or improve the quality of their relationship with their child. Connectedness has been frequently described in the scientific literature as a key feature of parent-child relationships. Defined as the emotional availability or responsiveness of a parent, connectedness has been likened to constructs such as warmth, closeness, support, trust, intimacy, and involvement (Clark & Ladd, 2000; Maccoby, 1984; Pinquart & Silbereisen, 2002).

Connectedness is associated with the social and emotional wellbeing of children (Rohner, 2004) and low levels of connectedness have been linked to adolescent outcomes such as involvement in risk taking (alcohol and other drugs), unhealthy weight control behaviours, poor mental health outcomes (depression, suicidality) early initiation to sexual activity (Deptula, Henry, & Schoeny, 2010) and low self-esteem (Ackard et al., 2006). Additionally, parents who are able to effectively facilitate a relationship that is characterised by demonstrations of warmth and caring, time spent together and positive regard are more likely to be able to effectively monitor their adolescents' behaviour and activities (Hayes, Hudson, & Matthews, 2003).

#### **2.3.3.4. Monitoring**

The amount of time an adolescent has that is unscheduled and unsupervised has been linked to increased delinquent activities including early sexual initiation (Hadley et al., 2011; Huang, Murphy, & Hser, 2011), criminal activities, truancy and alcohol and other drug use (Capaldi, DeGarmo, Patterson, & Forgatch, 2002; Huang et al., 2011; Patterson et al., 1992). Conversely, effective supervision has been linked to less engagement in antisocial and risk-taking behaviours. Parental monitoring or supervision has consistently been demonstrated as a key protective factor for adolescents, one that operates as a moderator of adolescent risk (Hayes et al., 2003; Huang et al., 2011; Laird, Criss, Pettit, Bates, & Dodge, 2009; Oberlander et al., 2011).

As children mature and develop greater autonomy, parents modify the frequency and types of supervision they provide to allow their adolescent more privacy and responsibility for decision making (Dishion & McMahon, 1998). Most move from direct to more distal approaches to supervision. Being able to answer four key questions has been linked to effective monitoring, that is: what is my adolescent doing; who they are doing it with; where are they; and when they will be home (Hayes et al., 2003).

Two components of effective monitoring have been described: the rules and expectations parents have about how much information they need from adolescents about their activities, and the amount of time the parent directly



spends with their adolescent (Patterson et al., 1992). Another key element of parental monitoring described in the literature is parental knowledge (Chilcoat & Anthony, 1996; Laird et al., 2009; Oberlander et al., 2011), meaning the extent to which parents are aware of their children's activities, concerns and whereabouts. Recently, Stattin and Kerr (2000) noted that child disclosure is an important aspect of successful monitoring, with voluntary disclosure of information by the adolescent related to lower levels of adolescent problem behaviour than situations in which parental solicitation of information is required.

Monitoring during adolescence is likely to work best when it is done incidentally as part of a warm, loving and accepting parent-adolescent relationship (Stattin & Kerr, 2000). In this context, parental enquiries are more likely to be interpreted as caring and routine elements of family life; to be expected and even desirable (Fuller, 1998). However, in families where the parent-adolescent relationship is strained and/or where parent involvement in their child's life is low, parental efforts at monitoring are likely to be interpreted as being "controlling" and lead to increases in conflict (Hayes et al., 2003). Taking a Coercive Family Cycles approach (Patterson, 1982), in these circumstances, parents are likely to learn one of two things: 1) monitoring leads to conflict, so don't ask; or 2) to find out anything about the adolescents activities the parent must escalate their attempts with more aversive strategies (e.g., yelling, threats, reading diaries). The former is likely to lead the parent to reduce their involvement in their child's life further, whilst the latter is likely to lead to higher conflict and further relationship breakdown. Both result in an adolescent who is more vulnerable to poor health and social outcomes.

Despite, the recognised importance of the role of parental monitoring during adolescence, it has been shown that the higher the adolescent problems the more likely there is to be a lower levels of parental monitoring (Hayes et al., 2003). This has implications for the content and approaches taken by parenting intervention developers. Hayes, Hudson and Matthews (Hayes et al., 2003) suggest that improving parental monitoring in families requires more than an increase in the number of questions parents ask about their adolescent's

activities, and rather requires a focus on improving other aspects of the parent-adolescent relationship such as connectedness and communication.

#### ***2.3.3.5. Rules, expectations and discipline practices***

Lack of clear rules and parental expectations that are backed up with appropriate consequences (discipline practices) are related to adolescent antisocial behaviours (Smart et al., 2005), risk taking (Boislard-Pepin et al., 2009; Hayes, Smart, et al., 2004; Ryan, Jorm, & Lubman, 2010) and oppositional and defiant behaviours that result in high levels of parent-adolescent conflict.

The developmental changes of adolescence, including the adolescent's ability to reason and understand the consequences of behaviours and activities, lead to the necessity for changes in how parents manage the use of discipline, with effective parents moving from unilateral decision making to a more mutual process that engages the adolescent via negotiation and problem solving (Steinberg, 2001). Parents, on average, decrease in their use of physical discipline during middle childhood and adolescence (Giles-Sims, Straus, & Sugarman, 1995). Problems may be exacerbated in families when the parent does not adapt their discipline approach over time or where the relationship between the parent and adolescent has deteriorated so that parent influence is low.

Locke and Prinz (2002) described "discipline" as the strategies used by parents that increase compliance and discourage inappropriate behaviour from their children. Much of the literature on discipline in parenting focuses on corporal punishment and other harsh and punitive behaviours and their impact on child wellbeing (McKee et al., 2007; Paolucci & Violato, 2004). Not surprisingly, clear links have been found between harsh discipline strategies and negative child outcomes (Gershoff, 2002; Paolucci & Violato, 2004; Reid et al., 2002) such as antisocial behaviours and aggression. However, there is another area of discipline that encompasses parenting behaviours shown to be effective in encouraging desirable behaviours in children and preventing or reducing difficult behaviour (Maccoby, 1992; Russell & Russell, 1996). Sanders (1999) calls these more effective approaches to discipline "assertive discipline" and they include provision of clear rules and instructions, reinforcement of behaviours

considered appropriate and that are incompatible with the difficult behaviour (e.g., talking quietly rather than yelling), time out, withdrawal of privileges, and the use of explanations and reasoning (Locke & Prinz, 2002; Sanders & Dadds, 1993).

Less effective discipline strategies are considered those that either reinforce or model inappropriate behaviours in children such as violence or nagging which can lead to the provision of mixed messages, absence of/or unclear rules; repeated instructions, social rewards via attention for inappropriate behaviours, physical punishment in the absence of a warm loving relationship and frequent reliance on coercion (Locke & Prinz, 2002; Sanders & Dadds, 1993; Sansbury & Wahler, 1992).

#### **2.3.4. Interim summary**

Parents are one of the primary influences on their children with this influence continuing throughout adolescence (Roth & Brooks-Gunn, 2000; Steinberg, 2001). Parents and parenting practices play an important role in adolescent outcomes. Foremost is a high quality relationship with their parents that is characterised by warmth, acceptance and respect. Also important are clear rules, discipline practices, and effective supervision. However, the identification of parenting styles and practices is not enough to fully understand what makes an “effective” parent. Achieving the “right” mix between the strategies and parenting style in a given situation, with a given child and a given context is just as important. That is, when and how parents negotiate, set boundaries or get involved in their adolescent’s life needs to be contextually driven, because behaviours that are effective in one environment may be potentially ineffective in another.

#### **2.4. The Missing Piece – Why Do Some Parents Respond More Flexibly (According To Context) Than Others?**

The Parenting Styles and Coercive Family Cycles approaches to effective parenting provide information about a range of parenting constructs and behaviours that have been linked to optimal development and wellbeing in children and adolescents. However, it seems logical that prescribing a set of

effective parenting practices for every circumstance is difficult if not impossible given the ever changing needs of the child and the changing contexts in which people are parenting (Azar & Cote, 2002; Centre for Community Child Health, 2004). As children develop and change parents must also change the way in which they interact with their children according to their child's developmental needs, family circumstances and the specific characteristics of the issue they are dealing with.

The Parenting Research Centre's "Model of Parent Adaptability" suggests that effective parenting adaptation involves perceptiveness (recognition of the child needs) and flexibility (choosing appropriate responses from a flexible repertoire of behaviours, skills and resources) (Centre for Community Child Health, 2004). In adolescence, this involves parents being able to recognise their child's need for and readiness to handle greater amounts of autonomy and responsibility and the gradual handing over of control for decision making to their adolescent whilst ensuring that they are protected from harm. For many parents, it is their struggles with their own difficult thoughts and emotions that present barriers to being perceptive, responsive and flexible towards their children (Azar, Reitz, & Goslin, 2008). Additionally, the fears and worries for their child's health and safety combined with their past experiences with "being in control" as being the best way to keep their child safe will at times lead parents to interact with their children in ways that are ineffective, failing to recognise their child's needs or to select responses that are appropriate to the situation. For example, a parent may yell at their daughter for "not doing her chores" without recognising that the adolescent is upset about an argument with her best friend and looking for her mother to listen and comfort her. In this situation the parent has chosen a coercive parenting strategy that may have worked to get chores done in the past. However, not only is the strategy coercive, it has also been rigidly applied without consideration of whether it is appropriate in this situation or not. The likely outcome from such an interaction is the withdrawal of the adolescent resulting in loss of connectedness with her mother. She may still

complete her chores, giving her mother the impression that this strategy “worked” without recognition of the impact on their long term relationship.

## **2.5. The Parent-Adolescent Relationship**

The relationship between parents and their child is a dynamic one that shifts and changes according to a range of contextual and individual factors. These include: factors associated with the child (e.g., temperament, learning difficulties/disability); the fit between the parent and child’s respective temperaments; factors associated with the context (e.g., poverty, isolation, and neighbourhood); factors associated with the parent (psychopathology, alcohol and other drugs, learning difficulty); and factors associated with parenting (perceptiveness, responsiveness, sensitivity, knowledge, skills and resources) (Centre for Community Child Health, 2004). In addition, the interplay between the normative changes of adolescence (pubertal, social and cognitive) and the adolescent’s and parent’s response to those changes can impact on the parent-adolescent relationship (Paikoff & Brooks-Gunn, 1991).

The parent-adolescent relationship is a reciprocal one, with each influencing and shaping the behaviour and responses of the other (Azar & Cote, 2002; Patterson, 1982). As already discussed, adolescents need a parent who is warm, involved and who accepts them as a unique and valuable individual and family member whilst also maintaining appropriate levels of supervision and limits around dangerous or inappropriate behaviours given their current context (Dishion & McMahon, 1998; Kim & Rohner, 2002; Nash et al., 2005). The degree to which the parent is able to achieve this is not only influenced by their own temperament, physical and mental health and contextual factors (SES: employment status, education) but also by the way in which the adolescent responds to parenting efforts. As already discussed, in Section 2.2.2.3 Coercive Family Processes, the parent and adolescent have been shaping each other’s responses since the day of the child’s birth. So, for example, by the time a child reaches adolescence, the parent will have learned how to deal with conflict with their child in part by how the child has responded in the past. If past experiences tell the parent that asking their child to clean their room will result in an angry

outburst from the teen, the parent may have learnt that keeping the peace means not expecting their child to do chores. Thus, the parent withdraws from their relationship with the child, making them vulnerable to higher levels of influence from outside the family.

In Australia, the majority of adolescents say they have a good relationship with their parents (Smart, Sanson, & Toumbourou, 2008). A number of factors that influence the strength of the parent-adolescent relationship have been described in previous sections of this chapter, including: child factors (temperament, adolescent mental health difficulties; history of child behaviour problems in early childhood, changes associated with puberty); adverse family events (marital difficulties or divorce, unemployment); and effective parenting styles (warm, loving, accepting) and practices (monitoring, involvement, acceptance and rules, expectations and discipline practices). Two additional factors are worth considering here: parent-adolescent conflict and parent wellbeing.

### **2.5.1. Parent- adolescent conflict**

A high level of parent-adolescent conflict has long been thought to be a feature of the adolescent years. However, more recently researchers have found that frequent, intense, hostile and unresolved conflict affects fewer than 25% of families (Steinberg, 2001) with some reports as low as 5 to 15% (Eisenberg et al., 2008). Current researchers are now describing conflict as a normative process of adolescence that characterises the adolescents push for autonomy and that creates the impetus for adaptation of parenting practices and expectations (McKinney & Renk, 2011). The majority of families (approximately 70%; Smart et al., 2008) experience only minor low levels of conflict related to everyday activities and hassles (Reisch et al., 2000). Conflict has been demonstrated to increase from early to middle adolescence before stabilising and then reducing in later adolescence (McGue & Iacono, 2005). However, where parent- adolescent relationships are characterised by high levels of unresolved conflict and particularly when they also involve high hostility, adolescents are also more likely

to exhibit behaviour problems (Keijsers, Loeber, Branje, & Meeus, 2011), risk taking behaviours and poorer mental health outcomes (Hurd et al., 1999).

### **2.5.2. Parent wellbeing**

The health and wellbeing of parents is consistently related to outcomes for children and adolescents, with parent mental illness (Gershon et al., 2011; Goodman & Gotlib, 2002) and substance addiction (Goldman Fraser, Harris-Britt, Leone Thakkallapalli, Kurtz-Costes, & Martin, 2010) linked to the development and persistence of adolescent problem behaviours (Smart et al., 2008). Recently, research has also turned to the role of parents' emotions and thoughts, and their links to parental behaviour (Teti & Cole, 2011). Teti and Cole (2011) assert that examining the processes associated with parental emotions and cognitions and their role in modifying effective parenting practices and approaches is important for better identifying the targets for parenting interventions and for further refining our understanding of why some children and adolescents are more vulnerable to risk than others. This will be explored further in Chapter 3.

#### **2.5.2.1. Parental self-efficacy**

Parental self-efficacy is another critical piece of parent wellbeing that has received much attention in the parenting literature (Coleman & Karraker, 1997). Parental self-efficacy refers to the extent to which a parent expects to perform competently and effectively as a parent (Teti & Gelfand, 1991). According to self-efficacy theory (Bandura, 1989), parental self-efficacy consists of two key components: 1) knowledge of effective parenting practices and 2) the confidence to effectively implement those practices. Ardel and Eccles (2001) described parental self-efficacy as the parents belief in their capacity to influence their children's behaviour and the environment in ways that foster children's successful development.

High levels of parental self-efficacy are associated with positive parenting behaviours such as responsiveness and providing stimulation for development in young children. Self-efficacy has also been studied in relation to its effect on parental psycho-social factors (e.g., depression, anxiety and stress) with mixed results. Teti and Gelfand (1991) demonstrated that maternal self-efficacy

mediates the effects of parenting behaviour on psychosocial factors such as depression in mothers of infants, such that more self-efficacious mothers are to some extent protected from the deleterious effects on their parenting of their mental health problems. However, Rogers and Matthews (2004) in a study of children aged 2 to 12 years did not find any relationship between parental self-efficacy and parental reports of depression, stress or anxiety.

In relation to adolescence, self-efficacy in parents has been associated with both direct and indirect positive effects for adolescents, including, improved academic outcomes, better self-regulation, (Purdie et al., 2004), higher motivation and persistence with physical activities (Xiang, McBride, & Bruene, 2003) and reduced levels of intention to smoke in young adolescents (Mahabee-Gittens et al., 2011). Parental self-efficacy has also been linked to the parent-adolescent relationship, including parental responsiveness (Gondoli & Silverberg, 1997), communication (Bogenschneider & Stone, 1997), and parental involvement and monitoring (Shumow & Lomax, 2002).

More recently, Steca, Bassi, Caprara and Fave (2011) described the importance of parent self-efficacy for the development of academic and social skills needed by adolescents as they move towards and adjust to adulthood. Results from their study investigating differences on adolescent wellbeing, academic efficacy and behaviour difficulties between parents with high and low levels of self-efficacy found significant benefits for adolescents whose parents reported high self-efficacy, including higher academic efficacy beliefs, higher levels of open communication and support from parents, fewer behaviour difficulties and lower levels of depression. In contrast, the adolescents of parents reporting low self-efficacy reported lower levels of wellbeing, more behavioural problems and higher involvement with violent events. However, these findings do come with some cautions: the authors noted their small sample size (N=64) and the potential for a gender effect given there was a larger number of girls in the high parental self-efficacy group. Despite these limitations, the results of this study and previous studies point to the important role that parental self-efficacy



plays in supporting effective parenting practices and positive outcomes for children and adolescents.

#### **2.5.2.2. Satisfaction**

Satisfaction in the parenting role is another important and related factor for parent wellbeing. Coleman and Karraker (1997) described a strong relationship between satisfaction and efficacy, noting that it is difficult to find satisfaction in activities that an individual does not have skill for, and conversely if the individual does not find an activity satisfying it will be difficult to develop proficiency in that skill. A number of studies have linked child behavioural difficulties to lower levels of parent satisfaction (Johnston & Mash, 1989; Ohan, Leung, & Johnston, 2000). Rogers and Matthews (2004) found a negative correlation between parent satisfaction with child behaviour difficulties and parent satisfaction with parent functioning (depression, anxiety and stress), providing support for this construct as another important factor in effective parenting.

As such, interventions that are designed to promote positive child and adolescent development by focusing on parental functioning may therefore benefit by including a focus on increasing parental self-efficacy and satisfaction.

### **2.6. Parenting Interventions**

Much of focus of researchers and program developers in the parenting field has been on the effectiveness of programs for parents of young children (3 to 10 years) with the aim being to prevent or disrupt the trajectory for the development of behavioural and other antisocial or mental health difficulties in early childhood (Webster-Stratton & Taylor, 2001). The evidence for these programs is substantial, with programs resulting in reductions in externalizing and internalizing child behaviour problems, improvements in parental wellbeing (parental confidence and effectiveness, anxiety, depression and self-esteem) and parenting practices that enhance the quality of parent-child relationships (Johnson, Franklin, Hall, & Prieto, 2000; Sanders, Markie-Dadds, & Turner, 2003; Webster-Stratton & Taylor, 2001). These positive findings have been replicated

across studies, different countries and in both home and community settings (Serketich & Dumas, 1996).

Most of these programs take a Parent Management Training (PMT) approach (also termed Behavioural Family Intervention) which is based on social learning theory, functional analysis and incorporates principles from cognitive behavioural therapy (Kazdin, 1997; Kazdin & Weisz, 1998). PMT has consistently been shown to be effective in reducing child behavioural difficulties with multiple studies demonstrating large effect sizes. These programs aim to teach parents to increase their positive interactions with children and to reduce coercive and inconsistent parenting practices. However, little or no focus is given to parental cognitions and other private events that may interfere with effective parenting practices or parent wellbeing. Where a focus on private events has been included, the focus has been on parenting young children. However, findings have shown that there is merit in addressing parental cognitions and emotions as part of parenting interventions. For example, Sanders and colleagues (2004) compared the effects of the Triple P program, a PMT based program with an enhanced version of the program involving specific focus on parents' negative attributions as they relate to anger and potential child maltreatment in a sample of 98 parents of children aged two to seven years. Results from this study demonstrated that both versions of the program were effective in improving parenting practices, child behaviour and reducing problematic attributions. However, the enhanced version demonstrated greater reductions in parents' unrealistic expectations and in their child abuse potential, as measured by the Child Abuse Potential Inventory (Milner, 1994).

PMT has proven less successful in addressing behavioural difficulties in adolescents (Ruma, Burke, & Thompson, 1996). Results have tended to be mixed and with smaller effect sizes. Woolfenden, Williams and Peat (2001) in their Cochrane Review of eight randomised controlled trials involving parents of adolescents caught up in the juvenile justice system found consistent positive effects, including reductions in the amount of time adolescents spent in detention, reductions in re-arrests, and fewer runaways. Similar to those

included in the Cochrane Review (Woolfenden et al., 2001) many of the programs developed for parents of adolescents have targeted a specific risk factor such as: Guiding Good Choices (Park et al., 2000) and BEST for drug use (Bamberg, Findley, & Toumbourou, 2006), or Growing up FAST for crime prevention (Gavazzi, Wasserman, Partridge, & Sheridan, 2000). Other programs have focused on treating identified behavioural disorders (conduct disorder or aggression) (Forgatch & Patterson, 1989). More recent programs have taken a broader preventative focus, concentrating on building the parent – adolescent relationship and giving parents strategies for preventing and managing risk-taking. Examples of programs include: Teen Triple P (Ralph & Sanders, 2004); ABCD parenting young adolescents (Burke et al., 2012) and Parenting Adolescents Wisely (Gordon & Rolland-Stanar, 2003).

Along with the mixed findings, researchers have also reported difficulties with engagement and retention of parents of adolescents in programs, with reported participation rates as low as 20 to 35% (Baker et al., 2011; Weinberger, Tublin, Ford, & Feldman, 1990) and drop-out rates between 40 to 60% (Baker et al., 2011).

It can therefore be seen that the evidence for the effectiveness of parenting interventions targeting the adolescent years at both a preventative and treatment level is still relatively small. More research on existing or new programs that adopt rigorous designs and strategies for parent engagement are required if we are to better understand the role that parenting interventions play in reducing behavioural difficulties and promoting the development of adolescents.

Additionally, a significant number of families still experience problems with relationships and adolescent behaviour even after participation in a parenting intervention (Serketich & Dumas, 1996). It is possible that the primary approach taken by program developers - that of enhancing parents repertoire of parenting practices and increasing parental knowledge - does not adequately assist all parents to work out how to apply the strategies flexibly beyond the bounds of the program. Perhaps the gap is on how we help parents to build their

capacity to respond flexibly in each moment and to deal with the beliefs and attitudes that get in the way of parenting according to their values and contextual demands.

## **2.7. Conclusion**

Adolescence is an important developmental period, with much change. If not managed well adolescence is a time in which many difficulties can arise for the adolescent and the family that affect not only the teenage years but can have impacts lasting well into adulthood. Despite popular belief to the contrary, parents remain important and continue to be a significant influence in their adolescent's life. A range of factors will impact on the degree to which this influence persists: individual child factors; parent factors; the fit between parent's and the adolescent's temperaments; the quality of parent child relationship; and broader contextual factors such as divorce, poverty, and the characteristics of the neighbourhood in which they live. Given that there is no one right way to parent and no one unifying theory of parenting, it is necessary to consider the role of parents and what constitutes effective parenting from within the context in which it takes place. Parenting is a challenging role and new pressures are added during the adolescent years, with parents and adolescents needing to adjust to developmental and social changes that result in adolescents becoming more autonomous and spending less time within the family unit. The majority of families manage these transitions very well; however, a substantial minority experience difficulties and need support to parent effectively. To this end a number of parenting practices have been identified and these have been incorporated into multiple parenting interventions with good effects for many families. Despite the positive findings, current interventions have not proven to be successful for all families with approximately 30% of parents still reporting difficulties after completing a program. This suggests that more work is needed to find new approaches that can either augment or offer an alternative to the current evidence-based programs. This will be explored in Chapter 3.

## CHAPTER 3

### Parental Psychological Flexibility

#### 3.1. Introduction

Chapter 3 will focus on an aspect of parenting that may offer an alternative approach to assisting parents to adopt and implement parenting practices likely to be effective in their own family context: psychological flexibility (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Chapter 3 provides a definition of parental psychological flexibility and describes the theoretical and clinical underpinnings of the construct. A brief overview is given of how psychological flexibility may be a useful approach for improving the outcomes of parenting interventions for parents of adolescents. This chapter concludes by discussing the ways in which it is expected that parental psychological flexibility will influence parents' sense of competence, parenting practices and adolescent behaviour (as described in Chapter 1: Figure 1.1).

#### 3.2. Parental Private Events

The way in which an individual relates to their private events (thoughts, feelings, beliefs, physical sensations and memories) is another factor that is likely to impact on a parent's capacity to parent adaptively. A number of studies have focused on this cognitive-affective component of parenting, using a variety of definitions and methods of assessing it (O'Connor, 2002). In particular, parental beliefs and attributions (the thoughts that parents have about themselves, their parenting role and their children) have been studied, particularly how they relate to parent wellbeing, parenting practices and child outcomes. Results of such studies have noted that parental cognitions and emotions predict both the quality of parenting and the parenting practices adopted. For example, mothers with depression have been shown to have reduced sensitivity and responsiveness to their child's needs, often misinterpreting their child's behaviour and responding inconsistently, with anger and irritability and the use of aversive parenting practices (Dix, 2000; Pidgeon & Sanders, 2009; Towe-Goodman & Teti, 2008). Much of this research has focused on parents of children under the age of ten years, however, Stern and Azar (1998) suggested a link

between attributions and conflict between parents and adolescents. For example, parents in families with high levels of parent-adolescent conflict have been found to be more likely to view their adolescent in blaming and negative terms than families with lower levels of conflict (Mas, Alexander, & Turner, 1991).

Bugental and Johnston (2000) argued that parental beliefs act as guides to how the parent will respond in different parenting contexts. As described in Chapter 2 parenting occurs in a context in which multiple risks and stressors are present. Parents must make decisions and respond to their child's and their own needs whilst also attempting to balance demands from other relationships and activities (intimate, extended family, friendships and work). Parents' private events as they go about balancing all these competing demands can affect whether a child/adolescents' behaviour is perceived to be developmentally appropriate or is viewed as misbehaviour that requires the parent to intervene (Stern & Azar, 1998).

One way in which parental private events affect child wellbeing and development is via the impact that they have on parental self-efficacy and mental health. Intrusive and unhelpful private experiences (thoughts, feelings etc) can undermine a parent's belief in their capacity to parent effectively and can reduce responsivity to their child's needs. This can result in parental withdrawal from interactions with children and/or overreaction to their behaviour, both of which can compromise the parent-child relationship and/or lead to the development of coercive family cycles.

Teti and Cole (2011) suggest that interventions be developed that directly target maladaptive emotion-regulatory processes during in-the-moment parenting. Blackledge and Hayes (2001) suggest that negative private events do not in themselves "cause" behavioural problems. Rather, they assert that much of the impact from negative thoughts and feelings come from the consequences of the strategies (e.g., drugs, alcohol, social isolation) used in an attempt to avoid those experiences. Interventions that seek to increase psychological flexibility

such as those that take a contextual-behavioural approach may provide a way to do this.

### **3.3. Contextual Behavioural Psychology**

Described by Hayes (Hayes, 1988; Hayes et al., 1994) as being the “third wave” of behavioural therapy, “Contextual Behaviour Therapy” maintains the key elements of the earlier developmental phases that defined what we know as Cognitive Behavioural Psychology (CBT). Namely, Contextual Behaviour Therapy maintains a focus on both: Phase 1: Behavioural Therapy in that it has a focus on the systematic application of learning theory and specifically the principles of applied behaviour analysis, including the importance of behavioural contingencies to the modification of emotional difficulties, along with an emphasis on empirical accountability and the evaluation of treatment outcomes (Bandura, 1961, 2000; Skinner, 1945; Skinner, 1988); and also Phase 2: Cognitive Therapy in that it maintains a focus on cognition (attention, memory and mental representations) (Beck & Dozois, 2011). One of the core underlying connections between third wave therapies is that they do not focus on teaching clients to change their cognitions (one type of private event), but rather teaches clients to view the cognitions and other private events (e.g., feelings, memories, physical sensations and urges) in a decentred and non-judgemental way – as if seeing them from a distance (Luoma, Hayes, & Walser, 2007).

A core task for the Contextual Behavioural therapist is to teach clients to be more “psychologically flexible”, that is, to fully contact the present moment and the thoughts and feelings it contains without needless defense, and, depending upon what the situation affords, persisting in or changing behavior in the pursuit of goals and values (Hayes et al., 2006, pp.7). Psychological flexibility involves clients learning to let go of the idea that if one puts in enough effort it is possible to “fix” or “change” all problems, including ones over which the client has little or no control (e.g., child getting older and wanting more autonomy; adolescent expressing ideas that are different to their parents; desire to control their adolescents activities, including when the parent is not present). Instead, the therapist aims to assist clients to stand back and notice that the change efforts may in fact be the cause of their ongoing pain or turmoil. For example, their repeated efforts to work out how to fix a problem over which they have limited control can actually lead to excessive rumination and further experiencing of the difficult emotions that they are seeking to “fix”. The therapist

helps the client to see the possibility that there is another way to relate to their private events and that by doing so they will be better able to focus their efforts on identifying and implementing behaviours and activities that are personally important to them, such as being a warm, responsive parent.

A number of therapeutic approaches have been developed that incorporate constructs such as mindfulness (being present in each moment, bringing one's full awareness to one's actions without judgement) and acceptance (the willingness to experience feelings and emotions without attempting to change their frequency or form) in order to help clients to develop their ability to respond flexibly and effectively to the demands of their current context. Acceptance and Commitment Therapy (ACT; Hayes, Wilson & Strosahl, 1999), Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2002), Dialectical Behaviour Therapy (DBT; Linehan, 1993) and Integrative Behavioral Couple Therapy (Jacobson & Christensen, 1996) are just some examples of therapies that are based on acceptance and mindfulness. These therapies whilst grounded in different theoretical traditions are united in their focus on second-order change processes. That is, rather than targeting the content or frequency of private events directly, as one would do in CBT, approaches based on acceptance and mindfulness seek to alter the function of private events so that that clients learn how to relate differently with their internal experiences. ACT is perhaps the therapeutic approach that has placed the most emphasis on defining psychological flexibility and the processes that underpin it. The perspective of psychological flexibility under consideration in this thesis is based largely on the description provided within ACT.

**Acceptance and Commitment Therapy (ACT)** is a contextual behavioural approach that seeks to target how an individual reacts to their emotional and cognitive experiences. It aims to reduce efforts to avoid or control unwanted internal experiences (private events), including thoughts, memories, feelings and sensations, so that the individual is better able to make choices and take actions that are effective given a specific situational context. ACT seeks to reduce the individual's overreliance on private events, as this kind of reliance can be problematic, leading to decisions designed to avoid or prolong the internal



experiences rather than to behave in ways that are relevant to their current circumstance. ACT aims to increase the client's focus toward taking actions that move the individual in personally held valued directions (Hayes, Strosahl, & Wilson, 1999) such as the pursuit of meaningful relationships or career goals.

ACT is based on a theory that provides a behavioural understanding of language and cognition called Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001) and on a specific type of contextualism: Functional Contextualism "has as its goal the prediction and influence of events, with precision, scope and depth" (Biglan & Hayes, 1996, p. 50) and the framework encourages a focus on research that has the goal of both identifying variables that allow prediction of an event and that the testing of the influence of those identified variables on the event (e.g., by manipulating the variables). Hence, functional contextualism primarily advocates experimental research however, it does not completely rule out correlational research, with this latter form providing knowledge of how "one organismic event is related to another" (Biglan & Hayes, 1996, p. 51). This is an important step in understanding the "environmental events that could be used to affect the probability of those events" (Biglan & Hayes, 1996, p. 51) and thus can lead to the development of more sophisticated and rigorous experimental designs in which both prediction and influence of events can be achieved.

ACT is proving effective for a range of human difficulties, including obsessive compulsive disorder (Twohig et al., 2010), depression and anxiety (Forman, Herbert, Moitra, Yeomans, & Geller, 2007), chronic pain (Wetherell et al., 2011), diabetes (Gregg, Callaghan, Hayes, & Glenn-Lawson, 2007) and workplace stress (Flaxman & Bond, 2010). The therapy has been recognized as an evidence based intervention for a number of disorders by the American Psychological Association (APA Presidential Task Force on Evidence-Based Practice., 2006), and the United States Department of Health and Human Services funded National Registry of Evidence-Based Programs and Practices (SAMHSA, 2010). One area in which ACT has been listed as evidence-based treatment is that of Obsessive-Compulsive Disorder (OCD). Twohig and

colleagues (2010) undertook a randomized clinical trial comparing ACT with Progressive Relaxation Training (PRT) as a treatment for OCD. Seventy-nine adults diagnosed with OCD participated in an eight-session program of either ACT (n=41) or PRT (n = 38). Assessments were completed at pre and post intervention and again at three-month follow-up. Results showed improvements for both groups with reductions in OCD symptom severity from baseline to both post-treatment. However, ACT participants had larger and more rapid reductions in OCD symptom severity compared with PRT participants with the differences between the groups associated with a large effect size (Cohen's  $d = 0.84$ ). Additionally, a higher percentage of ACT participants reported clinically significant reductions with medium to large effect sizes (Cohen's  $d = 0.77$  and  $1.10$  for 1 and 12 week follow-ups, respectively). Another example of the utility of ACT is chronic pain (Wetherell et al., 2011). In their randomised controlled trial involving 114 adults with chronic, non-malignant pain, ACT was found to be comparable to CBT as a treatment method with participants in both conditions demonstrating improvements on depression, the amount that pain interfered with their life and pain related anxiety.

Broadly, the aim of approaches adopting acceptance and mindfulness strategies is to increase an individual's repertoire of effective responses and to assist them to flexibly choose between and to implement those strategies in contexts that are personally challenging. This process can be called "psychological flexibility" (Hayes et al., 1994). Psychological flexibility represents an extension to the tradition of cognitive behavioural therapy. It is this construct and its application to parenting adolescents that is the focus of the current study. The remainder of this chapter describes the construct in more detail, its theoretical and clinical underpinnings and its hypothesised role in the parenting of adolescents. As much of the field of psychology has focused on alleviation or removal of psychological distress and disorder, it is useful to begin with a description of psychological *inflexibility* and its potential association with difficulties in parent-adolescent relationships.

### **3.4. Psychological Inflexibility**

A contextual behavioural model of psychopathology is based on the assumption that across the course of their lives, all humans will experience pain, disappointment, grief and loss and that these experiences are a normal part of life (Coyne, McHugh, & Martinez, 2011; Hayes, Strosahl, et al., 1999). However, the model suggests that a person will also experience psychological distress when their language and private events interact with the context of their life in ways that interfere with the individual taking action or making changes that would bring meaning and quality into their life (Hayes, Strosahl, et al., 2004). Put another way, psychological inflexibility results when an individual overinflates the meaning and power of their private events so that their observed experiences are under-emphasised or minimised and they instead become overly focused on managing their difficult thoughts and emotions.

Consider the following example: David frequently has the thought that “no-one likes me”. He insists, to his psychologist, that he has no friends, ignoring the observed events from his life (e.g., this week alone he went to lunch with people he likes from work, was invited out for drinks by an old school friend and had several phone messages from friends he made whilst in London). In this example David is under-emphasising, perhaps even discounting, his observed experiences and instead is taking his thoughts literally, assigning them the authority and legitimacy of “fact.” The danger in doing this is that he may begin to inflexibly apply this thought (“no-one likes me”) to his life and begin to behave in ways that are consistent with the thought, such as avoiding or refusing social invitations and not responding to his messages. This inflexibility may in fact result in the loss of friendships that he feared and lead to the exacerbation of his negative emotions and distress.

Psychological inflexibility then, occurs when the individual unquestioningly relies on their private events to guide their actions even when those thoughts, feelings and sensations lead to unhelpful behaviours that produce or maintain distress and other problems in their lives.

In parenting, psychological inflexibility can interfere with a parent's ability to be sensitive and responsive to their child's and their own needs. For example, a parent who wants a close, loving relationship with their adolescent and who rigidly believes that children should "do as they are told" may fail to recognise the developmental appropriateness of their adolescent's request for more autonomy and may insist on unquestioning compliance from their adolescent. The result is likely to be frequent angry conflicts between parent and teen. In this example, the parent's over-emphasis and rigid adherence to their cognition "children should do as they are told" results in actions that actively interfere with their overall goal of a close relationship.

The theory and psychological processes associated with psychological inflexibility have been described and applied extensively in the clinical approach, Acceptance and Commitment Therapy. Psychological inflexibility is fostered through two key cognitive processes:

#### **3.4.1. Experiential avoidance**

Experiential avoidance occurs when a person is unwilling to remain in contact with particular private experiences (e.g., bodily sensations, thoughts, emotions, memories) and takes action to try to change the frequency and content of these events and the contexts where they occur, even though doing so is accompanied by a behavioural cost (Blackledge & Hayes, 2001). As such experiential avoidance can take on any form, including behaviours that may be considered functional in other contexts (e.g., laughter, self-reassurance, problem solving), providing that the behaviour is being used to avoid or control a specific private event. For example, excessive drinking when the primary purpose/function of drinking is to alter or avoid private events such as negative evaluations of themselves or pain or conflict associated with an intimate relationship would be considered experiential avoidance. Equally, using humour during a discussion of a problem at work would be considered experiential avoidance, if the purpose of the humour was to distract or avoid dealing with an issue that has arisen. Experiential avoidance can also take the form of avoiding situations that may produce the specific private experience (e.g., not going to a

social event because it will produce anxiety) even when those events would facilitate the achievement of personal goals (e.g., meeting a potential partner). Attempts at experiential avoidance have been found to make the intensity or frequency of the avoided thoughts and feelings worse (Hayes, Bissett, Korn, Zettle, & et al., 1999).

Experiential avoidance can occur in many parenting situations. Mixed emotions are part and parcel of raising children. Along with the joys and other pleasant experiences that children bring, parenting is also often accompanied by feelings of worry, frustration and disappointment. For example, a key task of parenting is the gradual granting of autonomy to their child. This task can be accompanied by a broad range of difficult private experiences, ranging from pride in a child's accomplishments to anxiety and overwhelming concerns that something bad will happen to children if they are given more responsibility or autonomy. Parents who experience these negative private events may seek to avoid those thoughts and feelings by attempts to maintain control over their child's behaviour and activities, (e.g., refusing to allow an adolescent to go out with their friends without the parent present, or by not allowing children to ride their bikes or walk to school when they are developmentally ready). These attempts by parents to avoid their unwanted private experiences can have negative effects on the child's development, including reductions in opportunities for physical activity and lack of practice with taking responsibility and decision making. They also have implications for the parent-child relationship, leading to possibilities of increased conflict and disobedience, dangerous risk taking and reduced adolescent connectedness to family.

It should be noted that avoidance of activities, behaviours and feelings and emotions is a strategy used by most people at some point in their lives. It can be both an adaptive and a maladaptive response. For example, a parent using distraction to assist themselves and/or their child to manage anxiety whilst undergoing an invasive medical procedure would be an adaptive response. However, if an individual routinely avoids or suppresses any negative internal

experiences then it is likely that the negative effects described above will be seen.

### **3.4.2. Cognitive fusion**

The second key cognitive process underlying psychological inflexibility is cognitive fusion. This refers to the process of believing that a thought (which is an interpretation of an experience) is literally true (Blackledge & Hayes, 2001) and holds the same tangibility as physical events. For example, the thought “I won’t cope” is interpreted as the truth, irrespective of any/all experiences that contradict the thought, just as in the case of “David” described at the beginning of section 3.2. Human beings learn to define, evaluate and justify their experiences in emotional and cognitive ways (Hayes, Strosahl, et al., 1999). We are able to develop complex links between words and experiences (including experiences of others) (Torneke, 2010). This means that we do not need to actually experience something to be able to infer meaning from it. For example, it isn’t necessary to go through a bush fire to know that it would be harmful and extremely frightening – it is possible to experience some of the anxiety just by thinking about the possibility. Cognitive fusion occurs when the interpretations we make from our thoughts and emotions are taken literally and believed completely without question, rather than being viewed as “thoughts” or “feelings (a grouping of physiological sensations) that have no power in themselves to act or harm. Cognitive fusion leads to experiential avoidance in that the unquestioning belief in thoughts and emotions as real and powerful can shape the individual’s behaviour so that they no longer respond to what is actually happening but instead to the need to escape from or keep a particular thought/feeling. In this way, the individual is responding as if their thoughts and feelings directly cause behaviour or events.

Part of being a parent involves experiencing a range of emotions and thoughts, some pleasant and others unpleasant. Cognitive fusion occurs when a parent begins to over emphasise the importance of these emotions and thoughts over their actual experience in the moment. Parents can do this for both positive and negative experiences. For example, a parent who observes their adolescent

son helping his younger sister with her homework may feel pride and happiness at the same time as thinking “I better not say anything or it won’t last”. The behavioural response to this desirable behaviour in her son may therefore be to walk away without letting her son know she is pleased with him. This action, allows the parent to keep her positive feelings and avoid dealing with the anxiety that she would interrupt her children. However, this behavioural response means that she has missed an opportunity to use a more effective parenting strategy such as praise, and attention to reinforce her son for his behaviour and to potentially increase the likelihood it will occur again.

### **3.5. Psychological Flexibility**

In contrast, psychological flexibility involves individuals making choices and taking action in their lives even when those choices/actions are accompanied by difficult/painful thoughts, memories, emotions or sensations. A person who is psychologically flexible will have a broad array of strategies (both physical and cognitive) that they can choose between and implement according to the demands of a situation and their own values.

In parenting this involves taking action that keeps the wellbeing of the child in mind even when doing so is linked to frustration, worry, disappointment, fear and the myriad of other difficult internal experiences for the parent. For example, a parent would be demonstrating psychological flexibility if they remain calm in response to the late return home by a teenager even though the parent is feeling a mixture of fear, disappointment, anger and relief. Another example would be when a parent sets and carries through a consequence for inappropriate behaviour even when the parent has thoughts such as “he’ll hate me if I do this” or “I won’t be able to cope if she gets angry or refuses to obey me”. A parent who follows through with limit setting in the supermarket despite feeling embarrassed by their child’s tantrum and thoughts or judgement by other shoppers is demonstrating psychological flexibility, as is a parent who can allow their adolescent to go on a first date even though they are worried about their child’s safety and feel a sense of loss that their child is “no longer a baby”.

Along with the child's wellbeing, psychological flexibility in parenting is demonstrated when parents keep their long term relationship with their child in mind. Examples include refraining from immediately saying "no" to child requests but rather taking time to consider the request first or paying attention to their child's emotional state before correcting their behaviour.

Psychological flexibility is considered to comprise six core interrelated processes. These processes are linked to the way language and private events interact with the events and contexts of our lives. The theoretical underpinnings come from Relational Frame Theory (Hayes et al., 2001) which posits that people learn to relate events to each other based on social conventions and that the result of this training is that we learn to respond to events according to the relation that has been ascribed to another event, rather than to an event itself. That is, if as a child we see our sibling react in fear to the picture of a spider, then we might come to associate "spider" with "scary" and in the future when faced with a spiders may react with fear despite previously never having seen or had an actual bad experience with a spider.

### **3.5.1. The six processes of psychological flexibility**

The six processes of psychological flexibility work together to allow the individual to assess and respond to their current context more effectively without over reliance on their internal experiences to guide their responses. That is, to respond to the context of seeing a spider on the wall rather than to the memory of their sibling's fear and their own subsequent emotional state. Below is a brief summary of each of these processes (Hayes, Strosahl, et al., 1999; Luoma et al., 2007).

#### **3.5.1.1. Mindfulness**

Mindfulness involves being psychologically present in each moment, bringing full awareness to one's actions (Hayes & Wilson, 2003; Kabat-Zinn, 1990). In parenting this might be demonstrated by a parent listening to their child, giving them their full attention even though their mind could be full of thoughts about all the tasks they "should" be doing instead.



Mindfulness applies to parenting in that a parent who is present in the moment is keeping in mind what is most important as they go about the daily activities of raising children. Such a parent is more likely to be able to catch themselves when they begin to fall into the myriad of traps inherent in raising children – e.g. letting work overbalance their family time; not noticing when their child is upset; dismissing events that to the parent seem trivial, but to their child may be incredibly important; yelling at their children to get things done; thinking of what to cook for dinner when meant to be playing with or helping their child; not noticing when their teenager gets home late. A parent who is acting mindfully will not avoid these traps altogether, but is more likely to notice them and step back from unproductive ways of coping with or responding to children and demands of parenting. A parent who is being mindful will, for example, listen to their child describing an event or experience, non-judgmentally, noting and reflecting their child’s emotions in that moment, rather than immediately focusing their attention on the content of the problem and the potential solutions or advice that can/should be offered.

#### **3.5.1.2. Acceptance**

Also referred to as Willingness, Acceptance is the willingness to experience feelings and emotions without attempting to change their frequency or form (Hayes, Strosahl, et al., 1999). In ACT, acceptance is considered to be the alternative to experiential avoidance (Hayes, Bach, & Boyd, 2010). For example, a parent whose child is walking to school on their own for the first time may feel anxious and have worrying thoughts about the child’s safety. For many parents the physical sensations and thoughts that accompany anxiety are considered “intolerable” and something to be “gotten rid of” or avoided. A parent who is not demonstrating psychological flexibility might spend their morning caught up in thoughts about whether their child made it to school. These thoughts may have been met with attempts to get rid of them – pushing them away, or trying to reason out why they are untrue. It is likely that the parent will have had difficulty focusing on what they had planned to do that morning. In contrast a parent demonstrating psychological flexibility might have exactly the same thoughts and

feelings but rather than focusing their attention on removing these unwanted experiences, the parent might put steps into action to ensure she had the information about their child's safe arrival at school (e.g., contacting the school or a friend who was dropping their own child off that morning) or just acknowledging the thoughts are present and then focusing her attention on her day's activities.

### **3.5.1.3. Self as Context**

Self-as-context refers to the recognition that an individual is more than the sum total of their thoughts, feelings and sensations (Hayes, Strosahl, et al., 1999). Rather, the self is viewed as a context in which experience can occur – there is a self who is continuous and who experiences the events of a life but who is also distinct from those events. ACT posits that the individual can become overly connected to a particular conceptualisation of who they are (called “self-as-content”) such as “I am a good parent”; “I am competent”, “I need people to like me”, “I can't handle conflict” or “I am anxious”. Attached to this self-as-content are all the thoughts, behaviours, memories and feelings that provide evidence supporting this view of self – or identity (Luoma et al., 2007). These descriptions of who we are can be a useful tool for communicating about ourselves and can help to achieve goals and organise our lives (e.g., getting a job, prioritising activities, etc). However, over-identification with a particular conceptualisation of self can lead to a range of unhelpful behaviours designed to maintain that view of self. It is also possible that psychological distress will be experienced whenever faced with experiences that are contrary to the conceptualised sense of self. Consider the woman who has held very important and senior roles in her professional life and has a strong sense of herself as “competent” and “successful” and who now has a 15 year old daughter who refuses to talk to her (except when shouting at her) and recently came home from a party drunk. These experiences are certainly challenging. However, for a mother who is fused with a sense of herself as “competent” and “successful” it is also likely to be accompanied by thoughts of failure that threaten her sense of self. It is possible that this parent will respond from a position of attempting to

maintain her sense of “competence” by engaging in psychologically inflexible actions. For example, she might withdraw from her child’s life so that she does not know what her child is doing (and then can avoid the associated negative thoughts and emotions); or she might reframe her child’s behaviour as the fault of her friends bad influence meaning that she can avoid her sense of failure by rationalising that it wasn’t her fault but the fault “of those bad peers”; or she could become angry and overreact to her child’s behaviour with harsh or hostile responses that even further threaten her relationship with her daughter and/or increase the likelihood of further risk-taking by her child. Each of these responses is likely to lead to the woman risking something she cares about (e.g., her relationship with her daughter; and her daughter’s wellbeing) in an effort to “defend” a specific conceptualisation of who she thinks she is.

A key task of ACT approaches then is to assist individuals to obtain a sense of distance from any single conceptualisation of self by creating awareness of themselves as “observers or experiencers independent of the experience being had” (Luoma et al., 2007, p. 19). Thereby, ACT interventions aim to have people become aware of a self that acts as the context that holds all their experiences across time (self-as-context). This self-as-context is a sense of one’s self that is constant and continuous and that can be separated from immediate internal experiences. That is, the individual can have different thoughts, feelings and sensations in different contexts but the self remains constant; in most people the sense of self is relatively stable even if the person is anxious one day and relaxed the next. By assisting parents to connect to a sense of self that is continuous, greater psychological flexibility is fostered – the parent becomes better able to obtain distance from their internal experiences and to focus their energy on choosing parenting practices that will promote their adolescent’s development and maintain a warm, loving relationship. In the example above, the parent would be able to maintain her sense of competence and to recognise anything that she has done (or not done) to influence her daughters behaviour.

#### **3.5.1.4. Cognitive Defusion**

An ACT approach suggests that one of the reasons that people experience psychological difficulties is related to the amount of time and energy that is devoted to being “caught up in” or “interacting” with their thoughts and feelings. Cognitive Defusion (or de-fusion) involves recognising that thoughts and feelings are constructs created from the mind via language and that they are not “literally true” in the way that events in nature are literally true. Cognitive defusion attempts to reduce this difficulty by assisting individuals to think of their thoughts as an “ongoing behavioural process” (Luoma et al., 2007, p. 58) in which thoughts come and go whilst the person having the thoughts remains stable. The person is able to observe their thoughts as they come and go in this process. Cognitive defusion strategies aim to assist people to learn to view their internal experiences from this “observer” perspective – from “self-as-context”. For example, a client may be taught to recognise or label their thoughts as thoughts in the same way that they are able to identify an object (e.g., a tree) - as being separate from them. In doing so, they become able to respond to their thoughts with greater flexibility according to the specific value of the thought in assisting the person to achieve longer term goals or to act in accordance with their personal values (see 3.5.1.5). A person is therefore demonstrating cognitive defusion when they can separate their worries, fears and prejudices from their assessments of actual events, and choose behaviours that are likely to be effective in that context. In parenting, as in all other aspects of life, it is very easy to become caught up in the negative thoughts and feelings that occur. Cognitive Defusion occurs when the parent is able to notice responding to a thought or feeling literally, be aware that it is a thought (feeling or sensation) and then choose a parenting action that is likely to work to promote their adolescent’s long term wellbeing or the parent-child relationship. For example, a parent of an adolescent who has been suspended from school for fighting (again) and who has been angry in most interactions at home recently may become caught up in feelings of anxiety and imagining the potential conflict and angry responses from her daughter when her parents raise their concerns and attempt to address the

issue. Such internal experiences can easily lead the parent to avoid raising the issue at all, and perhaps even avoiding any interaction with her daughter. However, such action is not in the long term interests of the adolescent's education and future prospects. A parent demonstrating cognitive defusion would note that the thoughts and feelings they are experiencing and then place their focus on choosing actions that are likely to address the issue (e.g., deciding the best time and place to raise the issue, planning what words to use, considering consequences that may apply).

#### **3.5.1.5. Values**

Values are the guiding principles that set the direction for a person's life and provide them with a sense of purpose. In ACT they have been defined as verbally construed, global, desired life consequences (Hayes, Strosahl, et al., 1999). Identification of values assists the individual to establish goals and choose actions that are likely to be effective and meaningful to the individual in the longer-term. Values are personally chosen, not imposed and distinct from society's morals. Values are used to guide our choice of actions in the face of our internal experiences. Common values for parents include, being a loving parent, being available for their child, being respectful, honest and fun. A person who is psychologically flexible is more likely to be able to choose actions that are more effective in their life when they maintain a values focus. They can put their goals and principles ahead of unhelpful thoughts and feelings when choosing how to behave in stressful or challenging situations.

In parenting, values provide a critical perspective and anchor for parenting practices and decisions. This is critical as day to day busyness, stress, hassle and anxiety can undermine the most important aspects of raising healthy, well-functioning children. Problems are more likely to occur when actions are linked to the thoughts and emotions of the moment. The parenting field has for a long time recognised the dilemma parents face in dealing with difficult child behaviours that produce anxiety, frustration and the pull for parents to respond with strategies designed to stop or turn-off a child's problem behaviour or aversive interaction in the moment. However, the danger is that the strategies

chosen are often aversive or coercive ones that may indeed stop a behaviour in the moment whilst actually reinforcing problem behaviour and coercive family processes in the longer term (Reid et al., 2002). For example, a busy parent who has been to work all day and is in the middle of making dinner for the family whilst thinking about what needs to be organised for the next day could easily get so caught up in their “busyness” that they lose sight of their value to be a loving parent – instead reacting with impatience when their adolescent son asks for help with a school assignment that is due tomorrow, snapping at them “You always leave things to the last minute. When are you going to learn to organise yourself”. However, when parents have explicitly identified their values (e.g., what they most want for their child, themselves as a parent and for their family) they will be more able to focus on responding in ways that benefit their child and family even in the face of negative emotions, thoughts, past events and concerns for the future. Returning to the example of the busy parent above – a values focused response may be to set a time to sit down with their adolescent to discuss the current assignment and to then plan another time to discuss how to effectively schedule and manage time for homework.

Values also play a critical role in assisting parents to give up the need to “control” all aspects of their adolescent’s lives by helping them to place decisions in a broader context that is in service of their child’s development and the needs of the family rather than being swayed by momentary pressures, problems and worries.

#### **3.5.1.5. Committed Action**

Committed action refers to behavioural responses that are chosen flexibly, dependent on the individual’s specific context (e.g., family structure and environment, neighbourhood safety and resources, financial considerations) and in line with their values. The overall aim of ACT is to assist clients to engage more fully and positively in their own lives by committing themselves to actions that are consistent with their values and that are likely to be effective for their current situation.

Committed action involves the willingness to persist with actions even when doing so is difficult and accompanied by negative emotions, because the action is deemed important or meaningful. For example, choosing to set consequences for an angry adolescent who has broken family rules could easily be described as one of the less rewarding aspects of parenting. However, a parent who has values relating to teaching their children responsibility and respect for others will engage in these parent-adolescent interactions despite the negative reaction of their child and their own negative internal experiences.

Committed action also involves the ability to respond with a range of behaviours and the capacity to change when necessary in order to do what works for their context or because doing so will give them the opportunity to work towards something that is important. For example, a parent who has previously made decisions on behalf of their child and who wants their adolescent to be able to make effective decisions in their own life will need to shift to more collaborative approaches to decision making (e.g., problem solving; negotiation) as their child moves into and through the adolescent years.

### **3.5.2. Conceptualising the six processes of psychological flexibility**

The six processes are all interrelated and overlapping with one another. For example, taking committed action can be accompanied by many different thoughts, feelings and sensations, many of which may be interpreted as negative (Hayes, Strosahl, et al., 1999) and that require a sense of self-as-context and the use of mindfulness to be able to recognise times when cognitive defusion or a refocusing on values is needed. The first four of these processes (present moment, acceptance, cognitive defusion and self as context) can be viewed as precursors that facilitate committed action, the desired outcome of the process. The values component operates as a guide between the first four processes and the committed actions whereby the psychologically flexible individual uses their values to assist them to choose actions (sometimes against a background of 'competing' private events) that are meaningful and effective within their lives. It is via the promotion of the first four processes in the service of values-based

and committed action that the difficulties associated with experiential avoidance and cognitive fusion can be lessened.

Let's return to the example of David and how the four cognitive processes of psychological flexibility can assist him to live the life he wants:

- a. *Present Moment* - If David is taught to be more present to his moment by moment experiences he is more likely to notice the interactions he has with his friends;
- b. *Cognitive Defusion* - similarly, learning to disentangle his experiences from his private events will assist him to create some distance between himself and his thoughts and emotions so that he no longer takes them literally.
- c. *Acceptance* - If David is willing to experience his thoughts and emotions without trying to change them, that is, to accept that difficult emotions are a part of life and frequently accompany activities or actions that hold value to him, he can begin to reduce the effort he places into "fixing" his private events and instead shift his efforts to the things that matter to him, such as fostering his relationships.
- d. *Self as Context* – By recognising that he is more than any single role or description that he can apply to himself (e.g., bad friend, boring, brother, accountant, psychology client, etc.), David will find it easier to accept his private events without getting caught up in them.

As can be seen by this example, the four cognitive processes of psychological flexibility work together to enable David to focus on choosing actions that will work for him so that he can live a values-consistent and fulfilling life (with room for both his positive and negative experiences).

In a parenting intervention context, strategies that assist parents to identify their values in relation to their hopes for their child, themselves as parents and for their family may be useful. Maintaining a focus of values will help parents to choose and persist with parenting practices based on their effectiveness and long term relevance. This is likely to reduce the likelihood that



parents will mindlessly falling into coercive family processes (e.g., being inconsistent, lax or by choosing strategies that in the moment assist them to avoid the negative interactions and emotions inherent as part of the parenting experience). Committed action in a parenting context will be seen via the ongoing choice to use parenting practices aimed at the long term health and wellbeing of the adolescent; the parent-adolescent relationship and the broader family even when the implementation of those strategies leads to conflict, short-term pain and discomfort and negative internal experiences. However, it is via the promotion of the first four processes of psychological flexibility that parents will be better able to maintain a values-focus and persist with effective parenting practices tailored to their family context. It is these four precursors to committed action that will be the focus of this research project.

### **3.6. Research on Parental Psychological Flexibility**

As mentioned in Section 3.3, the research on the role of teaching clients to increase their psychological flexibility has demonstrated its effectiveness for reducing psychological difficulties in a range of areas. Until recently little attention had been given to the relevance and effectiveness of promoting psychological flexibility in children and parents. This has begun to change with the publishing of several theoretical papers describing the role of experiential avoidance and cognitive fusion in the development and maintenance of difficulties in parenting (Coyne & Wilson, 2004; Greco & Eifert, 2004; Murrell & Scherbarth, 2006). Several studies have also been published that provide descriptions and/or case studies of how ACT and the processes of psychological inflexibility might apply within a child, adolescent and parenting context (Coyne & Wilson, 2004; Greco & Eifert, 2004) with several summaries of the literature in this area are also available (Coyne et al., 2011; Murrell & Scherbarth, 2006). Outcome studies on the use of ACT with child and adolescent populations are now also beginning to emerge. For example, case studies have been published describing outcomes for children with anorexia (Heffner, Sperry, Eifert, & Detweiler, 2002) and with chronic pain (Wicksell, Dahl, Magnusson, & Olsson, 2005). In addition, Coyne, McHugh and Martinez (2011) in their recent review of

the advances and applications of ACT with children, adolescents and families, note a number of studies that are under way or currently under peer review.

Research in the area of psychological flexibility and parenting is still very much in its infancy with published, larger scale experimental design studies still needed. However, several studies have linked aspects of psychological inflexibility in parents with mental health problems in mothers (Murrell, Wilson, LaBorde, Drake, & Rogers, 2008; Shea & Coyne, 2011). For example, Shea and Coyne (2011) explored the relationship between experiential avoidance, depression, parenting style and child behaviour in a high-risk sample of 144 parents of preschool aged children. Parents completed the Depression Stress Anxiety Scale (Lovibond & Lovibond, 1995), the Achenbach Child Behaviour Inventory (Achenbach & Rescorla, 2000), the Parenting Stress Index – Short Form (Abidin, 1990), Alabama Parenting Questionnaire – Preschool version (Shelton, Frick, & Wootton, 1996) and the Acceptance and Action Questionnaire (Hayes, Strosahl, et al., 2004). Results from this study indicated that parents who experience symptoms of depression and who rely on experiential avoidance as a way to deal with their symptoms were at also risk for high levels of stress relating to their parenting. The authors conclude that parents for whom experiential avoidance is a common method of dealing with emotions are likely to engage in more ineffective parenting, such as over-reaction to mild child behaviour problems, the use of harsh or inconsistent discipline practices or to be lax in the face of more serious child behaviour difficulties.

In another study, Greco and her colleagues (2005) investigated the impact of experiential avoidance on distress and adaptation in 66 mothers of premature babies being cared for in a neo-natal intensive care unit (NICU) of a paediatric hospital. Mothers with higher levels of experiential avoidance, as assessed by the Acceptance and Action Questionnaire (AAQ; Hayes, Strosahl, et al., 2004), were more likely to experience high levels of distress and ongoing difficulties adjusting to the experience of having a seriously ill child.

A preliminary study has also been conducted assessing the outcomes from the application of ACT with parents of children with autism. In this study,

Blackledge and Hayes (2006) investigated the effectiveness of a two-day ACT intervention on the depression and anxiety of parents children who had a diagnosis of autism. Twenty parents participated in the study with assessments of depression, general health and psychological distress taken at pre and post intervention and again three months following completion of the intervention. Results showed reductions in depression and psychological distress from pre to post-intervention with these changes maintained over time and improvements in general health from pre-intervention to the three-month follow-up. Despite the small sample size and uncontrolled design, this study provides preliminary support for the relevance of ACT interventions for parents.

Several researchers have also begun to investigate the role of psychological flexibility in the adolescent developmental period; however, currently this work is focused on the role of parents in promoting adolescent psychological flexibility. For example, Williams, Ciarrochi and Heaven (2012) conducted a longitudinal study among students at five Australian schools, investigating the links between parenting style and the development of psychological flexibility in adolescents across their secondary school years. Students were aged between 11 and 14 years and completed self-report measures relating to their own psychological flexibility, using the Avoidance and Fusion Questionnaire for Youth (AFQ; Greco, Baer, & Smith, 2011) and their perceptions of their parents parenting style, using the Parental Authority Questionnaire (PAQ; Buri, 1991). Measures were completed once per year for the six years of the participants' high school education. A total of 759 students commenced the study during their first year of high school with 259 completing all six waves of data collection. Outcomes from this study suggest that increases in authoritarian parenting accompanied by decreases in authoritative parenting during the high school years was associated with lower levels of psychological flexibility in adolescent children, whilst the provision of greater warmth and autonomy during adolescence was associated with higher levels of psychological flexibility in adolescents in their final year of high school. This study provides early evidence for a link between parenting behaviours and the development of

psychological flexibility and capacity for emotion regulation in adolescents. However, there is still a gap in the literature, with no currently published studies investigating whether parents' psychological flexibility influences parent wellbeing, including their sense of self efficacy and satisfaction in their parenting role, parenting practices; or adolescent behaviour during adolescence.

Finally, the development of scales measuring aspects of psychological flexibility suitable for use with children and adolescents has also commenced with several scales showing good psychometric properties including the Child and Adolescent Mindfulness Measure (Greco et al., 2011); and the Avoidance and Fusion Questionnaire (Greco, Lambert, & Baer, 2008). One scale, the Parental Acceptance and Action Questionnaire (PAAQ; Cheron, Ehrenreich, & Pincus, 2009), has also been published that targets experiential avoidance in parents of children experiencing internalising difficulties such as anxiety. Currently no measures of psychological flexibility have been developed specifically for use within a general parenting context. A full discussion of the measurement of psychological flexibility and its associated processes can be found in Chapter 4.

### **3.7. A Model of Psychological Flexibility in Parenting of Adolescents**

Chapter 2 described the evidence for the role of parents and parenting in risk and protection for adolescent behavioural difficulties. In summary, parent wellbeing, including their sense of efficacy and satisfaction (competence) as a parent has a direct influence on the parenting strategies or practices that a parent uses with their children (Gondoli & Silverberg, 1997; Shumow & Lomax, 2002). Parents' sense of competence and parenting practices are also related to adolescent behaviour, with parents who have higher levels of satisfaction and efficacy, more likely to use more effective parenting strategies (positive reinforcement, acceptance, monitoring, discipline practices) and to have children who have higher levels of self-regulation and fewer behaviour difficulties (Purdie et al., 2004; Steca et al., 2011).

Section 2.2.2.3 described the Coercive Family Cycles model and its strengths in providing an account of the pathways by which parental beliefs and

parenting behaviours contribute to the development of behaviour difficulties in children and adolescents. This model suggests that the parent's context (e.g., their mental health status, the family structure and environment, child temperament, etc.) and personal beliefs directly influence the parenting practices adopted. The model also outlines the indirect impact that the parent's context and beliefs can have on adolescent behaviour via their impact on parenting practices. Additionally, the literature has highlighted the association between parental self-efficacy and satisfaction, parenting practices and adolescent outcomes (Purdie et al., 2004; Shumow & Lomax, 2002)

The current thesis is designed to broaden understanding of the pathways from parents' belief in their self-efficacy and their satisfaction in parenting to parenting practices and adolescent outcomes. It involves exploration of how the cognitive processes associated with psychological flexibility might mediate these pathways. Figure 1.1 (see Chapter 1) presents a model outlining the ways in which parental psychological flexibility is expected to relate to parent self-efficacy, parent satisfaction, parenting practices and adolescent behaviour. Parent beliefs about their self-efficacy and satisfaction have been grouped together in the model to represent their beliefs about their competence in parenting. This grouping is consistent with previous research (Gilmore & Cuskelly, 2008; Johnston & Mash, 1989) and provides information about two key parenting beliefs: "I am good/bad at being a parent" and "parenting is a satisfying/unsatisfying job".

As can be seen from Figure 1.1, it is expected that parental psychological flexibility will directly influence parents' sense of competence. It is hypothesised that psychological flexibility will increase the parents' capacity to focus on their moment by moment experiences with their adolescent. By doing this it is expected that parents will also have an increased ability to flexibly choose which parenting practice or response will work best to promote their child's development and/or keep their relationship strong. This increased use of flexible responding in parent-adolescent interactions is expected to contribute to

parents assessing themselves as more effective and more satisfied with their parenting experiences.

Parental psychological flexibility is also expected to directly influence the parenting practices adopted by parents, with parents who report higher levels of psychological flexibility also reporting the use of more effective parenting strategies, for example the establishment of rules and limits for adolescent behaviour (even when those rules are likely to be unpopular) or the use of negotiation regarding their adolescents activities (even when it would be quicker or less stressful to make the decision themselves). The parenting strategies in this model would be consistent with the committed action process underlying psychological flexibility. It is therefore expected that parents who are able to accept their private events (irrespective of their content) and maintain a sense that they are separate from these internal experiences will have the flexibility to focus on choosing and persisting with parenting practices that work to promote appropriate adolescent behaviour and discourage difficult behaviours in the longer term.

The pathways from parents' sense of competence to parenting practices and from parents' sense of competence and parenting practices to child and adolescent behaviour are already well established (Coleman & Karraker, 1997; Purdie et al., 2004; Steci et al., 2011). As such it is expected that outcomes from this thesis will replicate these relationships, thus providing further support for the importance of including a focus on self-efficacy and satisfaction within parenting interventions and further extending understanding of these pathways in adolescence.

Lastly, based on previous research on the role of parental cognitions and emotions as a mediating factor in adolescent behavioural outcomes (Stern & Azar, 1998; Reid, Patterson & Snyder, 2002), it is anticipated that parental psychological flexibility will have a direct influence on adolescent behaviour by increasing parental sensitivity and responsivity in moment to moment parent-adolescent interactions. It is also expected that parental psychological flexibility

will indirectly influence adolescent behaviour via its relationship to parents' sense of competence and parenting practices.

### **3.8. Conclusion**

Chapter 3 provided an overview of a psychological construct that may offer an alternative approach to assisting parents to adopt and implement parenting practices likely to be effective in their own family context (e.g., neighbourhood, socio-economic status, family structure, child temperament, parent mental health status): psychological flexibility (Hayes et al., 2006). The chapter concluded by discussing the ways in which it is expected that parental psychological flexibility will influence parents' sense of competence, parenting practices and adolescent behaviour. Chapter 4 will continue the focus on psychological flexibility by describing current efforts and gaps in measurement of the construct.





## CHAPTER 4

### Construct Measurement: Parental Psychological Flexibility

#### 4.1. Introduction

The development of tools for measuring the processes associated with psychological flexibility is underway. However, to date no measure has been developed that targets psychological flexibility within a general parenting context. Such a measure is needed if we are to fully understand the influence of and mechanisms by which this construct applies to this important aspect of human life. In order to investigate the hypotheses under investigation in this thesis, a measure of parental psychological flexibility will need to be developed. This chapter therefore, provides an overview of the current research on measurement of psychological flexibility and then concludes with an overview of the process that will be undertaken for developing a new measure of parental psychological flexibility.

#### 4.2. Measurement of Psychological Flexibility: State of the Evidence

Research on psychological flexibility has increased substantially in recent years (see Chapter 3 for details). There is a growing body of evidence for the applicability and importance of psychological flexibility as a process for addressing a range of psychological disorders and difficulties in adults (Flaxman & Bond, 2010; Forman et al., 2007; Gregg et al., 2007; Twohig et al., 2010). However, research on the role of psychological inflexibility/flexibility in mediating difficulties associated with parenting or on whether interventions that target parental psychological flexibility have impacts on third party recipients such as the children of participants is still in the very early stages.

An important factor in investigating the role of psychological flexibility in a parenting context is the capacity to measure the construct. As research on the impact of psychological inflexibility/flexibility has progressed a number of scales have been developed to measure its associated cognitive processes, with experiential avoidance, and mindfulness the most common targets of scale developers.

The Acceptance and Action Questionnaire (Hayes, Strosahl, et al., 2004) is the primary measure that has been developed for assessment of psychological inflexibility as a general construct. The measure has been shown to predict a range of outcomes, including job satisfaction, depression and anxiety (Hayes et al., 2006). The AAQ contains items on negative evaluations of feelings, avoidance of thoughts and emotions, distinguishing thoughts from objective data and how the person adjusts their behaviour when faced with difficult cognitions such as “I worry about not being able to control my worries and feelings” and “My painful memories prevent me from having a fulfilling life”. However, the original version of the AAQ was reported to have only moderate internal consistency (alpha levels of .70) and an unstable factor structure (Bond et al., 2011). One-factor solutions with both 9 and 16 items were identified by Hayes and colleagues (2004) and a two-factor 16-item version was identified by Bond and Bunce (2003). Given these psychometric difficulties a revised version of the AAQ was developed – the AAQ-II (Bond et al., 2011). The AAQ-II has a single factor structure and consists of ten items, three of which are reverse scored to obtain an assessment of psychological inflexibility. The AAQ-II demonstrates adequate construct, concurrent and predictive validity and shows greater stability than the AAQ, with an average Cronbach’s alpha  $\alpha = .84$  and test-retest = .81 (at 3 months) and .79 (at 12 months).

A number of measures of psychological inflexibility/flexibility have also been developed to be used in relation to specific psychological disorders or populations in adults including: the Chronic Pain Acceptance Questionnaire (CPAQ; McCracken, Vowles, & Eccleston, 2004) designed for use with individuals experiencing chronic pain; the Acceptance and Action Diabetes Questionnaire (AADQ; Gregg et al., 2007), designed for use with patients with Type 1 Diabetes; and the Social Anxiety - Acceptance and Action Scale (SA-AAQ; MacKenzie & Kocovski, 2010) designed for use with clients experiencing social anxiety. These context-specific scales have emerged due to concerns that general measures of psychological inflexibility/flexibility may have less utility than measures developed to contain construct specific examples of experiential avoidance and

cognitive fusion in the context of particular disorders or populations. All these measures have been adapted from the AAQ, for example the CPAQ includes items such as “I will have better control over my life if I can control my negative thoughts about pain” and “I avoid putting myself in situations where my pain might increase”; the AADQ includes items such as “I avoid thinking about what diabetes can do to me” and “My life would be much better if I didn’t have diabetes”; and the SA-AAQ includes items such as “Being socially anxious makes it difficult for me to live a life that I value” and “I worry about not being able to control social anxiety”. These targeted measures have each been tested in relation to their concurrent validity with the AAQ, and all have been demonstrated as sensitive to change.

Multiple measures of mindfulness (an aspect of psychological flexibility) have also been developed in recent years, including the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004); the Mindfulness Attention Awareness Scale (MAAS; Brown & Ryan, 2003); the Child and Adolescent Mindfulness Measure (CAMM; Greco et al., 2011); and the Five Facets Mindfulness Questionnaire (FFMQ; Baer et al., 2008). Each of these measures demonstrates good psychometric properties including internal consistency, test-retest reliability and content and construct validity. These measures incorporate aspects of mindfulness including the ability to observe (e.g., KIMS: “I pay attention to how my emotions effect my thoughts and behaviour”; FFMQ: “I notice the smells and aromas of things”), act with awareness (e.g., MAAS: “I rush through activities without being really attentive to them”; KIMS: “At school I walk from class to class without noticing what I am doing”) and non-judgemental acceptance (FFMQ: “I think some of my emotions are bad or inappropriate and I should not have them”). Overlap between the processes measured by these measures of mindfulness and the measures of psychological flexibility described above can be seen, however, these measures also add a unique dimension to the overall assessment of psychological flexibility. To- date no measure of mindfulness has been developed for use in a parenting context.

As the interest of practitioners and researchers has turned to children and parenting, attempts have also begun to develop measures of psychological flexibility that are suitable for these populations. For example, the Avoidance and Fusion Questionnaire (AFQ-Y; AFQ-Y8; Greco et al., 2008) is a questionnaire designed to measure the presence of experiential avoidance, cognitive fusion and behavioural ineffectiveness in adolescents. The authors have tested a 17-item (AFQ-Y) and a 8-item short-form (AFQ-8) of the scale containing items such as “My life won’t be good until I feel happy”, “I can’t be a good friend when I am upset” and “I don’t try out new things if I am afraid of messing up.” Both versions of the scale are showing adequate psychometric properties with good construct and convergent validity and internal consistency (AFQ-Y  $\alpha = .90$ ; AFQ-Y8  $\alpha = .83$ ). However, the authors suggest that due to variable unidimensionality the AFQ-Y may be most suitable for use in a clinical context with individual clients whilst the AFQ-Y8 which has lower reliability may be better suited to group based applications. This measure represents an important step forward in the investigation of the role of the processes of psychological flexibility on outcomes for children and adolescents.

One measure has also been published that specifically targets parental psychological flexibility. The Parental Acceptance and Action Questionnaire (PAAQ; Cheron et al., 2009) is a fifteen item measure that targets parental experiential avoidance in relation to their child’s emotions. The measure was developed for use with parents of children with anxiety disorders. The measure contains two subscales: Unwillingness (measuring the parent’s unwillingness to witness their child’s negative emotions) and Inaction (measuring the parent’s ability to manage their own responses to their child’s emotions). Example items include: “It is bad if my child feels anxious” (unwillingness) and “I am able to take action about my child’s fears, worries and feelings even if I am uncertain what the right thing is to do” (inaction). The scales reliability is mixed, with moderate test-retest (Inaction:  $r = .68$ ; Unwillingness:  $r = .74$  and Total Scale  $r = .72$ ) and low internal consistency (Inaction:  $\alpha = .64$ ; Unwillingness:  $\alpha = .65$  and Total Scale  $\alpha =$

.65). Support has also been found for construct and concurrent validity of the scale.

To date no measure has been published that measures psychological flexibility within a general parenting context and yet parenting primarily occurs outside a clinical context and involves parents managing responses to to their own internal experiences about their child's emotions, beliefs and behaviours but also their thoughts and feelings relating to the myriad of other responsibilities, relationships and activities that are associated with parent-adolescent relationships and adolescent wellbeing. As such, a measure of parental psychological flexibility focusing on parenting within a broader context is needed and will be developed as part of this thesis.

### **4.3. The Measurement Development Process**

Measure design requires the scale developer to traverse a number of steps that aim to ensure that the final measure adequately represents the construct under investigation; that it demonstrates adequate psychometric properties so that it can reliably and validly be used to measure the construct; and that the scale is written and organised in such a way as to maximise the likelihood that respondents can understand and answer the included items. The key steps involved in measure design are described in sections 4.3.1 to 4.3.4.

#### **4.3.1. Defining the construct**

Definition of the construct involves a thorough understanding of the theory underlying the construct or "latent variable" (Clark & Watson, 1995). Typically this involves a careful analysis of the literature resulting in the identification of the key elements that contribute to the construct. In the case of parental psychological flexibility, this process involves a consideration of both the psychological flexibility literature and the parenting literature, as described in Chapters 2 and 3. As noted in Chapter 3, it is expected that the four cognitive processes underlying psychological flexibility will be related to parenting and adolescent outcomes. Therefore, it is these processes that will be targeted for inclusion in the measure of parental psychological flexibility developed in this project.

### **4.3.2. Developing items**

The next step is to generate a pool of items. Typically researchers commence by developing a large pool of items and continue to reduce the overall number by removing unacceptable items until they have an agreed upon subset for trialling. The generation of items can be done using multiple methods, such as adapting items from scales measuring similar constructs or using experts or potential consumers to brainstorm potential items based on their knowledge of the theory or construct. Each of these methods was used to generate items for the measure of parental psychological flexibility (see Chapter 6).

The items that are subsequently developed are chosen because they represent aspects of a construct (an entity that cannot be directly observed). The aim of a scale measuring a latent variable is to estimate the strength or magnitude of the construct at a given point (i.e., the time of completion of the scale) for each respondent (DeVellis, 1991).

There are a number of considerations for developing items (Murphy & Davidshofer, 2001), including:

- length – keeping items relatively brief and using shorter words and sentences so that the item is easy to comprehend;
- clarity of expression – avoiding ambiguity, double negatives, and offensiveness of wording (including gender bias, racism etc.);
- reading level of the intended audience – ensuring that the complexity of items matches the lowest reading level amongst potential respondents; and
- the response format (e.g., Likert, multiple choice, true/false, yes/no) – considering the purpose of the scale, whether it is desirable to compare results across similar scales and the types of analyses that the scale will be used for.

### **4.3.3. Expert and Consumer Review**

Once a pool of items has been generated, the next step is to reduce the number of items to an agreed upon list that can be examined by a select group of

experts and/or consumers. The purpose of this review is two-fold. First, it provides a check of clarity, readability and comprehension of individual items, thus assisting to ensure that respondents are likely to be able to provide interpretable answers and to reduce ambiguities within the measure. Second, expert review provides support for content validity of the measure, as reviewers with expertise in the theory or population under consideration will be able to provide a check of how well the items capture aspects of the theory and context in which they will be applied. The measure of parental psychological flexibility developed here was subject to both expert and consumer review (see Chapter 6).

#### **4.3.4. Factor analysis**

A next step in validating a scale is by checking that the items relate to the construct. The most common way to do this is factor analysis. Factor analysis is used to determine whether a set of measured or observed variables (items) are reliably capturing hypothesised constructs (Brown, 2006; Kline, 2010). Exploratory Factor Analysis (EFA) is often used as the first step in the development of scales aiming to measure a construct or set of constructs that could not otherwise be directly measured. Confirmatory Factor Analysis (CFA) is then used to confirm the a priori relationships between items and their specified factors. Both EFA and CFA are used as part of the development of the measure of parental psychological flexibility for this study. A detailed description of the statistical procedures and how they are used is provided in Chapter 6 (EFA) and Chapter 8 (CFA).

##### **4.3.4.1. Exploratory factor analysis**

EFA is typically used as a descriptive technique to establish the number of factors that are appropriate for the scale and to identify which items appear to be indicators for each of those identified factors (Brown, 2006). As such, the primary aim of EFA is to determine the smallest number of interpretable factors that can adequately explain the correlations between the items. EFA is typically used earlier in the process of scale development than CFA (in which factors and their respective indicators are specified in advance of analysis). EFA enables the

researcher to develop a small number of factor/s from a larger set of directly observed and covaried variables and is therefore useful as a first step in scale development as it allows researchers to develop measures for the construct with the smallest number of items possible, thereby increasing the usability of the scale.

The most common factor extraction methods for use with continuous data are maximum likelihood (ML). ML is an effective approach in samples that have normal distribution. However, where assumptions of normality have been violated ML is prone to producing solutions that do not converge and that are considered “improper”.

Principal Components Analysis (PCA) is a related technique that is often confused with EFA (Tabachnick & Fidell, 2007). PCA aims to account for the variance in the observed measures rather than to explain the correlations between them. Therefore, PCA is a good method for data reduction (reducing the number of items into a more manageable number of composite variables for use in subsequent analyses. As opposed to ML, PCA is not prone to improper solutions, is simpler to perform and often produces results similar to EFA. PCA is the method chosen for use in the development of the measure of parental psychological flexibility for this study (see Chapters 6 and 7).

#### ***4.3.4.2. Confirmatory factor analysis***

Confirmatory Factor Analysis (CFA) is another form of factor analysis (Brown, 2006; Kline, 2010). Both EFA and CFA share the common goal of explaining correlations among measured variables. In contrast to EFA, in CFA the researcher uses previously established theory to specify the number of factors and which items relate to each factor prior to conducting the research. CFA is the preferred approach to testing measurement models and forms a major component of Structural Equation Modelling. CFA is associated with theory testing, in which the researcher is seeking to statistically verify the relationships between observed variables and hypothesised factors. As such, it is particularly useful when there is already evidence for the specification of factors and their related items. For this reason, it is a logical second step for verifying the factor



structure of a scale that has been established via EFA (Brown, 2006) 2006). For this thesis, CFA is conducted on the measure of parental psychological flexibility as part of Study 2 (see Chapters 8 and 9) following the initial scale development using EFA in Study 1 (see Chapters 6 and 7).

#### **4.3.5. Establishing scale reliability and validity**

The final piece of measure development is to assess the accuracy and consistency of the measure – that is, is it a valid and reliable measure of the construct? Validity refers to whether the measure provides an accurate account of the construct it is purporting to measure. Reliability refers to the stability of the measure (e.g., does it produce relatively consistent results each time it is used).

##### **4.3.5.1. Validity**

Checking the validity of a scale is an important step in the development process. Validity assessment provides confidence that the variable itself is the underlying cause of item co-variation. There are many types of validity, including:

- content validity (also known as “face validity,”): assesses how well the items are covering the various dimensions of the construct. Content validity is often assessed via the expert and consumer review process described in section 4.2.3.;
- concurrent validity (also called criterion or predictive): assesses whether the outcomes from the measure are similar to those obtained from a measure targeting a related construct and that was administered at the same time;
- construct validity – assesses whether the measure actually measured the underlying construct. Construct validity is assessed by comparing responses on the new measure with measures of constructs that are either theoretically similar (convergent validity) or different (discriminant validity) to that measured by the scale under development.

Content, construct (convergent and discriminant) and concurrent validity are tested as part of the measure development process adopted in this study. Results are provided in Chapter 7.

#### ***4.3.5.2. Internal consistency and reliability***

As previously mentioned, reliability refers to whether or not the scale consistently reflects the construct it is measuring (Field, 2005). There are two ways to look at reliability, test-retest (in which a person should get the same score on the measure across two different time points) and internal consistency which measures the consistency of responses across the items of a scale. For example, a person who scores low on an item in a scale should score low on similar items within the scale. Internal consistency is typically assessed using Cronbach's alpha, where the closer the correlation coefficient is to zero the more reliable it is considered to be (Field, 2005; Nardi, 2006). In this thesis, assessment of internal consistency of the measure of parental psychological flexibility was conducted in Study 1 (see Chapter 7) and then again after CFA in Study 2 (see Chapters 9 and 10).

#### **4.4. Conclusion**

Research on psychological flexibility, its application to a range of psychological difficulties is steadily increasing. With this, attention has also turned to operationalization and measurement of the construct. The most commonly used measure is the Acceptance and Action Questionnaire (AAQ; Hayes, Strosahl, et al., 2004) which is a general measure covering experiential avoidance, cognitive fusion and action in the face of difficult private events. However, concerns about the utility of a generic measure for specific contexts have led to the development of multiple adaptations to the AAQ, including several aimed at children and adolescents. Measures of the construct in parenting are only just beginning to emerge, with one measure published that looks at parents experiential avoidance in the face of their child's emotions (Cheron et al., 2009). No measures are currently available that measure psychological flexibility within the general context of parenting. In order to address this gap it is necessary to carefully design and test a set of items to

ensure that they are a valid and reliable representation of the construct of psychological flexibility as it applies to parenting. This then is a major objective of this thesis. The aim is to develop a measure that adequately represents the cognitive processes underlying psychological flexibility as they apply in a general parenting context so that it is possible to test the relationships hypothesised in the conceptual model of psychological flexibility, parents' sense of competence, parenting practices and adolescent outcomes (see Figure 1.1).



## CHAPTER 5

### Overview Project Method, Aims and Research Questions

#### 5.1. Introduction

This chapter provides an overview of the method, aims and research questions for this PhD project. As described in Chapter 3 the aim of the current thesis is explore the relationship between the cognitive processes associated with psychological flexibility and key aspects of parenting (parental competence, parenting practices) and adolescent behaviour. Figure 1.1 presented a model outlining the ways in which parental psychological flexibility is expected to relate to parents' sense of competence, parenting practices and adolescent behaviour. This model will be tested in two separate but related studies.

The first (Study 1) addresses the gap in measurement of the construct of parental psychological flexibility. A measure of psychological flexibility applicable to the general parenting context is developed, and its reliability and validity evaluated. The second study (Study 2) further assesses the psychometric properties of the measure of parental psychological flexibility and uses that measure to investigate the relationships between parental psychological flexibility, parenting and adolescent outcomes as described in Figure 1.1 (see Chapter 1).

#### 5.2. Research Design

The two studies undertaken as part of this thesis used a non-experimental cross-sectional survey design. Surveys were administered at a single time-point via an online survey format.

Cross-sectional designs using survey methodology are a common and well used tool in the social sciences and are useful for establishing the relationships between two or more variables (Spector, 1981) and an effective way to explore new constructs with large numbers of participants. The information gained can then be used to refine hypotheses and inform the development of interventions that can be tested using experimental designs, such as randomised controlled trials (Bagley-Thompson & Panacek, 2007).

### **5.3. Project Aims**

The primary purpose of the current project is to investigate whether parents who report higher levels of psychological flexibility also report: higher levels of parenting competence (satisfaction and efficacy); more effective parenting and fewer ineffective parenting practices; fewer behavioural difficulties and higher levels of pro-social behaviour of their adolescent children.

### **5.4. Project Research Question**

The primary research questions for this thesis were:

- a) Can a measure of psychological flexibility be developed that is valid and reliable for use in a general parenting context?
- b) Do parents with high levels of parental psychological flexibility also report: higher levels of parenting competence; higher levels of positive parenting; fewer ineffective parenting practices; lower levels of difficult adolescent behaviours; and higher levels of pro-social adolescent behaviour?

### **5.5. Overall Project Hypotheses**

Specific hypotheses for each of the two studies can be found in Chapters 6 (Study 1) and 8 (Study 2). However, broadly, it is hypothesised that:

5.5.1. A measure of parental psychological flexibility will be developed that:

- i. is consistent with four overlapping cognitive processes associated with psychological flexibility: cognitive defusion, acceptance, mindfulness and self-as-context;
- ii. has adequate internal consistency; and
- iii. exhibits content, construct (discriminant and convergent) and concurrent validity.

5.5.2. A model of parental psychological flexibility, parents' sense of competence, parenting practices and adolescent behaviour (see Figure 5. 1) will exhibit the following relationships (see Chapter 3: Section 3.7):

- i. parents' sense of competence will be directly related to parenting practices
- ii. parents' sense of competence will be directly related to adolescent behaviour

- iii. parenting practices will be directly related to adolescent behaviour
- iv. parental psychological flexibility will be directly related to parents' sense of competence
- v. parental psychological flexibility will be directly related to parenting practices
- vi. parental psychological flexibility will be directly and indirectly related to adolescent behaviour

### **5.6. Plan for Analysis**

The first hypothesis will be assessed using a combination of Principal Components Analysis; correlations; Cronbach's alpha; and Confirmatory Factor Analysis. Principal Components Analysis will be used with an initial sample of parents (Study 1) to establish the number of components appropriate for the scale and to reduce the number of items in the scale. Correlations will be used to establish the validity of the scale, with Cronbach's alpha conducted to determine the internal consistency of the scale and any subscales. Confirmatory Factor Analysis will then be conducted on a second sample of parents (Study 2) to confirm the structure of the measure. Correlations and Cronbach's alpha will again be conducted as further support for the reliability and validity of the measure.

Structural Equation Modelling (SEM) will be used in Study 2 to assess the second hypothesis. Measurement Modelling will be used for factorial validation of each of the PPF scales and the MAAS to further define the construct of parental psychological flexibility. SEM will then be used to investigate whether parental psychological flexibility is directly or indirectly associated with parents' sense of competence, parenting practices and adolescent outcomes.





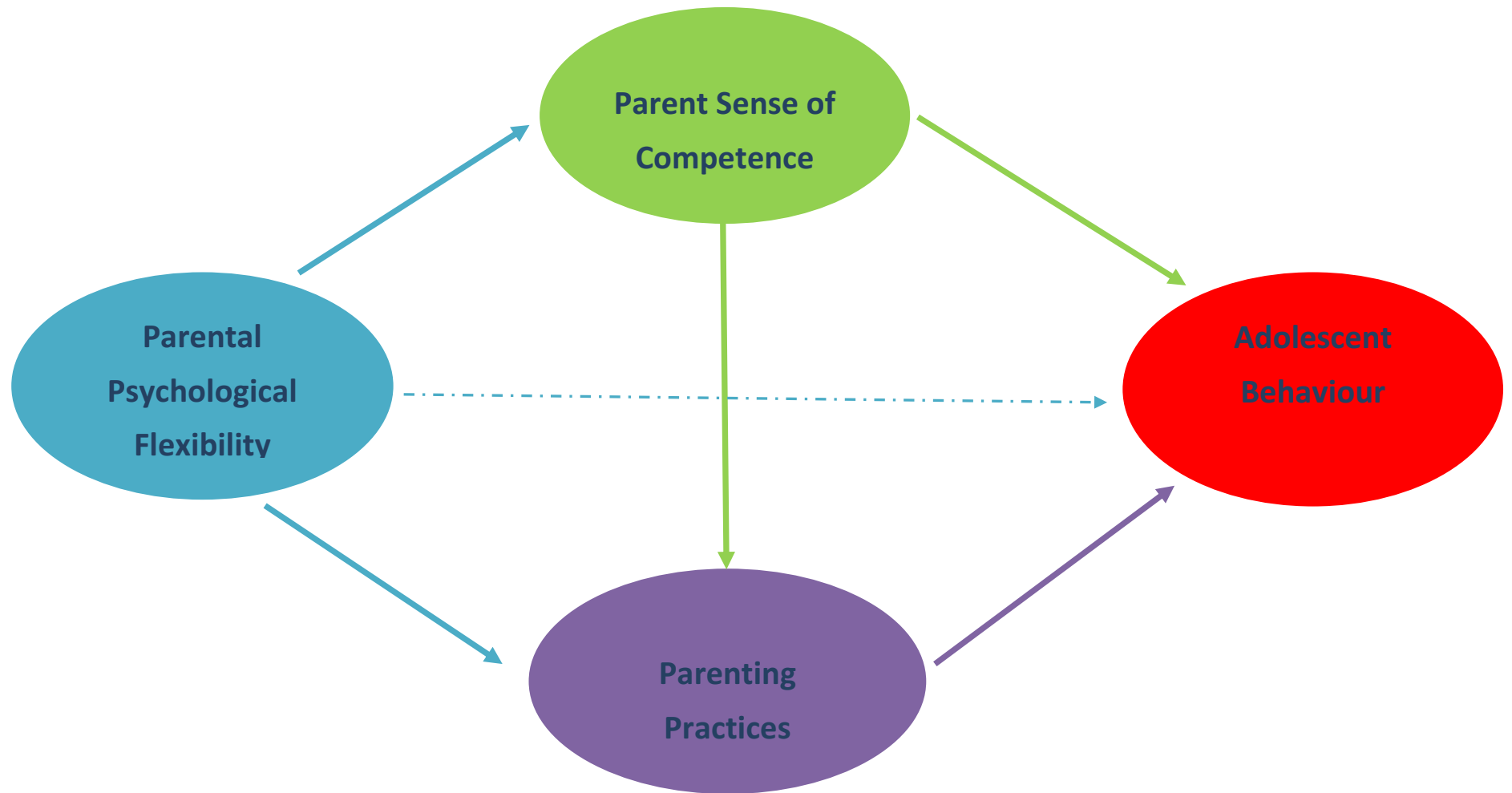


Figure 5.1

*Study 2 Conceptual Model of the predicted relationships between parental psychological flexibility, parent and adolescent outcomes: Direct and indirect paths and correlations*



## CHAPTER 6

### Study 1: Design of a New Measure, “Parental Psychological Flexibility Questionnaire”: Introduction and Method

#### 6.1. Introduction

This chapter describes the methodology for the first study of this PhD project. The over-arching aim of this thesis is to investigate whether parents who adopt cognitive processes associated with psychological flexibility within their parenting are better able to adapt to their adolescents’ changing developmental status and needs for autonomy and responsibility. A critical first step in assessing whether psychological flexibility is a useful process in parenting is to be able to measure the construct.

As described in Chapter 4, currently, no measure exists to assess the construct within a general parenting context or with parents of adolescents. This chapter will describe the method, aims and hypotheses for a study that developed and validated a measure of psychological flexibility specifically related to parenting.

#### 6.2. Aims

The aim of Study 1 was to develop a questionnaire specifically designed to measure psychological flexibility in relation to parenting and to demonstrate its reliability and validity, including content, concurrent and construct (discriminant and convergent) validities. This measure was then used in a second study (described in Chapters 7 to 11) to assess whether psychological flexibility is a cognitive process that is related to better outcomes for parents and adolescents.

#### 6.3. Research Questions

The primary research question for Study 1 was:

Can a parental self-report measure of parental psychological flexibility be developed that:

- a) discriminates between parents (e.g., each item and the total score shows a range across a parent sample);
- b) is reliable (internally consistent); and
- c) shows concurrent, construct and discriminant validity.

#### **6.4. Hypotheses:**

6.4.1. A parent sample will exhibit a range of scores across the items and total score of the developed measure of psychological flexibility;

6.4.2. The scale will exhibit construct (convergent and discriminant) validity:

- i. through exploratory factor analysis;
- ii. through positive correlations with parent-rated measures of parental satisfaction and self-efficacy;
- iii. through positive correlations with a parent-rated measure of parental warmth/involvement;
- iv. through zero relationships with variables not expected to relate to psychological flexibility (e.g., gender, age);

6.4.3. The scale will exhibit concurrent validity through positive correlations with scales of related constructs, in particular mindfulness as measured by the MAAS and a general measure of psychological flexibility (the AAQ-II); and

6.4.4. The scale will exhibit internal consistency.

#### **6.5. Method**

##### **6.5.1. Study design**

Study 1 employed a quantitative research design consisting of a single time point cross-sectional survey method. The survey was developed for completion online or by pen and paper (hard copy). Participants completed an anonymous survey package on one occasion. Consent to participate in the study was inferred by completion of the survey package. Opinio software was used to develop an online version of the survey package. The Online survey was located on the Swinburne University Website. A plain language statement outlining the study purpose and requirements of participation was provided both on-line and in hard copy.

##### **6.5.2. Participants**

Participation was obtained from 251 individuals who were currently parenting a child aged between 10 and 16 years or who had parented a child in this age range during the past 30 years. 72.1% of the sample were currently

parenting a child aged 10 -18 years, with the remaining 27.9% having raised a child in this age range during the past 30 years. All participants were literate in English. Parents who only had children younger than 10 years were excluded from the study. Parents were asked to select one of their children to be the focus of their responses on the survey.

Participants ranged in age from 24 to 70 years ( $M = 48.77$  years). The sample comprised 218 (86.9%) mothers, and 33 (13.1%) fathers. Participants' children were aged from 10 to 44 years ( $M = 17.79$ ,  $SD = 7.19$ ), 54.2% of these children were male. Demographic data for family structure and parents' country of birth, education and employment status are summarised in the Table 6.1. Characteristics of the children of participants are summarised in Table 6.2. Overall, the sample comprised parents living in family structures consistent with the broader Australian community as noted in the Australian 2006 census (ABS, 2006). However, the current sample contained a higher proportion of step/blended families (11%) than reported in the 2006 census (7%). The current sample was also more likely to be employed and to have higher levels of educational attainment, with more than half the sample having university qualifications.

### **6.5.3. Ethics approval**

The project received ethics approval from Swinburne University's Human Research Ethics Committee.

### **6.5.4. Recruitment**

Participant recruitment commenced in October 2008 and was completed in May 2009. Recruitment was conducted until the minimum of 200 completed surveys had been attained, ensuring an adequate number of participants for statistical comparison.

A link to the online survey was provided from a relevant parenting site – the ABCD Parenting Young Adolescent website: [www.abcdparenting.org.au](http://www.abcdparenting.org.au). Additionally, announcements for the survey were placed in the “participate in research” section of the Australian National parenting website - Raising Children Network ([www.raisingchildren.net](http://www.raisingchildren.net)).



Table 6.1

*Characteristics of Participating Parents*

	Whole Sample (n = 250) %	Mothers (n = 217) %	Fathers (n = 33) %
Australian Born	82.5	82*	85
Family Structure			
Original 2 Parent (%)	67% (168)	64	85
Sole (%)	18% (44)	18	12
Step (%)	11% (28)	12	3
Other(%)	4% (10)	5	-
Employment Status			
Home Duties#	15% (37)	17	3
Part Time Employed	38% (96)	42	12
Full Time Employed	47% (117)	41	85
Highest Education			
Primary school	2% (6)	2	3
Below year 12	13% (32)	13	9
Year 12	6% (15)	6	3
Trade/TAFE	9% (22)	9	9
Tertiary/Undergraduate	33% (82)	32	36
Post Graduate	37% (93)	37	39

# Home Duties refers to parents who identified as: Home Duties, not in paid employment or on a pension

Table 6.2

*Characteristics of the Children of Participating Parents*

	N = 251 (%)
Australian Born	93%
Raised in Australia	96%
Highest Education Level#	
Grade 4	1% (3)
Grade 5	6% (14)
Grade 6	5% (12)
Year 7	10% (26)
Year 8	8% (21)
Year 9	12% (31)
Year 10	13% (32)
Year 11	10% (25)
Year 12	9% (23)
Trade/TAFE	1% (2)
Tertiary	7% (17)
Post Graduate	1% (2)
Not at School	11% (27)

# n = 235

Swinburne University's media department placed calls for participants in the study on the Swinburne Staff Bulletin and in Melbourne's Leader Newspapers and the Australian Parenting Magazine. Additionally, a call for participants was placed on Swinburne University's "Participate in Research" section of the Faculty of Life and Social Sciences web page.

A flyer promoting the survey was developed and distributed via email to a convenience sample of approximately 367 people. This sample consisted of approximately 340 family and parenting professionals (including psychologists, social workers, family workers, mental health workers and government workers), and approximately 30 family and friends of the researcher. Many recipients of the email then forwarded the flyer and web details to their own networks. An email was sent to this sample on two occasions, the first as a call for participants with the flyer, and the second as a joint thankyou and reminder message. A total of 418 hits were received for the online survey with 229 completed (55% completion rate).

Hard copies of the survey were made available upon request. A total of 63 hard copy surveys were distributed. Each hard copy of the survey was accompanied by a reply paid envelope for return to the researcher at Swinburne University. Thirty-four hard copy surveys were returned resulting in a 54% response rate.

#### **6.5.5. Development of the Parental Psychological Flexibility Scale**

For this thesis and in line with current literature (Hayes et al., 2006; Hayes, Strosahl, et al., 1999; Luoma et al., 2007), the construct of 'psychological flexibility' was defined as comprising the four cognitive components described in Chapter 3 (acceptance, cognitive defusion, mindfulness and self as context). Study 1 consisted of the steps in measurement development outlined in a general way in Chapter 4 (Section 4.3). The results of these steps are described in Chapter 7. Chapter 9 describes a further step in the development of the measure, using the new sample recruited for Study 2 (Step 4.3.4.2: Confirmatory Factor Analysis). The aim of Study 1 was to develop a measure containing a pool of items that would reflect the construct of psychological flexibility; to refine the items via expert and consumer review; to administer the scale to a development



sample; to undertake initial scale development; and to establish the reliability and validity of the scale.

#### **6.5.5.1. Preliminary Item Development**

A pool of items was generated from a review of the literature on psychological flexibility, specifically focusing on the empirically based theory proposed within Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, et al., 1999). Item content and wording were modelled on previously developed measures of psychological flexibility. The primary measure used was the Acceptance and Action Questionnaire (AAQ-II; Bond et al., 2011), a questionnaire designed as a general measure of psychological flexibility and experiential avoidance in adults. However, items were also modelled from adaptations of the AAQ developed for specific populations, including chronic pain (C PAQ-R; McCracken et al., 2004) and youth (AFQ-Y; Greco et al., 2008). A list of fifty items was generated from an initial brainstorm and the literature review. Items on this new 50 item Parental Psychological Flexibility Questionnaire (PPF) were designed to reflect processes, such as acceptance, cognitive defusion, mindfulness and self-as-context that would result in varying levels of parental psychological flexibility. Positively worded items were designed to reflect higher levels of psychological flexibility. Negatively worded items were designed to tap psychological inflexibility resulting from cognitive fusion and experiential avoidance.

#### **6.5.5.2. Expert and Parent Consultation/Review**

The 50 items were revised and extended on the basis of feedback from the author's thesis supervisor, resulting in a list of 56 items. The list of items was divided into two sections. The first included items that reflected parental psychological flexibility more generally. The second section included items with behavioural specificity related to parenting an adolescent. This initial pool of items was then disseminated to professionals and parents for review.

Five independent professionals with expertise in psychological flexibility and/or parenting research and practice were asked to assess the items and provide feedback regarding the applicability of items to parenting, then theoretical coherence, wording and item clarity.

Five parents were also asked to review the questionnaire. Parents provided feedback on the relevance of items to their specific parenting context, clarity of expression of each item, ability to answer, comprehension and perceived duplication.

### **6.5.5.3. *Item Selection for Trial Version of Parental Psychological Flexibility Scale***

Feedback from the expert and parent consultations was compiled and reviewed. Items which received negative feedback from multiple sources or which indicated that the items did not reflect any of the four expected domains were removed first. The five items relating specifically to parenting an adolescent received feedback from multiple respondents suggesting the items were unclear and required major reworking. As such, it was decided to remove this second section of the measure. Following the removal of items, feedback suggesting the need for clarification of items and ideas for simplifying language and/or meaning of items were assessed and incorporated into the remaining items.

The review process led to the removal of 13 items, resulting in the 43 item measure that was included in the survey package for dissemination to a sample of parents in Study 1.

The draft measure, Parental Psychological Flexibility Scale (PPF; see Appendix A for draft measure) contains items such as “My worries get in the way of me being successful as a parent”, “I have to feel in the mood before I can give my child affection or attention”, and “Worry about my child’s wellbeing gets in the way of my doing things that are really important to me.” These items are reversed so that a high score equals higher levels of psychological flexibility. The measure also includes non-reversed items such as “I can get angry with my child and still be a good parent.” Each item is rated on a seven point Likert scale from “1” (never true) to “7” (always true). This rating scale is consistent with the AAQ-II (Bond et al., 2011) and was selected to allow comparisons with this and other measures of psychological flexibility. The PPF was scored by first making appropriate reversals to items and then adding ratings on all items to achieve a total score. High scores were designed to reflect high psychological flexibility and low scores to reflect low levels of psychological flexibility.

#### **6.5.5.4. Survey Package**

A survey package was developed to enable testing of the reliability and validity of the PPF. Five measures were disseminated in a questionnaire package along with the draft PPF (see Appendix A).

##### *Included Measures:*

A description of each of the included measures, including the construct assessed and the psychometric properties is provided below. Copies of each measure are included in Appendix A.

- *Parental Psychological Flexibility Scale (Burke, 2009)*

As described previously, this scale was designed to measure the construct of parental psychological flexibility. All other measures in the package were included to assess the reliability and validity of this measure.

- *Demographic Items*

Demographic information was collected including post code, family composition, parent age, gender and marital status; and child age, gender, educational status and country of birth. Demographic information was used to describe the sample, with parent and child age used to assess discriminant validity.

- *Parents' Sense of Competence Scale (PSOC; Johnston & Mash, 1989)*

This scale is a 16-item questionnaire assessing parents' views of their competence as parents on two dimensions: satisfaction with their parenting role; and feelings of self-efficacy as a parent. The PSOC was originally developed by Gibaud-Wallston and Wandersman (1978, as cited by Johnston & Mash, 1989) as a 17 item scale with adequate reliability for the two factors: Efficacy (Skill-Knowledge) and Satisfaction (Value-Comforting).

Johnston and Mash (1989) conducted a study to establish normative data on the PSOC which resulted in a 16 item scale with two factors that were consistent with Gibaud and Wandersman's (1978). In addition, norms were established for a Total Scale Score measuring overall parental perceptions of competence in parenting. This 16 item version of the PSOC is the most commonly cited version of the PSOC and is the version included in this thesis.

The PSOC has demonstrated good reliability for both subscales ( $\alpha = .79$  Satisfaction;  $\alpha = .76$  Efficacy) and the Total Score ( $\alpha = .79$ ).

Two more recent studies of the psychometric properties of the PSOC have been undertaken with Australian samples (Gilmore & Cuskelly, 2008; Rogers & Matthews, 2004). Rogers and Matthews (2004) reported alpha coefficients for their sample of mothers as  $\alpha = .77$  (Satisfaction),  $\alpha = .78$  (Efficacy) and noted a third factor: Interest in the parenting role ( $\alpha = .58$ ). Alpha coefficients for fathers were  $\alpha = .80$  (Satisfaction),  $\alpha = .82$  (Efficacy) and  $.62$  (Interest). Gilmore and Cuskelly (2008) validated the PSOC with a sample of parents, including parents of adolescents under 18 years of age. They too found evidence for the reliability of the scale, with their factor structure also identifying the Interest subscale. Cronbach's alpha coefficients were reported for mothers (Satisfaction:  $\alpha = .72$ ; Efficacy:  $\alpha = .68$ ; and Interest  $\alpha = .62$ ) and fathers (Satisfaction:  $\alpha = .76$ ; Efficacy:  $\alpha = .74$ ; and Interest:  $\alpha = .57$ ).

This measure was included to assess the construct (convergent) validity of the Parental Psychological Flexibility Scale. It was expected that a valid measure of parental psychological flexibility (PPF) would be positively associated with perceived sense of competence in parenting but that the scales would be measuring separate constructs, so correlations would be moderate rather than high. The Satisfaction scale measures the extent to which a parent perceives the role of parenting to be rewarding, frustrating, anxiety provoking and motivating. Items include: "Being a parent makes me tense and anxious" and "Even though parenting could be rewarding, I am frustrated now while my child is at his/her present age". The Efficacy scale reflects a parent's perceived competence, problem solving ability and capability in their parenting role. Items include: "If anyone can find the answer to what is troubling my child, I am the one" and "Being a parent is manageable and any problems are easily solved". Parents are instructed to rate each of the 16 items on a 6-point Likert scale (1 = strongly agree; 2 = agree; 3 = mildly agree; 4 = mildly disagree; 5 = disagree and 6 = strongly disagree). All items on the Efficacy Scale are reverse scored. Following appropriate reversals, item ratings are added together to obtain subscale and

total scores. High scores reflect higher levels of satisfaction, efficacy and competence in parenting.

As the most commonly used form of the measure, the current study used the two factor solution (Johnston & Mash, 1989) and reported alpha coefficients for the sample of .83 (Efficacy), .83 (Satisfaction) and .87 (Total Score).

- *Acceptance and Action Questionnaire Version 2 (AAQ-II; Bond et al., 2011)*

This 10 item questionnaire provides a general measure of psychological flexibility (not parent focussed), including the presence of cognitive fusion, experiential avoidance and ineffective action. Sample items include “It’s okay if I remember something unpleasant” and “My painful experiences and memories make it difficult for me to live a life that I would value”. This measure was used to assess concurrent and construct (convergent) validity of the PPF. It was expected that the AAQ-II would demonstrate a strong positive association with the PPF whereby high scores on the PPF would also reflect high scores on the AAQ-II, demonstrating that the PPF and AAQ-II are measuring aspects of the same construct.

The AAQ-II was developed as a revision to the Acceptance and Action Questionnaire Version One (AAQ; Hayes, Strosahl, et al., 2004). The original AAQ was designed to measure the processes underlying psychological inflexibility as described in the model of Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, et al., 1999). Specifically, it was designed to measure experiential avoidance and cognitive fusion. Chapter 4 outlines the development and validation of the AAQ and AAQ-II.

Each item on the AAQ-II is rated on a 7-point Likert scale (1 = never true; 2 = very seldom true; 3 = seldom true; 4 = sometimes true; 5 = frequently true; 6 = almost always true; 7 = always true). The AAQ-II is scored by first making appropriate reversals to items and then adding ratings on all items to achieve a total score. Seven of the ten items are reverse scored. The AAQ-II has demonstrated good reliability with reported alphas ranging from  $\alpha = .78 - .88$  with a mean of  $\alpha = .84$  (Bond et al., 2011). In the current study, the Cronbach alpha coefficient was  $\alpha = .85$ .

- *Mindfulness Attention Awareness Scale (Brown & Ryan, 2003)*

The MAAS is a 15 item instrument that measures people's tendency to be mindful of moment to moment experience. The MAAS is designed to focus on a key characteristic of dispositional mindfulness, "the presence or absence of attention to and awareness of what is occurring in the present" (Brown & Ryan, 2003). This measure was included to assess the construct (convergent) validity of the PPF. It was anticipated that there would be a strong direct, positive relationship between the PPF and Mindfulness with high scores on mindfulness also reflecting high scores on the PPF. Sample items include: "I rush through activities without being really attentive to them"; and "I find myself listening to someone with one ear, doing something else at the same time". Respondents rate each item on a Likert scale from one to six (1 = almost always, 2 = very frequently, 3 = somewhat frequently, 4 = somewhat infrequently, 5 = very infrequently, 6 = almost never). Scoring involves calculating mean ratings across the 15 items, with high scores reflecting higher levels of mindfulness. The MAAS shows strong psychometric properties and has been validated with college, community, and cancer patient samples. The measure has good internal reliability ( $\alpha = .82$ ) and good test-retest reliability ( $\alpha = .81$ ) as reported by Brown and Ryan in the original development paper (2003) and more recently as reported by Mackillop and Anderson (2007) ( $\alpha = .89$ ; 2007). For this study, the Cronbach alpha was  $\alpha = .91$ .

- *Authoritative Parenting Measure– Parent Report (APM; Purdie et al., 2004)*

The Involvement/Acceptance subscale of an adaptation of the Authoritative Parenting Questionnaire (APM; Purdie et al., 2004) was included as a measure of warmth, responsiveness and involvement of parents in their children's lives. This measure was used to assess the construct (convergent) validity of the PPF. It was expected that there would be moderate and positive relationship between Involvement and parental psychological flexibility.

The original APM (Lamborn et al., 1991), was designed as a measure of adolescents' perceptions of their parents' parenting style and is variously described as the "Parenting Styles Questionnaire" and the "Authoritative

Parenting Index". The 26 item measure rates parents across three dimensions of authoritative parenting: acceptance/involvement (Involvement), psychological autonomy granting (Autonomy Granting) and strictness/supervision (Supervision).

For the purposes of this study only the nine item Involvement sub-scale of the parent report adaptation, APM-P (Purdie et al., 2004) was included. This sub-scale provides information regarding the parents' perception of the extent to which their relationship with their adolescent is perceived as loving, responsive and involved. The items from the APM have been reworded to be suitable for completion by parents (e.g., "My child can count on me to help him/her out, if he/she has some kind of problem" and "I spend time just talking with my child"). Each item is rated on a six point Likert scale from Not Very Much (1) to Very Much (6). The subscale is scored by summing the item ratings together to achieve a total Involvement score. High scores indicated high levels of Involvement and Acceptance. This sub-scale has demonstrated acceptable reliability ( $\alpha = .74$ ) (Purdie et al., 2004). For this study, reliability of the Involvement scale was  $\alpha = .76$ .

#### **6.5.5.5. Analysis**

Using SPSS version 16, data was processed in order to reduce the number of items and to explore the factor structure of the PPF. A four-factor solution was predicted that would reflect four overlapping processes associated with psychological flexibility: cognitive defusion, acceptance, self-as-context and mindfulness in the presence of unwanted thoughts and feelings. Data analysis involved the following steps:

- Descriptive statistics were undertaken to describe the characteristics of the sample, including item frequencies, scale and subscale means and standard deviations. Checks were conducted on scales for any violations of assumptions (e.g., normality) underlying planned analyses, including correlations and factor analysis. Descriptive analyses were also used to identify the amount and locations of missing data. This enabled decisions to be made regarding the appropriate options for dealing with missing data.

- Bartlett's test of sphericity and the KMO were used to assess whether there was sufficient correlation in the data to justify a factor analysis to statistically explore the PPF. A KMO score of .6 or above was considered acceptable. Exploratory factor analysis was undertaken using Principal Components Analysis (PCA). It was anticipated that PCA would enable the reduction in the number of items included in the PPF. Factor extraction was conducted using a principal components procedure. Kaiser's criterion (eigenvalues greater than one) was used to choose the number of factors with confirmation provided by a Scree test. Further confirmation was provided using a parallel analysis (Horn, 1965). Once the number of factors had been determined, an Oblimin factor rotation was applied in order to obtain meaningful factors. The obtained structure and pattern matrixes were used to explain correlations between variables and factors and to remove cross loading items in order to ensure discriminant validity between the factors. Subscales were then constructed for each of the factors by adding together the responses for each of the items assigned to each factor.
- Correlations were used to assess strength and direction of relationships between scales.

## **6.6. Summary**

This chapter describes the methodology and proposed data analysis for Study 1, the development and validation of a scale to assess parental psychological flexibility (PPF). The following chapter presents the results of this study and culminates in Version 1 of the PPF. This scale will then be used in Study 2 to test the conceptual model of the relationship between parental psychological flexibility and parents' sense of competence, parenting practices and adolescent behaviour.



## CHAPTER 7

### Study 1: Design of a New Measure - The Parental Psychological Flexibility Questionnaire: Results and Discussion

#### 7.1. Introduction

This chapter presents the results of analyses conducted to explore the psychometric properties of the Parental Psychological Flexibility Questionnaire (PPF). The factor structure of the measure was explored using Principal Components Analysis with correlations and Cronbach's alpha used to investigate if the scale exhibited adequate validity and reliability.

The aim of the Chapter is to:

- determine the number of components that are appropriate for the measure to adequately capture the construct of psychological flexibility as it applies in a general parenting context;
- reduce the number of items on the PPF in order to increase its useability;
- establish the characteristics of the PPF scales, including the reliability and validity.

#### 7.2. Data Cleaning and Missing Value Analysis

Data were cleaned using SPSS version 16 using procedures outlined in Tabachnick and Fidell (2008). Missing value analyses were conducted and the expectation maximisation (EM) algorithm was used to impute subscale data that was missing completely at random. However, data were imputed in this way only for participants completing at least 70% of items on any subscale, with all other items belonging to the subscale used to estimate the missing data. If participants completed less than 70% of a subscale, the missing data were not imputed and the participant was not included in the analysis involving that subscale.

Questionnaires were returned by 263 parents. Eleven questionnaires were missing more than 30% of the data and were discarded. An additional case was removed due to a reported child age of one year which is well below the target age for the study. Two hundred and fifty-one cases were retained for data analysis.

### 7.3. Exploratory Factor Analysis

The 43 items of the trial measure of the PPF were subjected to exploratory factor analysis (EFA) using principal components analysis (PCA). Although a four factor solution was expected, analysis commenced with an EFA to check for unexpected multidimensionality in the item pool (Floyd & Widaman, 1995).

Prior to performing PCA, the suitability of the data for factor analysis was assessed. Inspection of the correlation matrix revealed a large number of coefficients .3 and above. The Kaiser-Meyer-Okin value was .86, exceeding the recommended minimum value of .6 (Tabachnick & Fidell, 2007) by a good margin and Bartlett's Test of Sphericity was very significant, justifying a factor analysis for the data.

Principal components analysis revealed the presence of 11 components with eigenvalues above 1, explaining 25.9%, 6.6%, 5.4%, 3.9%, 3.5%, 3.3%, 3.3%, 3.1%, 2.7%, 2.6% and 2.4% of the variance respectively. The eigenvalues from the unrotated solution are displayed as a Scree plot in Figure 7.1. An inspection of the Scree plot revealed a clear break after the second component and two smaller breaks after the third and fourth components. Using the Scree plot findings, it was decided to retain four components for further investigation. This decision was further supported by the results of Parallel Analysis, which showed four components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size (43 variables X 251 respondents). Results from Parallel Analysis are reported in Table 7.1.

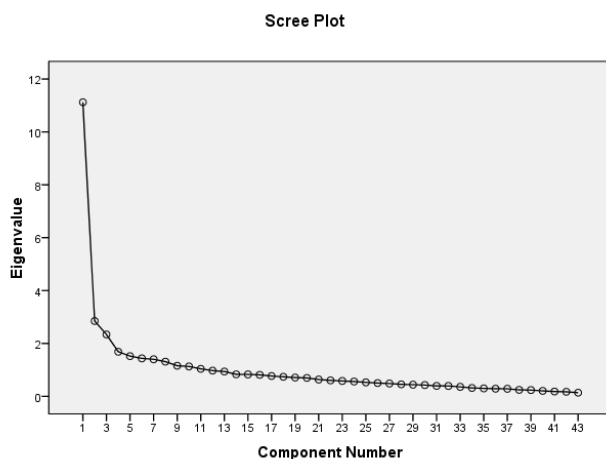


Figure 7.1

*Scree Plot for 43 items, unrotated solution*

Table 7.1

*Comparison of eigenvalues from PCA and criterion values from parallel analysis*

<b>Component Number</b>	<b>Actual eigenvalues from PCA</b>	<b>Criterion value from parallel analysis</b>	<b>Decision</b>
1	11.122	1.9045	Accept
2	2.847	1.7984	Accept
3	2.338	1.7169	Accept
4	1.685	1.6500	Accept
5	1.520	1.5918	Reject

The PCA was then performed again extracting only four factors as suggested by the Scree plot and parallel analysis. The four-component solution explained a total of 41.84% of the variance with Component 1 contributing 25.86%, Component 2 contributing 6.62%, Component 3 contributing 5.44% and Component 4 contributing 3.92% of the variance. To produce meaningful factors an oblimin rotation was performed. The resulting Pattern Matrix revealed 2 items that did not load strongly on any factor (items 3 and 15) and five items with Communalities below .3. Items 3 and 15 were also included in this list along with items 18, 25, 42 and 43. These six items were removed and the PCA was re-

run as a 37 item four factor solution with oblimin rotation (see Table 7.2 for factor loadings). This solution explained a total of 45.98% of the variance with Component 1 contributing 28.33%, Component 2 contributing 7.31%, Component 3 contributing 6.07% and Component 4 contributing 4.27% of the variance. This rotated solution revealed a number of items that crossloaded across components. These included items 31, 12, 20, 33, 30, 41, 36 and 39 (See Table 7.2). The fourth component had a total of seven items but appeared unstable with four items crossloading with other components (items 12, 20, 36 and 39) and two of these also had communalities below .3. The remaining four items on Component 4 appeared to be measuring a construct unrelated to the processes underpinning parental psychological flexibility. It was subsequently decided to further reduce the number of components and again perform the PCA, this time forcing a three factor rotated solution.

Table 7.2

*Factor Loadings for the 4 Factor 37 item version of the parental psychological flexibility scale (N=251)*

Item Number and Content		Loadings by Component			
		1	2	3	4
1	10: My worries get in the way of me being successful as a parent	.843			
2	9: My emotions get in the way of the being the type of parent I would ideally like to be	.819			
3	7: My emotions cause problems in my relationship with my child	.726			
4	19: I will be a better parent if I can control my negative thoughts and feelings about myself	.662			
5	8: It seems to me that most people are better parents than I am	.651			
6	4: My past makes it difficult for me to parent in a way that I would really like to	.649			
7	32: My painful memories prevent me from parenting the way that I would like	.628			
8	13: My feelings stop me from doing what I know is best for my children	.589			
9	26: It seems to me that most people manage their children better than I do	.577			
10	5: I worry about not being able to control the feelings I have about my children	.563			
11	11: The disciplinary strategies I use with my child are controlled by my emotions rather than by me	.514			
12	31: My worries get in the way of me having a successful relationship with my child	.505*	.310		
13	28: I'm afraid of the feelings I have about my children	.468			
14	16: I have to feel in the mood before I can give my child affection or attention	.456			
15	12: I avoid situations where I think my child will do something to embarrass me	.415*			.386
16	20: I avoid putting myself in situations where I am not sure I can control my child's behaviour	.405*			.313
17	34: Being a parent is so stressful that it is impossible for me to enjoy	.402			
18	1: I have to be in a good mood to spend quality time with my child (e.g. give affection, play, talk)	.374			
19	22: I don't let my child do many things with their friends because I don't think I could cope if something bad happened to him/her		.702		



		1	2	3	4
20	29: I have refused to let my child do things that were important to them because I would worry too much (e.g., spend time with friends, walk to school by themselves)		.584		
21	33: Watching my child deal with new experiences (e.g., starting high school, first kiss, puberty) as he/she grows up is interesting and exciting		.554*	.376	
22	40: The unpredictability of being a parent is one of the things that makes parenting fun and rewarding		.496		
23	30: Whatever I'm feeling in the moment controls the decisions I make and the actions I take in relation to parenting	.344*	.494		
24	24: I don't let my child do things that I'll worry about		.392		
25	17: I can still take care of my parenting responsibilities even when I am doubting my abilities to parent			.727	
26	14: I am able to take care of my parenting responsibilities even when I don't feel like it			.720	
27	2: I can still take care of my parenting responsibilities even when I feel tired, stressed, sad or angry			.568	
28	23: If I am worried about an activity my child wants to do it must be for a good reason			.548	
29	41: I can worry about my children and still be a good parent		.334*	.546	
30	21: I can get angry with my children and still be a good parent			.501	
31	6: I can have a good relationship with my children no matter what I am thinking and feeling			.432	
32	44: I am able to separate how I respond to my children from how I am feeling			.429	
33	37: I could not cope with the guilt if my child did something wrong				.672
34	38: I am responsible for my child's behaviour				.664
35	35: If my child does something wrong I feel it is my fault				.617
36	36: It is very stressful for me when I am not in control of my child's activities		.326*		.600
37	39: Worrying about my child's wellbeing gets in the way of my doing things that are really important to me		.343*		.362

Note: Results of exploratory factor analysis yielded a four factor solution accounting for 45.98% of the total variance; Legend:\*= crossload;; Only loadings > .3 are shown





A two-step process was used to remove seven items prior to obtaining the final solution. First, items 1, 31, 34, 20 and 12 were removed as they loaded on more than one component. Secondly, items 19 and 30 were removed as they further reduced the total number of items on the first component and because internal consistency (alpha levels) increased when they were removed. This resulted in a 30 item solution, presented in Table 7.3. This three-component solution explained 42.76% of the variance. The first Component had an eigenvalue of 8.174 contributing 27.25% of the variance after rotation. Items on Factor One comprised items reflecting an inability to separate internal private events like emotions and thoughts from behaviours. With items all reversed it was labelled Cognitive Defusion. The second Component had an eigenvalue of 2.565, contributing 8.55% of the variance after rotation. Items on this second factor concerned parents feeling stressed/worried about not being able to control their adolescent's behaviour, to an extent that it interfered with appropriate parenting/autonomy granting. With items reversed it was labelled Healthy Control. Component 3 had an eigenvalue of 2.097 and contributed 6.99% of the variance after rotation. Items on this factor appeared to measure the degree to which parents accept that difficult emotions and thoughts are part of their parenting and that they do not need to be changed or avoided and was therefore labelled Acceptance. The rotated solution revealed the presence of a clear structure with all three components showing a number of strong loadings. All variables loaded strongly on only one component suggesting discriminant validity.



Table 7.3

*Factor Loadings for the 3-factor 30-item version of the Parental Psychological Flexibility Scale (N=251)*

Items	Loadings			
	F1:CD	F2:HC	F3:AC	
1	9: My emotions get in the way of the being the type of parent I would ideally like to be	.88		
2	10: My worries get in the way of me being successful as a parent	.86		
3	7: My emotions cause problems in my relationship with my child	.79		
4	8: It seems to me that most people are better parents than I am	.69		
5	4: My past makes it difficult for me to parent in a way that I would really like to	.64		
6	32: My painful memories prevent me from parenting the way that I would like	.63		
7	11: The disciplinary strategies I use with my child are controlled by my emotions rather than by me	.60		
8	26: It seems to me that most people manage their children better than I do	.59		
9	13: My feelings stop me from doing what I know is best for my children	.50		
10	5: I worry about not being able to control the feelings I have about my children	.55		
11	16: I have to feel in the mood before I can give my child affection or attention	.49		
12	28: I'm afraid of the feelings I have about my children	.48		
13	36: It is very stressful for me when I am not in control of my child's activities		.72	
14	37: I could not cope with the guilt if my child did something wrong		.61	
15	22: I don't let my child do many things with their friends because I don't think I could cope if something bad happened to him/her		.56	
16	29: I have refused to let my child do things that were important to them because I would worry too much (e.g., spend time with friends, walk to school by themselves)		.56	
17	24: I don't let my child do things that I'll worry about		.55	
18	35: If my child does something wrong I feel it is my fault		.54	
19	38: I am responsible for my child's behaviour		.54	
20	39: Worrying about my child's wellbeing gets in the way of my doing things that are really important to me		.52	
21	17: I can still take care of my parenting responsibilities even when I am doubting my abilities to parent			.73
22	14: I am able to take care of my parenting responsibilities even when I don't feel like it			.72
23	41: I can worry about my children and still be a good parent			.61
24	2: I can still take care of my parenting responsibilities even when I feel tired, stressed, sad or angry			.57
25	21: I can get angry with my children and still be a good parent			.55
26	23: If I am worried about an activity my child wants to do it must be for a good reason			.52
27	6: I can have a good relationship with my children no matter what I am thinking and feeling			.47
28	33: Watching my child deal with new experiences as he/she grows up (e.g., starting high school, first kiss, puberty) is interesting and exciting			.45
29	44: I am able to separate how I respond to my children from how I am feeling			.44
30	40: The unpredictability of being a parent is one of the things that makes parenting fun and rewarding			.34

Note: PCA yielded a 30 item 3 factor solution accounting for 42.76% of the total variance; F1: CD = Factor 1: Cognitive Defusion; F2:HC = Healthy Control; F3:AC = Acceptance



#### **7.4. Parental Psychological Flexibility Scale Characteristics**

Descriptive statistics and preliminary analyses were performed to yield information about the PPF Total scale and subscales and to ensure no violations of the assumptions of normality, linearity and homoscedasticity. Figures 7.2a – h provide details of histograms and Normal Q-Q plots. Results indicate that the distribution of scores for the Total Scale and the three subscales was reasonably normal. The overall trend of slight negative skewness is to be expected in a normative general population sample where we would typically expect people to be functioning well.

##### **7.4.1. Total PPF**

The total PPF scores were derived by summing the responses on the 30 items after appropriate reversals to form a scale in which higher scores represent stronger levels of psychological flexibility. The Total PPF has a possible minimum total score of 30 and a maximum high score of 210. For this study total scores ranged from 106 to 209 (M= 164.01; SD = 17.91). Skewness and Kurtosis were recorded as -.365 and -.174 respectively. These results indicate that scores on the Total PPF were clustered at the high end. Results of the Kolmogorov-Smirnov statistic ( $p = .03$ ) indicate a slight violation of the assumption of normality but this is a very strict criterion. Inspection of the histogram and normal Q-Q Plot for Total PPF however, provides some evidence for normality of the scale, as do the skewness and kurtosis data.

##### **7.4.2. Cognitive defusion**

The Cognitive Defusion subscale scores were derived by reversing scores on all 12 items and summing the ratings. This subscale has a possible minimum total score of 12 and a maximum high score of 84. For this study total scores ranged from 38 to 84 (M= 68.02; SD = 9.40). Skewness and Kurtosis were recorded as -.610 and -.073 respectively. These results indicate that scores on Cognitive Defusion were slightly clustered at the high end indicating low levels of cognitive fusion. Results of the Kolmogorov-Smirnov statistic ( $p < .001$ ) indicate a violation of the assumption of normality but this is known to be a very sensitive test. Inspection of the histogram and normal Q-Q Plot for Cognitive Defusion however, provides some evidence for normality of the scale.

### **7.4.3. Healthy control**

The Healthy Control subscale scores were derived by reversing scores on all 8 items and summing the ratings. This subscale has a possible minimum total score of 8 and a high score of 56. For this study total scores ranged from 27 to 56 (M= 43.00; SD = 5.85). Skewness and Kurtosis were recorded as -.257 and .183 respectively. These results indicate that scores on Healthy Control were slightly clustered at the high end indicating higher levels of Healthy Control. Results of the Kolmogorov-Smirnov statistic ( $p = .001$ ) indicate a violation of the assumption of normality but this is known to be a very sensitive test. Inspection of the histogram and normal Q-Q Plot for Healthy Control, however, provides some evidence for normality of the scale.

### **7.4.4. Acceptance**

The Acceptance subscale scores were derived by summing the responses on the 10 items. This subscale has a possible minimum total score of 10 and a high score of 70. For this study total scores ranged from 31 to 70 (M= 68.02; SD = 9.40). Skewness and Kurtosis were recorded as -.219 and -.133 respectively. These results indicate that scores on Acceptance were clustered at the high end indicating higher levels of acceptance. Results of the Kolmogorov-Smirnov statistic ( $p > .05$ ) indicates normality. Inspection of the histogram and normal Q-Q Plot for Cognitive Defusion provides further evidence for normality of the scale.

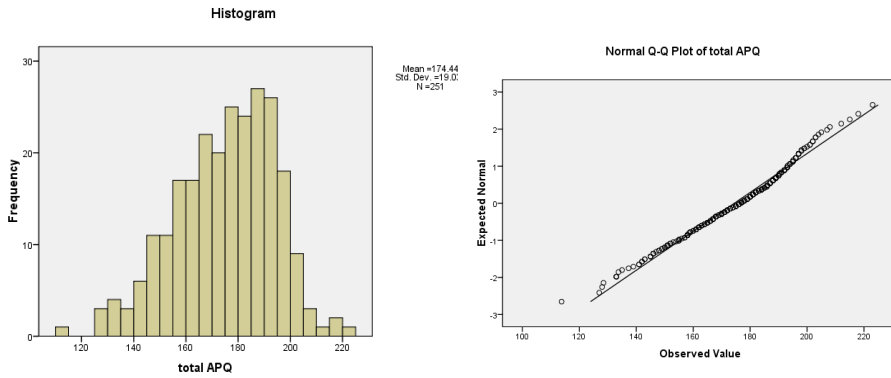


Figure 7.2: A and B: Total PPF Histogram and Normal Q-Q Plot

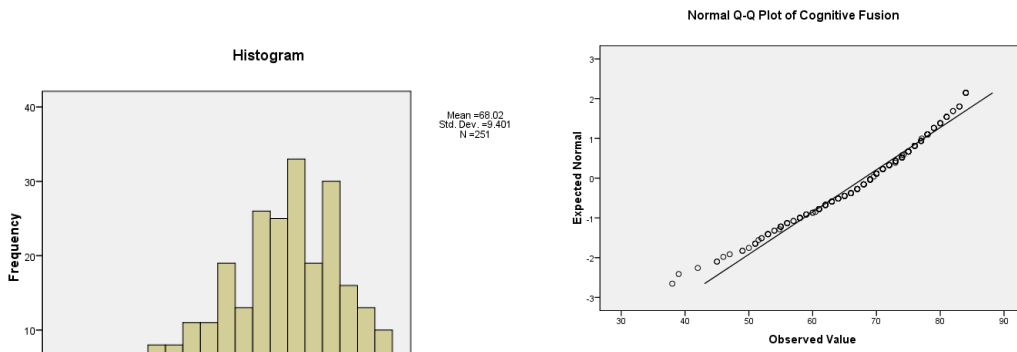


Figure 7.2: C and D: Cognitive Defusion Histogram and Normal Q-Q Plot

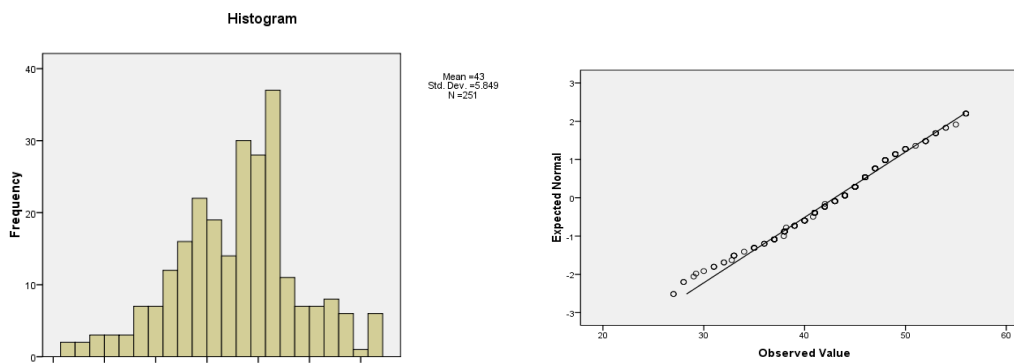


Figure 7.2: E and F: Healthy Control Histogram and Normal Q-Q Plot

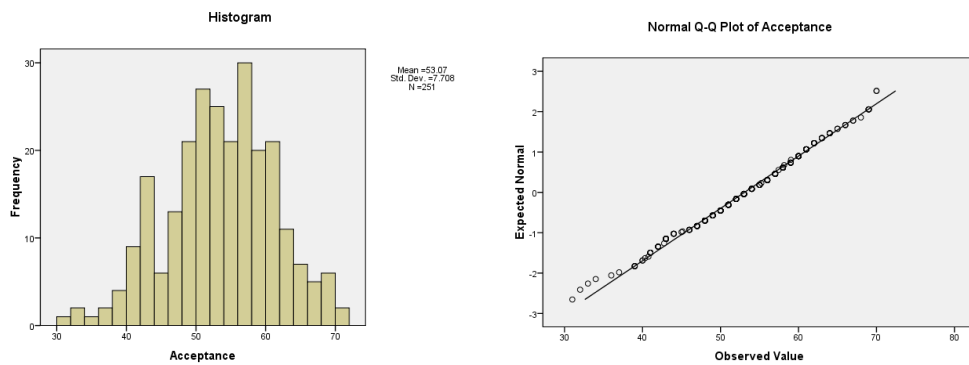


Figure 7.2: G and H: Acceptance Histogram and Normal Q-Q Plot

### 7.5. Correlations between subscales and total score

The above nearly normally distributed distributions mean the relationships between the PPF total scale score and its subscales, Cognitive Defusion, Healthy Control and Acceptance can be investigated using Pearson product-moment correlation coefficients. Correlation coefficients are reported in Table 7.4.

The PPF and its three subscales demonstrated significant correlations with each other. The strength of the correlations showed medium to large relationships between the total score and the subscales, with the exception of a relatively small but still significant correlation between Healthy Control and Acceptance. All correlations were in the expected positive direction. This analysis indicates that the factors were conceptually separate but overlapping with one another, each making a unique contribution to the measurement of the Parental Psychological Flexibility.



Table 7.4

*Correlations Between the PPF Total Score and subscales: Cognitive Defusion, Healthy Control and Acceptance*

Scale <sup>#</sup>	Total PPF	Cognitive Defusion	Healthy Control	Acceptance
1 Total PPF	1	.89**	.61**	.76**
2.Cognitive Defusion		1	.37**	.53**
3. Healthy Control			1	.23**
4. Acceptance				1

\*\* $p < .001$ ; # Total PPF = Total Scale of the Parental Psychological Flexibility Questionnaire; Cognitive

## 7.6. Reliability and Validity

### 7.6.1. Internal consistency

Cronbach's alpha was used to evaluate internal consistency on the 30 item measure. The Total PPF had a Cronbach's alpha of .89 and an average inter-item correlation of .22, indicating good internal consistency and cohesion of items. The three subscales of the PPF also demonstrated good internal consistency and cohesion of items. The Cognitive Defusion scale had an alpha of .90 and mean inter-item correlation of .42, the Healthy Control subscale had an alpha of .74 and mean inter-item correlation of .27 and the Acceptance subscale had an alpha of .79 and mean inter-item correlation of .28. Internal consistency is generally considered acceptable if the Cronbach's alpha is above .7 with values above .8 preferred (Clark & Watson, 1995; Murphy & Davidshofer, 2001). A recommended range for inter-item correlations is between .2 and .4 (Briggs & Cheek, 1986).

### 7.6.2. Validity

Prior to assessing relationships between PPF subscales and other measures, the chosen measures (AAQ-II; MAAS, PSOC, and Involvement) were checked for normality. Examination of histograms, skewness and kurtosis levels suggests that the scales on included measures generally approximated normality. However, some measures were skewed to the left, with scores clustering at the

high end of the subscales, representing normal levels of functioning. Given that the study involved a general population sample of parents these results are not surprising. Histograms and Q-Q Normality Plots are presented for each of the included subscales: AAQ-II; MAAS, PSOC, and Involvement in Appendix B. Normality data for the subscales of the PPF are reported in Section 7.5.

Table 7.5 shows that the PPF Total Score and its three subscales correlated significantly in the expected directions with other scales measuring similar or overlapping processes of psychological flexibility and mindfulness. This finding provides evidence for the concurrent validity of the PPF. In support of construct (convergent) validity, the PPF and its subscales generally correlated significantly in the expected directions with measures of theoretically related constructs – parents’ sense of competence (satisfaction, efficacy and total scale) and parent involvement. The lack of correlation between the Healthy Control subscale and the Involvement Scale was an exception to these results. Correlation coefficients are reported in table 7.5.

Table 7.5  
*Correlations Between PPF, MAAS, and Parenting variables (PSOC, APS Involvement)*

	AAQ-II	MAAS	PSOC Satisfaction	PSOC Efficacy	Total PSOC	APQ Involvement
1 Total PPF	.67**	.57**	.62**	.48**	.66**	.47**
2.Cognitive Defusion	.63**	.59**	.61**	.49**	.65**	.38**
3. Healthy Control	.45**	.40**	.33**	.21**	.32**	.12
4. Acceptance	.40**	.27**	.46**	.37**	.49**	.45**

\*\* p< 0.01 level (2-tailed); AAQ-II = Acceptance and Action Questionnaire; MAAS = Mindfulness Attention Awareness Scale; Total PSOC = Total Parents’ Sense of Competence Scale; APQ Involvement = authoritative Parenting Questionnaire Involvement Scale

Discriminant validity was established by comparing differences between scores for mothers and fathers, parent age and child age. It was expected that the PPF would not be significantly associated with parent gender, parent age or child age. A one-way between groups analysis of variance was conducted to explore the impact of parent gender on scores on the Total PPF and its three subscales, Cognitive Defusion, Healthy Control and Acceptance. Results demonstrated no statistically significant differences ( $p < .05$ ) between mothers and fathers on their scores on the total PPF ( $F(1, 249) = .29, p > .05$ ), or its subscales, Cognitive Defusion ( $F[1, 249] = .71, p > .05$ ), Healthy Control ( $F[1, 249] = .02, p > .05$ ) and Acceptance ( $F[1, 249] = .001, p > .05$ ).

The relationship between parent age and the total PPF and its three subscales was investigated using Pearson Product-moment correlation coefficients. Results indicated at most very weak relationships between the variables as shown in Table 7.6. Similarly, correlations between child age and the PPF and its subscales revealed no significant relationships between the variables, as expected (see Table 7.6).

Table 7.6

*Correlations Between PPF total score and subscales, Parent Age and Child Age*

	Total PPF	Cognitive Defusion	Healthy Control	Acceptance
Parent Age	-.04	.10	.14*	.09
Child Age	.05	.08	.02	-.02

\*Significant at  $< .05$ ; Total PPF = Total Parental Psychological Flexibility Scale;

## 7.7. Discussion

The aim of Study 1 was to construct a measure of psychological flexibility for use in a general parenting context. The development process aimed to capture the interrelated processes of psychological flexibility described in the literature (Hayes et al., 2006; Hayes, Strosahl, et al., 1999). An initial pool of 56 items was reduced to 43 following an expert and consumer review process. The draft measure was then disseminated to a sample of 251 parents and the

responses were subjected to exploratory factor analysis and tests for reliability and validity.

Exploratory factor analysis and measures of internal consistency supported a 3-factor solution that appears to be related to the processes underpinning psychological flexibility (see Chapter 3: Sections 3.4 and 3.5). Factor 1 appeared to contain items focused on emotions as the literal “cause” of parenting difficulties or behaviours. This is consistent with the process of Cognitive Fusion that has been related to psychological inflexibility. As the intention of the Parental Psychological Flexibility (PPF) scale is to measure psychological *flexibility* the items were reversed and hence the factor was labelled: Cognitive Defusion (see Chapter 3: Section 3.5.1.4). Factor 3 appeared to primarily measure another of the four cognitive aspects of psychological flexibility: Acceptance, (see Chapter 3: Section 3.5.1.2) in that the items were focused on the sense or belief that it is possible to parent effectively even when faced with negative internal experiences. Factor 2 revealed a somewhat different construct in that items appeared to be related to parental behavioural attempts to control their children’s behaviour as a way to regulate their own emotions, that is, to “avoid” negative internal experiences (e.g., Item r14 and r15 commence with the behavioural response: “I don’t let my child...” and finish with reason giving based on the parents internal experience: r14: thoughts “... I couldn’t cope” or; r15: feelings “...that I will worry about”). Factor 2 also appeared to contain items reflecting self-as-context (or self-as content) (see Chapter 3: Section 3.5.1.3) with many items reflecting the sense that the role of a parent is to be in control of their adolescent’s behaviour and activities. The items on Factor 2 were reversed thus providing an indication of the extent to which the parent exerts adaptive or “healthy” levels of control over their adolescent’s behaviour and activities and was labelled “Healthy Control.”

Whilst it is possible to see clearer examples across the PPF of cognitive defusion and acceptance, the inclusion of items measuring self-as-context and mindfulness are less clear. As previously noted (see Chapter 3: Section 3.5.2), the constructs underpinning psychological flexibility are interrelated and as such the

items in the scale may reflect more than one process at a time. Self-as-context for example can be seen in Factor 1 in items that propose “successful parenting” or an “ideal” conceptualised parent as well as in Factor 2 as described above.

The final of the four cognitive constructs that was expected was that of mindfulness (Chapter 3: Section 3.5.1.1.). The inclusion of mindfulness processes appears to be less clear. As defined in Chapter 3, mindfulness has been described as consisting of a number of facets, including: observing, describing, awareness (dispositional) and non-judgement (Baer et al., 2004; Baer et al., 2008; Brown & Ryan, 2003). The items on the PPF may reflect some aspects of mindfulness such as describing (e.g., “my emotions cause problems in my relationship with my child”) and non-judgement (e.g., “I can get angry with my child and still be a good parent”). Overall, however, the construct of mindfulness, particularly in relation to parental awareness and observation of the impact of their internal experiences on their parenting, are lacking from the PPF. As mindfulness is an important element to the cognitive processes associated with psychological flexibility it is important that a measure of mindfulness be included in testing of the conceptual model that is undertaken in Study 2. It will also be useful to assess the PPF’s relationship to a general measure of mindfulness in order to explore whether there are strong and independent relationships between the constructs included in the PPF and a more specific measure of mindfulness, thereby providing further evidence for construct validity of the PPF. As such, it was decided to include the Mindfulness Attention Awareness Scale (MAAS; Brown & Ryan, 2003) in Study 2 as an additional measure of psychological flexibility.

In summary, the results from Study 1 indicate that the PPF is an internally consistent measure that shows evidence of content, concurrent and construct (convergent and discriminant) validity. The measure demonstrated expected relationships with a general measure of psychological flexibility and with a measure of mindfulness with high scores on the PPF reflecting high scores on both the AAQ-II and the MAAS, thus providing evidence of concurrent validity. In addition, the PPF was positively related to a number of parenting measures

providing support for construct (convergent) validity. The exception to this was the non-significant correlation between the Healthy Control scale and Parental Involvement. It is possible that high levels of involvement may represent either healthy attempts to promote their child's wellbeing *or* control efforts designed to assist parents in avoiding their own negative emotions, that is, either healthy control or unhealthy control, using the framework of the current thesis. Support for discriminant validity was also demonstrated via the absence of a relationship to variables expected to have no association with psychological flexibility, namely parent gender and age and child age. Overall, the results from Study 1 provide initial support for the PPF as a potentially reliable and valid measure of psychological flexibility in a general parenting context.

## CHAPTER 8

### Study 2: Testing the Model: Study Design and Method

#### 8.1. Introduction

This chapter describes the aims, research questions and method for Study 2, the main study of this PhD project. The goal of Study 2 was to investigate whether parental psychological flexibility was related to better outcomes for parents and their adolescents as described in Figures 1.1 and 5.1, respectively. The Parental Psychological Flexibility Questionnaire (PPF) developed in Study 1 and further refined in this chapter, was used to examine these relationships.

#### 8.2. Aims

More specifically, the aim of this study was to explore the relationship between parental psychological flexibility and (a) parents' sense of competence, (b) parenting practices and (c) adolescent behaviour. The study examined a model of parenting (see Figure 1.1) that proposed that parents with higher levels of psychological flexibility would also report higher satisfaction and sense of efficacy in parenting, and would use more positive and fewer ineffective parenting practices than parents with lower levels of psychological flexibility. The model further proposed that this approach would be either directly or indirectly (via its links with parenting practices and parental competence) related to adolescent behavioural outcomes.

A secondary aim of Study 2 was to confirm the factor structure of the PPF thereby further verifying the scale's psychometric properties, including internal consistency and construct validity.

#### 8.3. Research Questions/Hypotheses

##### 8.3.1. Research questions:

**8.3.1.1.** Will confirmatory factor analysis provide supporting evidence for the structure and internal consistency of the Parental Psychological Flexibility Questionnaire?

**8.3.1.2.** Compared to parents reporting low levels of psychological flexibility, do parents who report higher levels of psychological flexibility also report:

- a) higher parenting competence;
  - b) more positive and fewer ineffective parenting practices;
- and
- c) more pro-social and less difficult behaviour in their adolescent children?

**8.3.1.3.** Is the relationship between parental psychological flexibility and adolescent behaviour direct, indirect (acting through parental sense of competence and/or parenting practices), or both direct and indirect?

### **8.3.2. Hypotheses:**

#### **8.3.2.1. Confirmation of the parental psychological flexibility questionnaire**

- a) Confirmatory factor analysis of the psychometric properties of the Parental Psychological Flexibility Questionnaire with a second sample of parents will:
  - i. support the three factor structure of the scale; and
  - ii. provide further evidence of the scale's internal reliability and construct validity.
- b) A general measure of mindfulness will demonstrate a strong positive relationship with the parental psychological flexibility aspects of:
  - i. acceptance
  - ii. cognitive defusion
  - iii. healthy control

#### **8.3.2.2. Testing the relationships between parental psychological flexibility, parenting and adolescent outcomes**

Examination of the relationships between parental psychological flexibility and parent and adolescent outcomes will find that:

H1. Parents' sense of competence is directly and negatively related to the parenting practices of:

- i. poor supervision
- ii. inconsistent discipline



iii. dysfunctionality (Laxness and Over-reactivity); and directly and positively related to:

iv. positive parenting practices;

H2. Parents' sense of competence is directly and positively related to adolescent:

i. prosocial behaviour, and directly and negatively related to adolescent

ii. total behavioural difficulties

H3. Parenting practices of poor supervision, inconsistent discipline, laxness and over-reactivity are directly and negatively related to adolescent:

i. prosocial behaviour, and directly and positively related to

ii. total behavioural difficulties

H4. Parental psychological flexibility (represented by the four constructs: cognitive defusion, acceptance, healthy control and mindfulness) is directly and positively related to parents' sense of competence (satisfaction and efficacy);

H5. Parental psychological flexibility (represented by the four constructs: cognitive defusion, acceptance, healthy control and mindfulness) is directly and negatively related to:

i. poor supervision

ii. inconsistent discipline

iii. dysfunctional parenting practices (laxness and over-reactivity); and positively and directly related to

iv. positive parenting practices;

H6. Parental psychological flexibility (represented by the four constructs: cognitive defusion, acceptance, healthy control and mindfulness) is directly and positively related to adolescent:

i. prosocial behaviour, and directly and negatively related to

ii. total behavioural difficulties.



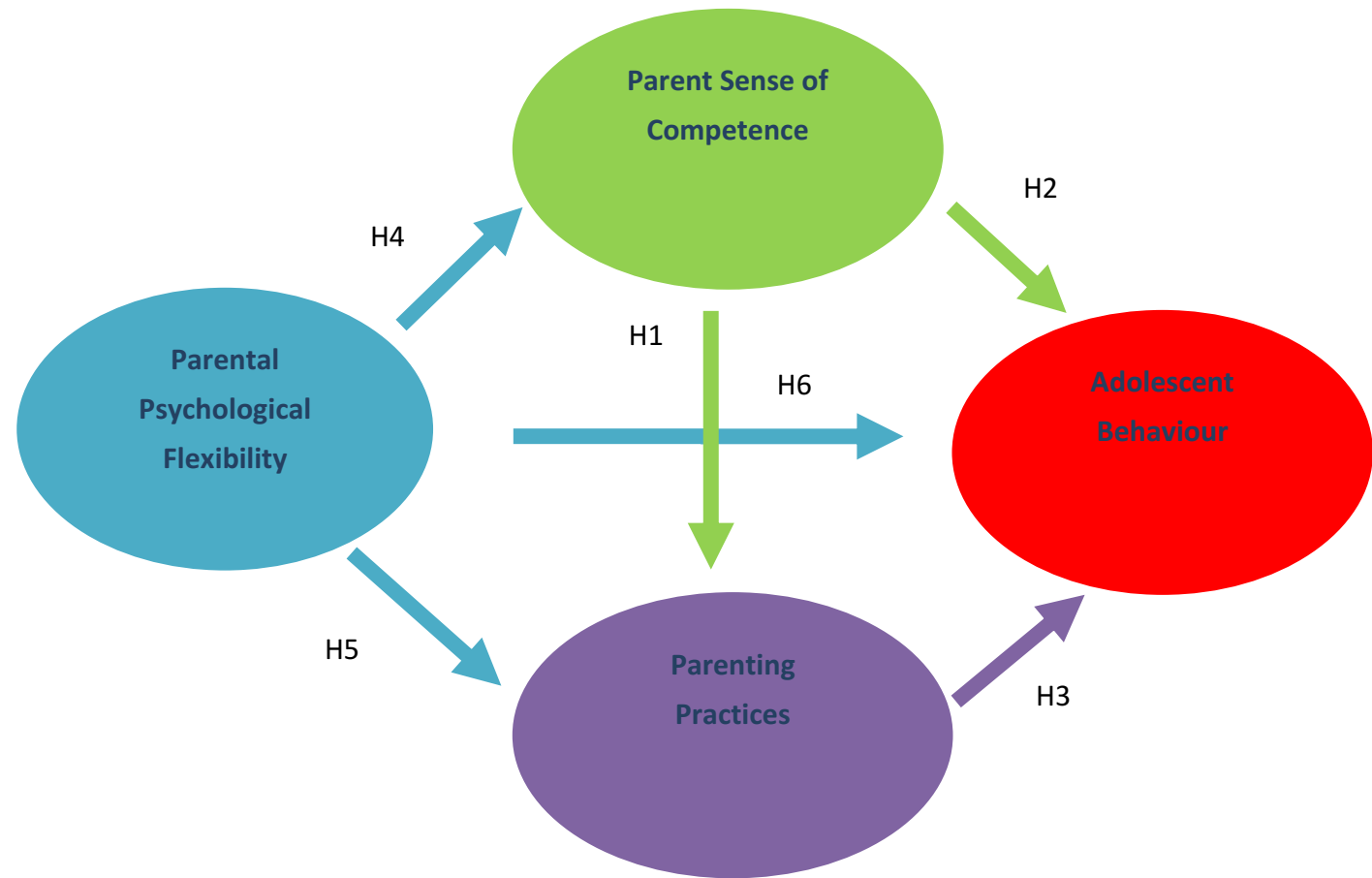


Figure 8.1  
*Study 2: Hypotheses in order of investigation*



## **8.4. Method**

### **8.4.1. Study procedures**

#### **8.4.1.1. Study design**

Study 2 employed a quantitative research design consisting of a single time point cross-sectional survey methodology. An anonymous survey was developed for completion online by parents, using Opinio software. Consent to participate in the study was inferred by completion of the survey package. The online survey was located on the Swinburne University website. A plain language statement outlining the study purpose and requirements of participation was provided online. A copy of the statement is included in Appendix C.

#### **8.4.1.2. Recruitment**

Participant recruitment extended from April 2010 to September, 2011. Recruitment was continued until a minimum of 200 completed parent surveys had been attained, ensuring an adequate number of participants for statistical analyses. The parent survey took approximately 15 to 30 minutes to complete.

A flyer promoting the survey (see Appendix C) was developed and distributed via email to a convenience sample of approximately 400 people. This sample consisted of approximately 300 family/parenting professionals (including psychologists, social workers, family workers, mental health workers and government workers), and approximately 100 family and friends of the researcher. Many recipients of the email then forwarded the flyer and web details to their own networks. Email was sent to this sample on two occasions, the first as a call for participants, and the second as a joint thankyou and reminder message. Swinburne University's media department placed calls for participants in the study on the Swinburne Staff Bulletin and to Melbourne's Leader Newspapers and the Australian Parenting Magazine.

The survey was also promoted on a custom designed website, [www.parentingteensurvey.com](http://www.parentingteensurvey.com). The site provided details of the study purpose and aims, the student and supervising researcher contact details and a link to the survey. The website was promoted via flyers and media releases sent to parenting agencies across Victoria and parent forums on parenting websites.

A link to the survey was also provided from a relevant parenting site – the ABCD Parenting Young Adolescent website, [www.abcdparenting.org.au](http://www.abcdparenting.org.au). Additionally, announcements for the survey were placed in the “participate in research” section of the Australian National parenting website: Raising Children Network, [www.raisingchildren.net](http://www.raisingchildren.net); on the Swinburne University, Faculty of Life and Social Sciences “participate in research” page and on the Parenting Research Centre’s website, [www.parentingrc.org.au](http://www.parentingrc.org.au) and on Facebook.

#### **8.4.1.3. Response rate**

A total of 389 hits were recorded with an overall completion rate of 49%. No hard copy surveys were distributed. Of the 389, 164 had not completed the demographic section or any questionnaires and were therefore disregarded, leaving 225. It was decided that at a minimum parents must have completed at least 70 per cent of the PPF in order to be considered for inclusion in the study. Twenty-six additional parents had not attempted the PPF and were excluded resulting in a total of 199 parents who had completed the demographic section and attempted the PPF. Of these three cases were missing more than 30% of data and subsequently removed. Four additional cases were removed because children were aged above 18 years (above the target age for the study). An additional 19 cases were missing more than 30 per cent of the Mindfulness Attention Awareness Scale (MAAS) and were removed from analyses involving that scale. One hundred and ninety-two cases were therefore retained for CFA analysis of the PPF, with 173 cases retained for CFA of the MAAS following completion of missing data processing. Finally, one more case was removed following assessment of Normality (See Chapter 10; Section 10.2.2) resulting in a total of 172 cases available for testing of the hypothesised conceptual model (see Figure 1.1.).

#### **8.4.1.4. Ethics approval**

The project received ethics approval from Swinburne University’s Human Research Ethics Committee. Copies of the ethics approval can be found in Appendix D.

### **8.4.2 Participants**

Participants were 192 parents of children aged between 10 and 18 years at the time of completing the survey. All participants were literate in English. Parents ranged in age from 26 to 62 years ( $M = 44$ ,  $SD = 6.5$ ). The sample comprised 172 (90%) mothers, and 20 (10%) fathers. Parents reported on children aged from 10 to 18 years ( $M = 14$ ,  $SD = 2.2$ ), 50% of whom were male. The mean number of people living in each household was 4 ( $SD = 1.1$ ), with between 1 and 6 children ( $M = 2.4$ ;  $SD = .94$ ). Table 8.1 provides details of parent country of birth, household structure, parent education and employment details for the current sample. Table 8.2 describes the education level of children at the time of parent participation.





Table 8.1

*Characteristics of Participating Parents*

	Whole Sample (n = 196) %	Mothers (n = 172) %	Fathers (n = 20) %
Australian Born	86	85	95
Family Structure			
Original 2 Parent	127 (66%)	113 (6%)	14 (70%)
Sole	35 (18%)	31 (18%)	4 (20%)
Step	27 (14%)	25 (14%)	2 (10%)
Other	2(2%)	2 (2%)	-
Employment Status			
Home Duties#	39 (20%)	38 (22%)	1 (5%)
Part Time Employed	84(44%)	80 (47%)	4 (20%)
Full Time Employed	69 (36%)	54 (31%)	15 (75%)
Highest Education			
Primary school	4 (2%)	2 (1%)	2 (10%)
Below year 12	24 (12%)	21 (12%)	3 (15%)
Year 12	18 (9%)	17 (10%)	1 (5%)
Trade/TAFE	37 (19%)	36 (21%)	1 (5%)
Tertiary	45 (23%)	39 (23%)	6 (30%)
Post Graduate	64 (33%)	57 (33%)	7 (35%)

# Home Duties refers to parents who identified as: Home Duties, not in paid employment or on a pension



Table 8.2

*Characteristics of the Children of Participating Parents*

		N = 196
		(%)
<hr/>		
Highest Education Level#		
	Grade 4	3 (1%)
	Grade 5	20 (10%)
	Grade 6	25 (13%)
	Year 7	25 (13%)
	Year 8	25 (13%)
	Year 9	25 (13%)
	Year 10	30 (16%)
	Year 11	21 (11%)
	Year 12	15 (8%)
	Tertiary	3 (1%)
	Not at School	3 (1%)

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**8.4.3. Measures**

A description of each of the included measures, including the purposely designed measure of parental psychological flexibility (PPF) is provided below. Measures were included for each of the constructs of interest as described in the Parenting Psychological Flexibility Model (Figure 1.1). Additionally, a series of items were included to enable description of the sample. Copies of each measure are included in Appendix E. Cronbach's alpha coefficients for each of the scales in the current study are provided in Chapter 9.

**8.4.3.1. Demographic Items**

Demographic items were used to collect descriptive information on the parents and adolescents in the study including post code, country of birth, family composition (original family, sole parent, step family or other), parent age, gender, educational level (Primary School, Below Year 12, Year 12, Trade/TAFE,

Tertiary, Post Graduate) and employment status (Home Duties, Part-time employed, Full-time employed, Unemployed, Pension). Child characteristics of child age, gender and educational status (range from Grade 5 to Tertiary or Not at School) were also collected.

#### **8.4.3.2. Psychological flexibility:**

*Parental Psychological Flexibility Scale (PPF; Burke, 2009)*

As described in Study 1 (Chapter 7 section 7.4) the PPF is a 30 item instrument rated on a 7-point Likert scale. The PPF was designed to measure parental psychological flexibility. The PPF consists of three subscales assessing elements of psychological flexibility: Cognitive Defusion, Acceptance and Healthy Control. It also provides an overall level of parental psychological flexibility via a Total Score. Study 1 data suggests that the measure demonstrates adequate psychometric properties, with good validity and reliability for the Total Scale ( $\alpha = .89$ ) and each of the subscales, Cognitive Defusion ( $\alpha = .90$ ), Healthy Control ( $\alpha = .74$ ) and Acceptance ( $\alpha = .79$ ).

*Mindfulness Attention Awareness Scale (MAAS; Brown & Ryan, 2003)*

The MAAS is a 15 item instrument rated on a 6-point Likert scale that measures people's tendency to be mindful of moment-to-moment experience. The MAAS is designed to focus on a key characteristic of dispositional mindfulness, "the presence or absence of attention to and awareness of what is occurring in the present" (Brown & Ryan, 2003). The measure is described in Chapter 6; Section 6.5.5.4. The MAAS was included as another aspect of psychological flexibility and as a general measure of mindfulness that will be used to further assess the construct validity of the PPF.

#### **8.4.3.3. Parents' sense of competence**

*Parents' Sense of Competence Scale (PSOC; Johnston & Mash, 1989)*

This scale assesses parents' views of their competence as parents on two dimensions: satisfaction with their parenting role and feelings of self-efficacy as a parent and also provides a composite or "total" score (Johnston & Mash, 1989).

It is described in Chapter 6; Section 6.5.5.4. The Total Score was included in Study 2 to measure aspects of parent self-efficacy and satisfaction included in the model of parental psychological flexibility (see Figure 1.1).

#### **8.4.3.4. Parenting practices:**

##### *Parenting Scale (Reitman et al., 2001)*

The Parenting Scale (PS) is a 10 item brief instrument designed to measure dysfunctional parenting practices for parents of children. The PS was included in Study 2 as a measure of ineffective parenting practices. The scale was adapted from a 30 item scale developed by Arnold and colleagues (Arnold, O'Leary, Wolff, & Acker, 1993). The adapted version of the PS yields two subscales, Laxness and Over-reactivity and a total score (Reitman et al., 2001). The Laxness scale has 5 items and purports to measure the extent to which parents notice but do not discipline misbehaviour. Items include "When I want my child to stop doing something I coax or beg my child to stop"; and "If saying no doesn't work I offer my child something nice so he/she will behave". The Over-reactivity scale contains 5 items and measures emotional reactivity in the context of discipline encounters. Items include: "When there's a problem with my child things build up and I do things I don't mean to", "After there's been a problem with my child I often hold a grudge". The adapted version of the PS (Reitman et al., 2001) demonstrates acceptable validity (construct, concurrent and discriminant) and reliability (Total Scale  $\alpha = .71$ ; Laxness,  $\alpha = .70$ ; Over-reactivity,  $\alpha = .74$ ). In addition, Karazsia, van Dulmen and Wildman (2008) conducted a study exploring the characteristics of the Parenting Scale which included confirmatory factor analysis of the original and several adaptations of the scale. Results supported the PS version adopted in this study and provided further evidence of the validity of the 10 item scale for use with parents of children of different ages (including adolescents) and cultural backgrounds.

##### *Alabama Parenting Questionnaire – Short Form (Elgar, Waschbusch, Dadds, & Sigvaldason, 2007)*

An adapted Australian short form version of the Alabama Parenting Questionnaire which contains nine items across three subscales: Positive

Parenting, Poor Supervision and Inconsistent Discipline was included as a measure of parenting practices (Elgar et al., 2007), providing another instrument for the assessment of effective and ineffective parenting approaches. The measure has been validated for 4 to 19 year olds and as such was an appropriate measure for use with the current sample. It has adequate psychometric properties ranging from  $\alpha = .79$  (Positive Parenting), to  $\alpha = .72$  (Inconsistent Discipline) and to  $\alpha = .59$  for Poor Supervision in a sample of children aged 5 to 12 years and moderate psychometrics in a sample of 5 to 18 year olds (ranging from .57 to .62).

Each item on the scale refers to a parenting practice. Respondents indicate how often they typically use each of these practices on a 5 item scale ranging from Never to Always. Items include: Positive Parenting – “You let your child know when he/she is doing a good job with something”; Inconsistent Discipline – “You threaten to punish your child and then do not actually punish him/her”; and Poor Supervision – “Your child fails to leave a note or to let you know where he/she is going”.

#### **8.4.3.5. Adolescent Outcomes:**

*Strengths & Difficulties Questionnaire* (SDQ; Goodman, 1997; Goodman & Scott, 1999)

The SDQ measures parental perception of their adolescent’s prosocial and difficult behaviours. The version for 7 to 17 year olds was used in the current study. This version has been validated with an Australian sample (Mellor, 2005). The SDQ includes 25 items, rated on a 3-point Likert scale, measuring the frequency of positive and negative behaviours. The measure provides a Total Difficulties score and 5 subscale scores; Emotional Symptoms, Conduct Problems, Inattention/Hyperactivity, Peer Problems, and Prosocial Behaviour. Items include: Prosocial - “Considerate of other people's feelings”; Emotional Symptoms - “Often complains of headaches, stomach-aches or sickness”; Conduct - “Often lies or cheats”; Hyperactivity - “, “Easily distracted, concentration wander”; and Peer Problems - “Picked on or bullied by other young people.” The Total Difficulties and Prosocial scales were used for this

study. The SDQ has good concurrent validity, adequate reliability and has adequate discriminant and predictive validity (Goodman, Meltzer, & Bailey, 1998).

### **8.5. Analysis**

Data was analysed using SPSS Version 20 and Amos Version 16. Descriptive statistics were used to describe the study sample with one sample t-tests conducted to compare means scores on each scale with their respective normative mean in order to assess whether the current sample was representative of a “normal” population.

Structural Equation Modelling (SEM) was the primary form of analysis conducted in Study 2. SEM refers to a set of statistical methods used for modelling data (Kline, 2010). SEM was chosen because it has the advantage of enabling researchers to model relationships between latent variables or unobserved constructs. This means that it is possible to more closely align the statistical expression of the model with the hypothesised conceptual model (Brown, 2006). SEM can be used to evaluate the degree to which an *a priori* model accounts for a set of observed relationships between variables; to compare alternative models; or for model generation (via careful modification of the *a priori* model based on theoretical and statistical grounds) (Brown, 2006; Kline, 2010; Tabachnick & Fidell, 2007).

SEM has two main components (Brown, 2006; Kline, 2010): (1) a Measurement Model in which the relationships between a set of indicators (scale items) and their latent variables (constructs) are specified; and (2) a Structural Model in which the relationships between the latent variables are specified.

In Study 2 AMOS version 16 was used for three purposes: (a) confirmatory Factor Analysis for PPF and MAAS measurement models (b) test of discriminant validity for PPF and MAAS and; (c) testing of the conceptual model suggested in Chapter 1 via structural equation modelling using Munck’s (Munck, 1979) method to allow for measurement error in the well validated Parents’

Sense of Competence, Alabama Parenting Questionnaire, Parenting Scale and Strength and Difficulties scales.

a) Confirmatory Factor Analysis for the PPF measurement model.

The factor structure of the Parental Psychological Flexibility Scale (PPF) developed in Study 1 was further validated and confirmed by running one-factor congeneric models (in which the relationship between indicators and the latent variable are direct) on each of the three identified subscales: Cognitive Defusion, Acceptance and Healthy Control. The MAAS scale was similarly validated.

b) Secondly, the measurement models for the three PPF subscales were combined with the MAAS in a four-factor model to test for discriminant validity. The results from a CFA include estimates of factor variances and covariances, the loadings of the items (indicators) on their respective factors, and the amount of measurement error for each item (Kline, 2010). A good model will generally have relatively high standardised factor loadings for all items relating to a particular factor ( $>.70$ ); and discriminant validity between the latent factors (e.g., only small to moderate correlations between the factors (Kline, 2010)).

c) The final step was to assess the Full Structural Model proposed as the conceptual model (see Chapter 1: Figure 1.1) using SEM. This step was used to investigate whether parental psychological flexibility predicted parents' sense of competence, parenting practices and adolescent outcomes. SEM was also used to assess whether parental psychological flexibility was directly or indirectly associated with these outcomes. To do this, the full structural model was drawn in AMOS including the hypothesised paths between latent constructs. Chi-Squared tests were used to test the mediation hypotheses. If the removal of direct paths does not significantly affect the goodness of fit a hypothesis of full mediation is supported.

### **8.5.1. Key steps in SEM**

There are a number of elements to conducting an *SEM*. These are summarised in this section (Brown, 2006; Kline, 2010) in relation to how the *CFA* and Structural Model will be assessed in this study.



#### **8.5.1.1. Specification of the model**

Specification involves expressing the research hypotheses as a structural equation model (Kline, 2010) thus identifying all the variables (observed and latent) that will be included in the model and setting the parameters of the model (how each variable will relate to the others). Typically, this involves drawing the model using a statistical program such as AMOS, which has been used here.

CFA models have a number of characteristics, including that each indicator (item) is a continuous variable that loads only on one factor; the measurement errors are independent (not correlated) of each other; each factor has at least three indicators; and the sample should be normally distributed (Blunch, 2008; Kline, 2010). However, all the items in this model were measured on discrete ordinal scales making the assumption of normality impossible for the confirmatory factor analysis.

#### **8.5.1.2. Estimation**

The goal of estimation is to generate a number of values that will be used to generate statistics and descriptive indices for assessing the model fit. In *SEM* the most widely used approach to estimation is Maximum Likelihood (ML). This approach maximises the likelihood of estimating a sample that is actually observed. ML assumes multivariate normality and seeks to minimise differences between the observed covariances in the data and those hypothesised by the researcher (called implied covariances). The ML output provides estimates of both the unstandardised and standardised regression weights and covariances. The standardised solution will be used in this study to interpret the model output and to assess the convergent and discriminant validity of the factors and overall model.

#### **8.5.1.4. Hypothesis Testing**

The focus of structural equation modelling techniques is on the “goodness of fit” or how well the model accounts for the covariances in the data. Models will typically not perfectly fit the model and hence a number of techniques have been developed to measure the degree to which a model fits

the data. Hypothesis testing assesses whether the implied covariance matrix adequately reflects the observed covariance matrix. This section provides an overview of the fit indices used in Study 2.

### Model Chi-square

The first statistical test for measuring fit is the model Chi-square statistic. The Chi-square statistic tests the difference between a saturated and an idealised “just-identified” version of it. Results that lead to failure to reject the null hypothesis (e.g.,  $p > .05$ ) are desirable (Brown, 2006; Kline, 2010).

A saturated model has a Chi-square value of zero and has no degrees of freedom meaning that the predicted (implied) correlations and covariances are the same as the observed correlations and covariances. As the value of the Chi-square increases from zero the fit becomes worse. A saturated model describes the data perfectly, but the fit is adequate so long as the Chi-Square statistic is not significant.

The Chi-square is sensitive to any violations of multivariate normality, large correlations between variables (with larger correlations resulting in higher Chi-square values) and to sample size (Kline, 2010; Tabachnick & Fidell, 2007).

### Approximate Fit Indices

The model Chi-square is always reported as the primary fit statistic. However, a large number of alternative fit indices have been created in an attempt to address the difficulties with the model Chi-square sensitivity. The most highly recommended of these indices are briefly described here (Brown, 2006; Kline, 2010; Tabachnick & Fidell, 2007). Each of these was used to assess the results of the analyses in Study 2.

Table 8.3

*Fit indices used to assess CFA and structural models in Study 2*

Fit Indices	Purpose	Values (Good Fit) <sup>##</sup>	Cautions <sup>#</sup>
Root Mean Square Error of Approximation (RMSEA)	Estimates the lack of fit in a model compared to a perfect model.	<.06	Small samples: tends to produce large values (over-reject the model)#
Comparative Fit Index (CFI)	Assesses the model fit relative to a "independence" model in which all variables are uncorrelated and only error variances are estimated.	Range: 0-1 Values >.95	Works well with small samples
Tucker-Lewis Index (TLI)	Assesses the model fit relative to other more restricted or "independence" models	Range: 0-1 Values close to .95 (can exceed 1)	Better for large samples
Standardised Root Mean Square Residual (SRMR)	Assesses the average difference between the sample variances and covariances and the estimated population variances and covariances	Range:0-1 Values < .08	Sensitive to outliers

# (Tabachnick &amp; Fidell, 2007); ## (Hu &amp; Bentler, 1999)

**8.5.1.5. Re-specification**

If the hypothesis testing reveals problems with model fit it is possible to make post-hoc modifications to the model in an attempt to improve the model fit. The aim of re-specification is to try to better account for any shared variance or cross loading between items and factors by adding covariances between items/paths and/or deleting items or variables that cross load or covary with each other. In path analysis the process of re-specification is also to inspect the model output to identify significant and non-significant paths between variables.

The process of re-specification involves inspection of the output Modification Indices and the Standardised Residual Matrix. The Standardised Residual values that are of a large magnitude ( $> 2.58$ ) indicate that the model is not accounting for the association between the two respective items (Byrne, 2000). However, the changes suggested by the output are statistically based and should be used cautiously, with any changes to the model also making sense theoretically (Brown, 2006; Byrne, 2000; Kline, 2010).

### **8.5.2. Dealing with problems of normality**

A key assumption underlying CFA with ML is that the sample is normally distributed. If this assumption of normality is violated the model Chi-square statistic will be inflated with the standard errors deflated leading to the null hypothesis being rejected too often (Kline, 2010). Bootstrapping procedures are recommended when data is not normally distributed (Bollen & Stine, 1992). Bootstrapping creates multiple random subsamples from the original data (typically between 1000 – 2000 samples) which can then be used to assess how stable their parameter estimates are (Byrne, 2000). In particular bias corrected bootstrap confidence intervals can be generated to assess the significance of each parameter estimate. In the current study the “Bollen-Stine bootstrap p” bootstrapping procedure will also be used. This is a type of post-hoc adjustment to the Chi-square value that is used to account for non-normality (Bollen & Stine, 1992; Byrne, 2000). The test generates a modified Chi-square value and then compares it to the original. The result is an adjusted p- value with models rejected when  $p < .05$ .

### **8.6. Summary**

In this chapter the aims, research questions, hypotheses and method for Study 2, the main study for this thesis, were described. The measures used to represent each of the constructs in the conceptual model were outlined and the plan for analysis provided. Chapter 9 provides the results from measurement modelling of the PPF subscales and the MAAS. Results from the testing of the Full Structural Model using SEM are provided in Chapter 10.

## CHAPTER 9

### Study 2 Results: Confirmation of the Parental Psychological Flexibility Questionnaire

#### 9.1. Introduction

In this chapter statistical analyses are presented that are the necessary preparations for model testing by SEM (Figure 1.1). These involve confirmatory factor analyses of the PPF and its subscales, and assessment of the discriminant validities, inter-correlations and internal consistencies of the refined subscales (cognitive defusion, healthy control, acceptance), as well as their relationships to a statistically refined measure of mindfulness.

Recall that Study 1 involved development of a measure – the Parental Psychological Flexibility (PPF) questionnaire - a 30-item scale consisting of three factors each measuring a unique aspect of parental psychological flexibility: Cognitive Defusion, Healthy Control and Acceptance. Study 1 provided initial evidence for the validity (content, construct and concurrent) and reliability (internal consistency) of the scale. This chapter further examines the characteristics of the PPF using a new sample of parents (N= 192). It also examines the characteristics of the Mindfulness Awareness Attention Scale (MAAS; Brown & Ryan, 2003), a general measure of mindfulness in adults. The relationship between the three PPF constructs: Cognitive Defusion, Acceptance and Healthy Control and Mindfulness are subsequently examined in order to determine if adding a measure of mindfulness designed for a general population of adults to the three PPF scales generates an improved overall higher-order construct of parental psychological flexibility. In conducting these analyses, this chapter finalises development of the latent construct of Parental Psychological Flexibility that will be used to test the hypothesised model in Chapter 10.

As described in Chapter 8, measurement modelling is one of two components of SEM, generally conducted prior to evaluating a full structural model. This is because it is important to ensure that the structural model is measuring the hypothesised constructs with minimal error. If the measurement

models are not valid then it is possible that any difficulties with the fit of the structural model may be due to measurement error rather than to the hypothesised structural relationships between variables in the model. Measurement modelling involves each of the subscales being evaluated separately (one-factor congeneric models) in the first instance. This ensures that the scale is uni-dimensional and that it adequately discriminates from the other subscales in the measure. Then a confirmatory factor analysis is conducted to assess the discriminant validity between scales and therefore suitability for inclusion in the final structural model.

Specifically, the aims of Chapter 9 are to:

- a) further validate the psychometric properties of the PPF with a new sample of parents;
- b) validate the psychometric properties of the MAAS, with one-factor congeneric models and establish the discriminant validity for the scale;
- c) to assess whether the four scales (Cognitive Defusion, Acceptance, Healthy Control and Mindfulness) can be combined to form a higher-order model of parental psychological flexibility;

## **9.2. Confirming the PPF Factor Structure, Validity and Internal Consistency**

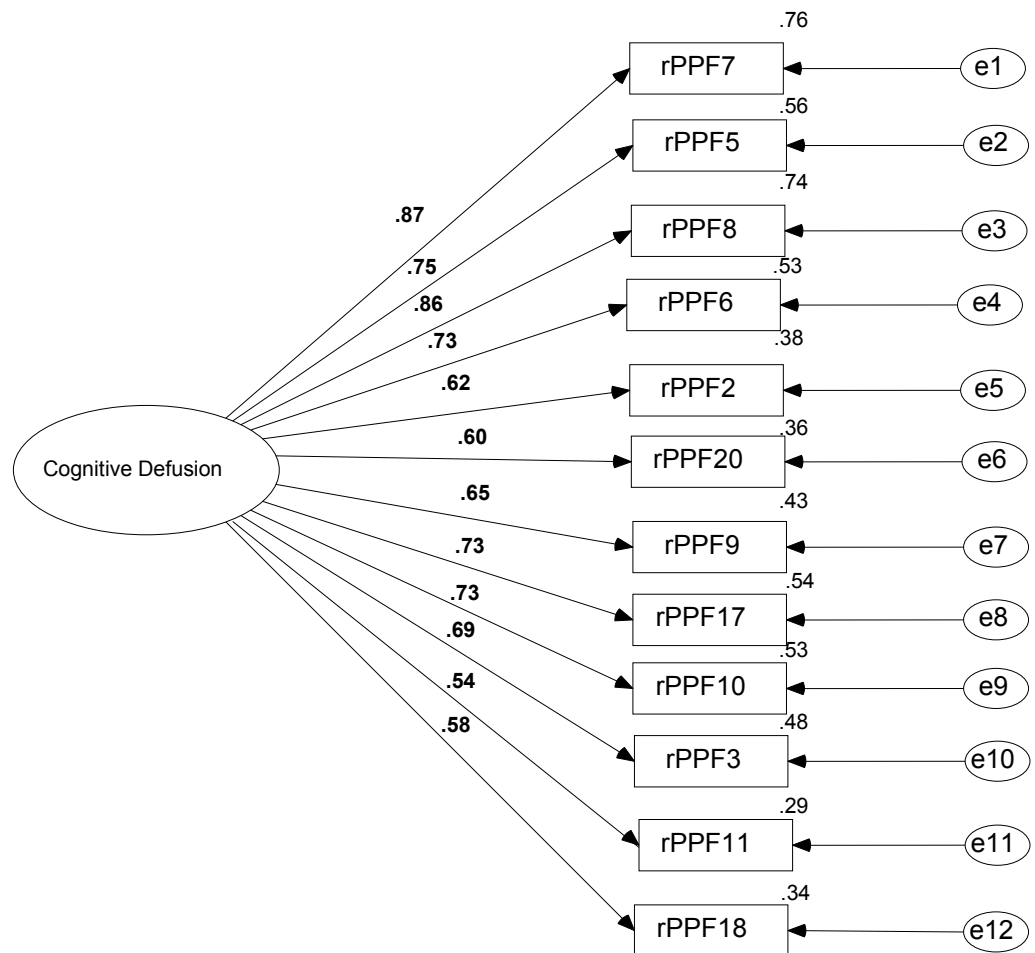
Confirmatory Factor Analysis (CFA) was conducted on the 30 item Parental Psychological Flexibility Questionnaire (PPF) using a new sample of parents to verify whether the three factors identified via Principal Components Analysis in Study 1 fit the hypothesised model of Parental Psychological Flexibility. It was expected that CFA could result in further reductions in items but that the resulting scales would match those identified in Study 1 and would be consistent with the hypothesised model of parental psychological flexibility, comprising three factors measuring Cognitive Defusion, Acceptance and Healthy Control.

The statistical package, Amos 16 was used for the analyses. The first step was to test each subscale individually to confirm the content validity of each latent factor (Cognitive Defusion, Healthy Control, and Acceptance) and to

ascertain if the items specified on each latent factor represented a uni-dimensional measure of the theorised construct. The resulting latent factors were then analysed together to check the discriminant validity of the latent variables to further assess if they provide a good model of parental psychological flexibility.

### 9.2.1. Cognitive Defusion

CFA was initially carried out on the 12 items specified to load on this factor from Exploratory Factor Analysis in Study 1. See Figure 9.1 for specification of the Latent variable, Cognitive Defusion and the twelve indicators.



Note: Factor Loadings are in bold.

Figure 9.1

*CFA of the 12 Item Cognitive Defusion Factor*

9.2.1.1. Initial analysis of the Cognitive Defusion latent factor using Maximum Likelihood (ML) estimation on the covariance matrix of the twelve indicators did not reveal a good fit for the hypothesised factor, ( $\chi^2 = 167.472$ ,  $df=54$ ,  $p < .001$ ). The factor loadings were all significant at  $p < .001$  and the standardised loadings ranged from .54 to .87. The CFA indicated which items in the scale were redundant. In particular, inspection of Modification Indices and Standardised Residuals showed that the model was not accounting well for the shared variance between the following items: rPPF2 and rPPF20; rPPF6 and rPPF17; rPPF3 and rPPF18; rPPF9 and rPPF10. The item rPPF2 was considered to be a relatively complex item that could be interpreted by participants in ways different to those intended by the researcher. As such it was decided that a first step would be to remove Item rPPF2 and the CFA rerun.

9.2.1.2. Results after removing item rPPF2 again indicated difficulties with fit for the hypothesised factor, albeit marginally improved, ( $\chi^2 = 129.966$ ,  $df=44$ ,  $p < .001$ ). All standardised residuals were within an acceptable range (below 2) however, problems with covariance were still indicated by the Modification Indices.

9.2.1.3. It was then decided to removed item rPPF17 as this item was very close in form to item rPPF6, suggesting redundancy of this item. Results again improved the model fit marginally, but indicated a poor fit to the hypothesised model ( $\chi^2 = 82.248$ ,  $df=35$ ,  $p > .001$ ).

9.2.1.4. Next, item rPPF9 was removed. Results indicated that this item was covarying with item rPPF10. Item rPPF9 was more complex in content than item rPPF10 and again considered to be more susceptible to misinterpretation by respondents. Removal of this item again resulted in improvement to model fit, ( $\chi^2 = 89.010$ ,  $df = 27$ ,  $p = .001$ ). Whilst still not a good fit, inspection of absolute and comparative fit indices provide some support for the model (see Table 9.1). The modification indices indicated that the model was still not accounting for the shared variance between items rPPF18 and rPPF3. It was therefore decided to remove the item considered to have the highest level of content complexity, rPPF18 and rerun the CFA.



9.2.1.5. Removal of item rPPF18 found that the data was an excellent fit for the one factor model of Cognitive Defusion, ( $\chi^2 = 25.037$ ,  $df = 20$ ,  $p = .200$ ). The standardised factor loadings were all significant, ranging from .53 to .89. The eight items reflecting Cognitive Defusion and their respective factor loadings are listed in Table 9.2. Table 9.1 shows Absolute fit indices across re-specification attempts for the model.

Table 9.1

*Cognitive Defusion chi-square, degrees of freedom, probability and model fit indices by CFA model re-specification attempt.*

	Model Specification				
	12 Item	1	2	3	4
	Cognitive Defusion	Remove rPPF2	Remove rPPF17	Remove rPPF9	Remove rPPF18
Chi-square	167.472	129.966	82.248	54.568	25.037
Degrees of freedom	54	44	35	27	20
Probability	.000	.000	.000	.001	.200
TLI	.890	.906	.938	.957	.994
CFI	.910	.925	.952	.957	.991
RMSEA	.105	.101	.084	.073	.036
SRMR	.06	.05	.05	.04	.03

TLI Tucker Lewis Index; CFI Comparative Fit Index; RMSEA Root Mean Square Error of Approximation; SRMR Standardised Root Mean Square Residual

NOTE: rPPF 2 = My past makes it difficult for me to parent in a way that I would really like to (reversed);

rPPF17 = It seems to me that most people manage their children better than I do (reversed)

rPPF9 = The disciplinary strategies I use with my child are controlled by my emotions rather than by me (reversed)

r PPF 18 = I'm afraid of the feelings I have about my children (reversed)



Table 9.2

*Items, Standardised Factor Loadings and Bollen-Stine P Confidence Intervals for final eight item Cognitive Defusion model*

Item	Standardised Factor Loading	Bootstrap Confidence Intervals (95%)*
rPPF11 I have to feel in the mood before I can give my child affection or attention	.53	.38 - .66
rPPF3 I worry about not being able to control the feelings I have about my children	.68	.52 - .79
rPPF10 My feelings stop me from doing what I know is best for my children	.72	.58 - .82
rPPF20 My painful memories prevent me from parenting the way that I would like	.57	.43 - .71
rPPF6 It seems to me that most people are better parents than I am	.71	.56 - .80
rPPF8 My worries get in the way of me being successful as a parent	.87	.82 - .92
rPPF5 My emotions cause problems in my relationship with my child	.76	.66 - .84
rPPF7 My emotions get in the way of the being the type of parent I would ideally like to be	.89	.80 - .94

\*Bias Corrected percentile method was used



9.2.1.6. A key assumption underlying CFA with maximum likelihood estimation is that observations are drawn from continuous and multivariate normal populations. However, the items used to measure this eight item Cognitive Defusion factor were measured on a discrete ordinal scale so this assumption is not valid. As shown in Figures 9.2 and 9.3, the Histogram and Normal Q-Q Plots for the scale constructed from these eight items, confirm that this scale is also not normally distributed. The distribution for this scale shows negative skewness with the majority of participants obtaining a relatively high score.

9.2.1.7. Results (reported in Table 9.3) also indicate a violation of assumptions of normality in terms of skewness and/or kurtosis with Mardia's coefficient of multivariate kurtosis (Mardia's coefficient = 50.580, with a critical ratio of 27.704) providing further evidence for the violation of the normality assumption.

9.2.1.8. The data violated the assumption of multivariate normality and so it is likely that the Chi-square test statistic of the overall fit of the model may not be an accurate assessment of fit and that the tests of the parameter estimates may be biased, resulting in too many significant results (Bollen, 1989). To account for this a post-hoc adjustment using the Bollen-Stine bootstrap p was completed. This test is a bootstrapped modification to the model Chi-square that adjusts for the problems with normality (Bollen & Stine, 1992; Tabachnick & Fidell, 2007). The Bollen-Stine p was not significant ( $p = .893$ ) and the bootstrapped bias corrected confidence intervals for the Standardised Factor Loadings, reported in Table 9.2, all show significance, indicating that the data fit the one factor model of Cognitive Defusion well when allowance is made for the non-normality of the data. The eight item model was therefore retained as the final model of Cognitive Defusion.



Table 9.3

*Assessment of normality eight item Cognitive Defusion Factor*

Variable	min	max	skew	c.r.	kurtosis	c.r.
rPPF11	1.000	7.000	-1.546	-8.745	2.073	5.864
rPPF3	1.000	7.000	-1.145	-6.474	.699	1.976
rPPF10	1.000	7.000	-1.240	-7.016	1.212	3.427
rPPF20	2.000	7.000	-1.428	-8.076	1.469	4.154
rPPF6	1.000	7.000	-.872	-4.935	.277	.782
rPPF8	1.000	7.000	-.799	-4.517	.006	.017
rPPF5	1.000	7.000	-.796	-4.505	.146	.413
rPPF7	1.000	7.000	-.714	-4.038	-.044	-.123
Multivariate					50.580	27.704

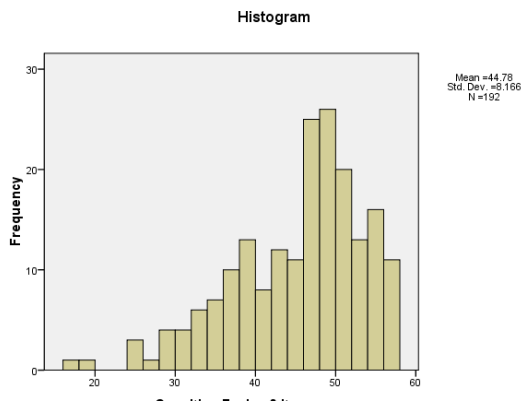


Figure 9.2  
*Histogram 8-Item Cognitive Defusion*

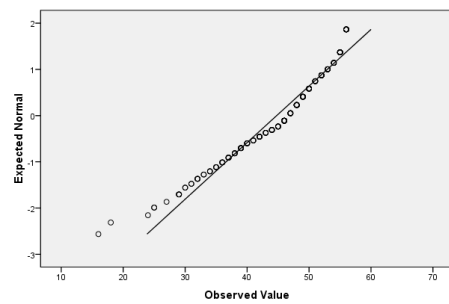


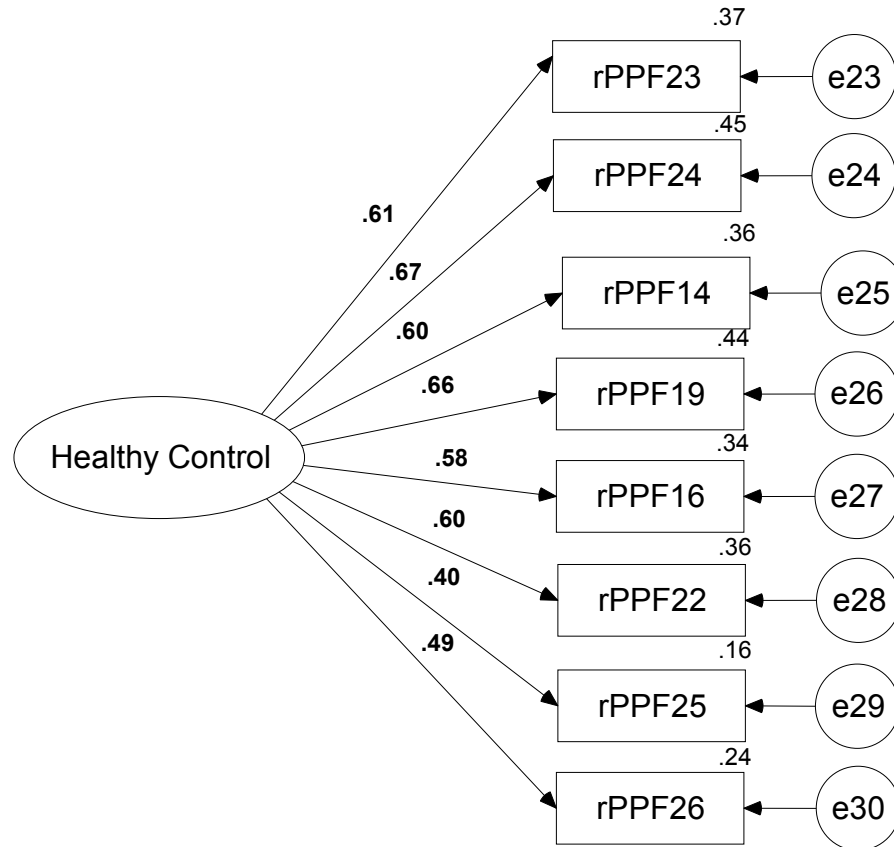
Figure 9.3  
*Normal Q-Q Plot 8-Item Cognitive Defusion*





### 9.2.2. Healthy Control

CFA was initially carried out on the eight items specified to load on this factor from Exploratory Factor Analysis in Study 1. See Figure 9.4 for specification of the latent variable, Healthy Control and its eight indicators.



Note: Bolded figures represent the factor loadings

Figure 9.4

#### *Eight Item Healthy Control Factor*

9.2.2.1. Initial analysis of the Healthy Control latent factor using ML estimation on the covariance matrix of eight indicators did not reveal a good fit for the hypothesised factor ( $\chi^2 = 60.269$ ,  $df = 20$ ,  $p = .001$ ). The factor loadings were all significant at  $p < .001$  and the standardised loadings ranged from .40 to .67. The CFA indicated which items in the scale were redundant, and therefore contributing to potential issues with the scale validity. In particular, inspection of Modification Indices and Standardised Residuals showed that the model was not accounting well for the shared variance between the following items: rPPF26 and rPPF23; rPPF16 and rPPF22; rPPF19 and rPPF22; rPPF19 and rPPF16; rPPF14 and

rPPF16; rPPF14 and rPPF19; rPPF24 and rPPF22. Item rPPF23 was removed because it had the highest standardised residual and the modification indices suggested that this item had the highest unexplained covariance with other items. The CFA was then rerun.

9.2.2.2. Results after removing item rPPF23 again indicated difficulties with fit for the hypothesised factor, albeit marginally improved,  $\chi^2 = 39.326$ ,  $df = 14$ ,  $p < .001$ . All standardised residuals were within an acceptable range (below 2) however, several items had negative residual covariances and a number of covariances were still indicated by the Modification Indices. In particular rPPF22 had both multiple negative covariances and multiple covariances according to the modification indices.

9.2.2.3. Item rPPF22 was subsequently removed. Removal of item rPPF22 found that the data was an excellent fit for the one factor model of Healthy Control, ( $\chi^2 = 14.557$ ,  $df = 9$ ,  $p = .104$ ). The standardised factor loadings were all significant, ranging from .37 to .73. The eight items reflecting Healthy Control and their respective factor loadings are listed in Table 9.5. Table 9.4 shows Absolute fit indices across re-specification attempts for the model.

9.2.2.4. The resulting six items for the Healthy Control factor were assessed for normality using the same process as for Cognitive Defusion. Results (reported in Table 9.6) indicate violation of assumptions of normality with a negative skew to the data indicating that most participants rated highly on this factor with scores above the mean. Mardia's coefficient of multivariate kurtosis was higher than 3 but below 10 indicating moderate non-normality (Kline, 2010).

Figures 9.5 and 9.6 provide the Histogram and Normal Q-Q Plots for the final composite scale, showing some evidence of negative skewness as expected.

Table 9.4

*Healthy Control chi-square, degrees of freedom, probability and model fit indices by CFA model re-specification attempt*

	Model Specification		
	8 Item Healthy Control	1 Remove rPPF23	2 Remove rPPF22
Chi-square	60.629	39.326	14.557
Degrees of freedom	20	14	9
Probability	.000	.000	.104
TLI	.844	.866	.956
CFI	.889	.911	.974
RMSEA	.10 (.07 - .13)	.10(.06 - .13)	.06(.00 - .11)
	pclose = .000	pclose =.000	pclose =.365
SRMR	.06	.06	.04

TLI Tucker Lewis Index; CFI Comparative Fit Index; RMSEA Root Mean Square Error of Approximation; SRMR Standardised Root Mean Square Residual

NOTE: rPPF23 = It is very stressful for me when I am not in control of my child's activities

rPPF22 = If my child does something wrong I feel it is my fault



Table 9.5

*Healthy Control Items, Standardised Factor Loadings and Bootstrap Confidence Intervals for final six item model*

Item	Standardised Factor Loading	Bootstrap Confidence Intervals (95%)*
rPPF24	.59	.42 - .72
	.66	.53 - .77
rPPF14		
	.73	.63 - .83
rPPF19		
	.65	.52 - .77
rPPF25	.37	.20 - .54
	.38	.20 - .58
rPPF26		

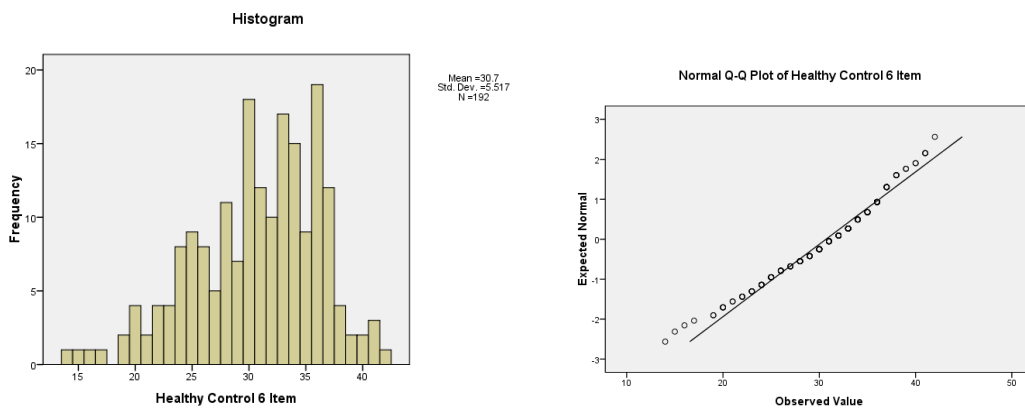
\*Bias Corrected percentile method was used



Table 9.6

*Assessment of normality six item Healthy Control Factor*

Item	min	max	skew	c.r.	kurtosis	c.r.
rPPF26	1.000	7.000	-.668	-3.777	-.314	-.889
rPPF25	1.000	7.000	-.068	-.382	-.644	-1.821
rPPF16	1.000	7.000	-.275	-1.555	-.396	-1.119
rPPF19	1.000	7.000	-.942	-5.329	.520	1.471
rPPF14	1.000	7.000	-1.210	-6.844	1.290	3.648
rPPF24	1.000	7.000	-1.107	-6.262	1.016	2.873
Multivariate					9.898	6.999



Figures 9.5 & 9.6

*Histogram & Normal Q-Q Plot for 6 Item Healthy Control Factor*

9.2.2.5. Once again, it was likely that the Chi-square test statistic of the overall fit of the model was not an accurate assessment of fit and that the tests of the parameter estimates were biased, resulting in too many significant results (Bollen, 1989). The Bollen-Stine bootstrap p test was therefore performed. The Bollen-Stine p was not significant ( $p = .590$ ) indicating that the data fit the one factor model of Healthy Control well when adjusted for the non-normality of the data. The 6-item model was therefore retained as the final model of Healthy Control. The Bootstrap bias corrected confidence intervals are

reported in Table 9.5 along with the Standardised Factor Loadings for the final 6-item model.

### 9.2.3. Acceptance

Next, a CFA was carried out on the ten items specified to load on the Acceptance factor from Exploratory Factor Analysis in Study 1. See Figure 9.7 for specification of the Latent variable, Acceptance and its ten indicators.

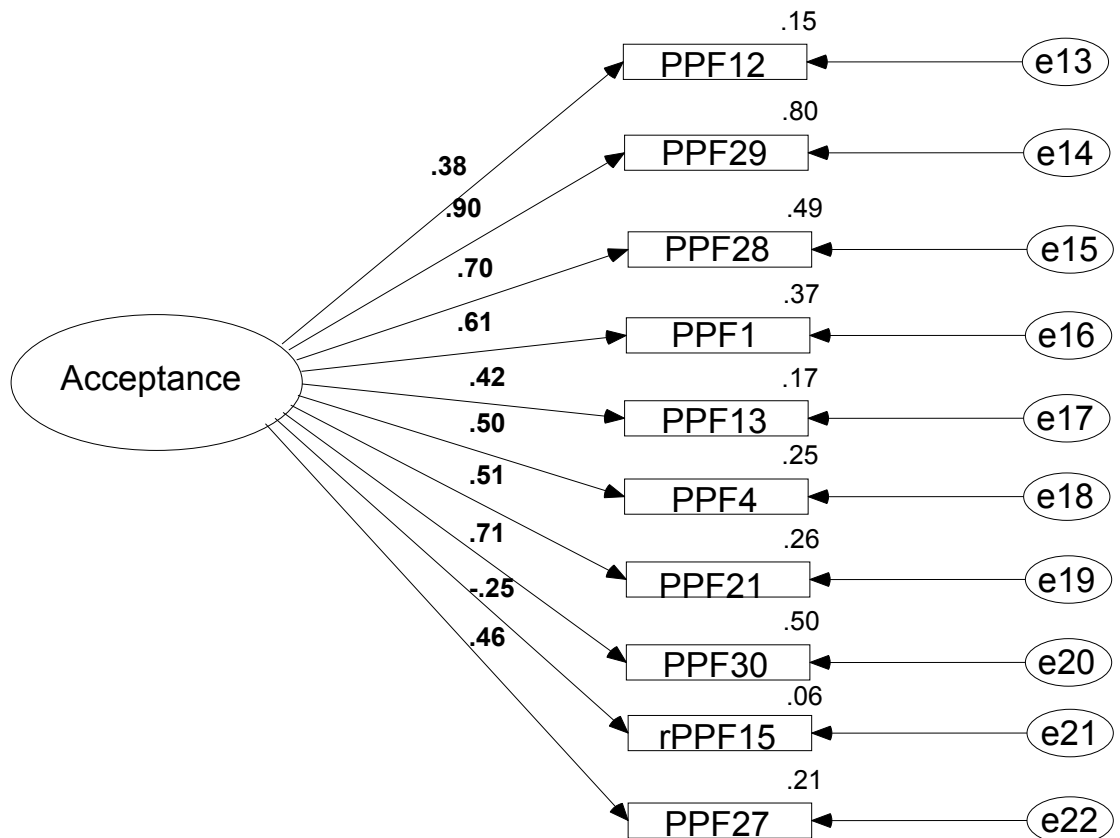


Figure 9.7  
Ten Item Acceptance Factor



9.2.3.1. Initial analysis of the Acceptance latent factor using ML estimation on the covariance matrix of ten indicators did not reveal a good fit for the hypothesised factor,  $\chi^2 = 73.928$ ,  $df = 35$ ,  $p < .001$ . The factor loadings were all significant at  $p < .001$  and the standardised loadings ranged from  $-.25$  to  $.90$ . Inspection of Modification Indices and Standardised Residuals showed that the model was not accounting well for the shared variance between multiple items: PPF21 and PPF27; PPF13 and rPPF15; PPF1 and PPF4; PPF28 and rPPF15; PPF28 and PPF30; PPF28 and PPF1; and PPF29 and PPF28; PPF12 and PPF13. It was decided to remove item rPPF15 because it had a low negative factor loading of  $-.25$ . As this scale was intended to have items that load in the positive direction, the item was considered to be performing differently to the other items in the scale. In addition, the item had multiple covariances with other items. The CFA was then rerun.

9.2.3.2. Removal of item rPPF15 still revealed difficulties with fit for the hypothesised factor, albeit marginally improved,  $\chi^2 = 58.741$ ,  $df = 27$ ,  $p < .001$ . All standardised residuals were within an acceptable range (below 2) with the exception of items 13 and 12 which had a standardised residual of 3.124 indicating that the model was not accounting adequately for the shared variance between these two items. Several items also had negative residual covariances and multiple problems with shared variance were still indicated by the Modification Indices. PPF12 was similar in content to several other items on the scale (including, PPF13, PPF1 and PPF29). PPF12 also had the largest modification indices, suggesting that removal of this item would reduce the value of the model  $\chi^2$  by 14.66 points and it also had a large standardised residual covariance.

9.2.3.3. Item PPF12 was subsequently removed. Removal of this item found that the data whilst somewhat improved was still not a good fit for the one factor model of Acceptance according to the tests of absolute fit,  $\chi^2 = 34.313$ ,  $df = 20$ ,  $p = .024$ . Tests of comparative fit provided some support for the model (see table 9.7). Modification indices still showed that item PPF28 had problems with shared variance with three other items, along with negative standardised covariances with three items. Additionally, this item was similar in

content to several other items on the scale (including, PPF13, PPF1 and PPF29). As such, it was decided to delete this item and rerun the CFA.

9.2.3.4. Item PPF28 was subsequently removed. Removal of the item found that the data was an excellent fit for the one factor model of Acceptance,  $\chi^2 = 13.032$ ,  $df = 14$ ,  $p = .524$ . The standardised factor loadings were all significant, ranging from .46 to .84. The resulting seven items reflecting Acceptance and their respective factor loadings are listed in Table 9.8. Table 9.7 shows Absolute fit indices across re-specification attempts for the model.

Table 9.7

*Acceptance chi-square, degrees of freedom, probability and model fit indices by CFA model re-specification attempt.*

		Model Specification		
		1	2	3
10 Item Acceptance		Remove rPPF15	Remove PPF12	Remove PPF28
Chi-square	73.928	58.741	14.557	13.032
Degrees of freedom	35	27	9	14
Probability	.000	.000	.104	.524
TLI	.901	.913	.956	1.004
CFI	.923	.935	.974	1.000
RMSEA	.08 (.05 - .10)	.08 (.05 - .11)	.06(.00 - .11)	.00 (.00 - .07)
	pclose =.04	pclose =.05	pclose =.37	pclose =.86
SRMR	.06	.06	.04	.03

TLI Tucker Lewis Index; CFI Comparative Fit Index; RMSEA Root Mean Square Error of Approximation; SRMR Standardised Root Mean Square Residual

NOTE: PPF15 = If I am worried about an activity my child wants to do it must be for a good reason  
 PPF12 = I can still take care of my parenting responsibilities even when I am doubting my abilities to parent  
 PPF28 = I can worry about my children and still be a good parent

Table 9.8

*Acceptance Items, Standardised Factor Loadings and Bootstrap Confidence Intervals for final seven item model*

Item	Standardised Factor Loading	Bootstrap Confidence Intervals (95%)*
PPF29	.84	.73 - .92
PPF1	.65	.50 - .76
PPF13	.39	.20 - .57
PPF4	.52	.37 - .65
PPF21	.52	.35 - .65
PPF30	.76	.64 - .85
PPF27	.46	.30 - .59

\*Bias Corrected percentile method was used



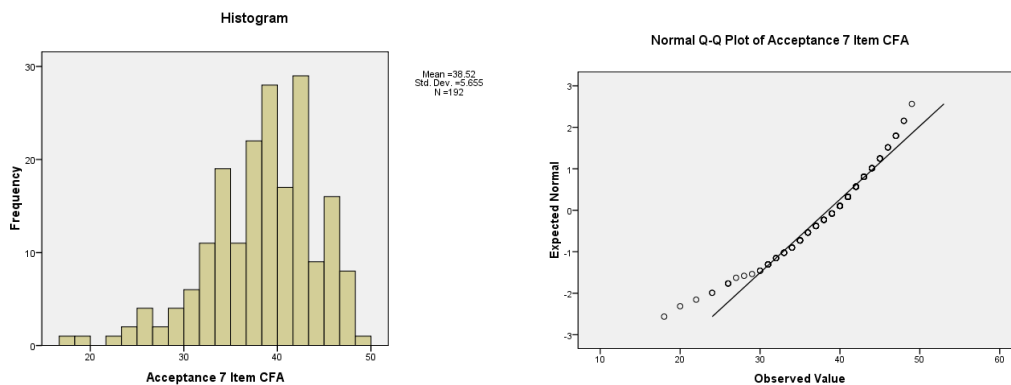
9.2.3.5. The resulting seven item Acceptance factor was then assessed for normality. Results (reported in Table 9.9) indicate violation of assumptions of normality with a negative skew to the data indicating that most participants rated highly on this factor with scores above the mean. Kurtosis was positive for all items except PPF27. Skewness and Kurtosis values were relatively small indicating only minor problems with univariate normality (see Table 9.9). Mardia's coefficient of multivariate kurtosis (reported in Table 9.9) was higher than 20 indicating serious problems with multivariate non-normality (Kline, 2010).

Table 9.9

*Assessment of normality seven item Acceptance Factor*

Variable	min	max	skew	c.r.	kurtosis	c.r.
PPF27	1.000	7.000	-.471	-2.662	-.033	-.093
PPF30	1.000	7.000	-.714	-4.039	.728	2.059
PPF21	1.000	7.000	-1.059	-5.990	.888	2.513
PPF4	2.000	7.000	-.978	-5.534	.667	1.887
PPF13	1.000	7.000	-1.076	-6.089	.723	2.044
PPF1	1.000	7.000	-.853	-4.825	.833	2.356
PPF29	1.000	7.000	-1.417	-8.017	2.713	7.672
Multivariate					25.061	15.468

Figures 9.8 and 9.9 provide the Histogram and Normal Q-Q Plots for the final composite scale, again showing some negative skewness.



Figures 9.8 & 9.9

*Histogram & Normal Q-Q Plot for 7 Item Acceptance Factor*

9.2.3.6. Once again, it was likely that the Chi-square test statistic of the overall fit of the model was not an accurate assessment of fit and that the tests of the parameter estimates were biased, resulting in too many significant results (Bollen, 1989). The Bollen-Stine  $p$  was not significant ( $p = .984$ ) indicating that the data was a good fit for the one factor model of Acceptance when adjusted for the non-normality of the data. The six item model was therefore retained as the final model of Healthy Control. The bias corrected confidence intervals are reported in Table 9.8 for the Standardised Factor Loadings for the final six item model.

**9.2.4. Summary of One-factor Congeneric Models of the PPF**

One-factor congeneric models for the 30-item, 3 factor PPF questionnaire with a second sample of parents resulted in a number of items being removed from each factor (Cognitive Defusion – 4 items; Healthy Control – 2 items; Acceptance – 3 items). This resulted in three factors demonstrating a good fit for the data, with Cognitive Defusion now containing 8 items, Healthy Control having 6 items and Acceptance having 7 items. The next step was to check discriminant validity between the subscales.

**9.2.5. Discriminant Validity of the PPF**

Discriminant validity testing involved assessment of whether the three identified factors described above had adequate discriminant validity, with each of the factors measuring a unique element of parental psychological flexibility. To investigate this, the CFA was rerun as a three factor model (see Figure 9.10).

Results from this analysis will help to provide confidence in the goodness of fit and standardised factor loadings obtained from each of the one factor models. Additionally, a test of discriminate validity is possible if the deterioration in model fit when factor correlations are set to one is assessed (Brown, 2006).

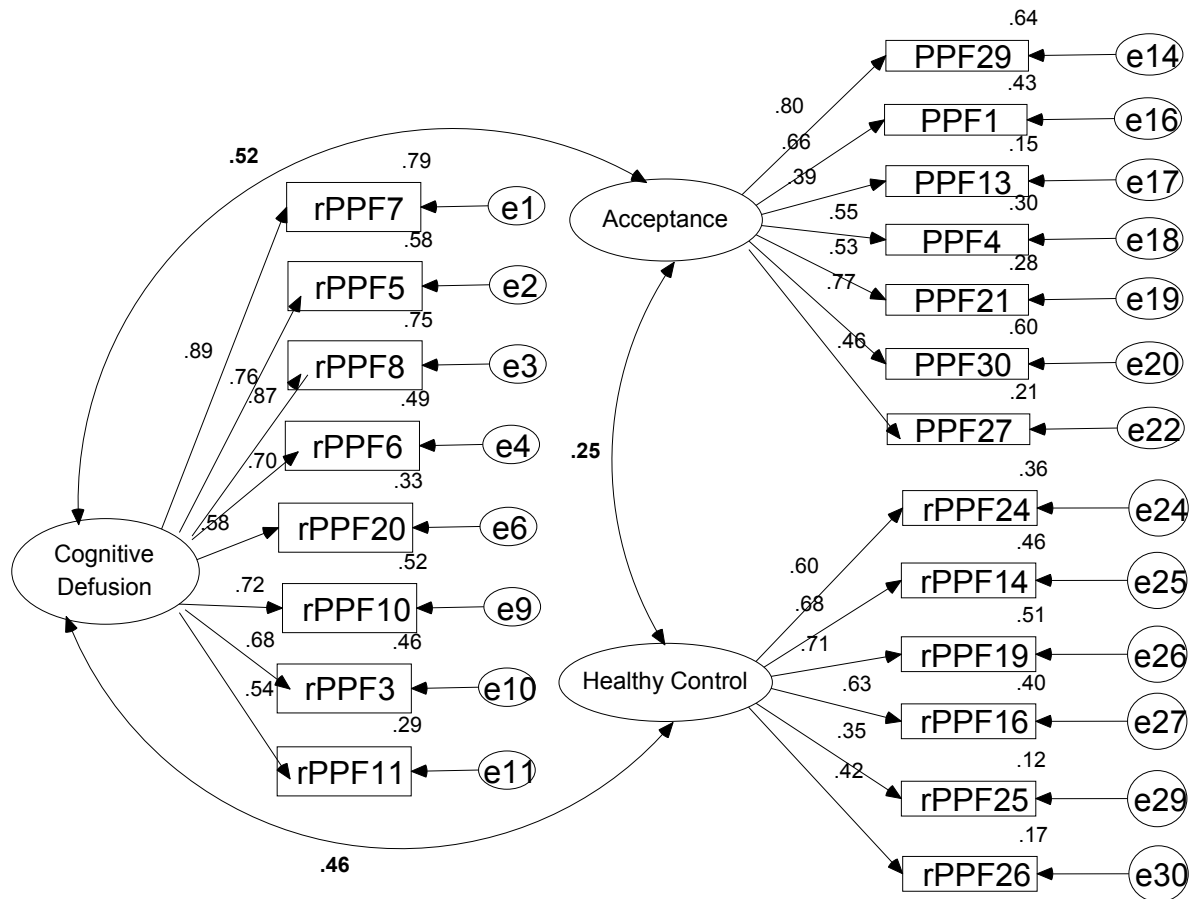


Figure 9.10

*Three Factor CFA Model of Parental Psychological Flexibility*

9.2.5.1. Inspection of the three factor model of psychological flexibility using ML estimation did not reveal a good fit for the hypothesised model,  $\chi^2 = 273.286$ ,  $df = 186$ ,  $p < .001$ . The standardised factor loadings were all significant, ranging from .35 to .89. Inspection of Modification Indices: Regression Weights revealed problems with crossloading between items rPPF26 (which loads on Healthy Control) and the Cognitive Defusion factor, as well as

with items rPPF20, and rPPF8. In addition, PPF26 had high standardised residual covariance with five other items (rPPF3, rPPF20, rPPF8, rPPF5 and rPPF7) and the highest overall standardised residual covariance with item rPPF20 = 3.500. Whilst crossloading was indicated for other items, the modification indices suggested that the Chi-square would be reduced by the greatest number of points if Item PPF26 was removed. As such, it was decided to remove item rPPF26 and rerun the CFA.

9.2.5.2. Removal of item rPPF26 again indicated a poor fit for the hypothesised model,  $\chi^2 = 238.258$ ,  $df = 167$ ,  $p = .000$ . Modification Indices indicated the largest change in Chi-square would result in removal of either PPF29 or rPPF5. As PPF29 had the two highest Modification Indices and was similar in content to PPF1, it was decided that item PPF29 would be removed.

9.2.5.3. Results from removal of PPF29 provided some support for the hypothesised model. The model Chi-square again did not support the model,  $\chi^2 = 195.387$ ,  $df = 149$ ,  $p = .006$ . However, approximate fit indices provide some qualitative support for model fit (see Table 9.10). The standardised factor loadings were all significant, ranging from .35 to .89. Inspection of modification indices revealed no further crossloading items. As the purpose of this analysis was to establish discriminant validity it was not deemed necessary to further respecify the model in order to improve model fit. Instead, to further check discriminant validity, a Chi-square test of independence was performed to check if the observed Chi-square would differ significantly if the correlation between the factors was forced to be 1. The Chi-square test was performed on the largest correlation between the three factors, Cognitive Defusion to Acceptance ( $r = .61$ ). Results from the Chi-square test of independence increased the  $\chi^2$  by 4.5 points with 1 associated degree of freedom to  $\chi^2 = 199.90$ ,  $df = 150$ ,  $p = .03$ . These results demonstrate a significant deterioration in fit when we assume the correlation is 1 and therefore discriminant validity is confirmed. Items reflecting the three factors, their respective factor loadings and confidence intervals are listed in Table 9.11.



9.2.5.4. Overall, the analysis supported a 19 item scale with items loading onto their pre-specified factors. The CFA results indicated that the factors are conceptually separate, suggesting that each of the three subscales makes a unique contribution to the measurement of parental psychological flexibility (see Figure 9.11).



Table 9.10

*Three Factor Model chi-square, degrees of freedom, probability and model fit indices by CFA model re-specification attempts.*

	Model Specification		
	21 Item 3 Factor model	1 Remove rPPF26	2 Remove PPF29
Chi-square	273.286	238.258	195.387
Degrees of freedom	186	167	149
Probability	.000	.000	.006
TLI	.932	.943	.958
CFI	.940	.950	.963
RMSEA	.05 (.04 - .06) pclose =.510	.05 (.03 - .06) pclose =.619	.04(.02 - .06) pclose =.848
SRMR	.07	.07	.06

TLI Tucker Lewis Index; CFI Comparative Fit Index; RMSEA Root Mean Square Error of Approximation; SRMR Standardised Root Mean Square Residual

NOTE: rPPF26 = Worrying about my child's wellbeing gets in the way of my doing things that are really important to me (reversed)

PPF29 = I am able to take care of my parenting responsibilities even when I don't feel like it



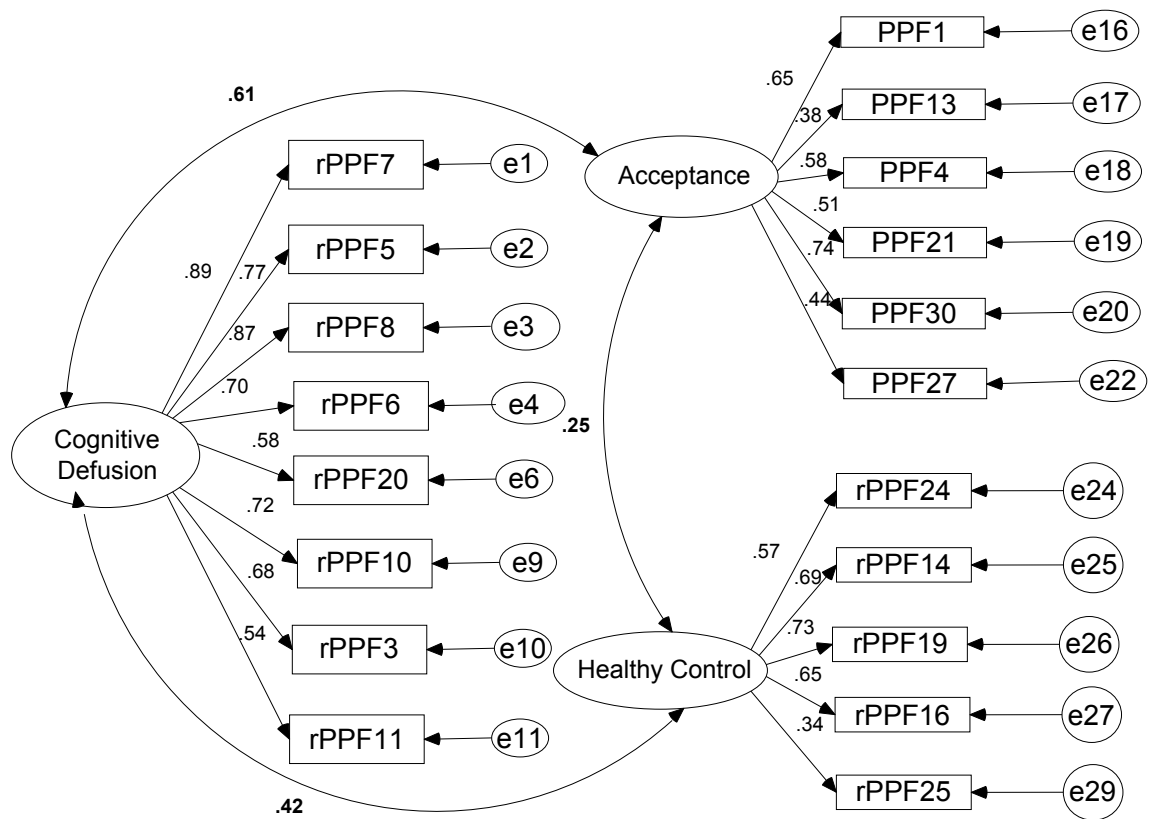


Figure 9.11  
 Final Three Factor Model of Parental Psychological Flexibility, Factor Loadings  
 and Inter-correlations



Table 9.11

*Three Factor Model of Parental Psychological Flexibility Items, Standardised  
Factor Loadings and Bootstrap Confidence Intervals for final nineteen item model*

	Item	Standardised Factor Loading	Bootstrap Confidence Intervals (95%)*
Cognitive Defusion			
rPPF11	I have to feel in the mood before I can give my child affection or attention	.53	.39 - .66
rPPF3	I worry about not being able to control the feelings I have about my children	.68	.52 -.78
rPPF10	My feelings stop me from doing what I know is best for my children	.72	.59 - .82
rPPF20	My painful memories prevent me from parenting the way that I would like	.57	.43 - .70
rPPF6	It seems to me that most people are better parents than I am	.71	.56 - .80
rPPF8	My worries get in the way of me being successful as a parent	.87	.81 - .91
rPPF5	My emotions cause problems in my relationship with my child	.76	.67 - .84
rPPF7	My emotions get in the way of the being the type of parent I would ideally like to be	.89	.79 - .94





	Item	Standardised Factor Loading	Bootstrap Confidence Intervals (95%)*
Acceptance			
PPF1	I can still take care of my parenting responsibilities even when I feel tired, stressed, sad or angry	.65	.51 -.76
PPF13	I can get angry with my children and still be a good parent	.39	.19 – .56
PPF4	I can have a good relationship with my children no matter what I am thinking and feeling	.52	.41 - .71
PPF21	Watching my child deal with new experiences as he/she grows up (e.g., starting high school, first kiss, puberty) is interesting and exciting	.52	.32 - .66
PPF30	I am able to separate how I respond to my children from how I am feeling	.76	.62 - .84
PPF27	The unpredictability of being a parent is one of the things that makes parenting fun and rewarding	.46	.25 - .59



	Item	Standardised Factor Loading	Bootstrap Confidence Intervals (95%)*
Healthy Control			
rPPF24	I could not cope with the guilt if my child did something wrong	.59	.41 - .721
rPPF14	I don't let my child do many things with their friends because I don't think I could cope if something bad happened to him/her	.66	.56 - .79
rPPF19	I have refused to let my child do things that were important to them because I would worry too much (e.g., spend time with friends, walk to school by themselves)	.73	.61 - .82
rPPF16	I don't let my child do things that I'll worry about	.65	.52 - .77
rPPF25	I am responsible for my child's behaviour	.37	.16 - .51

\*Bias Corrected percentile method was used



### **9.2.6. Inter-correlations**

The three factors of the PPF (Cognitive Defusion, Healthy Control and Acceptance) were all positively correlated with one another, with correlations ranging from small for Healthy Control and Acceptance (.25) to moderate for Healthy Control and Cognitive Defusion (.42) and for Cognitive Defusion and Acceptance (.61) as can be seen Figure 9.12. These results from the 19-item version of the scale are consistent with the results for the 30-item version of the PPF found in Study 1. Correlations between the subscales were all significant and in the expected positive direction. However, these correlations were not sufficiently large as to allow the formation of a second-order construct for the PPF.

### **9.2.7. Internal consistency**

The revised PPF subscales consisted of 19 items. The Cognitive Defusion subscale had an alpha of  $\alpha = .90$  and mean inter-item correlation of .51 (range of .31 to .79) indicating good internal consistency. The Acceptance subscale had an alpha of  $\alpha = .71$  and mean inter-item correlation of .30 (range of .17 to .48). The Healthy Control subscale had an alpha of .73 and mean inter-item correlation of .36 (range of .20 to .51). Corrected Item-Total Correlations were all in the positive direction and above .3 for all subscales.

### **9.2.8. Final scale attributes of the revised PPF**

#### **9.2.8.1. Cognitive defusion**

The Cognitive Defusion subscale scores were derived by summing the responses on the eight included items (rPPF8, rPPF7, rPPF5, rPPF3, rPPF6, rPPF10, rPPF20, rPPF11) and dividing by 8. This subscale has a possible minimum total score of 1 and a maximum high score of 7. For this study total scores ranged from 2 to 7 (M= 5.6; SD = .96).

#### **9.2.8.2. Healthy control**

The Healthy Control subscale scores were derived by summing the responses on the five items (rPPF19, rPPF16, rPPF24, rPPF14, rPPF25). This subscale has a possible minimum total score of 1 and a maximum high score of 7. For this study scores ranged from 1.6 to 6.8 (M= 5.11; SD = .98).

### **9.2.8.3. Acceptance**

The Acceptance subscale scores were derived by summing the responses on the six items (PPF1, PPF4, PPF13, PPF21, PPF30, PPF27). This subscale has a possible minimum total score of 1 and a maximum high score of 7. For this study total scores ranged from 2.67 to 7 ( $M = 5.39$ ;  $SD = .83$ ).

### **9.2.9. Summary of CFA for the PPF**

Confirmatory Factor Analysis was performed to verify the factor structure of the Parental Psychological Flexibility Questionnaire with a second sample of parents. Eleven items were removed from the original 30 item measure following CFA analysis of the Study 2 sample. The outcome was a 19 item measure of Parental Psychological Flexibility with three distinct subscales measuring positive elements of parent private events associated with parental psychological flexibility: Cognitive Defusion; Healthy Control and Acceptance. All three subscales appeared to measure unique aspects of the construct that matched those found in Study 1. The final PPF measure demonstrated adequate discriminant validity (as assessed through CFA) with good internal consistency. The revised 19 item measure will be used in the second aspect of Study 2 (see Chapter 10) – the exploration of the influence of psychological flexibility on parents' sense of competence, parenting practices and adolescent outcomes.

### **9.3. A Four Factor Model of Parental Psychological Flexibility: PPF and the Mindfulness Attention Awareness Scale (MAAS)**

The next step in ensuring that measurement of parental psychological flexibility was consistent with the hypothesised definition of the construct posed in Chapter 3 was to explore whether the included measure of Mindfulness (one of the core processes underlying psychological flexibility) added another unique dimension of psychological flexibility to that measured by the PPF. Given that the PPF does not have a specific mindfulness subscale, it was decided that it was important to test the contribution of a separate measure of the construct. As described previously, the Mindfulness Awareness Attention Scale (MAAS; Brown & Ryan, 2003) is a general measure of people's tendency to be mindful of

moment-to-moment experiences in their lives, not one developed specifically to assess parental mindfulness.

The next section describes the measurement modelling, followed by normality checks and adjustments of the MAAS. Following this the three subscales of the PPF and the MAAS were combined in a four-factor model and assessed for discriminant validity.

### 9.3.1. Confirmatory factor analysis (CFA) of the MAAS

Confirmatory Factor Analysis was conducted on the 15 item Mindfulness Attention Awareness Scale Questionnaire (MAAS) using Amos 16. Figure 9.12 provides the specification of the MAAS and its 15 indicators.

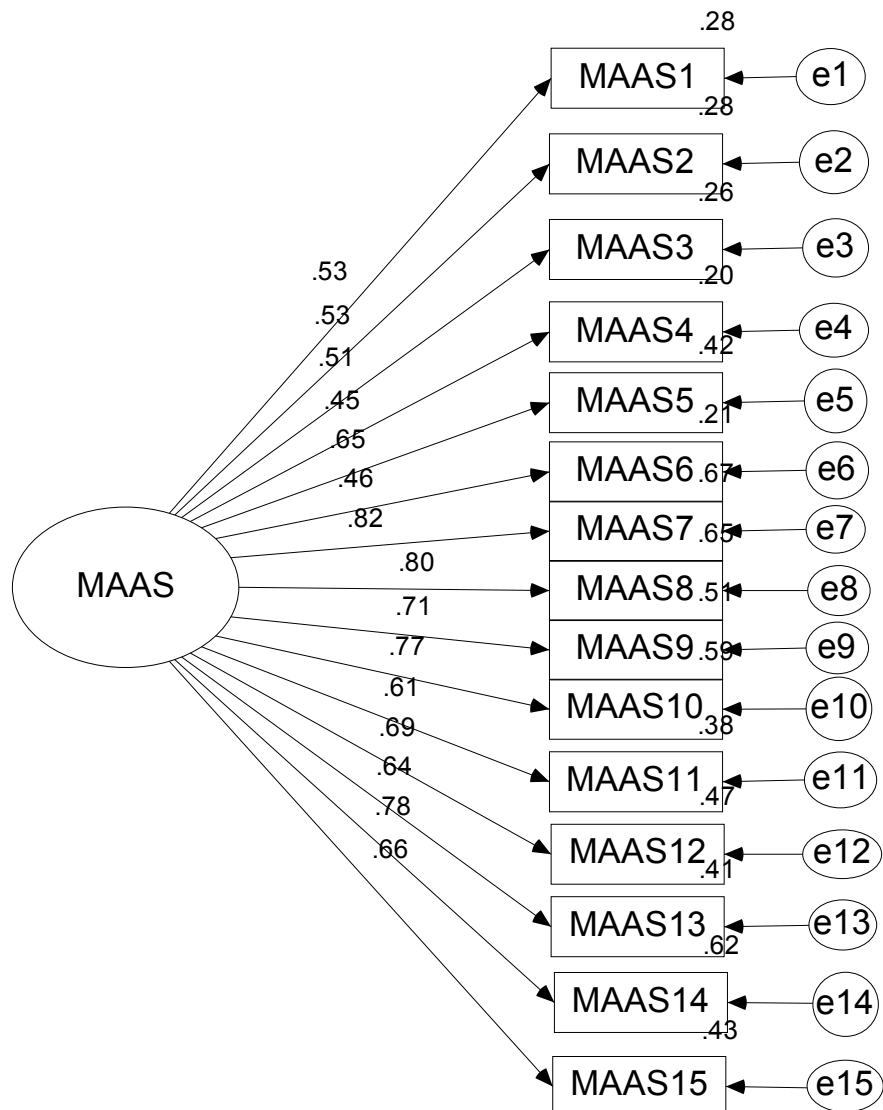


Figure 9.12  
15 Item MAAS Factor

9.3.1.1. Initial analysis of the MAAS latent factor using Maximum Likelihood (ML) estimation on the covariance matrix of the 15 indicators did not reveal a good fit for the hypothesised factor,  $\chi^2 = 236.052$ ,  $df = 90$ ,  $p < .001$ . The factor loadings were all significant at  $p < .001$  and the standardised loadings ranged from .45 to .82. Given the large number of items this result was not unexpected. Inspection of Modification Indices showed that the model was not accounting well for the shared variance between the following items: 11 and 14; 10 and 14; 7 and 8; 4 and 14; 3 and 10; 2 and 3; and 1 and 5. In addition the Standardised Residual Matrix showed a high level of shared variance between items 2 and 3 (standardised residual = 2.625). Items 4 and 14 and 3 and 10 were negatively correlated. Given that the items are all meant to load positively on one factor, these negative results were unexpected. As item 14 was negatively correlated, showed high levels of shared variance with multiple items and theoretically appeared a broader statement of several of the other items (e.g., Items 15 "I snack without being aware that I am eating"), this item was removed.

9.3.1.2. Removing item 14 resulted in improved fit but did not result in a good fit for the model,  $\chi^2 = 180.736$ ,  $df = 77$ ,  $p = .000$ . Whilst still not a good fit, the standardised factor loadings were all significant, ranging from .47 to .84. Inspection of Modification Indices showed that the model was still not accounting well for the shared variance between the following items: 4 and 15; 7 and 8; 4 and 14; 3 and 10; 2 and 3; and 1 and 5. Items 3 and 10 and 4 and 15 were negatively correlated. Item 4 was negatively correlated with 3 other items. In addition the Standardised Residual value between items 2 and 3 still remained high (residual = 2.441) and in addition items 4 and 15 now also had a high Standardised Residual (residual = -2.045).

9.3.1.3. It was decided to remove item 4. This again improved fit and although the Chi-square statistic remained significant,  $\chi^2 = 145.237$ ,  $df = 65$ ,  $p = .000$ , the comparative fit indices now provided some support for the model. Table 9.12 shows Absolute fit indices across re-specification attempts for the model. The 13 items reflecting the MAAS now had standardised factor loadings



ranging from .47 to .82. Inspection of the Modifications Indices revealed that showed that the model was still not accounting well for the shared variance between multiple items. The greatest improvement in Chi-square would be achieved by covarying Items 7 and 8. Given that the MAAS is an pre-existing scale, an attempt was made to keep the measure as close to the original as possible, therefore, rather than removing a third item it was decided to covary items 7 and 8 and rerun the model.

9.3.1.4. Covarying items 7 and 8 again improved fit,  $\chi^2 = 119.902$ ,  $df = 64$ ,  $p = .000$ . The 13 items reflecting the MAAS now had standardised factor loadings ranging from .53 to .79. Each item and their respective factor loadings are also listed in Table 9.13 and can be seen in Figure 9.13. As the goal of the analysis was to establish discriminant validity for the model whilst also keeping the model as close as possible to the original validated scale, and the comparative fit indices provided support for the model, it was decided not to continue to respecify the model until a good fit was obtained. The 13-item model was retained for use in further analyses.



Table 9.12

*MAAS chi-square, degrees of freedom, probability and model fit indices by CFA model re-specification attempt.*

	1	2	3	4
	Initial	Remove	Remove	Covary
	MAAS	Item 14	Item 4	Items 7 and 8
Chi-square	236.052	180.736	145.237	119.902
Degrees of freedom	90	77	65	64
Probability	.000	.000	.000	.000
TLI	.86	.88	.90	.93
CFI	.88	.90	.92	.94
RMSEA	.1 (.08 - .11)	.09 (.07 - .11) pclose	.09 (.07 - .10) pclose	.07 (.05 - .09) pclose
	pclose = .000	= .000	= .002	= .04
SRMR	.061	.060	.05	.05

TLI Tucker Lewis Index; CFI Comparative Fit Index; RMSEA Root Mean Square Error of Approximation; SRMR Standardised Root Mean Square Residual

NOTE: Item 14 = I find myself doing things without paying attention

Item 4 = I tend to walk quickly to get where I'm going without paying attention to what I experience along the way



Table 9.13

*MAAS Items, Standardised Factor Loadings and Bootstrap Confidence Intervals  
for final eight item model*

Item		Standardised Factor Loading	Bootstrap Confidence Levels (95%)
MAAS1	I could be experiencing some emotion and not be conscious of it until sometime later.	.53	.42 - .65
MAAS2	I break or spill things because of carelessness, not paying attention, or thinking of something else.	.53	.50 - .43
MAAS3	I find it difficult to stay focussed on what's happening in the present.	.53	.39 - .65
MAAS5	I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	.66	.56 - .74
MAAS6	I forget a person's name almost as soon as I've been told it for the first time.	.48	.34 - .60
MAAS7	It seems I am "running on automatic," without much awareness of what I'm doing.	.79	.67 - .86
MAAS8	I rush through activities without being really attentive to them.	.76	.70 - .87
MAAS9	I get so focussed on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	.73	.65 - .84
MAAS10	I do jobs or tasks automatically, without being aware of what I'm doing.	.76	.62 - .86
MAAS11	I find myself listening to someone with one ear, doing something else at the same time.	.61	.48 - .71
MAAS12	I drive places on "automatic pilot" and then wonder why I went there.	.69	.58 - .79
MAAS13	I find myself preoccupied with the future or the past.	.63	.50 - .73
MAAS15	I snack without being aware that I'm eating.	.67	.55 - .76

\*Bias Corrected percentile method was used



9.3.1.5. As a key assumption underlying CFA with maximum likelihood estimation is that observations are drawn from continuous and multivariate normal populations, the 13 item MAAS was assessed for normality. However, inspection of Mardia's coefficient of multivariate kurtosis was not significant (Mardia's coefficient = 48.498, critical ratio = 16.15) indicating violation of assumptions of normality with results demonstrating a negative skew to the data indicating that most participants rated highly on this factor with scores above the mean. Kurtosis was negative indicating the data was platykurtic or more widely dispersed (Kline, 2010). Items 2 and 3 were an exception to this, having a positive kurtosis and therefore clustered more closely (leptkurtic; Kline, 2010), indicating a lower peak, providing further indication for violation of normality. The histogram and normal Q-Q plot for the composite scale derived from these items show only slight negative skewness (see Figures 9.13 and 9.14).

9.3.1.6. As the data violated the assumption of multivariate normality it is likely that the Chi-square test statistic of the overall fit of the model may not be an accurate assessment of fit and that the tests of the parameter estimates may be biased, resulting in too many significant results (Bollen, 1989). To account for this the Bollen-Stine bootstrap p was used. The Bollen-Stine p was not significant ( $p = .18$ ) indicating that the data fit the one factor model of Mindfulness well when adjustments were made for the non-normality of the data. The 13 item model was therefore retained as the final model of the MAAS. The bootstrap bias corrected confidence intervals are reported in Table 9.14.

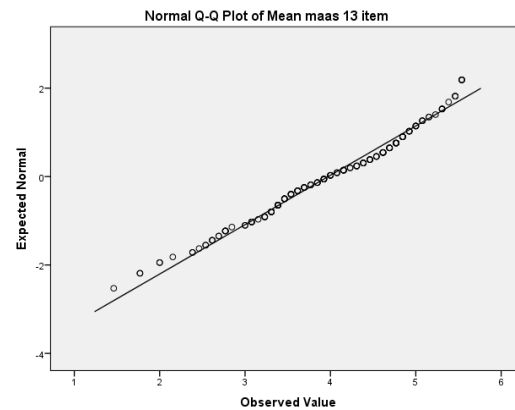
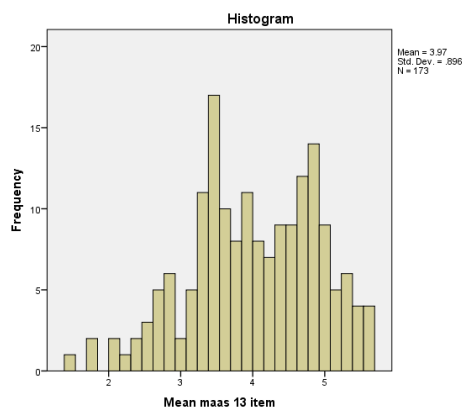




Table 9.14

*Assessment of normality for the MAAS*

Variable	min	max	skew	c.r.	kurtosis	c.r.
MAAS15	1.000	6.000	-.685	-3.676	-.497	-1.334
MAAS13	1.000	6.000	-.164	-.878	-.837	-2.247
MAAS12	1.000	6.000	-.397	-2.133	-.881	-2.365
MAAS11	1.000	6.000	.277	1.486	-.543	-1.459
MAAS10	1.000	6.000	-.108	-.580	-.765	-2.055
MAAS9	1.000	6.000	-.376	-2.018	-.538	-1.445
MAAS8	1.000	6.000	-.427	-2.292	-.312	-.839
MAAS7	1.000	6.000	-.166	-.893	-.607	-1.630
MAAS6	1.000	6.000	.118	.633	-.875	-2.349
MAAS5	1.000	6.000	-.190	-1.021	-.893	-2.398
MAAS3	1.000	6.000	-.847	-4.547	.239	.643
MAAS2	1.000	6.000	-.953	-5.115	.214	.574
MAAS1	1.000	6.000	-.469	-2.520	-.498	-1.337
Multivariate					48.498	16.150



Figures 9.13 and 9.14

*Histogram 13 Item MAAS Normal Q-Q Plot 13 Item MAAS*



#### 9.3.1.7. Internal Consistency

The refined MAAS consisted of 13 items and had a Cronbach's alpha of .90 and an average inter-item correlation of .42 (range .14 to .77), indicating good internal consistency. Corrected Item-Total Correlations were all in the positive direction and above .3.

#### 9.3.1.8. Summary

CFA of the 15 item MAAS with the current sample indicated that some re-specification was required due to negative correlations between items. Removal of two items (4 and 14) improved the model and resulted in a 13 item scale. The final measurement model of the MAAS is reported in Figure 9.15. In addition, the model demonstrated good internal consistency. This model will now be added to the model of parental psychological flexibility to determine whether the MAAS has discriminant validity from the subscales of the PPF, therefore measuring a different aspect of parental psychological flexibility.



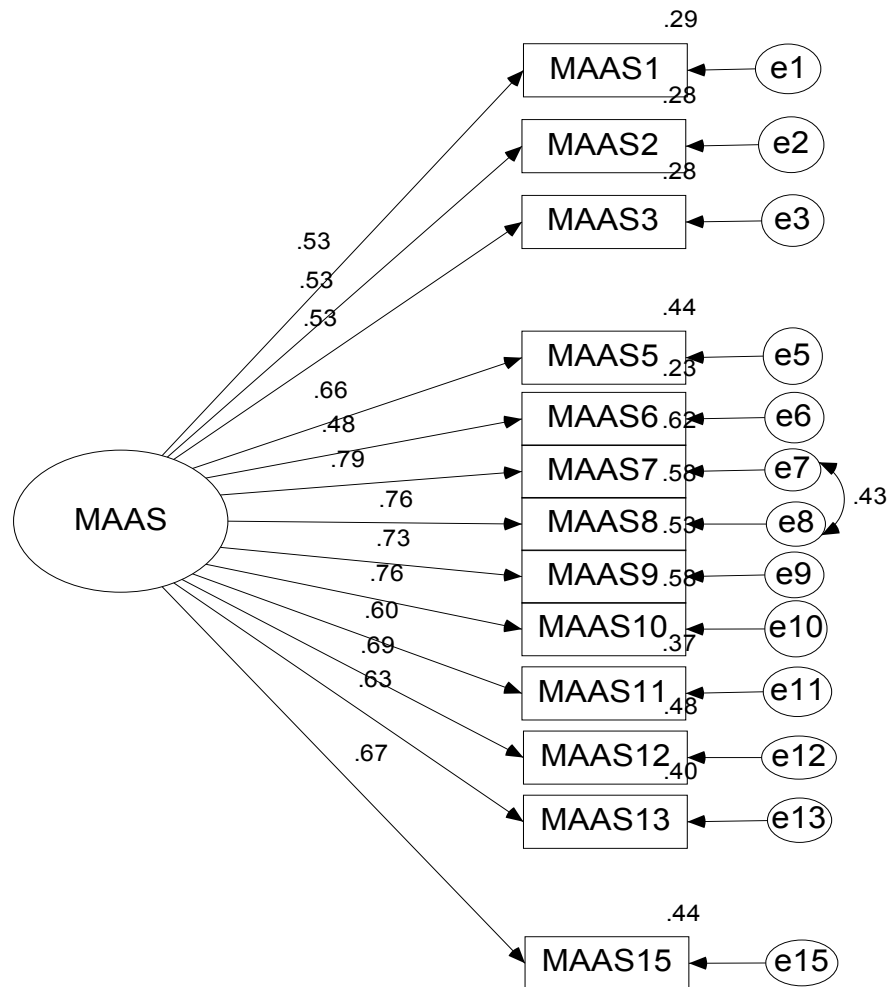


Figure 9.15

*Final 13 item MAAS*

### 9.3.2. Discriminant validity analysis: PPF subscales and the MAAS

The next step was to assess whether the three PPF factors described above had adequate discriminant validity with the MAAS, with each of the factors measuring a unique element of parental psychological flexibility. To investigate this, the CFA was rerun as a four factor model (see Figure 9.16). Results from this analysis help to provide confidence in the goodness of fit and standardised factor loadings obtained from each of the one factor models and will help to ensure that the full structural model analysis in Chapter 10 adequately covers the core processes of psychological flexibility defined in Chapter 3.

9.3.2.1. Inspection of the four factor model of psychological flexibility using ML estimation did not reveal a good fit for the hypothesised model,  $\chi^2 = 633.652$ ,  $df = 457$ ,  $p = .000$ . However, given the number of indicators and lack of normality this was to be expected. Comparative fit indices provided some support for the model (RMSEA = .05 [.04 - .06]  $p_{close} = .562$ ; TLI = .91; CFI = .92; SRMR = .06). The standardised factor loadings were all significant, ranging from .40 to .86. Correlations between the factors were small to moderate, ranging from .24 to .64.

Inspection of Modification Indices – Regression Weights, revealed problems with crossloading between item rPPF21 (which loads on Acceptance) and Item rPPF19 (Healthy Control) and MAAS Items 3 and 10 (Refer to Figures 9.10 and 9.15). In addition, PPF21 and rPPF19 recorded a high standardised residual covariance. Whilst crossloading was indicated for the items mentioned, no theoretical argument can be made for covarying or removing items rPPF19 and PPF21 or Items 3 and 10 of the MAAS. Additionally, as the purpose of this analysis was to establish discriminant validity for the MAAS in relation to the PPF it was not necessary to respecify the model in order to improve model fit.

Instead, to further check discriminant validity, a Chi-square test of independence was performed to check if the observed Chi-square would differ significantly if the correlation between the MAAS and PPF factors was forced to be 1. The Chi-square test was performed on the largest correlation between the three factors, Cognitive Defusion to MAAS ( $r = .63$ ). Results from the Chi-square test of independence increased the  $\chi^2$  by 272.66 points and 1 degree of freedom to  $\chi^2 = 906.31$ ,  $df = 458$ ,  $p = .000$ . These results demonstrate a significant deterioration in fit when we assume the correlation is 1 and therefore discriminant validity is confirmed, meaning that the MAAS contributes something unique to the measurement of parental psychological flexibility.

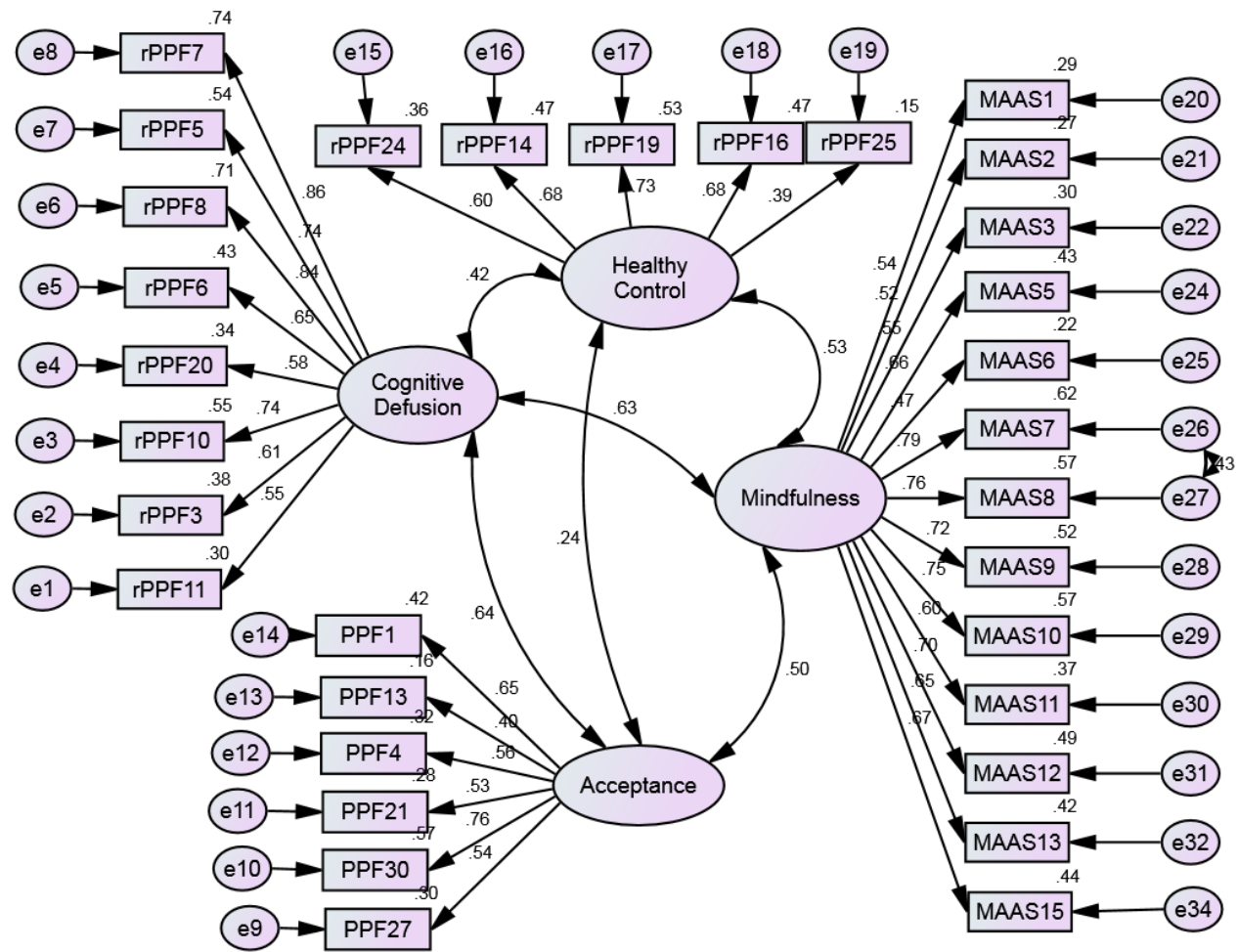


Figure 9.16

CFA Four Factor Model of Parental Psychological Flexibility





### **9.3.3. Inter-correlations**

The four factors were all positively correlated, with correlations ranging from small (Acceptance with Healthy Control = .24) to moderate (.50 for Acceptance with Mindfulness; .53 for Mindfulness with Healthy Control; .42 for Healthy Control with Cognitive Defusion; .63 for Cognitive Defusion with Mindfulness; and .64 for Cognitive Defusion with Acceptance) as displayed in the final four factor model (see Figure 9.16). Correlations on these scales were all significant and in the expected positive direction.

### **9.3.4. Higher-order model of parental psychological flexibility**

Given that each of the four factors, Cognitive Defusion, Acceptance, Healthy Control and Mindfulness were found to measure unique elements of the construct Parental Psychological Flexibility with no high correlations it was not appropriate to construct a higher-order model for “parental psychological flexibility”. This means that the four sub-scales for PPF will be considered separately in the final SEM model.

## **9.4. Chapter Summary**

Recapping, the primary construct under investigation in this study is parental psychological flexibility. Whilst attempts have been made to measure psychological flexibility in general terms and in a number of specific psychological conditions (e.g., depression, anxiety, substance disorder) and populations (chronic pain; children; youth) attention has only recently turned to parenting. As yet no well validated measures of psychological flexibility specifically for use in a general parenting context exist. Therefore it was important to develop a measure of the construct for this project. A measure, the Parental Psychological Flexibility Questionnaire (PPF), was developed in Study 1 (Chapters 6 and 7). Exploratory Factor Analysis revealed a three factor structure that appeared to measure key processes associated with psychological flexibility and that had good internal consistency, content, concurrent and construct (convergent and discriminant) validity.

This chapter constituted the second step in the development of the PPF. The structure of the PPF was further validated using Confirmatory Factor Analysis to verify the relationships between the items in the PPF and the factor that they

were specified to relate to. In addition, the relationship of the PPF with the MAAS was explored to determine whether adding mindfulness to the three aspects of psychological flexibility measured by the PPF would produce a valid higher-order model of the overall construct. This was considered an important step given the important role of mindfulness in psychological flexibility and that the PPF did not include a mindfulness subscale.

Confirmatory Factor Analysis (CFA) did indeed confirm the three factor structure of the PPF, with items loading on their pre-specified factor. However, as expected, CFA also resulted in a reduction in the number of items on each factor, resulting in a 19 item measure (Cognitive Defusion: 8 items; Acceptance: 6 items; Healthy Control: 5 items). In addition, good internal consistency was noted for each of the subscales and the overall PPF and there was adequate discriminant validity between subscales providing further support for the validity and reliability of the measure and indicating that each of the subscales is measuring a unique aspect of psychological flexibility.

Similarly, CFA showed that items needed to be removed from the MAAS Scale (Brown & Ryan, 2003). CFA of the MAAS with the three PPF subscales showed that the MAAS did assess a different aspect of psychological flexibility from the PPF. Whilst not a measure developed specifically for parents, the internal consistency of the scale was high in both Study 1 and in its refined version in Study 2, with a different sample of parents. It was therefore decided that including the MAAS along with the three subscales of the PPF (Cognitive Defusion, Acceptance and Healthy Control) would enhance the measurement of the construct, Parental Psychological Flexibility. These four-constructs will be used to investigate the relationship between parental psychological flexibility and parent and adolescent outcomes in the full structural model in the Chapter 10.

In Chapter 10 a test of the Full Structural Model is performed. This is done after testing for differences between normative and actual means – with the exception of the PPF and MAAS where such comparison is not possible – and provision of descriptive statistics and correlations for all the scales.

## CHAPTER 10

### Factorial Validation of Variables for Structural Model

#### 10.1. Chapter Introduction

This chapter describes testing of a full structural model (*SEM*) to explore the primary research questions of this thesis – do parents who report higher levels of psychological flexibility also report: higher levels of parenting competence (satisfaction and efficacy); fewer ineffective parenting practices; and fewer behavioural difficulties with their adolescent children? Formulation of the hypothesised model shown in Figure 10.1 was derived from the literature on parenting and adolescence, with specific reference to the aspects of parenting shown to influence adolescent behavioural difficulties, namely, parents' sense of self efficacy and satisfaction (competence) and the parenting practices they adopt. In addition, the growing body of literature on contextual behavioural psychology was used to inform the cognitive construct, psychological flexibility. The resulting model is comprised of several constructs representing: parental psychological flexibility, parents' sense of competence, parenting practices and adolescent behaviour.

In Study 2, parental psychological flexibility is represented by four distinct constructs: Cognitive Defusion, Healthy Control, Acceptance and Mindfulness. This part of the model is based on the work of Hayes, Wilson and Strosahl (1999) and conceptualises parental psychological flexibility as the ability of parents to take effective parenting actions even when negative internal experiences (e.g., feelings, thoughts, memories) are present. The paths leading from the four separate parental psychological flexibility constructs to parents' sense of competence and the constructs that comprise parenting practices reflect two of the primary hypotheses for the study: that parental psychological flexibility will demonstrate direct and positive paths to parents' sense of competence and positive parenting practices and a direct and negative path to ineffective parenting practices. It is also expected that relationships will be seen between the parental psychological flexibility constructs and adolescent behaviour via the relationships with the parenting factors. However, direct relationships from parental psychological flexibility to adolescent behaviour may also be observed.

Parents' sense of competence is operationalised as the total scale score from the Parents' Sense of Competence Scale (PSOC; Gilmore & Cuskelly, 2008; Johnston & Mash, 1989). The Total Scale of the PSOC measures satisfaction, self-efficacy and engagement in the parenting role. Parental self-efficacy and parenting satisfaction have both been shown in previous research to be related to use of effective parenting practices and to improved adolescent outcomes (Ardelt & Eccles, 2001; Jones & Prinz, 2005; Morawska & Sanders, 2007; Rogers & Matthews, 2004).

The parenting practices construct is represented by four distinct factors in the full structural model (Figure 10.1). The factors are drawn from two separate scales – the Parenting Scale (Reitman et al., 2001) and the Alabama Parenting Questionnaire (Elgar et al., 2007). The Alabama measures aspects of both effective (Positive Parenting) and ineffective (Poor Supervision, Inconsistent Discipline) parenting, whilst the Parenting Scale measures ineffective discipline approaches (Laxness and Over-Reactivity). As demonstrated in previous literature, it is hypothesised that the paths from parents' sense of competence to the constructs measuring ineffective aspects of parenting practices will be direct and negative, whilst the path from parents' sense of competence to effective parenting will be direct and positive.

Adolescent behaviour is represented by the Strengths and Difficulties Questionnaire (SDQ; Goodman & Scott, 1999; Mellor, 2005). Four of the five SDQ factors are combined in an established subscale "Total Difficulties" reflecting adolescent behavioural difficulties (Conduct, Peer Problems, Hyperactivity and Emotional Symptoms). The fifth factor reflects adolescent prosocial behaviour. It is hypothesised that there will be direct paths from both parents' sense of competence and the four parenting practices constructs to Total Difficulties and to Prosocial Behaviour. It is also hypothesised that parental psychological flexibility will be linked to adolescent behaviour either directly or via the parents' sense of competence and four parenting practices constructs.

The aims of this Chapter are therefore to:

- a. Establish the psychometric properties (means, standard deviations, normality, Cronbach's alpha, inter-correlations) of scales to be used in model testing;
- b. To test the conceptual model of parental psychological flexibility, parenting sense of competence, parenting practices and adolescent behaviour using SEM.



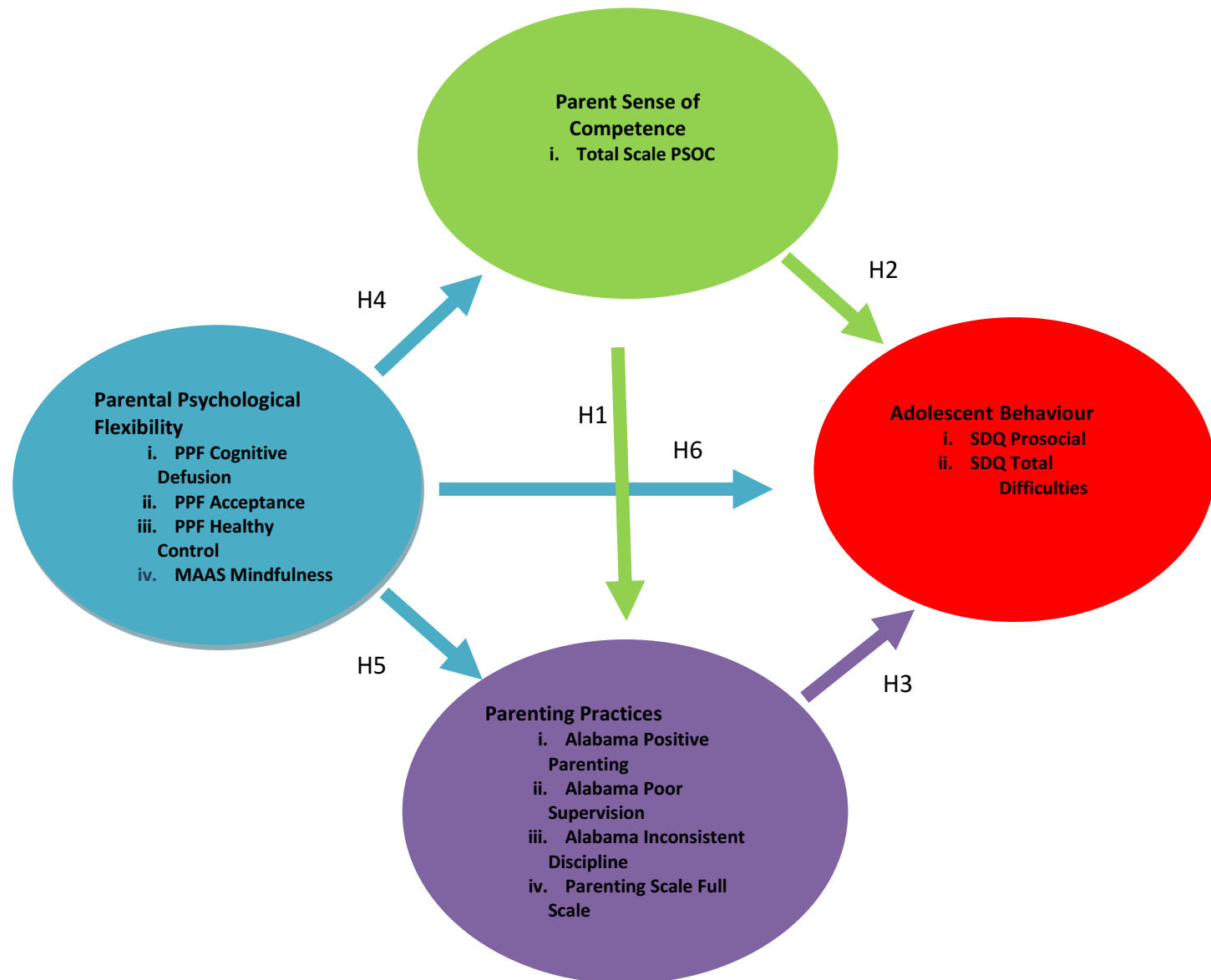


Figure 10.1

*Structural equation model included constructs*

NOTE: PPF = Parental Psychological Flexibility; MAAS = Mindfulness Attention Awareness Scale; Alabama = Alabama Parenting Questionnaire; SDQ = Strengths and Difficulties Questionnaire





## **10.2. Descriptive Statistics, Scale Normality and Normative Comparisons**

Table 10.1 provides details of the means, standard deviations, skewness and kurtosis and internal consistency for all 11 included variables. Internal consistency as demonstrated by Cronbach's alpha was adequate for all variables, ranging from  $\alpha = .71$  to  $.90$ .

### **10.2.1. Normality**

Examination of the normality of the sample distribution was undertaken for each of the 11 variables to be included in the full structural model. Results from normality testing for the three PPF variables and single MAAS scale were reported in Chapter 9. The results from normality testing and resulting adjustments to each of the remaining seven variables are presented in Appendix F according to their related construct: parents' sense of competence; parenting practices or adolescent behaviour. Where a variable violated assumptions of normality, they were checked for outliers which were then removed and normality reassessed.

The majority of the scales violated assumptions of normality; however, only two subscales had skewness or kurtosis values that were high enough (Kline, 2010) to consider transformation: Positive Parenting and Poor Supervision (both from the Alabama). Transformation resulted in improved skewness and kurtosis however the scales still deviated from normality. To maintain consistency across all measures the scales were however not transformed and all scales were retained in their original form. One outlier relating to the Parenting Scale was removed thereby reducing the overall sample size to  $N = 172$  and resulting in improved normality. However, given that Structural Equation Modelling assumes multivariate normality, a bootstrap analysis was needed in order to confirm any conclusions reached in the SEM analysis.



Table 10.1

*Descriptives (mean, standard deviation, range, skewness, kurtosis and alpha coefficients) for all included variables (N= 173)*

Scale	Mean	Standard Deviation	Range	Skewness	Kurtosis	Alpha
PPF						
Cognitive Defusion	5.6	.96	2 - 7	-.803	.429	.88
Acceptance	5.39	.83	2.67 - 7	-.699	.565	.74
Healthy Control	5.11	.98	1.6 – 6.8	-.756	.561	.75
MAAS (13 Item)						
Total MAAS	3.97	.90	1 – 6	-.320	-.429	.90
SDQ						
Prosocial	7.3	2.07	1 - 10	-.633	-.062	.74
Total Difficulties	10.38	6.30	0 – 30	.885	.516	.84
Alabama <sup>#</sup>						
Positive Parenting	12.87	1.79	5 – 15	-.762	1.461	.86
Inconsistent Discipline	7.13	2.16	3 – 14	.464	.366	.71
Poor Supervision	5.44	2.49	3 - 14	1.353	1.384	.81
Parenting Scale						
Full Scale	3.13	.94	1 -5	.353	-.578	.78
PSOC						
Total PSOC	4.28	.72	2.5 – 5.9	-.227	-.370	.86

# Note: After removal of extreme outlier Positive Parenting skewness= -.40 and kurtosis = .14; and Poor Supervision skewness =.943 and kurtosis =.271



### **10.2.2. Inter-correlations**

To make Structural Equation Modelling meaningful it is useful to explore the correlation between variables. Very high correlations suggest the variables may be measuring the same construct and could provide a rationale for removing one of these variables. The inter-correlations between all 11 variables included in the model are included in Table 10.2 and are discussed below.

#### ***10.2.2.1. Parent's sense of competence and parenting practices***

All correlations between the PSOC Total Scale with each of the four parenting practices scales were significant and in the expected direction. The strongest correlation was for PSOC with the Full Parenting Scale, with the weakest being with the Alabama Positive Parenting scale.

#### ***10.2.2.2. Parent's sense of competence and adolescent behaviour***

Both correlations between the PSOC and SDQ Prosocial and Total Difficulties subscales were significant and in the expected direction. The strongest correlation was for PSOC with the Total Difficulties scale, however both were moderate in size.

#### ***10.2.2.3. Parenting practices and adolescent behaviour***

Eight of the nine correlations between the four parenting practices scales with the two SDQ subscales were significant and in the expected direction. The strongest correlation was for the Full Parenting Scale with the SDQ Total Difficulties scale. However, there was no significant correlation between the Alabama Positive Parenting scale and the SDQ Total Difficulties scale.

#### ***10.2.2.4. Parental psychological flexibility and parents' sense of competence (PSOC)***

All correlations between the four parental psychological flexibility scales and the PSOC were significant and in the expected direction. The strongest correlation was with PPF Cognitive Defusion subscale and the weakest was with the PPF Healthy Control subscale.

#### ***10.2.2.5. Parental psychological flexibility and parenting practices***

Fourteen of the 16 correlations between the four parental psychological flexibility scales and the four parenting practices scales were significant and in

the expected direction. The strongest correlation was between the PPF Cognitive Defusion subscale and the Full Parenting Scale. However, there was no significant correlation between the PPF Healthy Control subscale and the Alabama Positive Parenting scale or between the MAAS with the Alabama Poor Supervision scale.

**10.2.2.6. Parental psychological flexibility and adolescent behaviour**

Seven of the eight correlations between the four parental psychological flexibility scales and the two SDQ scales were significant and in the expected direction. The strongest correlation was between the PPF Cognitive Defusion subscale and the SDQ Total Difficulties subscale. However, there was no significant correlation between the PPF Healthy Control subscale and the SDQ Prosocial Behaviour subscale.

Table 10.2

*Correlations between final 11 variables following measurement modelling*

	Cognitive Defusion	Acceptance	Healthy Control	MAAS	Total PSOC	Positive Parenting	Inconsistent Discipline	Poor Supervision	Full Parenting Scale	Prosocial	Total Difficulties
<b>Cognitive Defusion</b>	1	.530**	.338**	.576**	.653**	.215**	-.429**	-.350**	-.603**	.228**	-.460**
<b>Acceptance</b>		1	.146	.387**	.511**	.456**	-.208**	-.159*	-.458**	.290**	-.246**
<b>Healthy Control</b>			1	.421**	.260**	-.088	-.465**	-.179*	-.238**	.069	-.308**
<b>MAAS</b>				1	.440**	.184*	-.329**	-.144	-.487**	.257**	-.354**
Total PSOC					1	.203**	-.325**	-.410**	-.498**	.365**	-.421**
Positive Parenting						1	-.152*	-.118	-.415**	.247**	-.133
Inconsistent Discipline							1	.359**	.452**	-.174*	.424**
Poor Supervision								1	.265**	-.310**	.510**
Full Parenting Scale									1	-.306**	.418**
Prosocial										1	-.308**
Total Difficulties											1

\*\* Correlation is significant at the 0.01 level (2-tailed); \*. Correlation is significant at the 0.05 level (2-tailed).





### 10.2.3. Normative Comparisons

Comparison of variable mean scores of the Study 2 sample with normative or comparative data, using one sample t-tests, showed some sample deviations from the norms. Means and Standard Deviations for the 11 included subscales for the Study 2 sample and their respective normative values are provided in Table 10.3.

Comparative data for the PPF were obtained from the Study 1 sample (see Chapter 7) by recalculating the means for the subscales using the refined Study 2 measures (see Chapter 9). Mean scores were similar across the two samples, with both samples reporting high levels of psychological flexibility. However, it should be noted that the Study 2 sample reported statistically significantly lower levels of Healthy Control than the Study 1 sample.

Overall, the sample reported scores relatively similar to those reported in normative samples. However, they differed in a number of respects, with the current sample reporting their adolescent children as significantly lower on pro-social behaviour and higher on overall difficulties, albeit not clinically, than the norms for 910 Australian adolescents aged 7 to 17 years (Mellor, 2005). Parents in the current sample also self-reported significantly lower levels of positive parenting and higher levels of poor supervision on the Alabama, as well as higher scores on the Parenting Scale. The differences on the Alabama and Parenting Scale may be due to the broader age range included in the norming studies (Alabama: 5-18 years; Parenting Scale: 4-17 years) than is included in the current study. Finally, the current sample reported a sense of efficacy or overall competence as a parent significantly higher than parents in the norming sample. This discrepancy may be accounted for by the younger age of the norming sample (children up to 9 years old). Gilmore and Cuskelly in their sample with parents of children aged under 18 reported a higher mean ( $M = 4.35$ ) than the norming sample of (Johnston & Mash, 1989). Despite these statistically significant differences, scores on all variables were within one standard deviation of the norms suggesting that the current sample could still be characterised as a general population sample.



Table 10.3

*Comparison means to normative means*

	Sample Mean (SD)	Normative Mean (SD)	t-test
SDQ <sup>1</sup>			
Prosocial	7.30** (2.07)	8.3 (1.7)	t = -6.35; p < .001
Total Difficulties	10.38** (6.30)	8.2 (6.1)	t = 4.54; p < .001
Alabama <sup>2</sup>			
Positive Parenting	12.87** (1.79)	M 13.78 (1.50) F 13.14 (1.79)	t = -6.7; p < .001
Inconsistent Discipline	7.13 (2.16)	M 7.41 (2.30) F 7.15 (2.12)	t = -1.69; p = .09
Poor Supervision	5.44** (2.49)	M 3.93 (1.54) F 3.98 (1.52)	t = 7.96; p < .001
Parenting Scale <sup>3</sup>			
Full Scale	3.13** (.94)	2.81 (1.85)	t = 4.50; p < .001
PSOC <sup>4,5</sup>			
Total PSOC	4.28 (.72)	M 4.00 (.61)	t = 5.14; p < .001
MAAS <sup>6</sup>			
Total MAAS	3.96 (.88)	3.97 (.64)	t = -.17; p = .862
PPF			
Cognitive Defusion	5.60 (.96)	5.62 (.82)	t = .31; p = .76
Acceptance	5.39 (.83)	5.28 (.77)	t = 1.78; p = .08
Healthy Control	5.11* (.98)	5.34 (.76)	t = -3.11; p = .002

\*\*p < .001; \*p < .05;

NOTE: 1 = Mellor, D. (2005). Normative data for the strengths and difficulties questionnaire in Australia. *Australian Psychologist*, 40(3), 215-222.  
 2 = Elgar, F., Waschbusch, D., Dadds, M., & Sigvaldason, N. (2007). Development and Validation of a Short Form of the Alabama Parenting Questionnaire. *Journal of Child and Family Studies*, 16(2), 243-259.  
 3 = Reitman, D., Currier, R., Hupp, S., Rhode, P., Murphy, M., & O'Callaghan, P. (2001). Psychometric Characteristics of the Parenting Scale in a Head Start Population. *Journal of Clinical Child & Adolescent Psychology*, 30(4), 514-524.  
 4 = Johnston, C., & Mash, E. J. (1989). A measure of parenting satisfaction and efficacy. *Journal of Clinical Child Psychology*, 18(2), 167-175.  
 5 = Gilmore, L., & Cuskelly, M. (2008). Factor structure of the Parenting Sense of Competence scale using a normative sample. *Child: Care, Health and Development*, 35(1), 48-55.  
 6 = Brown, K., & Ryan, R. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822-848.



### 10.3. Allowance for Measurement Error in the SEM Model

Before testing the hypothesised model, the status of the factors that comprise the model is described below.

SEM modelling was conducted using Munck's method (Munck, 1979) to ensure that any difficulties with the fit of the structural model were likely to be the result of the hypothesised structural relationships between variables in the model rather than measurement error. Four latent factors were included to represent the Parental Psychological Flexibility construct (Cognitive Defusion, Acceptance, Healthy Control and Mindfulness). These four latent variables are exogenous (independent) factors in the model and it is hypothesised that they will exert influence (direct and/or indirect) on the seven other endogenous latent factors (Parents' Sense of Competence, Positive Parenting, Inconsistent Discipline, Poor Supervision, Parenting Scale, Adolescent Prosocial and Total Difficulties). Each of the seven endogenous latent factors has single-headed arrows pointing at it, indicating that they are dependent within this model.

Model fit was evaluated using the Chi-square statistic and comparative fit indices *CFI* and *TLI*, along with *SRMR* and the *RMSEA*. *TLI* values over .90 were used as indication of close fit; and *CFI* values between .90 and .95 used as indicative of marginal fit, with values over .95 representing good fit. For the *SRMR*, values below .08 are viewed as indicating marginal fit, with values below .05 represent good fit. For the *RMSEA*, values between 0 and .08 represent acceptable close (acceptable) fit with values between .08 and .1 representing marginal fit. Finally, the Bollen-Stine *p* was used to account for non-normality in the data (Bollen & Stine, 1992). A non-significant Bollen-Stine *p* indicates good fit for the model and confidence intervals are also reported. For a more detailed discussion of these fit indices, see Chapter 8, Section 8.5.

One advantage of applying structural equation modelling (*SEM*) rather than path analysis is that measurement error can be estimated and controlled. First, item parcelling (averaging the number of items for each factor), is used to create composite variables or scales. Once this is done it is possible to specify values for the latent variable loadings and the measurement error variances

associated with each composite variable. The formula provided by Munck (1979) can be used to specify the regression coefficient and measurement error variances for each scale. Munck's formula uses the standard deviation ( $SD$ ) and Cronbach's alpha ( $\alpha$ ) values for each scale. To specify the loading ( $\lambda$ ) the formula:  $\lambda = SD\sqrt{\alpha}$  is used and to specify the respective values of the measurement error variances the formula:  $SD^2(1 - \alpha)$  is used. These specific parameter values are then fixed for each of scales. Figure 10.2 shows the application of Munck's formula to the Cognitive Defusion factor. The full hypothesised structural model with Munck's values is provided in Appendix G.

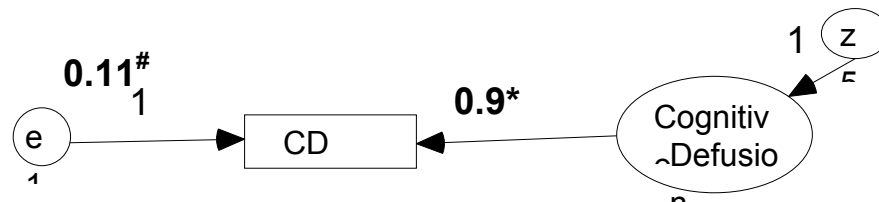


Figure 10.2

*Cognitive Defusion using Munck's formula to specify the regression coefficient and measurement error variance*

# = measurement error variance; \* = loading

#### 10.4. Hypothesis Testing Based on a Saturated Model

In this section each of the six hypotheses for Study 2 (see Chapter 8) will be tested separately. Commencing with the saturated model illustrated in Figure 10.3 the paths related to a hypothesis will be removed together and the Chi-square change statistic inspected. If the Chi-square change is significant the hypothesis will have support because there is an unacceptable deterioration in model fit when the hypothesised paths are removed. Table 10.4 provides the results from this hypothesis testing. This approach reduces the number of statistical tests required in order to test each of the hypotheses. The degree of support (full or partial) and the significance of each of the specific paths will then be explored as part of the process of developing an optimum model in Section 10.5.

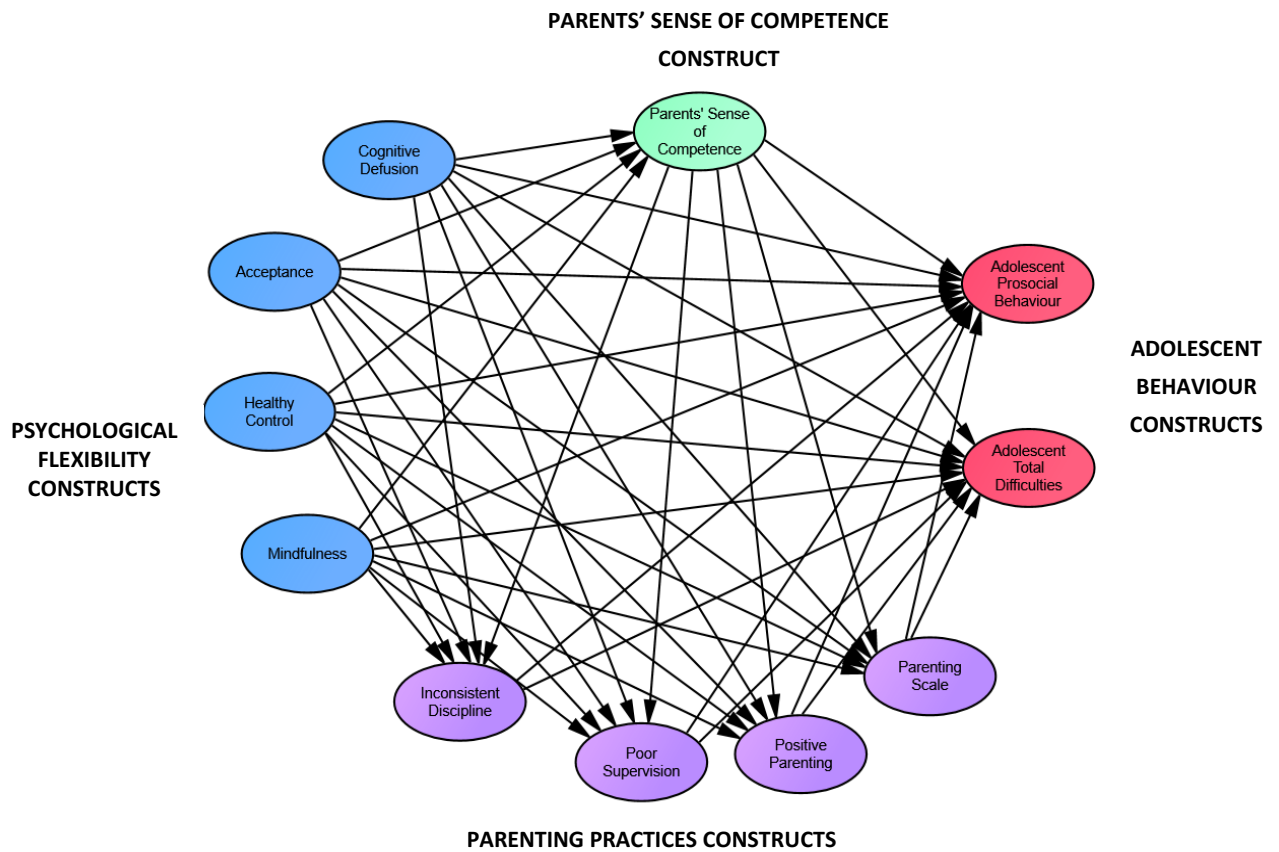


Figure 10.3

*Conceptual model of the relationships between parental psychological flexibility, parent and adolescent outcomes: The saturated model*





Table 10.4

*Hypothesis testing based on a saturated model*

Hypothesis	Chi-square change following removal of paths	Degrees of freedom	p-value	Support for hypothesis
1	16.350	4	.003	Strong Support
2	4.863	2	.088	Weak Support
3	40.044	8	.000	Strong Support
4	107.957	4	.000	Strong Support
5	103.046	16	.000	Strong Support
6	10.662	8	.222	No Support

**10.4.1. Hypothesis 1: Parents’ sense of competence (PSOC) is directly related to parenting practices**

Inspection of the Regression Weights of the Saturated Model (See Appendix H) revealed that 1 of the 4 paths from the PSOC to the Parenting Practices scales was significant, being the path from PSOC to Poor Supervision ( $p < .001$ ). Removal of the 4 paths resulted in a significant Chi-square change meaning that there was strong support for this hypothesis.

**10.4.2. Hypothesis 2: Parents’ Sense of Competence (PSOC) is Directly Related to Adolescent Behaviour**

Inspection of the Regression Weights of the Saturated Model (See Appendix H) revealed that 1 of the 2 paths from the PSOC to the adolescent behaviour scales was significant, being the path to prosocial behaviour ( $p < .05$ ). Removal of the 2 paths resulted in a non-significant Chi-square change. As the p-value associated with the Chi-square change was less than 10% but more than 5% it means that there was only weak support for the hypothesis. Given this, a closer look at the individual paths was taken to further explore the relationships between the PSOC and adolescent behaviour scales. First the path from the PSOC

to Total Difficulties was tested by removing only that path from the saturated model. This resulted in a significant path from PSOC to Prosocial ( $p < .05$ ) and a non-significant Chi-square change: ( $\chi^2 = .205$ ,  $df=1$ ,  $p > .65$ ) indicating that there was no support for a direct relationship from the PSOC to adolescent difficulties. Next, the path from PSOC to Prosocial was removed to test whether prosocial behaviour was directly related to adolescent behaviour. Results provided strong support for this path with the Chi-square change becoming significant when only the Prosocial path was removed ( $\chi^2 = 4.826$ ,  $df=1$ ,  $p < .03$ ) and thus indicating strong support for the hypothesis that parents' sense of competence was directly related to adolescent prosocial behaviour.

In summary, testing of the hypothesis that parents' sense of competence was directly related to adolescent behaviour was partially supported with strong support for a path from PSOC to Prosocial behaviour and no support for the path from PSOC to Total Difficulties.

#### **10.4.3. Hypothesis 3: Parenting practices are directly related to adolescent behaviour**

Inspection of the Regression Weights of the Saturated Model (See Appendix H) revealed that 2 of the 8 paths from the parenting practices to the adolescent behaviour scales were significant, being the paths from poor supervision to Prosocial behaviour ( $p = .01$ ) and Poor Supervision to Total Difficulties ( $p < .001$ ). Removal of the 8 paths resulted in a significant Chi-square change meaning that there was strong support for this hypothesis.

#### **10.4.4. Hypothesis 4: Parental Psychological Flexibility is Directly Related to Parents' Sense of Competence (PSOC)**

Inspection of the Regression Weights of the Saturated Model (See Appendix H) revealed that 2 of the 4 paths from the parental psychological flexibility scales to the PSOC were significant, being the paths: PSOC to Cognitive Defusion ( $p < .001$ ) and PSOC to Acceptance ( $p < .001$ ). Removal of all the 4 paths resulted in a significant Chi-square change meaning that there was strong support for this hypothesis.

#### **10.4.5. Hypothesis 5: Parental Psychological Flexibility is Directly Related to Parenting Practices**

Inspection of the Regression Weights of the Saturated Model (See Appendix H) revealed that 7 of the 16 paths from the four parental psychological flexibility scales to the four parenting practices scales were significant or nearing significance, being the paths: Cognitive Defusion to the Parenting Scale ( $p < .001$ ) and to Inconsistent Discipline ( $p < .01$ ); Acceptance to Positive Parenting ( $p < .001$ ) and the Parenting Scale ( $p = .08$ ); Healthy Control to the Inconsistent Discipline ( $p < .001$ ) and Positive Parenting ( $p < .001$ ) scales; and the MAAS to the Parenting Scale ( $p < .05$ ). Removal of all the 16 paths resulted in a significant Chi-square change, meaning that there was strong support for this hypothesis.

#### **10.4.6. Hypothesis 6: Parental Psychological Flexibility is Directly Related to Adolescent Behaviour**

Removal of all of the 8 paths resulted in a non-significant Chi-square change suggesting that there was no support for the hypothesis of a direct relationship from parental psychological flexibility to adolescent behaviour. However, inspection of the Regression Weights of the Saturated Model (See Appendix H) revealed that 1 of the 8 paths from the four parental psychological flexibility scales to the two adolescent behaviour scales, the path from Cognitive Defusion to the Prosocial scale, was just significant, ( $p < .05$ ) suggesting that parental psychological flexibility may play a direct role in adolescent behaviour, albeit small.

#### **10.4.7. Summary of Hypothesis Testing Based on the Saturated Model**

In summary, testing revealed support for five of the six hypotheses for Study 2. In particular, the results were consistent with previous literature that links parenting practices with parents' sense of competence and adolescent behaviour and the literature linking parents' sense of competence to adolescent behaviour, albeit this hypothesis received only weak support. The primary relationships being tested in this thesis revolved around the relationships between parental psychological flexibility and parent, parenting and adolescent constructs. Two of the three hypotheses for direct relationships with parental

psychological flexibility were supported with direct links found to parents' sense of competence and parenting practices. However, the hypothesis that there would be a direct link to adolescent behaviour from parental psychological flexibility was not supported. The specific paths between the 11 scales were explored next, in Section 10.5 as part of the process of developing an optimum model.

### **10.5. Testing the Hypothesised Model**

As described in section 10.4, initial testing of the hypotheses based on the saturated model revealed support for 5 of the 6 Study 2 hypotheses. The next step was to explore the paths between the 11 scales in more detail in order to develop an optimum model that best describes the relationships between the constructs in the conceptual model for the current sample. This process involved comparing various mediation models. First a full mediation model in which the effects of parental psychological flexibility on adolescent prosocial and total difficult behaviours are mediated by parents' sense of competence and/or parenting practices was fitted. Then two alternative models that allow direct effects from parental psychological flexibility to the adolescent constructs will be estimated. The first of these alternative models will estimate a model allowing direct effects to adolescent Prosocial behaviour from Cognitive Defusion, Acceptance, Healthy Control and Mindfulness and the second alternative model will allow direct effects to adolescent Total Difficulties. The alternative mediating models and the full mediation model will then be compared using the Chi-square difference test.

#### **10.5.1. A Full Mediation Model**

The full mediation model demonstrated good fit for the data,  $\chi^2 = 10.662$ ,  $df=8$ ,  $p = .222$  and comparative fit indices: TLI = .971; CFI = .996; SRMR = .02; RMSEA = .04 (.00:.11)  $pclose = .495$ . However, inspection of the covariances revealed a number of non-significant values. These covariances were removed one at a time until all covariances were significant at least at the  $p < .01$  level. A total of 5 covariances were removed with the resulting model providing a good

fit for the data, with  $\chi^2 = 21.536$ ,  $df=13$ ,  $p = .06$  and comparative fit indices also indicating good fit (see Table 10.6).

Inspection of the unstandardized regression weights revealed a number of non-significant weights. Therefore, post hoc modifications were made to further refine the model. As described in Chapter 8: Section 8.5.1.5, this involved adding or removing paths until a plausible model with reasonable values for the fit statistics were obtained. The full mediation hypothesis was tested by removing non-significant paths related to each of the Study 2 hypotheses. This means that the relationships between the constructs that have been established by previous literature were considered first, that is Hypotheses 1 to 3: the relationships from parents' sense of competence to parenting practices (Bogenschneider, Small, & Tsay, 1997; Shumow & Lomax, 2002); parents' sense of competence to adolescent behaviour (Bogenschneider et al., 1997) ; and parenting practices to adolescent behaviour (Bogenschneider et al., 1997; Day, Factor, & Szkiba-Day, 1994; Shumow & Lomax, 2002). Then the relationships of the novel construct of parental psychological flexibility to parents' sense of competence and parenting practices (Hypotheses 4 and 5) were explored in order to investigate the primary research question for this thesis: "Do parents with high levels of parental psychological flexibility also report: higher levels of parenting competence; greater positive parenting practices and fewer ineffective parenting practices?" Hypothesis 6, that parental psychological flexibility will be related to lower levels of difficult adolescent behaviours; and higher levels of pro-social adolescent behaviour was further explored in Section 10.5.2 as part of the test for mediation. The re-specification outcomes for the Full Mediation model are described in Sections 10.5.1.1 – 10.5.1.5.

***10.5.1.1. Hypothesis 1: Parents' sense of competence (PSOC) is directly related to parenting practices.***

As described in Section 10.4, Hypothesis 1 was found to have strong support. The next step is to inspect each of the hypothesised paths relating to this hypothesis in more detail. It was expected that the PSOC would be directly and positively related to positive parenting and directly and negatively related to

the constructs measuring ineffective parenting (inconsistent discipline, poor supervision and the full scale of the parenting scale – over-reactivity and laxness).

Inspection of the unstandardized regression weights revealed partial support for the hypotheses with only 1 of the 4 paths significant. A direct relationship between parents' sense of competence (PSOC) and poor supervision was supported, however all other relationships were not significant. Non-significant paths were removed one at a time based on the available evidence for a relationship with parent competence described in previous literature. The path to Inconsistent Discipline was removed first based on findings in previous literature that this relationship may be mediated rather than direct (Day et al., 1994) and because this scale had the highest non-significant p-value. Next the path from Positive Parenting was removed. This construct has been defined inconsistently with mixed findings reported for this construct (Elder, Eccles, Ardel, & Lord, 1995; Hill & Bush, 2001). The path to the Parenting Scale was removed last. This scale has been the most commonly evaluated path, albeit with children under twelve years of age. Both of the constructs measured by the scale (over-reactivity and laxness) have been correlated with parental competence (Gross, Conrad, Fogg, & Wothke, 1994; Rogers & Matthews, 2004) however, these results have also been variable with Sanders and Woolley (2005) finding that parent self efficacy did not predict parenting practices as measured by the Parenting Scale. As previous literature for the three scales has been primarily correlational and has pointed to both direct and indirect relationships, all three of the non-significant paths were removed and the model fit statistics were inspected after each post hoc modification. The order of removal and final model p-values are reported in Table 10.5. The fit statistics following removal of the 3 paths revealed that the model remained a good fit for the data ( $\chi^2 = 24.381$ ,  $df = 16$ ,  $p = .08$ ). Comparative fit indices also indicated good model fit (see Table 10.6).

**10.5.1.2. Hypothesis 2: Parents' sense of competence is directly related to adolescent behaviour**

Next the hypotheses relating to parents' sense of competence and adolescent behaviour were explored. It was expected that parents' sense of competence would be directly and positively related to adolescent prosocial behaviour and directly and negatively related to the adolescent total difficulties (encompassing conduct, hyperactivity, emotional symptoms and peer problems).

Inspection of the unstandardized regression weights revealed partial support for the hypotheses with 1 of 2 paths significant. A direct relationship between parents' sense of competence and adolescent prosocial behaviour was supported, however no support was found for a direct relationship between parents' sense of competence and adolescent behaviour difficulties. Previous research has indicated both direct and indirect (via parenting practices) relationships between parents' sense of competence and adolescent behaviour (Ardelt & Eccles, 2001). The non-significant path was removed and the model fit statistics were then inspected. The final model p-values are reported in Table 10.4. The fit statistics following removal of the path to Total Difficulties revealed that the model remained a good fit for the data ( $\chi^2 = 25.766$ ,  $df = 17$ ,  $p = .08$ ). Comparative fit indices also indicated good model fit (see Table 10.6).

**10.5.1.3. Hypothesis 3: Parenting practices are directly related to adolescent behaviour**

The hypotheses relating to parenting practices and adolescent behaviour were investigated next. It was expected that parenting practices would be directly and positively related to adolescent prosocial behaviour and directly and negatively related to adolescent total difficulties (encompassing conduct, hyperactivity, emotional symptoms and peer problems).

Initial inspection of the unstandardized regression weights revealed support for three of the paths: Poor Supervision to Prosocial, Poor Supervision to Total Difficulties and the Parenting Scale to Total Difficulties. Non-significant paths were removed one at a time based on their p-value and on the theory relating to role of parenting practices on adolescent behaviour. In total three

paths were removed. First, the path from the Parenting Scale to Prosocial behaviour was removed as there is limited literature regarding the effect of parental over-reactivity and laxness on adolescent social skills. Removal of this path resulted in the path from Positive Parenting to Prosocial becoming significant. Second, the path from Inconsistent Discipline to Prosocial was removed as whilst the literature is clear that inconsistent discipline is linked to engagement with problem peers the direct effect on an adolescent's social skills from inconsistent discipline is less studied. Finally, the path from Positive Parenting to adolescent Total Difficulties was removed. The correlation between these scales was non-significant (see section 10.2.2.) and the literature has most clearly demonstrated that inconsistent discipline and monitoring are more predictive than positive parenting of child outcomes (Dishion & McMahon, 1998; Véronneau & Dishion, 2010). One of the paths remained non-significant, however, it was decided that no theoretical reason could be provided for removing this path (Total Difficulties to Inconsistent Discipline) given that this construct has consistently been described in the literature as a key protective factor for adolescent anti-social and problem behaviour (Dishion, Patterson, Stoolmiller, & Skinner, 1991; Smart et al., 2005). It was therefore decided to leave five of the paths in the model and to inspect the model fit statistics. The fit statistics following removal of the three paths revealed that the model remained a good fit for the data ( $\chi^2 = 28.727$ ,  $df = 20$ ,  $p = .09$ ). Comparative fit indices also indicated good model fit (see Table 10.6).

**10.5.1.4. Hypothesis 4: Parental psychological flexibility is directly related to parents' sense of competence (PSOC)**

Hypothesis 4, that the constructs representing parental psychological flexibility (cognitive defusion, acceptance, healthy control and mindfulness) would be directly related to parents' sense of competence (PSOC) was strongly supported in the previous section. Further consideration of specific relationships between the constructs indicated partial support for the hypothesis, with two of the four paths significant. Specifically the results show a direct path from Cognitive Defusion to PSOC and also from Acceptance to PSOC. However, the



path from Healthy Control to PSOC and the path from MAAS to PSOC were not significant and therefore the hypotheses relating to these constructs were not supported. Each of the non-significant paths was then removed one at a time to assess the fit of the modified model. Removal of both these paths resulted in a model with good fit for the data ( $\chi^2 = 30.369$ ,  $df = 22$ ,  $p = .110$ ). Comparative fit indices also indicated good model fit (see Table 10.6).

**10.5.1.5. Hypothesis 5: Parental psychological flexibility is directly related to parenting practices**

The next step was to explore the hypotheses relating to parental psychological flexibility and parenting practices. It was expected that parental psychological flexibility would be directly and positively related to positive parenting and directly and negatively related to the constructs measuring ineffective parenting (inconsistent discipline, poor supervision and the full scale of the parenting scale – over-reactivity and laxness).

Inspection of the unstandardized regression weights revealed partial support for the hypotheses with 7 of the 16 paths significant (see Table 10.3). Direct links were therefore supported for Cognitive Defusion to the Parenting Scale and Inconsistent Discipline; Acceptance to Positive Parenting and the Parenting Scale; Healthy Control with Inconsistent Discipline and Positive Parenting; and from the MAAS to the Parenting Scale. However, one of these paths was in the wrong direction, with the Healthy Control to Positive Parenting negative rather than the expected positive.

As this is a new area of research, there is no previous literature to guide which aspects of psychological flexibility will directly affect parenting practices, therefore, non-significant paths were removed one at a time based on the highest p-value following each modification. A total of nine paths were removed with the model fit statistics inspected after each post hoc modification. The fit statistics following removal of all 9 paths revealed that the model remained a good fit for the data ( $\chi^2 = 38.319$ ,  $df = 31$ ,  $p = .171$ ). Comparative fit indices also indicated good model fit (see Table 10.6). Final Standardised Beta and p-values for the Full Mediation Model are provided in Table 10.5. Figure 10.4 shows



the final Full Mediation Model with retained paths. For ease of presentation only the latent variables are presented.

Table 10.5

*Full mediation model significant and non-significant paths, post hoc modifications and final p - and beta Values*

Related Hypothesis	Modification	Path	Initial p-value	Final p-values	Final Full-Mediation Model Beta
<b>1</b>		<b>Poor Supervision&lt;---PSOC</b>	<b>***</b>	<b>***</b>	<b>-.44</b>
1	1	Parenting Scale<---PSOC	.16	-	
1	2	Positive Parenting<---PSOC	.78	-	
1	3	Inconsistent Discipline<---PSOC	.49	-	
<b>2</b>		<b>Prosocial&lt;---PSOC</b>	<b>.04</b>	<b>.02</b>	<b>.27</b>
2	4	Total Difficulties<---PSOC	.33	-	
<b>3</b>		<b>Prosocial&lt;---Positive Parenting</b>	<b>.10</b>	<b>.02</b>	<b>.17</b>
<b>3</b>		<b>Prosocial&lt;---Poor Supervision</b>	<b>.03</b>	<b>.03</b>	<b>-.18</b>
3		Total Difficulties<---Inconsistent Discipline	.10	.07	.18
<b>3</b>		<b>Total Difficulties&lt;---Poor Supervision</b>	<b>***</b>	<b>***</b>	<b>.51</b>
<b>3</b>		<b>Total Difficulties&lt;---Parenting Scale</b>	<b>.01</b>	<b>***</b>	<b>.39</b>
3		Total Difficulties<---Positive Parenting	.21	-	-
3	5	Prosocial<---Inconsistent Discipline	.61	-	
3	6	Prosocial<---Parenting Scale	.46	-	
<b>4</b>		<b>PSOC&lt;---Cognitive Defusion</b>	<b>***</b>	<b>***</b>	<b>.57</b>
<b>4</b>		<b>PSOC&lt;---Acceptance</b>	<b>***</b>	<b>***</b>	<b>.24</b>
4	7	PSOC<---Healthy Control	.58	-	
4	8	PSOC<---MAAS	.40	-	
<b>5</b>		<b>Parenting Scale&lt;---Cognitive Defusion</b>	<b>.00</b>	<b>***</b>	<b>-.46</b>
<b>5</b>		<b>Parenting Scale&lt;---MAAS</b>	<b>.02</b>	<b>.01</b>	<b>-.22</b>
<b>5</b>		<b>Inconsistent Discipline&lt;---Cognitive Defusion</b>	<b>.01</b>	<b>***</b>	<b>-.31</b>
<b>5</b>		<b>Inconsistent Discipline&lt;---Healthy Control</b>	<b>***</b>	<b>***</b>	<b>-.36</b>
<b>5</b>		<b>Parenting Scale&lt;---Acceptance</b>	<b>.08</b>	<b>.01</b>	<b>-.19</b>
<b>5</b>		<b>Positive Parenting&lt;---Acceptance</b>	<b>***</b>	<b>***</b>	<b>.48</b>
<b>5</b>		<b>Positive Parenting&lt;---Healthy Control</b>	<b>.01</b>	<b>.01</b>	<b>-.16</b>
5	9	Inconsistent Discipline<---MAAS	.95	-	
5	10	Parenting Scale<---Healthy Control	.83	-	
5	11	Inconsistent Discipline<---Acceptance	.72	-	
5	12	Positive Parenting<---Cognitive Defusion	.91	-	
5	13	Poor Supervision<---MAAS	.10	-	
5	14	Poor Supervision<---Healthy Control	.26	-	
5	15	Poor Supervision<---Cognitive Defusion	.12	-	
5	16	Positive Parenting<---MAAS	.25	-	
5	17	Poor Supervision<---Acceptance	.16	-	

\*\*\*p < .001;

Note: Significant paths are bolded and the order paths were removed is indicated in the second column;



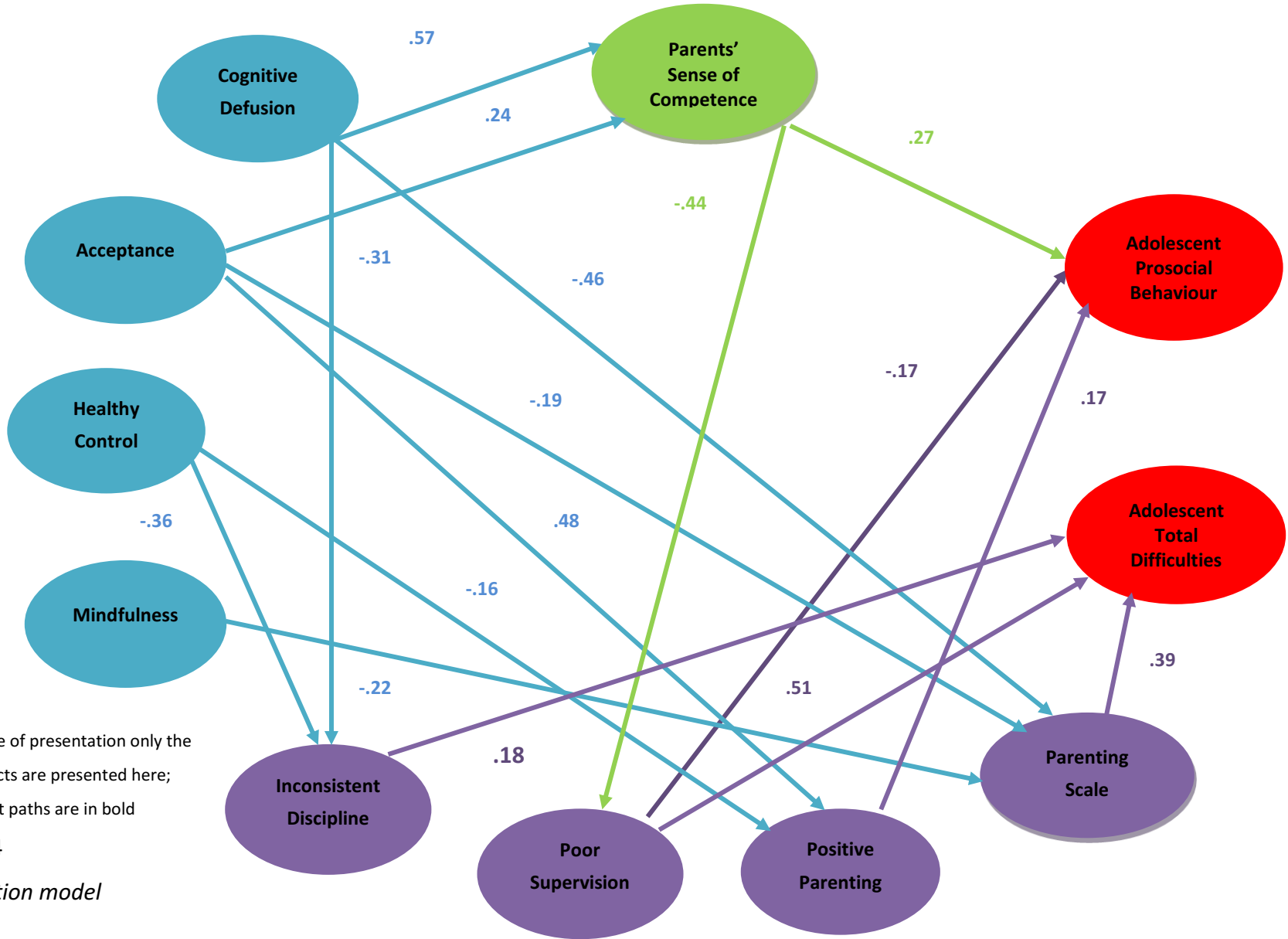
Table 10.6

*Chi-Square, degrees of freedom, probability and model fit indices for full structural model hypotheses following re-specifications*

	Model Specification						
	Initial Model	Remove Non-Significant Covariances	Hypothesis 1 PSOC and Parenting Practices	Hypothesis 2 PSOC and Adolescent Behaviour	Hypothesis 3 Parenting Practices and Adolescent Behaviour	Hypothesis 4 Parental Psychological Flexibility and PSOC	Hypothesis 5 Parental Psychological Flexibility and Parenting Practices
Hypothesis support			Partial	Partial	Partial	Partial	Partial
Chi-square	10.662	21.536	24.381	25.766	28.727	30.369	38.319
Degrees of freedom	8	13	16	17	20	22	31
Probability	.222	.06	.08	.08	.09	.110	.171
TLI	.971	.943	.955	.956	.962	.967	.980
CFI	.996	.987	.987	.986	.986	.987	.989
RMSEA	.04 (.00: .11)	.06(.00: .11)	.06(.00: .10)	.06(.00: .10)	.05(.00: .09)	.05(.00: .09)	.04 (.00: .07)
	pclose = .495	pclose =.300	pclose = .381	pclose = .387	pclose = .454	pclose =.510	pclose = .692
SRMR	.02	.06	.06	.05	.05	.05	.06

TLI Tucker Lewis Index; CFI Comparative Fit Index; RMSEA Root Mean Square Error of Approximation; SRMR Standardised Root Mean Square Residual





NOTE: For ease of presentation only the latent constructs are presented here;  
Non-significant paths are in bold

Figure 10.4

*Full mediation model*





### **10.5.2. Hypothesis 6: Test of Mediation**

Next, two mediation tests were conducted to explore direct relationships between the four constructs representing parental psychological flexibility and the two adolescent constructs. Results are presented in Table 10.6.

#### ***10.5.2.1. Direct relationships between parental psychological flexibility and adolescent prosocial behaviour.***

The mediation test involved adding four paths from the parental psychological flexibility constructs to the prosocial construct and rerunning the model. The model resulted in a slightly improved model fit (see Table 10.7). A Chi-square difference test was run to assess whether the full or partial mediation model was supported. Results from the Chi-square test of full mediation where the difference in the  $\chi^2$  was 7.01 points and 4 degrees of freedom, was not significant at  $p < .05$  level indicating that the Partial Mediation model does not represent a significant improvement over the Full Mediation Model. However, there were significant direct links in the case of Cognitive Defusion to Prosocial and Mindfulness to Prosocial, indicating partial mediation for these variables.

#### ***10.5.2.2. Direct relationships between parental psychological flexibility and adolescent total difficulties.***

The second mediation test involved adding four paths from the parental psychological flexibility constructs to the Total Difficulties construct. The model resulted in a slightly improved model fit (see Table 10.7). The Chi-square independent test was run to assess whether the full or partial mediation model was supported. Results from the Chi-square test of full mediation, where the difference in the Chi-square was 5.95 points and 4 degrees of freedom, was not significant at  $p < .05$  level, thus meaning that the Partial Mediation Model does not represent a significant improvement over the Full Mediation Model.

Table 10.7

*Test of mediation: Chi-Square, degrees of freedom, probability and model fit indices*

	Full Mediation Model	Prosocial Model Direct Links Added	Total Difficulties Model Direct Links Added
Chi-square	38.319	31.379	32.371
Degrees of freedom	31	27	27
Probability	.171	.256	.219
TLI	.980	.986	.983
CFI	.989	.993	.992
RMSEA	.04 (.00: .07)	.03 (.00: .07)	.03 (.00: .07)
	pclose = .692	pclose = .751	pclose = .715
SRMR	.06	.06	.06
Chi-square Independence Test		Chi-diff = 7.01, df = 4, p = .13	Chi-diff = 5.95, df = 4, p = .20

TLI Tucker Lewis Index; CFI Comparative Fit Index; RMSEA Root Mean Square Error of Approximation; SRMR Standardised Root Mean Square Residual; Chi-diff = the difference between the full mediation model Chi-square and the partial mediation model Chi-square

### 10.5.3. The Final Model

The final model is therefore a Partial Mediation Model (see Figure 10.4) with Chi-square fit statistic:  $\chi^2 = 32.784$ ,  $df = 29$ ,  $p = .287$ , and comparative fit indices: (TLI = .989; CFI = .994; RMSEA .03 [.00: .07] pclose = .791; SRMR = .06). Standardised Regression Weights for each path between the exogenous (independent) and endogenous (dependent) variables in the final model are

presented in Table 10.8. The final model, including regression co-efficients and error measurement variances is provided in Appendix H.

As stated previously, the data violated the assumption of multivariate normality and so it is likely that the Chi-square test statistic of the overall fit of the model may not be an accurate assessment of fit and that the tests of the parameter estimates may be biased, resulting in too many significant results (Bollen, 1989). To account for this a post-hoc adjustment using the Bollen-Stine bootstrap p was completed. This test is a bootstrapped modification to the model Chi-square that adjusts for the problems with normality (Bollen & Stine, 1992; Tabachnick & Fidell, 2007). The Bollen-Stine p was not significant ( $p = .88$ ) and the bootstrapped bias corrected confidence intervals for the Standardised Factor Loadings, reported in Table 10.8, all show significance, with the exception of Inconsistent Discipline to Total Difficulties ( $p = .07$ ) which was approaching significance, indicating that the data fit the partial model well when allowance is made for the non-normality of the data.

All hypotheses have partial support as illustrated in Figure 10.5. The standardised direct, indirect and total effects for the final model are provided in Table 10.10. Table 10.9 provides the squared multiple correlation coefficients ( $R^2$ ) for the endogenous constructs in the final mixed model. These results show that:

- Parental psychological flexibility significantly predicted parents' sense of competence with 53% of the variance able to be explained as a linear function of its direct relationships to the Cognitive Defusion and Acceptance scales, with Cognitive Defusion (total effects = .58) the strongest contributor.
- Parental psychological flexibility also significantly predicted parenting practices, with:
  - 54% of the variance explained as a linear function of the direct relationships between the Parenting Scale with the Mindfulness, Acceptance and Cognitive Defusion scales, again

- with Cognitive Defusion (total effects =  $-.46$ ) making the strongest contribution;
  - 19% of the variance explained as a linear function of the indirect relationships of poor supervision with Acceptance and Cognitive Defusion, with Cognitive Defusion the strongest predictor (total effects =  $-.25$ );
  - 26% of the variance explained as a linear function of the direct relationships between Positive Parenting and the Healthy Control and Acceptance scales, with Acceptance the strongest predictor (total effects =  $.48$ ); and
  - 29% of the variance explained as a linear function of the direct relationships between Inconsistent Discipline and the Healthy Control and Cognitive Defusion scales, with Healthy Control the strongest contributor (total effects =  $-.36$ ).
- Parental psychological flexibility significantly predicted adolescent behaviour with:
  - 23% of the variance in adolescent Prosocial Behaviour was accounted for by the indirect relationships between the Healthy Control, Acceptance and Cognitive Defusion scales, with Acceptance the strongest predictor (total effects =  $.19$ ); and
  - 66% of the variance was explained as a linear function of the direct relationships between adolescent Total Difficulties and all four of the parental psychological flexibility scales (cognitive defusion, acceptance, healthy control and mindfulness), with the relationship with Cognitive Defusion the strongest predictor (total effects =  $-.37$ ).

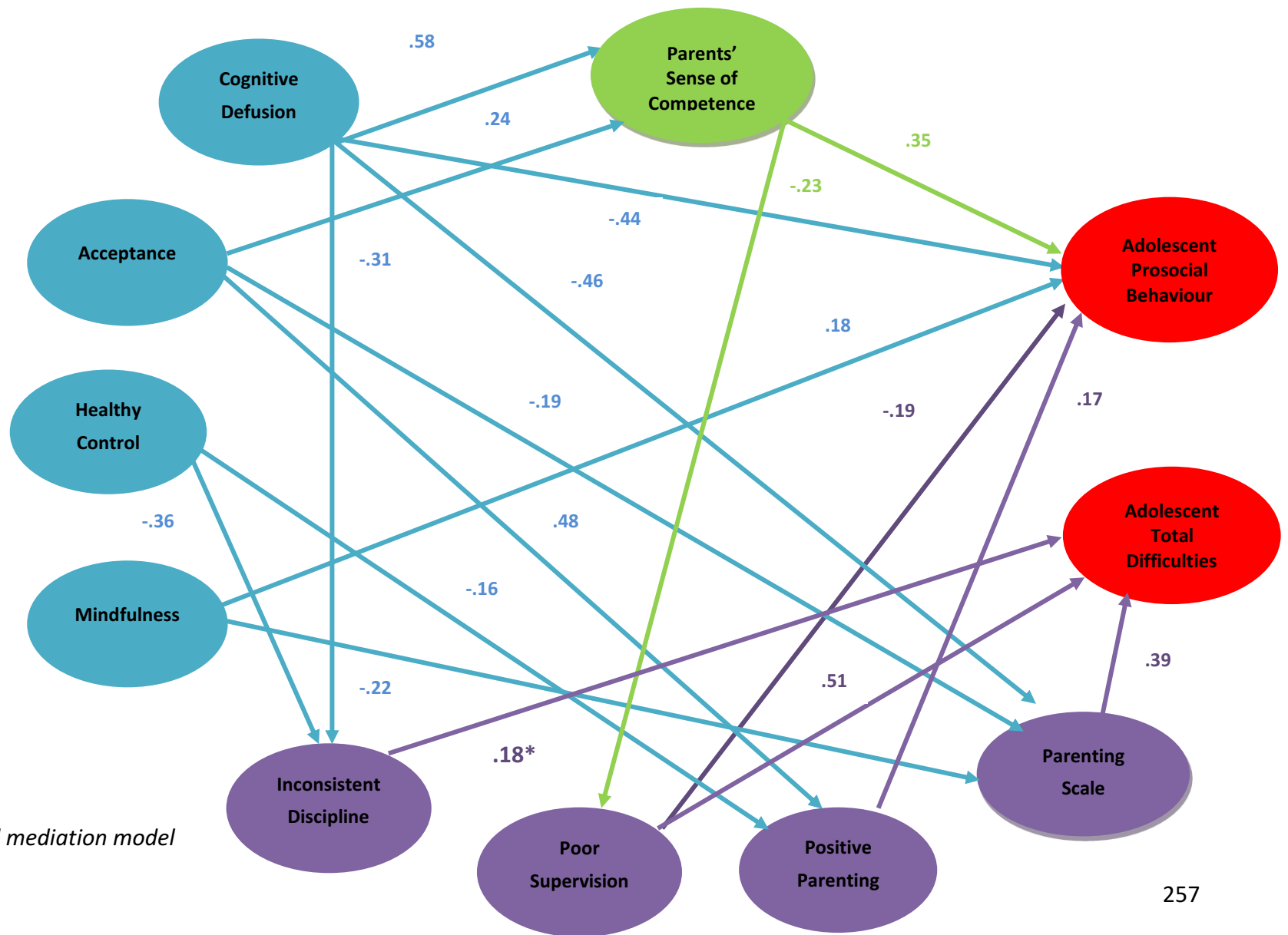


Figure 10.5  
Final partial mediation model



Table 10.8

*Standardised regression weights and p-value for final partial mediation model*

Related Hypothesis	Path	Final Partial-Mediation Model Beta	Final p-values	Bootstrap Confidence Intervals (95%)*
1	Poor Supervision<---PSOC	-.44	***	.01 <--- .06
2	Prosocial<---PSOC	.35	.01	.74 <--- 3.6
3	Prosocial<---Positive Parenting	.17	.02	-.05 <--- .58
3	Prosocial<---Poor Supervision	-.19	.02	-.62 <--- -.05
3	Total Difficulties<---Inconsistent Discipline	.18	.07	-.00 <--- .05
3	Total Difficulties<---Poor Supervision	.51	***	.04 <--- .10
3	Total Difficulties<---Parenting Scale	.39	***	.09 <--- .30
4	PSOC<---Cognitive Defusion	.58	***	.05 - .08
4	PSOC<---Acceptance	.24	***	.01 - .06
5	Parenting Scale<---Cognitive Defusion	-.46	***	-.08 <--- -.03
5	Parenting Scale<---MAAS	-.22	.01	-.41 <---.00
5	Inconsistent Discipline<---Cognitive Defusion	-.31	***	-.18 <--- -.08
5	Inconsistent Discipline<---Healthy Control	-.36	***	-.30 <--- - .11
5	Parenting Scale<---Acceptance	-.19	.01	-.05 <--- -.00
5	Positive Parenting<---Acceptance	.48	***	.15 <--- .30
5	Positive Parenting<---Healthy Control	-.16	.01	-.16 <--- -.01
6	Prosocial<--- Cognitive Defusion	-.23	.05	-.33 <--- .01
6	Prosocial<--- Mindfulness	.18	.05	.02 <--- 2.4

\* Bias-corrected percentile method was used





Table 10.9

*Squared multiple correlation coefficients ( $R^2$ ) of the variables in the final model*

Model Variables	( $R^2$ )
PSOC	.53
Parenting Scale	.54
Poor Supervision	.19
Positive Parenting	.26
Inconsistent Discipline	.29
Prosocial	.23
Total Difficulties	.66



Table 10.10

*Standardised Direct, Indirect and Total Effects of Variables in Final Model*

	Mindfulness	Healthy Control	Acceptance	Cognitive Defusion	PSOC	Parenting Scale	Poor Supervision	Positive Parenting	Inconsistent Discipline
Standardised Direct Effects									
PSOC	-	-	.24	.58	-	-	-	-	-
Parenting Scale	-.22	-	-.19	-.46	-	-	-	-	-
Poor Supervision	-	-	-	-	-.44	-	-	-	-
Positive Parenting	-	-.16	.48	-	-	-	-	-	-
Inconsistent Discipline	-	-.36	-	-.31	-	-	-	-	-
Prosocial	.18	-	-	-.23	.35	-	-.19	.17	-
Total Difficulties	-	-	-	-	-	.39	.51	-	.18
Standardised Indirect Effects									
PSOC	-	-	-	-	-	-	-	-	-
Parenting Scale	-	-	-	-	-	-	-	-	-
Poor Supervision	-	-	-.11	-.25	-	-	-	-	-
Positive Parenting	-	-	-	-	-	-	-	-	-
Inconsistent Discipline	-	-	-	-	-	-	-	-	-
Prosocial	-	-.03	.19	.25	.08	-	-	-	-
Total Difficulties	-.09	-.07	-.13	-.37	-.22	-	-	-	-
Standardised Total Effects									
PSOC			.24	.58	.				
Parenting Scale	-.22		-.19	-.46					
Poor Supervision			-.11	-.25	-.44				
Positive Parenting		-.16	.48						
Inconsistent Discipline		-.36		-.31					
Prosocial	.18	-.03	.19	.02	.43		-.19	.17	
Total Difficulties	-.09	-.07	-.13	-.37	-.22	.39	.51		.18



## 10.6. Summary

This chapter described the testing of the full structural model (SEM) exploring the relationships between constructs in the conceptual model described in Figure 1.1 and repeated here in Figure 10.6. Results from the SEM provide partial support for all of the six hypotheses. Initial hypothesis testing based on a saturated model did not provide support for Hypothesis 6, that there would be direct relationships from parental psychological flexibility to adolescent behaviour. However, post hoc modifications made to the model during the model testing phase resulted in support for a Partial Mediation model in which both indirect and direct paths from parental psychological flexibility to adolescent behaviour were evident. Overall, the final model chosen had good fit to the data and demonstrated paths consistent with those found in previous literature relating to parents' sense of competence, parenting practices and adolescent behaviour. Importantly, the results from SEM demonstrate that parental psychological flexibility contributes to parenting and adolescent behaviour via both direct and indirect paths. All paths were significant and in the expected directions with two exceptions. The path from Healthy Control to Positive Parenting was significant but not in the expected direction. Secondly, the path from Inconsistent Discipline to Total Difficulties, whilst in the expected direction, was only approaching significance. The implications of these relationships will be discussed further in Chapter 11.



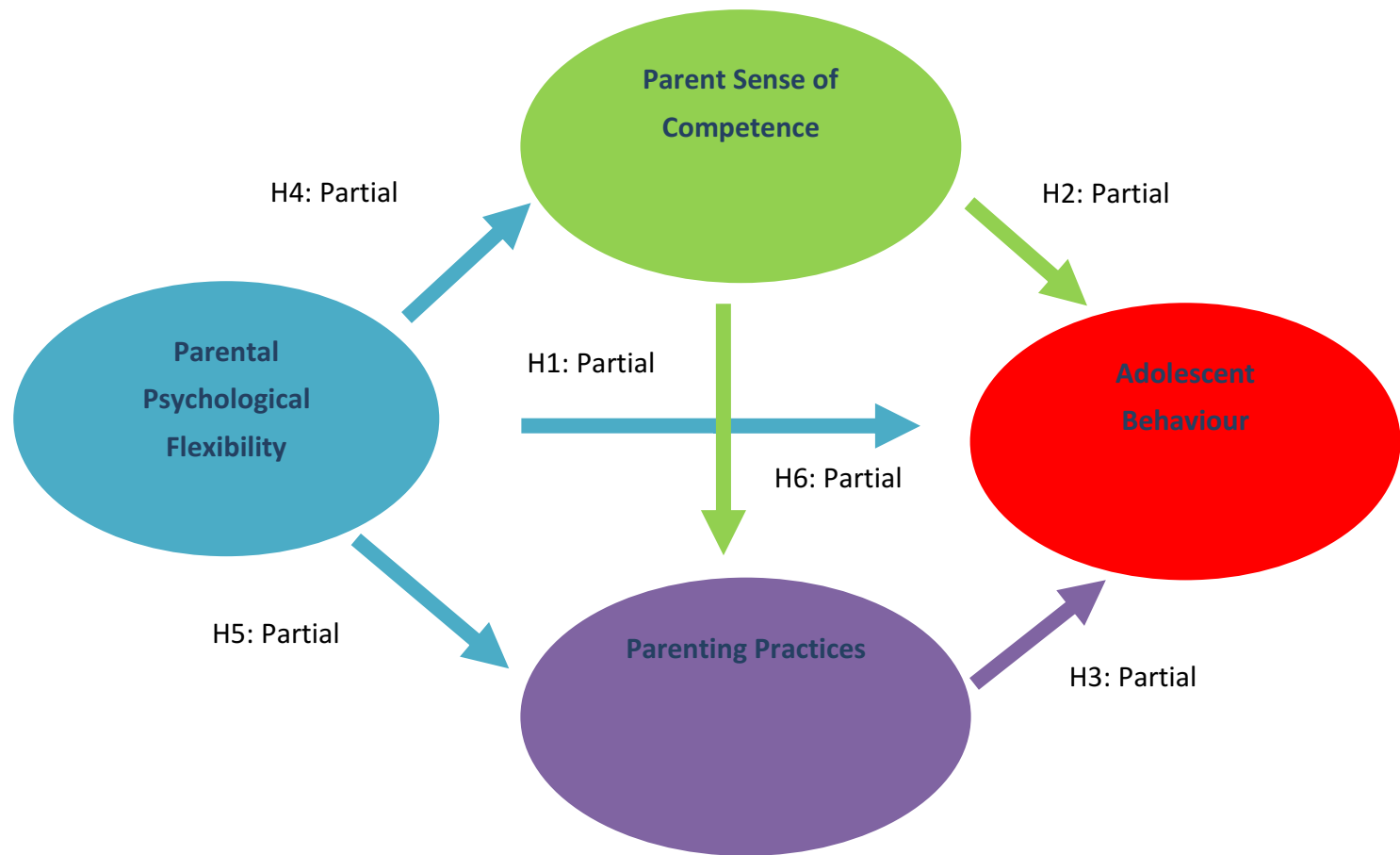


Figure 10.6  
 Conceptual model: Support for hypotheses





## CHAPTER 11

### General Discussion

This thesis aimed to broaden our understanding of the pathways from parents' beliefs in their self-efficacy and satisfaction in their parenting role (parent competence) to parenting practices and adolescent behaviour by exploring whether parental psychological flexibility is related to parents' sense of competence, parenting practices and adolescent behaviour.

Two separate studies comprised the overall project. In this chapter both Study 1, development of a measure of Parental Psychological Flexibility; and Study 2, testing six hypotheses about parental psychological flexibility and its relationship to parenting and adolescent behaviour, will be reviewed and discussed. The Chapter will commence with consideration of the outcomes from the measure development process and will then explore the six hypotheses from Study 2 in turn. At the end of the Chapter a conclusion will be reached about the construct of parental psychological flexibility and its potential for use within parenting interventions designed to promote adolescent wellbeing and/or reduce antisocial behaviours.

#### 11.1. Measuring Parental Psychological Flexibility

Development of reliable and valid tools to measure psychological flexibility is still in progress. As described in Chapter 4, to date a number of measures have been developed that measure the construct in either a general context (e.g., Acceptance and Action Questionnaire; Hayes, Strosahl, et al., 2004) or for use within specific contexts such as Chronic Pain (McCracken et al., 2004) and Social Anxiety (MacKenzie & Kocovski, 2010). These context specific measures have emerged in an attempt to increase the utility and clarity of items representing the construct by linking items to particular situations. Currently one measure has been published that specifically targets parental psychological flexibility, the Parental Acceptance and Action Questionnaire (Cheron et al., 2009). This measure was designed to assess parental experiential avoidance in relation to negative child emotions (e.g., anxiety).

The model under investigation in this thesis is concerned with parenting adolescents within a general context, rather than the parenting of children with disabilities or clinical issues. In order to explore the primary hypotheses of the thesis it was necessary to develop a measure of the construct of psychological flexibility relevant to a general parenting context. Study 1 therefore aimed to develop such a measure and to explore its factor structure, reliability and validity. Study 2 then aimed to confirm the factor structure and provide additional support for the reliability and validity of the measure.

As previously described, psychological flexibility is thought to comprise six interrelated processes; four of these are processes (acceptance, mindfulness, cognitive defusion and self as context) are precursors to the final two processes (valued-living and committed action). These first four processes facilitate the individuals capacity to focus on the valued living and taking committed action. This project focuses on the development of these first four processes.

Development of the measure was undertaken using a five-step process (described in detail in Chapter 4): definition of the construct, item development, expert and consumer review, factor analysis and establishment of scale reliability and validity. Outcomes from the first three steps resulted in a 43 item scale that was disseminated to a sample of parents and then subjected to Exploratory Factor Analysis (EFA) using Principal Components Analysis (PCA). Results from this analysis supported a 30-item, three-factor structure.

The first two factors appeared to measure two of the four cognitive processes of psychological flexibility: acceptance and cognitive defusion. The third factor, somewhat unexpectedly, seemed to be measuring parent's ability to relinquish control of their adolescent's choices and activities in the face of their own difficult emotions. The items on this third factor were reversed thus providing an indication of the extent to which the parent exerts adaptive or "healthy" levels of control over their adolescent's activities. The factor, titled "Healthy Control" appeared to tap aspects of committed action, via inclusion of behavioural responses to emotions (i.e., "I have refused to let my child do things that were important to them because I would worry too much" – a reversed

item) as well as aspects of self-as-context (or self-as-content) with items reflecting parents belief that they are or “should be” in control and take responsibility for their adolescent’s actions and decisions. That it taps into aspects of committed action was somewhat surprising and may be due to the difficulty of describing abstract cognitive processes without including aspects of observed behaviour.

In addition to the emergence of the Healthy Control factor, some of the other findings from Study 1 were unexpected and required further investigation. First, the measure did not contain factors specifically representing the constructs of either self-as-context or mindfulness. Self-as-context is the most abstract of the processes of psychological flexibility and it is possible that the construct may be represented in aspects of the items contained in the PPF’s identified factors. For example, the item “My painful memories prevent me from parenting the way that I would like” contains aspects of cognitive fusion and self-as-context, with their memories being viewed as representing who the parent is and this self representation limiting their capacity to act. The use of “I” at the beginning of items also carries with it some implication that the individual will respond in accordance with their self concept in relation to the context of the item. That self-as-context did not emerge as a distinct construct was therefore not a complete surprise. Additionally, there is currently no measure of psychological flexibility that assesses this process independently from the others. Perhaps the abstract nature of self-as-context and its interrelation with the other processes means that this process cannot be measured independently. Alternatively, it is a possible that self-as-context overlaps with measures of parental attributions and that a stronger focus on “self-as-content” via a more explicit articulation of the roles and definitions that are common within parenting (e.g., “I am a bad parent,” “A good parent would know what to do”, “I am the boring parent”) would be useful in exploring the relationship between cognitive fusion and these beliefs about the self.

The construct of mindfulness also did not appear as a separate construct in the PPF measure. As for self-as-context, mindfulness appears to be reflected in

some items of the PPF (e.g., my emotions cause problems in my relationship with my child” and “I can get angry with my child and still be a good parent”) but not sufficiently independently to form a separate factor. Additionally, some items that were thought to reflect mindfulness (e.g., I think that being with my child is so important that I often find it difficult to undertake my other tasks -housework, paid work) dropped out of the measure during the early stages of development (e.g., during expert and consumer review). As already discussed (Chapter 3) mindfulness is also one of the six key processes described as underpinning psychological flexibility (Hayes et al., 1994; Hayes, Strosahl, et al., 1999) and the construct has received much attention in therapeutic circles in recent years, with multiple books published (Kabat-Zinn, 1990; Lau, Segal, Witkiewitz, & Marlatt, 2007; Siegel, 2007), and interventions developed that specifically focus on mindfulness in parenting (Bailie, Kuyken, & Sonnenberg, 2012; Dumas, 2005; van der Oord, Bögels, & Peijnenburg, 2012). Therefore, it was deemed important that this construct be assessed more directly via inclusion of a separate measure of mindfulness in Study 2.

Another unexpected result in Study 1 was a non-significant correlation between the Healthy Control Factor and parental involvement (measured by the Authoritative Parenting Questionnaire – Parent Report, Involvement subscale) (Purdie et al., 2004). The Involvement scale provides an indication of the level of warmth in the parent-adolescent relationship and it was expected that parents who exert higher levels of Healthy Control would be less influenced by their negative thoughts and emotions when making decisions, thus increasing their capacity for positive involvement in their child’s life. One explanation for this result may be that it is possible for parents to express their attempts to relinquish control or responsibility for their children’s activities in ways that demonstrate warmth (e.g., using encouragement and expressing confidence in their children) and in ways that do not (e.g., being resentful, expressing doubt, giving lectures). This finding warrants further investigation.

Despite these unexpected results, Study 1 resulted in a measure of parental psychological flexibility that had a stable factor structure and evidence

for the validity of the scale. The scale demonstrated construct (convergent) validity as evidenced by significant and positive correlations with the theoretically related constructs of parents' sense of competence and parent involvement, as well as discriminant validity, as evidenced by the lack of relationship between the PPF and variables expected to have no relationship to it, parent and child gender and child age. Evidence was also found for concurrent validity of the scale via the expected correlations with other scales measuring similar or overlapping processes of psychological flexibility, the Acceptance Action Questionnaire (Bond et al., 2011) and the Mindfulness Attention Awareness Scale (Brown & Ryan, 2003). This factor structure was confirmed and refined with a second sample of parents in Study 2 (see Study 2; Chapter 9). The refinements led to a reduction in the number of items in the scale, from 30 to 19, thus increasing its useability for future research and clinical work. Study 2 provided further support for the internal consistency of the three factors and overall measure. A pattern of adequate validity continued to emerge (see Table 10.2) with further support provided for construct and concurrent validity via the expected small to moderate correlations with the PPF subscales and each of the MAAS (Brown & Ryan, 2003), PSOC (Mash & Johnston, 1983), Alabama (Elgar et al., 2007) and the Parenting Scale (Reitman et al., 2001). The final scale, was titled "Parental Psychological Flexibility Questionnaire" (PPF) and its scale properties and scoring criteria are included in Appendix G.

However, similarly to Study 1, some unexpected results were revealed by Study 2 with respect to the Healthy Control scale. Little relationship was found between the Healthy Control scale and the Positive Parenting scale of the Alabama Parenting Questionnaire (Elgar et al., 2007), perhaps providing some further explanation for the lack of relationship between Healthy Control and Involvement found for the Study 1 sample. It was expected that parents who exhibit Healthy Control would be more accepting of any difficult internal experiences and able to remain focused on what their adolescent needs and that this would then be associated with higher levels of positive parenting, in the form of reinforcement and encouragement of their child's autonomy. However,

perhaps, it is possible to exhibit Healthy Control, that is, to allow an adolescent to engage in developmentally appropriate activities that are accompanied by difficult emotions and thoughts for the parent irrespective of whether the parent is high or low on positive parenting. For example, a parent may choose to allow their young teenager to walk to school by themselves even though they are worried the child will get lost or have an accident (thus demonstrating Healthy Control) by telling them they have done a great job at following the rules for walking to the shop and so they have earned the trust to take the longer walk to school by themselves (thus also demonstrating Positive Parenting). However, it is also possible that the parent could demonstrate Healthy Control as described above but do so without encouraging their child or recognising their child's achievements, in fact it may possible to demonstrate Healthy Control and low acceptance for one's own internal experiences. For example, the parent may focus on and share their fears with their adolescent – "Alright, you can go, but I don't think it is a good idea - you might get lost or hurt yourself and I won't be there to help" or behave in ways that appear hostile and unsupportive to their child (e.g., "Fine go if you want – but don't come crying to me when something goes wrong"). Finally, the results also demonstrated a lack of relationship between Healthy Control and Prosocial adolescent behaviour. This is somewhat more difficult to explain, however, if as suggested above, we consider that it is possible for parents to relinquish control or responsibility in ways that are positive (warm) or negative (hostile) then it is also possible that the influence on the adolescent's behaviour is more affected by the parent's behavioural response than by the choice to grant or not grant autonomy and responsibility.

In summary then, the Healthy Control scale measures parental efforts at managing autonomy granting along a continuum. At one end is the choice to relinquish control (as developmentally and contextually appropriate) even in the face of difficult parent emotions. At the other is the choice not to relinquish control so that the parent can avoid experiencing any negative thoughts and feelings. The former choice is likely to involve the other cognitive processes of parental psychological flexibility, (namely, acceptance, mindfulness, self-as-

context and cognitive defusion) whilst the latter choice is likely to involve experiential avoidance and cognitive fusion. Additionally, the results indicate that when parents relinquish control it is possible to do so in ways demonstrate that they do not accept their own feelings about the situation, thus increasing the likelihood that they will act in ways that are inconsistent with their values (e.g., lack of warmth or positive parenting). This suggests that the Healthy Control scale may be measuring the cognitive process of making (or not) the choice rather than the behavioural expression of this choice. Thus, the scale could be assessing an intellectual understanding of managing autonomy granting rather than actual willingness to experience worries and fears.

In spite of the unexpected results, the measure development process did result in a measure of psychological flexibility that contains scales consistent with the construct of psychological flexibility. Most promising is the emergence of the acceptance and cognitive defusion scales. These two scales are the clearest illustrations of the PPF's measurement of the four cognitive aspects of psychological flexibility (Chapter 3: Section 3.5) and directly relate to the two key aspects of psychological inflexibility, experiential avoidance and cognitive fusion, described in Chapter 3 (Section 3.4). The Acceptance subscale of the PPF seems to measure the degree to which parents accept that difficult emotions and thoughts are part of their parenting and that they do not need to change them or avoid them to be effective as a parent. The Cognitive Defusion subscale (in its reversed form) appears to measure parents' recognition that their emotions and thoughts are not literally in control of their actions and decisions relating to their parenting and are separate from their capacity to act. As such, the PPF has potential as a useful method of assessing psychological flexibility as it pertains to the parenting context.

In summary, the two studies conducted led to a 19 item measure – Parental Psychological Flexibility Questionnaire – that consists of three factors measuring distinct but overlapping aspects of the construct of psychological flexibility within a general parenting context. Two of the factors substantively appear to be measuring two of the expected cognitive processes of psychological

flexibility: Acceptance and Cognitive Defusion. The third factor, Healthy Control appears to be measuring parents' ability to relinquish control of their children's activities even when doing so is linked to negative private events. Unexpectedly, this third factor seems to include aspects related to the process of committed action, which is considered the behavioural goal of interventions targeting psychological flexibility. Additionally, the Healthy Control scale did not relate well to several of the parenting and adolescent variables (particularly those related to positive parenting and adolescent behaviour) and was not clearly a measure of one of the four cognitive processes of psychological flexibility. It is therefore possible that the Healthy Control subscale is measuring something broader than psychological flexibility. This will be explored further in Section 11.5. Finally, a limitation to the PPF is that it does not include a mindfulness factor. Therefore, to fully investigate the role of this aspect of parental psychological flexibility a separate measure of mindfulness was required for inclusion within the Full Structural Model (SEM).

## **11.2. Testing a Model of Parental Psychological Flexibility**

A model of parental psychological flexibility has been presented throughout this thesis (see Figure 11.1 for hypothesised model and 11.6 for final model) that outlines the ways in which parental psychological flexibility is expected to relate to parents' sense of competence, parenting practices and adolescent behaviour. It was expected that parental psychological flexibility would directly influence parents' sense of competence since psychological flexibility increases the parent's capacity to focus on their moment by moment experiences with their adolescent whilst also increasing the parents ability to flexibly choose which parenting practice or response will work best to promote their child's development and/or keep their relationship strong. This increased focus on parent-adolescent interactions and flexible responding was expected to be associated with parent's sense of themselves as being effective and to the satisfaction they gain from their parenting experiences.

Parental psychological flexibility was also expected to directly influence the parenting practices adopted by parents, with parents who report higher



levels of psychological flexibility also reporting the use of more effective parenting strategies. The parenting strategies in this model would be consistent with the committed action process underlying psychological flexibility. It was therefore expected that parents who were able to accept their private events (irrespective of their content or form) and maintain a sense that they are separate from these private events would have the flexibility to maintain a focus on choosing parenting practices that work to promote appropriate adolescent behaviour and discourage difficult behaviours.

It was expected that outcomes from this thesis would replicate the established relationships from parents' sense of competence to parenting practices (Bogenschneider et al., 1997; Shumow & Lomax, 2002) and from parents' sense of competence and parenting practices to adolescent behaviour (Bogenschneider et al., 1997; Day et al., 1994; Shumow & Lomax, 2002), thus providing further support for the importance of including a focus on self-efficacy and satisfaction within parenting interventions and as expected, demonstrating the importance of the strategies included in current evidence-based parent management training interventions.

Lastly, based on previous research on the role of parental cognitions and emotions as a mediating factor in adolescent behavioural outcomes (Dugan, 2011; Reid et al., 2002; Teti & Cole, 2011), it was anticipated that parental psychological flexibility would influence adolescent behaviour either directly or via its relationship to parents' sense of competence and parenting practices.

In this section the primary hypotheses for this thesis will be discussed, commencing with a discussion of the relationships between parenting and adolescent constructs and then concluding by considering the role of parental psychological flexibility in parenting and adolescent behaviour. The relationship between parenting and child behaviour is well established by previous research with strategies such as positive reinforcement, effective monitoring, assertive discipline (including clear rules and expectations) and acceptance shown to influence child outcomes (Bank, Patterson, & Reid, 1987; Reid et al., 2002; Sanders, 1999; Webster-Stratton & Hammond, 1997). Therefore, prior to

discussing the contribution of psychological flexibility the aspects of the conceptual model (see Figure 1.1) that relate to those known relationships in the parenting and adolescent sphere will be explored.

**11.2.1. Hypothesis 1: Parents' sense of competence is directly related to parenting practices**

The hypothesis that the parents' sense of competence (PSOC; satisfaction and efficacy) would be directly related to their parenting practices was partially supported. Correlations between the PSOC and the parenting practices variables showed that relationships did indeed exist between these constructs. SEM provided a more nuanced picture of these relationships, demonstrating a direct relationship between parents' sense of competence and poor supervision. This finding is consistent with previous research, suggesting that parents who report higher levels of competence are also less likely to report ineffective monitoring of their adolescents activities (Ardelt & Eccles, 2001; Shumow & Lomax, 2002).

The lack of direct relationships from PSOC to other parenting practices in the model is somewhat surprising but not entirely unexpected. Parental self-efficacy and satisfaction have been well studied in relation to younger children with a few studies also covering the adolescent years. Results from these studies have reported both direct and indirect effects, with the strongest relationships during adolescence found between parents' sense of competence and monitoring and/or encouragement (Bogenschneider et al., 1997; Elder et al., 1995; Shumow & Lomax, 2002). This study provides further support for the importance of parental self-efficacy in effective monitoring but diverges from the literature that has shown direct relationships with parenting practices such as laxness and over-reactivity (Hill & Bush, 2001; Sanders & Woolley, 2005) and inconsistent discipline (Dumka, Stoerzinger, Jackson, & Roosa, 1996). It is worth noting that most of the research investigating the relationship between parental competence and parenting practices has so far been conducted with children under the age of 12 years, with much of it using analyses based on univariate correlations or other simple statistical procedures'. There is therefore a need to extend this research to the adolescent developmental period and to multivariate

designs in which the relative role of parents' sense of competence in influencing each of the aspects of parenting practices during adolescence are examined.

### **11.2.2. Hypothesis 2: Parents' sense of competence is directly related to adolescent behaviour**

The hypothesis that the parents' sense of competence (PSOC; satisfaction and efficacy) in their parenting role would be directly related to their adolescent's prosocial and difficult behaviour was partially supported. As for Hypothesis 1, the correlations between these three factors revealed significant relationships in the expected directions. SEM then provided a more detailed picture of the nature of these relationships, revealing that parents' sense of competence is directly related to adolescent prosocial behaviour and indirectly related to adolescent behaviour difficulties via its relationship with parental poor supervision.

The direct relationship to adolescent prosocial behaviour is consistent with previous research demonstrating that parental self-efficacy plays a role in positive adolescent outcomes such as the development of adolescent self-regulation (Purdie et al., 2004) and academic self-belief (Steca et al., 2011), higher motivation and persistence with physical activities (Xiang et al., 2003) and reduced levels of intention to smoke in young adolescents (Mahabee-Gittens et al., 2011). That parents' sense of competence is also related to adolescent behaviour difficulties, albeit indirectly, is also not surprising. Past research has shown associations between parental satisfaction and behaviour problems in children (Ohan et al., 2000; Steca et al., 2011) and adolescents (Steca et al., 2011). That the relationship was mediated via parental supervision rather than direct may be explained by the use of the total PSOC scale in the current study which provided a composite of both satisfaction and efficacy in parenting. Previous literature has found that satisfaction and efficacy can at times relate differently to children's behaviour. For example, Ohan and colleagues (2000) found that child behaviour was associated with the degree to which parents were satisfied in their parenting role but that parental efficacy was not related to the child's externalising behaviour. The researchers suggest that self efficacy in

parents from community samples may be more associated with positive aspects of child behaviour and development such as academic achievements rather than to the presence of child behaviour problems. Once again, such studies have tended to focus on children 12 years and under and have used correlational analyses to examine relationships. However, the results of the current study add to this literature and suggest that parents' satisfaction and efficacy both play a role in adolescent prosocial and difficult behaviours, although it must be noted that some of the specificity is lost due to the use of the composite scale.

### **11.2.3. Hypothesis 3: Parenting practices are directly related to adolescent behaviour**

The hypothesis that the parenting practices would be directly related to adolescent's prosocial and difficult behaviour was partially supported. Significant correlations in the expected directions provided support for the existence of relationships between these constructs. SEM again allowed a more nuanced picture of the nature of those relationships revealing the presence of direct relationships from parenting practices to both adolescent prosocial and difficult behaviours. Using the multivariate approach, poor supervision emerged as the only construct to directly impact both prosocial and difficult adolescent behaviours. This finding is consistent with previous literature highlighting the importance of parental monitoring as a protective factor in adolescent wellbeing (Hayes et al., 2003; Huang et al., 2011; Laird et al., 2009; Oberlander et al., 2011; Véronneau & Dishion, 2010).

The link between harsh and ineffective discipline practices and adolescent behaviour has been established in multiple studies of children and adolescents (Dadds, Maujean, & Fraser, 2003; Luyckx et al., 2011; Roche, Ghazarian, Little, & Leventhal, 2010; Scott, Doolan, Beckett, Harry, & Cartwright, 2012) and as such is considered to be an important aspect of the model. Not surprisingly then, a direct relationship was found between the Parenting Scale - measuring over-reactivity and laxness - and adolescent behaviour difficulties. The relationship from inconsistent discipline to adolescent behaviour difficulties also neared significance. This scale was significantly covaried with the Parenting Scale

and it is likely that the non-significant finding was a result of the modelling process taking account of this covariance through its multivariate analysis. In other words, over-reactivity, laxness and inconsistent discipline are all measuring aspects of parental discipline and are inter-related with one another, and because of this only the strongest predictor of adolescent behaviour was significant following multivariate analysis via SEM.

Positive parenting has also long been implicated as a protective factor in child and adolescent behavioural difficulties (Lamborn et al., 1991; Sanders & Dadds, 1993) and this study provided further evidence of this link with a direct path found from positive parenting to adolescent prosocial behaviour. These findings are consistent with Luyckx and colleagues (2011) who found that parents who adopted a more positive parenting approach were less likely to have adolescents engaged in anti-social behaviours such as smoking and alcohol consumption. The result is also consistent with Scott and colleagues (2012) study of parenting practices with younger children (4 – 7 years) which found that the positive parenting scale of the Alabama was associated with the prosocial scale of the SDQ suggesting the role of positive parenting remains important from childhood into adolescence.

Intervention studies that seek to enhance positive parenting practices by encouraging parents to spend more quality time with their children or to provide them with praise and encouragement, have frequently been associated with decreases in negative or antisocial child and adolescent behaviours (Brestan & Eyberg, 1998; Dretzke et al., 2009; Kazdin, 1997). That the positive parenting factor was not related to adolescent behaviour difficulties in the current study was therefore surprising. The current result is consistent with that found in younger children by Scott (2012). However, it is inconsistent with much of the current parenting theory. Perhaps this is due to the broad range of definitions of positive parenting that exist in the literature, with some studies equating the construct to specific parenting actions designed to encourage and reward appropriate behaviour (Dadds et al., 2003) whilst others equate it to warmth and involvement in the adolescents life (Lamborn et al., 1991). In the current study,

the operationalisation of this concept via the Alabama Parenting Questionnaire (Dadds et al., 2003) meant that positive parenting was assessed via items such as “You compliment your child if he/she has done something well” and “You let your child know when he/she is doing a good job at something”, thus equating to studies that measure parenting actions relating to reinforcing desirable behaviour. Once again, it should be noted that the bulk of literature examining the role of positive parenting has focused on the younger years and/or the role of negative parenting practices on child and adolescent behaviour. Further research is required that specifically targets the role of positive parenting practices for adolescents.

As can be seen from discussion of the first three hypotheses, the conceptual model (Figure 1.1) provides further support for the influence of parents’ sense of competence and parenting practices on adolescent behaviour (both Prosocial and Total Difficulties). The remainder of this section will discuss the hypotheses related to parental psychological flexibility.

#### **11.2.4. Hypothesis 4: Parental psychological flexibility is directly related to parents’ sense of competence**

The hypothesis that parental psychological flexibility would be directly related to parents’ sense of competence (PSOC) was partially supported. Univariate correlations revealed significant relationships between parental psychological flexibility constructs and the PSOC with all relationships in the expected directions. Multivariate analysis using SEM revealed the presence of significant direct relationships from Acceptance and from Cognitive Defusion to PSOC. This result is particularly promising, providing initial evidence for the role of parental psychological flexibility in parenting. Parents who were higher on Acceptance were also likely to report high parental competence indicating that parents who do not attempt to control or avoid their difficult internal experiences are more likely to see themselves as effective and satisfied in their parenting role. Similarly, parents who reported higher levels of cognitive defusion and who were therefore more able to disentangle their choices and

actions from their internal experiences were also more likely to see themselves as effective and satisfied in their parenting role. It is also possible that parents with higher levels of psychological flexibility will have a more resilient sense of competence in that they may be less likely to judge their competence as a parent on each individual parenting action, but rather be able to accept that mistakes and successes are “normal” parts of raising children. Taken together these results begin to suggest a picture in which interventions that promote parental psychological flexibility may also bolster parents’ sense of competence.

Interestingly, no relationship was found between Healthy Control and PSOC or between Mindfulness and PSOC. As noted in Section 11.1 Healthy Control focuses on parents attempts to relinquish control and/or a sense of responsibility for their adolescent’s activities in the face of their own difficult internal experiences about doing so. As theorised in Section 11.1 perhaps it is possible for parents to demonstrate Healthy Control (or to ‘let go’) in ways that are not values consistent (e.g., via the use of coercive or aversive strategies such as lecturing, nagging, guilt-laden messages). If this is the case then it is possible that parents’ sense of competence as a parent may be more influenced by the behavioural expression of Healthy Control (i.e. the coercive or aversive parenting response) – that is, by the strategies they use when they grant autonomy to their children - than by the cognitive process underpinning that response (e.g., the choice to relinquish control). A missing piece of this relationship may be found via an investigation of the role of values-guided action (see Chapter 3: Section 3.5.1.5). Perhaps, parental competence is judged more according to how consistent the parents’ actions are with their values. Such an investigation is outside the scope of this project but represents an important area for future research.

In relation to the absence of a direct relationship from Mindfulness to PSOC, one possible hypothesis is that the current study measured only dispositional mindfulness (e.g., awareness of thoughts and emotions). Parents arguably can parent mindfully (with awareness) or not mindfully (without awareness). It stands to reason that non-mindful parenting would have less

impact on the parents' sense of themselves as a parent as it implies a lack of insight into the link between their own actions and their parenting outcomes. It is less clear why a parent acting mindfully would not be linked to a higher sense of competence. However, it is possible that aspects of mindfulness other than general awareness may be related to parents' sense of competence. For example, parents who are able to observe their own internal experiences (observing aspect of mindfulness) and describe their experiences without judging them as good or bad (describing and non-judgement elements) may be less susceptible to moment-to-moment variations in their assessments of their own competence.

#### **11.2.5. Hypothesis 5: Parental psychological flexibility is directly related to parenting practices**

The hypothesis that parental psychology flexibility would be directly related to parenting practices was partially supported. Significant univariate correlations in the expected directions provided support for the existence of relationships between these constructs with one notable exception: there was no significant correlations between healthy control and positive parenting (see Section 11.1). Multivariate results from SEM however, revealing that parental psychological flexibility was directly or indirectly related to all of the included parenting practices constructs.

Similarly to the relationship to PSOC, the Acceptance and Cognitive Defusion aspects of parental psychological flexibility demonstrated the strongest relationships to parenting practices, having both direct and mediated relationships (via their impact on PSOC). Results indicated that parents who were more willing to experience their private events (acceptance) and/or who were able to create distance between themselves and those private events (cognitive defusion) were also more likely to engage in more positive parenting strategies (such as acknowledgement, praise and encouragement) and fewer ineffective strategies (such as yelling or arguing with adolescent; not enforcing consequences; and not keeping track of their adolescents activities and whereabouts). As for the relationships with PSOC, these results suggest that



parental psychological flexibility is relevant in a parenting context and as such may be a promising addition to the parenting intervention sector.

The Healthy Control construct continued to provide a mixed picture. The construct had a direct relationship to ineffective parenting (inconsistent discipline) and a direct relationship to positive parenting. However, the relationship to positive parenting was in the opposite direction to that expected, in that parents with higher levels of healthy control were more likely to use fewer positive parenting strategies when multivariate statistics were employed to examine these relationships. This result is difficult to account for. However, correlation between Healthy Control and Positive Parenting whilst negative, was not significant and in the final model represented only a very weak, albeit significant, relationship. This suggests a suppression effect, with the other elements of psychological flexibility having a more dominant effect and thus negating the negative effects of Healthy Control. For example, if we consider parents with the same MAAS only then it is clear that Healthy Control adversely affects Positive Parenting. Otherwise, in the overall picture, MAAS tends to negate the negative effect of Healthy Control.

Finally, the Mindfulness construct was directly related to the Parenting Scale with results indicating that higher levels of mindfulness are associated with lower levels of over-reactivity and laxness in parenting. These findings show some promise for the role of encouraging mindfulness in parenting, and are in line with the small number of intervention studies that have been conducted to-date in this area. These have demonstrated reductions in use of ineffective discipline practices (Coatsworth, Duncan, Greenberg, & Nix, 2010; van der Oord et al., 2012) as a result of teaching parents skills in mindful parenting. For example, van der Oord, Bögels and Peijnenburg (2012) reported a reduction in over-reactivity (with a large effect size of .85) in a small sample ( $n = 22$ ) of parents of 8 to 12-year old children with ADHD, following completion of a mindfulness-based parenting intervention. Parents also reported significant increases in mindfulness on the MAAS albeit with a small effect size (.28).

It is noteworthy that neither Cognitive Defusion nor Mindfulness had a significant direct path to Positive Parenting in the model. Univariate analyses demonstrated that both Cognitive Defusion and Mindfulness were related to Positive Parenting and results from the SEM revealed significant covariance between Acceptance and both Cognitive Defusion and Mindfulness. It is therefore possible that the lack of significant result is related to the covariance with Acceptance, with Acceptance being the stronger predictor of Positive Parenting and thus the only significant path. Or in other words, the relationships from Mindfulness to Positive Parenting and from Cognitive Defusion to Positive Parenting were fully mediated by the relationship between these constructs and Acceptance in this model. This is a finding that requires further investigation, perhaps involving a broader range of the aspects of parenting often included under the banner of “positive parenting” such as involvement, encouragement and reinforcement along with communication. It is also possible that research involving a multi-dimensional measure of mindfulness specifically relating to parenting may demonstrate stronger and more direct relationships with parenting practices.

Therefore, it appears that psychological flexibility is directly related to parenting practices that involve discipline and reinforcement of their adolescent’s behaviour. In particular, the findings are consistent with those of Shea and Coyne’s (2011) study with parents of preschool children in which parental experiential avoidance was found to be related more ineffective parenting, including over-reaction to mild child behaviour difficulties, the use of harsh or inconsistent discipline or laxness in the face of more serious child behaviour problems.

Interestingly, no direct relationship was found to poor supervision with this relationship an indirect one, being fully mediated via parents’ sense of competence. That is, Acceptance and Cognitive Defusion have an influence on Poor Supervision via their influence on Parents’ Sense of Competence. This finding further supports the literature highlighting the importance of including strategies that enhance parents’ sense of competence in their parenting within

parenting interventions and that including strategies for increasing parental psychological flexibility may be a useful clinical approach.

In summary, the results from this study suggest that approaches aimed at enhancing parental psychological flexibility may provide a way to bolster both parents' sense of competence and their use of effective parenting strategies.

#### **11.2.6. Hypothesis 6: Parental psychological flexibility is directly related to adolescent behaviour**

The hypothesis that parental psychological flexibility would be directly related to adolescent behaviour was partially supported. Significant correlations in the expected directions provided support for the existence of relationships between these constructs. Structural Equation Modelling revealed two direct relationships, with both Cognitive Defusion and Mindfulness directly related to adolescent Prosocial behaviour. These findings demonstrate the potential for interventions enhancing parental psychological flexibility to directly influence adolescent outcomes. For example, Cognitive Defusion may lend itself to direct instruction and/or modelling by parents to their children in that the strategies that parents use to deliteralise or obtain distance for their thoughts and feelings may be observed, via self-talk or explanations to their children about the differences between having a thought and "the thought having them". Additionally, if the parent is spending less time attempting to manage or change their internal experiences they will have more time available to be sensitive to and responsive to their adolescents needs. Secondly, intuitively, it makes sense that mindfulness would be directly related given that the very definition of this construct implies the parent giving their full attention to their child non-judgementally (Kabat-Zinn, 1990). Such behaviour is likely to be interpreted as warmth and accessibility by an adolescent and to therefore lead to more positive outcomes.

Indirect relationships between parental psychological flexibility and adolescent behaviour were also observed, suggesting that the influence psychological flexibility is both direct and mediated. That is, psychological flexibility influences parents' sense of competence and parenting practices and

these constructs directly affect adolescent behaviour and as a result parental psychological flexibility has an indirect effect on the adolescent's behaviour. For example, Acceptance has a direct influence on Parents' Sense of Competence which directly influences Prosocial adolescent behaviour. Thus the influence of Acceptance on Prosocial behaviour is mediated by Parents' Sense of Competence. The influence of parental psychological flexibility on adolescent difficult behaviour was entirely mediated via parenting practices suggesting that by using strategies to increase parental psychological flexibility it is likely to lead to effective parenting and through this to a reduction in adolescent behaviour difficulties.

### **11.3 Practical Implications of the Model**

The outcomes from this study provide a potential new piece of the puzzle for improving outcomes for adolescents via parent interventions. Incorporating strategies that promote psychological flexibility into evidence-based interventions may assist parents who are not currently benefiting from these programs.

One particular area in which parental psychological flexibility may add to current parenting interventions is via the impact it has on parent's sense of competence. Given that these factors are influenced by parent interpretations of their own and their children's actions (Azar et al., 2008; Bugental, Johnston, New, & Silvester, 1998) it is likely that parents' sense of competence is vulnerable to parent attributions and cognitive fusion with those attributions. This may lead parents to avoid experiences that have the potential to interfere with their sense of competence, even when those situations are important for the adolescent's wellbeing. For example, a parent who is feeling anxious and thinking that they don't know how to get their adolescent to comply with a consequence for not coming home on time, may avoid addressing their child's behaviour at all because in so doing they reduce the likelihood that their parenting strategy will fail and that they will experience feelings of inefficacy. However, by not addressing this potentially risky behaviour the parent is not engaging in parenting practices that serve to protect their child from harm (e.g., effective

monitoring of adolescent behaviour and appropriate limit-setting). Rather than targeting increases in parental self-efficacy per se, targeting parental psychological flexibility in parenting interventions may create greater resilience in parents' sense of competence by reducing the likelihood that parents will judge their parenting successes and failures as being "proof" of their overall effectiveness. By accepting that the parenting experience will contain examples in which they respond effectively to their child's needs and examples in which they are ineffective, parents are more likely to be able to maintain a healthy distance between the outcomes of any one specific parenting behaviour and their overall view of themselves as competent or incompetent. A by-product of this flexibility may then also be an increase in self-efficacy and satisfaction in parenting.

Another area in which a focus on parental psychological flexibility may be useful is that of retention of parents in evidence-based parenting interventions. This issue has been identified as a key challenge in the parenting field with interventions aimed at parents of adolescents often experiencing high levels of drop-out (Baker et al., 2011; Weinberger et al., 1990). It is therefore important to continue to explore ways in which to better engage and maintain engagement of families who could benefit from these programs. Given that this study has demonstrated a direct relationship from parental psychological flexibility to a range of parenting practices it is worth considering whether augmenting or supplementing existing evidence-based parenting interventions with approaches designed to increase parental willingness to experience private events would assist parents to commit to attending and implementing the strategies from existing programs. It is possible that enhancing parents psychological flexibility would provide them with the resources required to persist with change efforts even when doing so is difficult, may be met with resistance from their children and is accompanied by doubt, frustration and worry.

Strategies that promote parental psychological flexibility could be incorporated into the parenting field in a number of ways according to the needs of parents. For example, stand-alone interventions could be delivered to

individual parents or in group settings that seek to reduce the cognitive barriers to parenting decision making and implementation of parenting practices in a contextually sensitive manner. Alternatively, it is possible that strategies could be adapted and incorporated from therapies such as Acceptance and Commitment Therapy to be embedded within existing evidence-based parenting interventions. Parent Management Training approaches that incorporate a functional assessment of parenting and child behaviour have considerable potential for this (Kazdin, 1997; Kazdin & Weisz, 1998). Both rely on an underlying theory for the selection of therapeutic elements that increase effective action.

#### **11.4. Limitations**

This research has a number of limitations that should be considered when interpreting outcomes. Both studies comprised samples of convenience and may therefore not be representative of a general sample of parents of adolescents. Both samples were predominantly Australian born with a high proportion employed and holding university qualifications. Additionally fathers were underrepresented, making up approximately 13 per cent of the Study 1 sample and 10 per cent of the sample for Study 2. This small sample of fathers and underrepresentation of parents from culturally and linguistically diverse backgrounds means that comparison between cultures or parent gender was not possible. These demographics thus limit conclusions regarding the role of parental psychological flexibility for men and for parents from culturally and linguistic backgrounds.

It should be noted that whilst separate samples were recruited for each of the two studies, both studies were conducted as online anonymous surveys. Thus it is possible that participants in the first study also participated in the second study and it is also possible that mothers and fathers from the same family also chose to participate in the study meaning that there may be some overlap between the samples. As the surveys were anonymous it is not possible to quantify if or how great an overlap there was between the two samples and as such the findings should be interpreted with caution.

The purpose of this study was to explore factors associated with parenting adolescents. This group has been demonstrated to be difficult to engage. Thus it was decided to attempt to increase the sample size for the first study by including parents who had parented a teenager in the past. It was considered that parents are able to reflect and report on behaviour that they have undertaken in the past. However, it is acknowledged that this is a further limitation to the study. This limitation was somewhat mitigated by Study 2 in which only parents who were currently parenting a child aged 10-18 years were included and given that the structure of the scale remained largely unchanged following CFA with the second sample.

A larger sample may have increased the statistical power for the Factor Analysis in Study 1 (n=252) however, the sample size is considered adequate using the guidelines suggested by Tabachnick and Fidell (2007, page 613) in which they describe adequacy in term of overall size and where a sample of 200 is considered fair and a sample of 300 good. The sample for Study 1 is hence considered fair to good.

The final sample size in Study 2 was relatively small (N=172), particularly once outliers and missing data were accounted for (via removal of cases with more than 30% missing data or who represented extreme outliers) which increases the likelihood of Type 2 errors (false negatives) and the likelihood that the results were due to chance. It should also be noted that post hoc hypothesis testing (e.g., respecifying the model) also leads to an increased likelihood of Type 1 error, thereby reducing the generalisability of the findings beyond the current sample.

A further limitation of this study is the reliance on parent self-report questionnaires administered anonymously online. Whilst an efficient method for survey dissemination, there is an associated loss of experimenter control and challenges to standardisation of administration associated with online technologies and snowball data collection. For example, in the current study participants were provided with instructions at the beginning of the survey requesting that they answer the questions by themselves and in relation to

specific child within the age range however it was not possible to monitor compliance with these instructions. Nor was it possible to force participant responding, thus increasing missing data nor was it possible to ensure that participants completed the surveys within a set time frame. Future research would benefit from using administration technologies that have more flexibility for standardising and monitoring compliance with study procedures. This should also include broadening of the research design to include multi-method, multi-informant designs, including directly observed measures of parenting practices or at least reporting of more specific parenting behaviours and objective variables relating to their usage (e.g., frequency of use). Equally, it would be worthwhile to include adolescent report data. Parents and adolescent reports of aspects of the parent-adolescent relationship, parenting and adolescent behaviour have been shown to have mixed levels of agreement (Fisher et al., 2006; Tein, Roosa, & Michaels, 1994; Wilks & McPherson, 2002). As such, adding the perspective of adolescents would add to the robustness and confidence in the relationships between the variables.

### **11.5. Where to Next**

This thesis provides important information for moving the field of parenting intervention forward, particularly in relation to overcoming some of the current challenges to meeting the needs of parents of adolescents. However, further investigation is required to fully understand how and in what ways parental psychological flexibility may affect parenting beliefs and behaviours and adolescent outcomes. Research involving larger samples of families and with parent and adolescent data will be critical as will the inclusion of directly observed parenting variables. Additionally, more specific and well-defined studies examining the role of parents' sense of competence and the specific contributions of parenting strategies shown to be effective with younger children to adolescent outcomes are warranted.

The Parental Psychological Flexibility Questionnaire (PPF) developed in this study demonstrates promise as a tool in both the parenting and contextual behavioural fields. However, studies are still required to assess the utility of the



scale as a clinical tool. In particular a study that assesses test-retest reliability and clinical change is needed. The current project has investigated the PPF in two general samples of parents. As such, research validating the scale for use with clinical samples is needed. Additionally, whilst the PPF demonstrated a stable factor structure with adequate reliability and validity the Healthy Control scale did produce some unexpected null results. In fact this subscale was directly related only to Parenting Practices and appeared to be independent of positive aspects of parenting. As the relationship from parental psychological flexibility was captured by both the Acceptance and Cognitive Defusion scale, it could be argued that there is no need for including the Healthy Control subscale as part of the PPF. Research investigating the PPF as a two factor scale may be useful as would addition of a specific mindfulness construct.

Further exploration of the Healthy Control construct is also needed. Despite its lack of connection to many of the variables in the model it did demonstrate a relationship with the parenting scale, which assesses ineffective discipline practices such as overreacting to or ignoring difficult adolescent behaviours and parenting situations. Perhaps this construct has something to offer in the very challenging parenting task of autonomy granting. Currently measures of autonomy or parental control tend to measure the degree to which parents grant autonomy or freedom and whether this occurs within a warm or hostile relationship with their parent (Lamborn et al., 1991; Supple, Ghazarian, Peterson, & Bush, 2009). However, one of the critical decisions parents need to make in relation to autonomy is when and over what issues is it appropriate for the adolescent to take responsibility or to “go it alone”. Such decision-making is likely to be confounded by parents own internal experiences. The Healthy Control construct identified here may therefore have something to offer investigations into parental autonomy granting given that it focuses on control efforts in the face of difficult emotions. However, more work is required in the development of the construct. So far in this chapter Healthy Control has been described as a continuum with two possible options – choosing to relinquish control/responsibility in the presence of difficult emotions or not. Perhaps there

is a third possibility in which parents may relinquish control “mindlessly”, that is without making a conscious decision to do so. This third possibility is likely to be related to higher levels of ineffective parenting practices (e.g., poor supervision and laxness) as well as to more effective parenting (e.g., involvement and positive parenting) in that with this option parents are not attending to their child’s needs or to the contextual variables that impact whether granting autonomy is appropriate. Dumas (2005) has described this notion of “non-mindful” action in family relationships as being automatic and most likely to occur in times of stress or distraction, both factors that are likely to recur time and again in the course of raising a family. As such further development of the construct, Healthy Control, as commenced in this study may offer a fruitful new way to explore the conditions under which parents do and should relinquish control during the adolescent years.

A further area for investigation that has received little attention in this study is that of the role of parenting values in changing parenting behaviours and adolescent outcomes. This is one of the six interrelated processes of psychological flexibility described in Chapter 3. Values, which refer to the guiding principles that parents use to set goals and choose actions in relation to their parenting and their adolescent’s wellbeing, are beginning to be included in parenting interventions such as the ABCD Parenting Adolescents Program (Burke et al., 2012). However the specific contribution that values make to parenting has not yet been established in the scientific literature. It is likely that this aspect of psychological flexibility will be a critical mediator of psychological flexibility and parenting practices.

Exploration of the relationship between parental psychological flexibility and other aspects of parental wellbeing (e.g., parental depression, substance misuse) and their impact on parenting practices is also needed. Outcomes from research into Acceptance and Commitment Therapy are showing that reducing psychological inflexibility is useful in improving a range of mental health and other difficulties in adults (Forman et al., 2007; Gregg et al., 2007; Luoma, Kohlenberg, Hayes, Bunting, & Rye, 2008; McCracken & Velleman, 2010). The

impact of these improvements on parents parenting practices is an important area for future research given that parental mental health has been demonstrated as a key risk and/or protective factor for children and adolescents (Gershon et al., 2011; Goldman Fraser et al., 2010; Goodman & Gotlib, 2002).

Once greater understanding of the mechanisms by which parental psychological flexibility influences parenting and adolescent outcomes, careful consideration will be required into how to best incorporate strategies designed to increase psychological flexibility, such as those used in contextual-behavioural therapies into parenting interventions without increasing the complexity of programs or reducing their accessibility and feasibility for parents (i.e., via increasing number of sessions and hours required). Comprehensive testing of new programs using rigorous research methods will be required for newly developed or adapted programs to determine whether adding psychological flexibility components improves outcomes for families over and above those already seen in programs adopting Parent Management Training theory.

#### **11.6. Conclusion**

This PhD project aimed to broaden our understanding of the pathways from parents' belief in their self-efficacy and their satisfaction in parenting to parenting practices and adolescent outcomes by exploring the role of the cognitive processes associated with psychological flexibility in mediating these pathways. The concept of psychological flexibility is drawn from contextual-behavioural psychology (Hayes, 1988; Hayes et al., 1994) and in a parenting context is defined as taking action that keeps the wellbeing of the child and/or the state of the parent-child relationship in mind even when doing so is linked to frustration, worry, disappointment, fear and the myriad of other difficult internal experiences for the parent.

Outcomes from this PhD project have resulted in a measure of Parental Psychological Flexibility that has a stable factor structure and adequate psychometric properties that remained constant across two samples of parents. As expected, the hypothesised model of parental psychological flexibility, parents' sense of competence, parenting practices and adolescent behaviour

confirms the literature suggesting that parenting self-efficacy and satisfaction are both directly and indirectly related to parenting practices and to adolescent behaviour, and that parenting practices directly influence adolescent behaviour. Most importantly, the study provides initial evidence of a link between parental psychological flexibility and the other variables in the model. This thesis therefore adds a new piece to our understanding of factors that have the potential to strengthen the parent-adolescent relationship and reduce the risk for behavioural difficulties during the adolescent years. These findings have implications for future efforts to improve the effectiveness of parenting interventions targeting the adolescent years at both a preventative and tertiary level.

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## APPENDICES



## APPENDIX A

### Study 1 Parent Survey Included Measures

#### A.1. 43 Item Version of the Parental Psychological Flexibility Questionnaire

	Please rate how true each statement is for you by circling a number from 1 to 7.	Never true	Very seldom true	Seldom true	Some-times true	Frequently true	Almost always true	Always true
1	I have to be in a good mood to spend quality time with my child (e.g. give affection, play, talk)	1	2	3	4	5	6	7
2	I can still take care of my parenting responsibilities even when I feel tired, stressed, sad or angry	1	2	3	4	5	6	7
3	It is okay to have unpleasant thoughts about my child	1	2	3	4	5	6	7
4	My past makes it difficult for me to parent in a way that I would really like to	1	2	3	4	5	6	7
5	I worry about not being able to control the feelings I have about my children	1	2	3	4	5	6	7
6	I can have a good relationship with my children no matter what I am thinking and feeling	1	2	3	4	5	6	7
7	My emotions cause problems in my relationship with my child	1	2	3	4	5	6	7
8	It seems to me that most people are better parents than I am	1	2	3	4	5	6	7
9	My emotions get in the way of the being the type of parent I would ideally like to be	1	2	3	4	5	6	7
10	My worries get in the way of me being successful as a	1	2	3	4	5	6	7

parent								
11	The disciplinary strategies I use with my child are controlled by my emotions rather than by me	1	2	3	4	5	6	7
12	I avoid situations where I think my child will do something to embarrass me	1	2	3	4	5	6	7
13	My feelings stop me from doing what I know is best for my children	1	2	3	4	5	6	7
14	I am able to take care of my parenting responsibilities even when I don't feel like it	1	2	3	4	5	6	7
15	I think that being with my child is so important that I often find it difficult to undertake my other tasks (housework, paid work)	1	2	3	4	5	6	7
16	I have to feel in the mood before I can give my child affection or attention	1	2	3	4	5	6	7
17	I can still take care of my parenting responsibilities even when I am doubting my abilities to parent	1	2	3	4	5	6	7
18	I avoid putting myself in situations that will make me worry about my ability to parent	1	2	3	4	5	6	7
19	I will be a better parent if I can control my negative thoughts and feelings about myself	1	2	3	4	5	6	7
20	I avoid putting myself in situations where I am not sure I can control my child's behaviour	1	2	3	4	5	6	7
21	I can get angry with my	1	2	3	4	5	6	7



	children and still be a good parent							
22	I don't let my child do many things with their friends because I don't think I could cope if something bad happened to him/her	1	2	3	4	5	6	7
23	If I am worried about an activity my child wants to do it must be for a good reason	1	2	3	4	5	6	7
24	I don't let my child do things that I'll worry about	1	2	3	4	5	6	7
25	I can't be a good parent if I am upset	1	2	3	4	5	6	7
26	It seems to me that most people manage their children better than I do	1	2	3	4	5	6	7
27	I'm afraid of the feelings I have about my children	1	2	3	4	5	6	7
28	I have refused to let my child do things that were important to them because I would worry too much (e.g., spend time with friends, walk to school by themselves)	1	2	3	4	5	6	7
29	Whatever I'm feeling in the moment controls the decisions I make and the actions I take in relation to parenting	1	2	3	4	5	6	7
30	My worries get in the way of me having a successful relationship with my child	1	2	3	4	5	6	7
31	My painful memories prevent me from parenting the way that I would like	1	2	3	4	5	6	7
32	Watching my child deal with new experiences as he/she grows up (e.g., starting high	1	2	3	4	5	6	7

	school, first kiss, puberty) is interesting and exciting							
33	Being a parent is so stressful that it is impossible for me to enjoy	1	2	3	4	5	6	7
34	If my child does something wrong I feel it is my fault	1	2	3	4	5	6	7
35	It is very stressful for me when I am not in control of my child's activities	1	2	3	4	5	6	7
36	I could not cope with the guilt if my child did something wrong	1	2	3	4	5	6	7
37	I am responsible for my child's behaviour	1	2	3	4	5	6	7
38	Worrying about my child's wellbeing gets in the way of my doing things that are really important to me	1	2	3	4	5	6	7
39	The unpredictability of being a parent is one of the things that makes parenting fun and rewarding	1	2	3	4	5	6	7
40	I can worry about my children and still be a good parent	1	2	3	4	5	6	7
41	I avoid putting myself in situations that will make me worry about my child's wellbeing	1	2	3	4	5	6	7
42	I try hard to get rid of any negative thoughts about my child	1	2	3	4	5	6	7
43	I am able to separate how I respond to my children from how I am feeling	1	2	3	4	5	6	7

## A.2. Demographic Information

### ABOUT MY FAMILY

Postcode: \_\_\_\_\_

Cultural \_\_\_\_\_

Group/Nationality:

In total, how many \_\_\_\_\_

people live in your house? (Include yourself, partner, children, other adults or relatives etc.)

Which of the following best describes your household? (please tick):

<input type="checkbox"/> Original (both biological or adoptive parents present)	<input type="checkbox"/> Sole Parent	<input type="checkbox"/> Step Family (two parents, one being step parent)	<input type="checkbox"/> Other
---	--------------------------------------	---	--------------------------------

### ABOUT ME

Age: \_\_\_\_\_

Number of Children: \_\_\_\_\_

Gender (please tick):  Male  Female

Country of Birth: \_\_\_\_\_

Highest level of education (please circle):

<input type="checkbox"/> Primary School	<input type="checkbox"/> Below Year 12	<input type="checkbox"/> Year 12	<input type="checkbox"/> Trade/TAFE	<input type="checkbox"/> Tertiary	<input type="checkbox"/> Post-Graduate
---	--	----------------------------------	-------------------------------------	-----------------------------------	--

Employment Status (please circle):

<input type="checkbox"/> Home Duties	<input type="checkbox"/> Part-time employed	<input type="checkbox"/> Full-time employed	<input type="checkbox"/> Pension	<input type="checkbox"/> Unemployed
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### ABOUT MY CHILD

Age: \_\_\_\_\_

Gender:  Male  Female

Country of birth: \_\_\_\_\_

Country where my child was raised? \_\_\_\_\_

Grade at school: \_\_\_\_\_

### A.3. Acceptance and Action Questionnaire (AAQ-II)

Please rate how true each statement is for you by circling a number next to it.	Never true	Very seldom true	Seldom true	Some - times true	Frequently true	Almost always true	Always true
It's OK if I remember something unpleasant.	1	2	3	4	5	6	7
My painful experiences and memories make it difficult for me to live a life that I would value.	1	2	3	4	5	6	7
I'm afraid of my feelings.	1	2	3	4	5	6	7
I worry about not being able to control my worries and feelings.	1	2	3	4	5	6	7
My painful memories prevent me from having a fulfilling life.	1	2	3	4	5	6	7
I am in control of my life.	1	2	3	4	5	6	7
Emotions cause problems in my life.	1	2	3	4	5	6	7
It seems like most people are handling their lives better than I am.	1	2	3	4	5	6	7
Worries get in the way of my success.	1	2	3	4	5	6	7
My thoughts and feelings do not get in the way of how I want to live my life.	1	2	3	4	5	6	7

#### A.4 Mindfulness Attention Awareness Scale (MAAS)

Below is a collection of statements about your everyday experience. Using the **1-6 scale** below, please indicate **how frequently or infrequently** you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

	<b>Almost always</b>	<b>Very frequently</b>	<b>Somewhat frequently</b>	<b>Somewhat infrequently</b>	<b>Very infrequently</b>	<b>Almost never</b>
I could be experiencing some emotion and not be conscious of it until sometime later.	1	2	3	4	5	6
I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	1	2	3	4	5	6
I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
It seems I am "running on automatic," without much awareness of what I'm doing.	1	2	3	4	5	6
I rush through activities without	1	2	3	4	5	6

being really attentive to them.						
I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	1	2	3	4	5	6
I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6
I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6
I drive places on 'automatic pilot' and then wonder why I went there.	1	2	3	4	5	6
I find myself preoccupied with the future or the past.	1	2	3	4	5	6
I find myself doing things without paying attention.	1	2	3	4	5	6
I snack without being aware that I'm eating.	1	2	3	4	5	6

### A.5. Parenting Sense of Competence Scale (PSOC)

Please circle the response that shows how much you agree or disagree with each statement.	Strongly agree	Agree	Mildly agree	Mildly disagree	Disagree	Strongly disagree
The problems of taking care of a child are easy to solve once you know how your actions affect your child; an understanding I have acquired.	1	2	3	4	5	6
Even though being a parent could be rewarding, I am frustrated now while my child is at his/her present age.	1	2	3	4	5	6
I go to bed the same way that I wake up in the morning — feeling that I have not accomplished a whole lot.	1	2	3	4	5	6
I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.	1	2	3	4	5	6
My parents were better prepared to be a good parent than I am.	1	2	3	4	5	6
I would make a fine model for a new parent to follow to learn what she/he would need to know in order to be a good parent.	1	2	3	4	5	6
Being a parent is manageable, and any problems are easily solved.	1	2	3	4	5	6
A difficult problem in being a parent is not knowing whether you are doing a good job or a bad one.	1	2	3	4	5	6
Sometimes I feel like I'm not getting anything done.	1	2	3	4	5	6
I meet my own personal expectations for expertise in caring for my child.	1	2	3	4	5	6
If anyone can find the answer to what is troubling my child, I am the one.	1	2	3	4	5	6
My talents and interests are in other areas, not in being a parent.	1	2	3	4	5	6
Considering how long I have been a parent, I feel thoroughly familiar with this role.	1	2	3	4	5	6
If being a parent was only more interesting, I would be motivated to do a better job.	1	2	3	4	5	6
I honestly believe I have all the skills necessary to be a good parent to my child.	1	2	3	4	5	6
Being a parent makes me tense and anxious.	1	2	3	4	5	6

### A.6. Involvement Scale of Authoritative Parenting Questionnaire

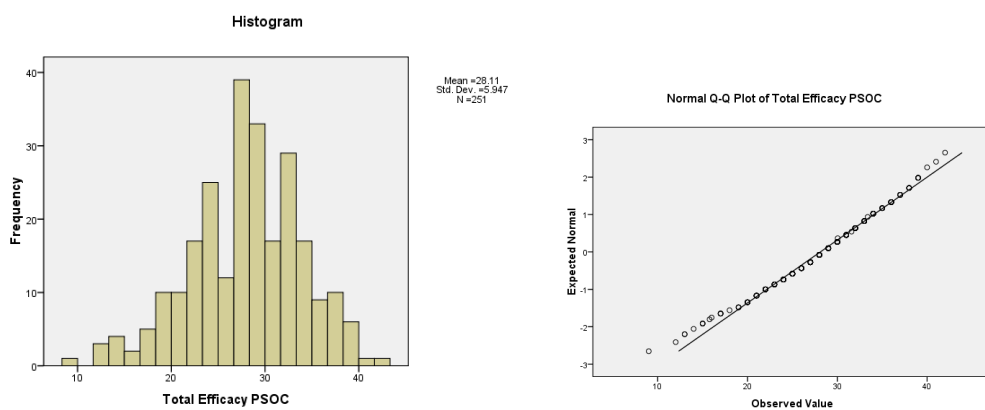
The following questions tell us about your preferred parenting style and how you like to run your home. Circle a number from Not Very Much (1) to Very Much (6).	Not very much	1	2	3	4	5	Very Much
My child can count on me to help him/her out, if he/she has some kind of problem.	1	2	3	4	5	6	
I keep pushing my child to do his/her best in whatever he/she does.	1	2	3	4	5	6	
I keep pushing my child to think independently.	1	2	3	4	5	6	
I help my child with his/her schoolwork if there is something he/she doesn't understand.	1	2	3	4	5	6	
When I want my child to do something, I explain why.	1	2	3	4	5	6	
If my child gets a poor grade in school, I encourage him/her to try harder.	1	2	3	4	5	6	
I know who my child's friends are.	1	2	3	4	5	6	
I spend time just talking with my child.	1	2	3	4	5	6	
My family does things for fun together	1	2	3	4	5	6	



## APPENDIX B

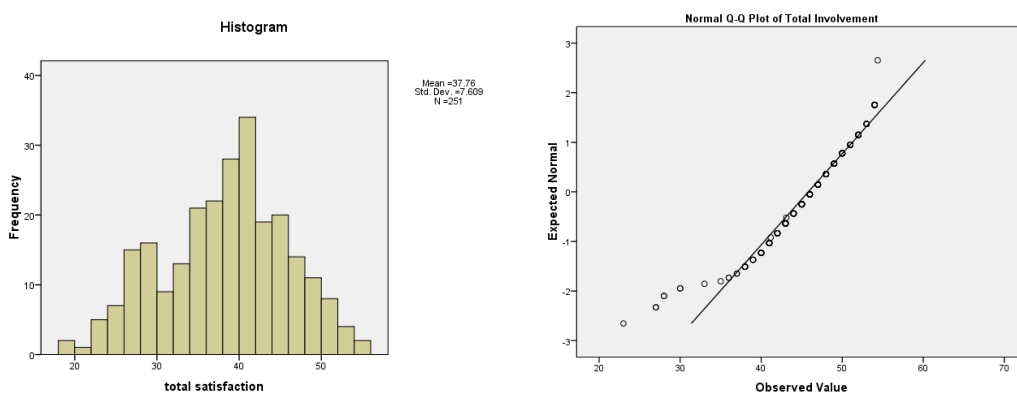
### B.1. Study 1 Tests of Normality

The figures below provide the histograms and Normal Q-Plots for the following scales: Parents' Sense of Competence (PSOC), Acceptance and Action Questionnaire – Version Two (AAQ-II), Authoritative Parenting Questionnaire – Involvement Subscale (Involvement) and the Mindfulness Attention Awareness Scale (MAAS)



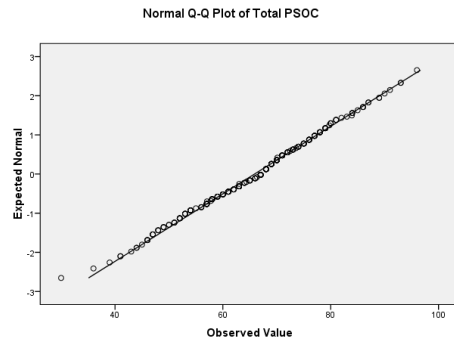
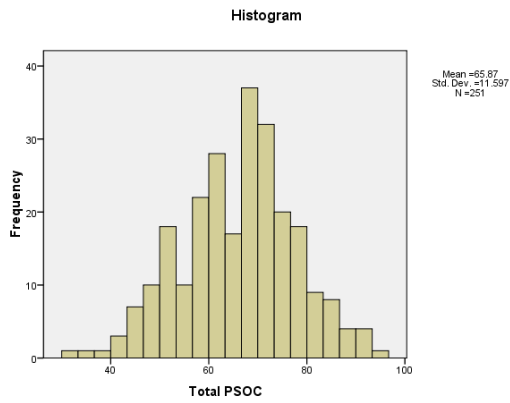
Figures B.1 and B.2

*Histograms and normal Q-Plots: PSOC efficacy subscale*



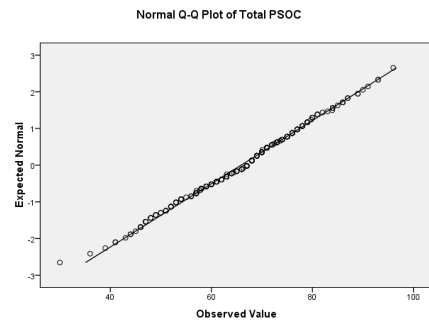
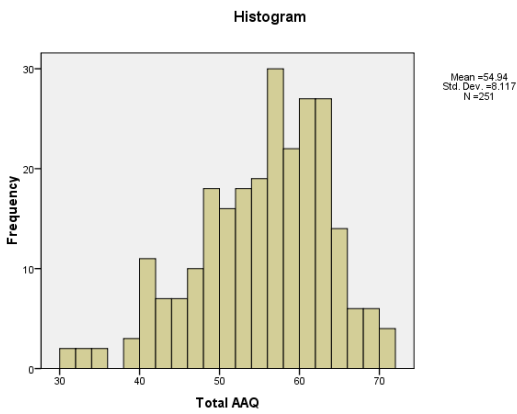
Figures B.3 and B.4

*Histograms and normal Q-Plots: PSOC satisfaction subscale*



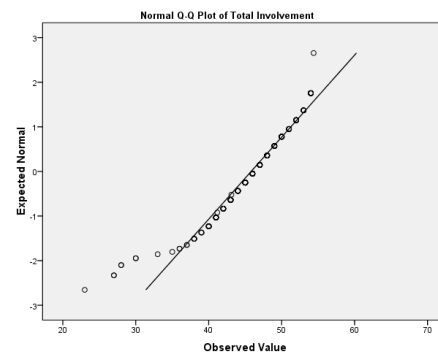
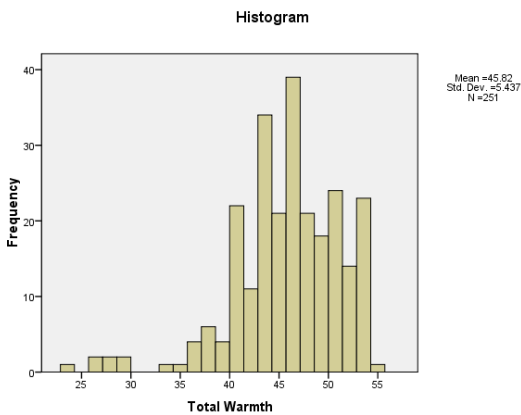
Figures B.5 and B.6

*Histograms and normal Q-Plots: PSOC total score*



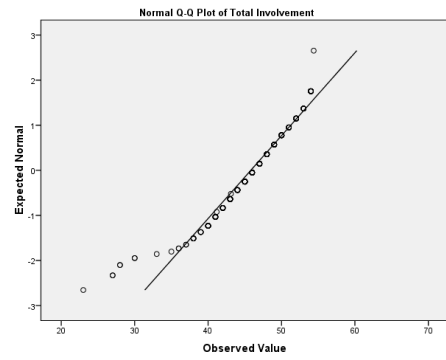
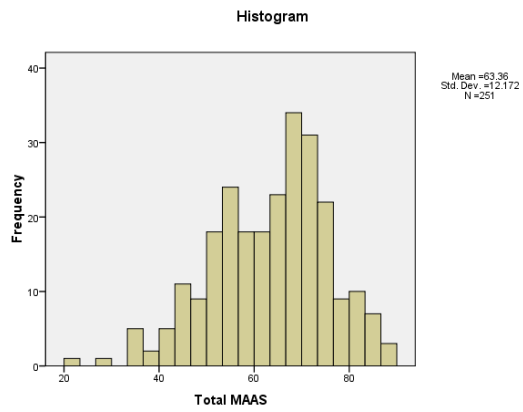
Figures B.7 and B.8

*Histograms and normal Q-Plots: AAQ-II*



Figures B.9 and B.10

*Histograms and normal Q-Plots: Involvement subscale*



Figures 11 and 12

*Histograms and normal Q-Plots: MAAS*



## APPENDIX C

### Recruitment Materials

#### C.1. Plain Language Statement

##### Consent Information Statement:

##### Parent Version: Phase 1



##### Project Title:

Psychological Flexibility as a Cognitive Process in Parenting Adolescents: Study Two – Investigation of the link between parental psychological flexibility, parent and adolescent outcomes.

##### Investigators:

Kylie Burke (Student Researcher, Swinburne University)

Professor Susan Moore (Research Supervisor, Swinburne University)

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#### 1. Introduction to Project and Invitation to Participate:

You are invited to take part in this project which aims to investigate whether some ways of thinking about parenting and our children are more helpful than others in promoting the wellbeing of teenagers and their parents.

This page contains detailed information about the project to help you decide whether or not to take part.

Please read this information carefully and feel free to ask any questions you have. You may also wish to discuss the project with a relative or friend or your local health worker.

If after reading this information, you decide you would like to take part in the project, please click “Start” to commence the survey. This shows that you understand the information and that you agree to participate.

Please download a copy of this Consent Information Statement to keep as a record.

#### 2. What this project is about and why it is being undertaken:

Adolescence can be a challenging time for both parents and children. Raising children to become responsible adults is an important task and trying to prevent problems from occurring can feel overwhelming and confusing for parents. Difficulties that families may face during this period include: increases in conflict, mental health issues for teenagers, and teenagers engaging in high risk behaviours such as drug and alcohol use.

Parents experience a large range of thoughts and emotions about themselves, their children and about the way they are raising their children (parenting). These thoughts and emotions can both help and get in the way of the decisions we make and the things we do with or for our children. Whilst most parents feel confident about their parenting and are able to manage their thoughts and emotions well, there are many parents who at times have doubts about their parenting and who find it difficult to control the negative thoughts and feelings that they experience. These difficulties can lead to problems such as stress, anxiety and depression and can result in higher levels of conflict with our children. As such, it is important that we find ways to assist parents to

cope with their thoughts and emotions so that they do not interfere with the parent-adolescent relationship or the wellbeing of teenagers and their parents.

This project is being undertaken wholly as part of a PhD thesis at Swinburne University. It will help us to identify whether there are some ways of thinking and dealing with emotions that are more effective in helping parents to protect their teenage children from harm and that promote their children's wellbeing. Specifically, this project will involve answering questions about your thoughts and feelings about parenting and about your child's behaviour.

A total of 200 parents/guardians (mothers and fathers) who are currently parenting children aged between ten and eighteen years will be invited to participate.

Participation in this project will involve completion of a survey package that contains questionnaires that ask about the ways you think and feel about parenting, how you cope with parenting and other aspects of life, your approach to parenting and your adolescent's behaviour.

Completion of the survey package will take approximately 30 minutes.

### **3. Participant rights and interests – Risks and Benefits/Back-up Support**

Many participants may find it a useful learning experience to reflect on their parenting whilst completing the survey package. However, whilst it is not anticipated that you will experience any negative effects by participating in this project, should any issues of concern present as a result of this project or the questions put, you may wish to access assistance or information from, your local GP or health professional. Additionally, support and information can be found by contacting your state based Parentline telephone service. Numbers for National Parentline services are provided below or can be found in the "Links" section of the following websites: [www.parentingteensurvey.com](http://www.parentingteensurvey.com) or [www.abcdparenting.org](http://www.abcdparenting.org). Both Parentline telephone services and the ABCD website provide useful advice and information for parents on a range of topics. The ABCD website contains information and strategies specifically for parents of adolescents. It also provides links to other services and resources that can provide assistance.

Participation in the project is anonymous. You will not be asked any questions that will identify you or your family.

### **4. Participant rights and interests – Free Consent/Withdrawal from participation**

Participation in this project is voluntary. Parents will be recruited via the Internet on both the Swinburne and ABCD parenting websites. Additionally, the project will be promoted via flyers sent to a range of community and parenting agencies across Victoria.

No personal information will be collected through this project that will allow you or your family to be identified. Your survey responses will be anonymous. **Consent to participate in this project will be implied by the online completion of the anonymous survey package.**

### **5. Participant rights and interests – Privacy and Confidentiality**

All data collected as part of the project is private and confidential. It will be collected, stored and disposed of according to Swinburne University's Policy on the Conduct of Research and Privacy Policy (see <http://ppd/swinburne.edu.au/humres/Privacy.htm>). All electronically collected information will be stored in a password protected computer file during the project and for seven years after it has finished. Following this, all data will be destroyed.

### **6. Research Output**

A summary of group results from the project will be made available on the Parenting Teens Survey and ABCD parenting websites within the next 12 months. Participants who wish to have a copy of this report may request one by contacting the Investigators (see contact details below).

Findings from this project will be published in a PhD thesis. They may also be published or presented in scientific journals or at conferences. If they are, only group data will be used.

**7. Further Information about the project – who to contact:**

If you would like further information about this project, please do not hesitate to contact:

Kylie Burke (Student Researcher) on Ph: 9214 5694 or via email:

KMBURKE@groupwise.swin.edu.au.

Or

Professor Susan Moore (Supervisor) on Ph: 9214 5694 or via email:

SMoore@groupwise.swin.edu.au.

**8. Concerns/complaints about the project – who to contact:**

This project has been approved by or on behalf of Swinburne’s Human Research Ethics Committee (SUHREC) in line with the *National Statement of Ethical Conduct in Human Research*. If you have any concerns or complaints about the conduct of this project, you can contact:

Research Ethics Officer, Swinburne Research (H68),

**National Parenting Services**

Parents and carers can call parenting telephone services in their state for counselling, referral, information and support service for children aged 0-18. Some phone numbers are free, some are the cost of a local call but all services are confidential and free of charge.

State	Service	Phone	Hours of operation
ACT	Parentline	(02) 6287 3833	9 am - 9 pm Mon - Fri
NSW	<u>Parentline</u>	13 20 55	9 am - 4.30 pm Mon - Sat
NT	<u>Parentline</u>	1300 301 300	8 am - 10 pm 7 days a week
QLD	<u>Parentline</u>	1300 301 300	8 am - 10 pm 7days a week
SA	<u>Parent Helpline</u>	1300 364 100	24/7
TAS	Parenting Helpline	1300 808 178	24/7
VIC	<u>Parentline</u>	13 22 89	8 am - 12 midnight Mon - Fri  10 am - 10 pm weekends
WA	<u>Parent Help Centre</u>	(08) 9272 1466 1800 654 432 (free for STD callers)	24/7

## C.2. Parenting Adolescents Survey Flyer



## New Research Project

Help us find out more about what works and doesn't work in parenting!

Are you the parent of a 10–18 year old child ?

Could you help with a survey aimed at exploring what parents do to protect their teenage children from harmful activities such as alcohol and truancy.

**What you will do:**

We need parents to answer questions about their child's behavior, parenting, their relationship with their child and the way in which they see the world.

This research is completely **voluntary and confidential**. The survey can be done online and will take approximately 20 minutes to complete

# Parenting adolescents

## Parenting Adolescents Survey



This project is part of a PhD project investigating the ways parents promote the health and wellbeing of their teenage children and themselves .

For more information contact :

**Kylie Burke**

**Email: [kylieburke2@gmail.com](mailto:kylieburke2@gmail.com)**



### **C.3. Email and Media Advertisement**

#### **How do families manage the challenge of raising adolescents?**

Many parents worry about their children behaving badly or getting involved in dangerous activities as they approach the teenage years.

Although we can never totally protect our children, research already shows that a critical part of dealing with unacceptable teenage behaviour and protecting young people from dangerous activities is the quality of their relationship with their parent, the boundaries set by parents, and the amount of involvement parents have in their children's lives.

A new research project, part of a PhD study at Swinburne University, will try to identify how parent attitudes about their parenting influences their child's behaviour.

**We need parents and their adolescent children** to answer questions about the children's behaviour, parenting, the parent-adolescent relationship and how parents see the world.

#### **Are you the parent of a 10–18 year-old child?**

If you are the parent of 10-18 year-old child and interested in helping us learn more about parenting adolescents, here's how you can take part:

9. You complete the survey online (your child does not take part in this option).

Complete the survey online: [Parenting Adolescents Survey](#)

This research is completely **voluntary and confidential**. The survey will take **about 30 minutes** to complete.

If you have any questions about the study, send an email to Kylie Burke: [kylieburke2@gmail.com](mailto:kylieburke2@gmail.com) or phone: 0402 512 798.



## APPENDIX D

### Ethics Approvals

#### D.1. Study 1 Approval

From: Keith Wilkins

Sent: Monday, 8 September 2008 5:43 PM

To: [kylieburke2@bigpond.com](mailto:kylieburke2@bigpond.com); Moore, Susan

Subject: SUHREC Project 2008/073 Ethics Clearance

To: Prof Susan Moore/Ms Kylie Burke, FLSS

Dear Sue and Kylie

SUHREC Project 2008/073 Acceptance as a Cognitive Process in Parenting of Young Adolescents Study One - Developments and Validation of the Acceptance in Parenting Questionnaire (APQ)

Prof Susan Moore FLSS Ms Kylie Burke

Approved Duration: 08/09/2008 To 31/07/2009

I refer to the ethical review of the above project protocol undertaken on behalf of Swinburne's Human Research Ethics Committee (SUHREC) by a SUHREC Subcommittee (SHESC1). Your responses to the review - as emailed on 4 September 2008 with revised consent instruments attached - were put to a Subcommittee delegate for consideration.

I am pleased to advise that the project (as submitted to date) has approval to proceed in line with standard on-going ethics clearance conditions here outlined.

- All human research activity undertaken under Swinburne auspices must conform to Swinburne and external regulatory standards, including the National Statement on Ethical Conduct in Human Research and with respect to secure data use, retention and disposal.

- The named Swinburne Chief Investigator/Supervisor remains responsible for any personnel appointed to or associated with the project being made aware of ethics clearance conditions, including research and consent procedures or

instruments approved. Any change in chief investigator/supervisor requires timely notification and SUHREC endorsement.

- The above project has been approved as submitted for ethical review by or on behalf of SUHREC. Amendments to approved procedures or instruments ordinarily require prior ethical appraisal/ clearance. SUHREC must be notified immediately or as soon as possible thereafter of (a) any serious or unexpected adverse effects on participants and any redress measures; (b) proposed changes in protocols; and (c) unforeseen events which might affect continued ethical acceptability of the project.

- At a minimum, an annual report on the progress of the project is required as well as at the conclusion (or abandonment) of the project.

- A duly authorised external or internal audit of the project may be undertaken at any time.

Please contact me if you have any queries about on-going ethics clearance. The SUHREC project number should be quoted in communication.

Best wishes for the project.

Yours sincerely

Keith Wilkins  
Secretary, SHESC1

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Keith Wilkins  
Research Ethics Officer  
Swinburne Research (H68)  
Swinburne University of Technology  
P O Box 218  
HAWTHORN VIC 3122  
Tel +61 3 9214 5218  
Fax +61 3 9214 5267

## **D.2. Study 2 Approval**

### **EMAIL COMMUNICATION: ETHICS APPROVAL STUDY 2 – SWINBURNE HREC**

To: Prof Susan Moore/Ms Kylie Burke, FLSS

Dear Sue and Kylie

SUHREC Project 2009/282 Psychological Flexibility as a Cognitive Process in Parenting Adolescents: Study two - Investigation of the link between parental psychological flexibility, parent and adolescent outcomes

Prof Susan Moore, FLSS; Ms Kylie Burke

Approved Duration: 01/02/2010 To 30/09/2011 [Adjusted]

I refer to the ethical review of the above project protocol by Swinburne's Human Research Ethics Committee (SUHREC). Your responses to the review, as emailed on 22 January 2010 with attachments, were put to a SUHREC delegate for consideration.

I am pleased to advise that, as submitted to date, the project has approval to proceed in respect of Phase 1 which is understood as not significantly involving Government or Catholic Schools. Once evidence of 'in principle' authority to involve these Schools (as applicable) has been submitted to my office, formal clearance will be accordingly issued.

The standard on-going ethics clearance conditions for the project to proceed as above are here outlined.

- All human research activity undertaken under Swinburne auspices must conform to Swinburne and external regulatory standards, including the current National Statement on Ethical Conduct in Human Research and with respect to secure data use, retention and disposal.

- The named Swinburne Chief Investigator/Supervisor remains responsible for any personnel appointed to or associated with the project being made aware of ethics clearance conditions, including research and consent procedures or instruments approved. Any change in chief investigator/supervisor requires timely notification and SUHREC endorsement.

- The above project has been approved as submitted for ethical review by or on behalf of SUHREC. Amendments to approved procedures or instruments

ordinarily require prior ethical appraisal/ clearance. SUHREC must be notified immediately or as soon as possible thereafter of (a) any serious or unexpected adverse effects on participants and any redress measures; (b) proposed changes in protocols; and (c) unforeseen events which might affect continued ethical acceptability of the project.

- At a minimum, an annual report on the progress of the project is required as well as at the conclusion (or abandonment) of the project.

- A duly authorised external or internal audit of the project may be undertaken at any time.

Please contact me if you have any queries about on-going ethics clearance, citing the SUHREC project number. Copies of clearance emails should be retained as part of project record-keeping.

Best wishes for the project.

Yours sincerely

Keith Wilkins

Secretary, SUHREC

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Keith Wilkins

Research Ethics Officer

Swinburne Research (H68)

Swinburne University of Technology

P O Box 218

HAWTHORN VIC 3122

Tel: 9214 5218

### **D.3 Final Ethics Clearance**

To: Ms Kylie Burke, FLSS

Dear Kylie

**SUHREC Project 2008/073 Acceptance as a Cognitive Process in Parenting of Young Adolescents Study One - Developments and Validation of the Acceptance in Parenting Questionnaire (APQ)**

Prof Susan Moore, FLSS; Ms Kylie Burke

Approved Duration: 08/09/2008 To 31/07/2009

**SUHREC Project 2009/282 Psychological Flexibility as a Cognitive Process in Parenting Adolescents: Study two - Investigation of the link between parental psychological flexibility, parent and adolescent outcomes**

Prof Susan Moore, FLSS; Ms Kylie Burke, Dr Rosalyn Galligan, Assoc Prof Denny Meyer

Approved Duration: 01/02/2010 To 30/09/2011 [Modified August 2010]

I confirm receipt of progress/final reports in line with ethics clearance conditions issued for the above projects related to the supervised doctoral course research.

Please contact me if you have any queries about the ethics clearances issued.

Best wishes for your thesis submission.

Yours sincerely

Keith

Keith Wilkins  
Secretary, SUHREC & Research Ethics Officer  
Swinburne Research (H68)  
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## APPENDIX E

### Study 2 Parent Survey Included Measures

#### E.1. 30 Item Version of the Parental Psychological Flexibility Questionnaire and Scoring details

The Parental Psychological Flexibility (PPF) contains a total of 30 items designed to measure the degree to which parents report psychological flexibility in relation to their parenting. High scores are designed to reflect high psychological flexibility and low scores to reflect low levels of psychological flexibility.

Each item is rated on a seven point Likert scale from “1” to “7”. This rating scale is consistent with the AAQ-2 (Bond et al, submitted) and was selected to allow comparisons with this and other measures of psychological flexibility. The PPF is scored by first making appropriate reversals to items and then subscale scores are calculated by summing items together (after appropriate reversals have been made).

#### Cognitive Defusion

12 items; All items reversed

Item by Factor	Study 2 Order	Item
1	r7	My emotions get in the way of the being the type of parent I would ideally like to be
2	r5	My emotions cause problems in my relationship with my child
3	r8	My worries get in the way of me being successful as a parent
4	r6	It seems to me that most people are better parents than I am
5	r2	My past makes it difficult for me to parent in a way that I would really like to
6	r20	My painful memories prevent me from parenting the way that I would like
7	r9	The disciplinary strategies I use with my child are controlled by my emotions rather than by me
8	r17	It seems to me that most people manage their children better than I do
9	r10	My feelings stop me from doing what I know is best for my children
10	r3	I worry about not being able to control the feelings I have about my children
11	r11	I have to feel in the mood before I can give my child affection or attention
12	r18	I'm afraid of the feelings I have about my children

## Experiential Willingness

8 items; All Items Reversed

Item by Factor	Study 2 Order	Item
13	r23	It is very stressful for me when I am not in control of my child's activities
14	r24	I could not cope with the guilt if my child did something wrong
15	r14	I don't let my child do many things with their friends because I don't think I could cope if something bad happened to him/her
16	r19	I have refused to let my child do things that were important to them because I would worry too much (e.g., spend time with friends, walk to school by themselves)
17	r16	I don't let my child do things that I'll worry about
18	r22	If my child does something wrong I feel it is my fault
19	r25	I am responsible for my child's behaviour
20	r26	Worrying about my child's wellbeing gets in the way of my doing things that are really important to me

## Acceptance

10 Items; Items not reversed

Item by Factor	Study 2 Order	Item
21	12	I can still take care of my parenting responsibilities even when I am doubting my abilities to parent
22	29	I am able to take care of my parenting responsibilities even when I don't feel like it
23	28	I can worry about my children and still be a good parent
24	1	I can still take care of my parenting responsibilities even when I feel tired, stressed, sad or angry
25	13	I can get angry with my children and still be a good parent
26	r15	If I am worried about an activity my child wants to do it must be for a good reason
27	4	I can have a good relationship with my children no matter what I am thinking and feeling
28	21	Watching my child deal with new experiences as he/she grows up (e.g., starting high school, first kiss, puberty) is interesting and exciting
29	30	I am able to separate how I respond to my children from how I am feeling
30	27	The unpredictability of being a parent is one of the things that makes parenting fun and rewarding

## E.2. Demographic Information

### ABOUT MY FAMILY

Postcode: \_\_\_\_\_

Cultural \_\_\_\_\_

Group/Nationality:

In total, how many \_\_\_\_\_

people live in your house? (Include yourself, partner, children, other adults or relatives etc.)

Which of the following best describes your household? (please tick):

<input type="checkbox"/> Original (both biological or adoptive parents present)	<input type="checkbox"/> Sole Parent	<input type="checkbox"/> Step Family (two parents, one being step parent)	<input type="checkbox"/> Other
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### ABOUT ME

Age: \_\_\_\_\_

Number of Children: \_\_\_\_\_

Gender (please tick):  Male  Female

Country of Birth: \_\_\_\_\_

Highest level of education (please circle):

<input type="checkbox"/> Primary School	<input type="checkbox"/> Below Year 12	<input type="checkbox"/> Year 12	<input type="checkbox"/> Trade/TAFE	<input type="checkbox"/> Tertiary	<input type="checkbox"/> Post-Graduate
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Employment Status (please circle):

<input type="checkbox"/> Home Duties	<input type="checkbox"/> Part-time employed	<input type="checkbox"/> Full-time employed	<input type="checkbox"/> Pension	<input type="checkbox"/> Unemployed
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### ABOUT MY CHILD

Age: \_\_\_\_\_

Gender:  Male  Female

Country of birth: \_\_\_\_\_

Grade at school: \_\_\_\_\_

### E.3 Mindfulness Attention Awareness Scale (MAAS)

Below is a collection of statements about your everyday experience. Using the **1-6 scale** below, please indicate **how frequently or infrequently** you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

	<b>Almost always</b>	<b>Very frequently</b>	<b>Somewhat frequently</b>	<b>Somewhat infrequently</b>	<b>Very infrequently</b>	<b>Almost never</b>
I could be experiencing some emotion and not be conscious of it until sometime later.	1	2	3	4	5	6
I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	1	2	3	4	5	6
I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
It seems I am "running on automatic," without much awareness of what I'm doing.	1	2	3	4	5	6
I rush through activities without	1	2	3	4	5	6

being really attentive to them.						
I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	1	2	3	4	5	6
I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6
I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6
I drive places on 'automatic pilot' and then wonder why I went there.	1	2	3	4	5	6
I find myself preoccupied with the future or the past.	1	2	3	4	5	6
I find myself doing things without paying attention.	1	2	3	4	5	6
I snack without being aware that I'm eating.	1	2	3	4	5	6

#### E.4. Parenting Sense of Competence Scale (PSOC)

<b>Please circle the response that shows how much you agree or disagree with each statement.</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Mildly agree</b>	<b>Mildly disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
The problems of taking care of a child are easy to solve once you know how your actions affect your child; an understanding I have acquired.	1	2	3	4	5	6
Even though being a parent could be rewarding, I am frustrated now while my child is at his/her present age.	1	2	3	4	5	6
I go to bed the same way that I wake up in the morning — feeling that I have not accomplished a whole lot.	1	2	3	4	5	6
I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.	1	2	3	4	5	6
My parents were better prepared to be a good parent than I am.	1	2	3	4	5	6
I would make a fine model for a new parent to follow to learn what she/he would need to know in order to be a good parent.	1	2	3	4	5	6
Being a parent is manageable, and any problems are easily solved.	1	2	3	4	5	6
A difficult problem in being a parent is not knowing whether you are doing a good job or a bad one.	1	2	3	4	5	6
Sometimes I feel like I'm not getting anything done.	1	2	3	4	5	6
I meet my own personal expectations for expertise in caring for my child.	1	2	3	4	5	6
If anyone can find the answer to what is troubling my child, I am the one.	1	2	3	4	5	6
My talents and interests are in other areas, not in being a parent.	1	2	3	4	5	6
Considering how long I have been a parent, I feel thoroughly familiar with this role.	1	2	3	4	5	6
If being a parent was only more interesting, I would be motivated to do a better job.	1	2	3	4	5	6
I honestly believe I have all the skills necessary to be a good parent to my child.	1	2	3	4	5	6
Being a parent makes me tense and anxious.	1	2	3	4	5	6

## E.5. Alabama Parenting Practices Questionnaire – Short Form

**Instructions:** The following are a number of statements about your family. Please rate each item as to how often it typically occurs in your home. Possible answers are: Never (1), Almost Never (2), Sometimes (3), Often (4), Always (5). Please answer all items

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1. You let your child know when he/she is doing a good job with something	1	2	3	4	5
2. You threaten to punish your child and then do not actually punish him/her	1	2	3	4	5
3. Your child fails to leave a note or to let you where he/she is going	1	2	3	4	5
4. Your child talks you out of being punished after he/she has done something wrong	1	2	3	4	5
5. Your child stays out in the evening after the time he/she is supposed to be home	1	2	3	4	5
6. You compliment your child after he/she has done something well	1	2	3	4	5
7. You praise your child if he/she behaves well	1	2	3	4	5
8. Your child is out with friends you don't know	1	2	3	4	5
9. You let your child out of a punishment early (like lift restrictions earlier than you originally said)	1	2	3	4	5

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## E.6 Parenting Scale

For each item below, please indicate by circling a number from one to eight which of the statements is more true for you.

When there's a problem with my child:	1	2	3	4	5	6	7	8
	Things build up and I do things I don't mean to.				Things don't get out of hand			
After there's been a problem with my child:	1	2	3	4	5	6	7	8
	I often hold a grudge				Things get back to normal quickly.			
When I am upset or under stress:	1	2	3	4	5	6	7	8
	I'm on my child's back.				I am no more picky than usual			
When my child misbehaves:	1	2	3	4	5	6	7	8
	I raise my voice or yell.				I speak to my child calmly			
When my child misbehaves:	1	2	3	4	5	6	7	8
	I usually get into a long argument with my child.				I don't get into an argument			
When I want my child to stop doing something:	1	2	3	4	5	6	7	8
	I coax or beg my child to stop				I firmly tell my child to stop			
If saying no doesn't work:	1	2	3	4	5	6	7	8
	I offer my child something nice so he/she will behave.				I take some other kind of action			
When my child won't do what I ask:	1	2	3	4	5	6	7	8
	I often let it go or end up doing it myself.				I take some other kind of action			
If my child gets upset when I say "No":	1	2	3	4	5	6	7	8
	I back down and give in.				I stick to what I said			
When my child does something I don't like:	1	2	3	4	5	6	7	8
	I often let it go.				I do something about it every time it happens			



## E.7. Strengths and Difficulties Questionnaire (Parent Report - 11-17 years)

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of your child's behaviour over the last six months.

(a)	Considerate of other people's feelings	0	1	2
(b)	Restless, overactive, cannot stay still for long	0	1	2
(c)	Often complains of headaches, stomach-aches or sickness	0	1	2
(d)	Shares readily with other youth, for example CD's, games, food	0	1	2
(e)	Often loses temper	0	1	2
(f)	Would rather be alone than with other young people	0	1	2
(g)	Generally well behaved, usually does what adults request	0	1	2
(h)	Many worries or often seems worried	0	1	2
(i)	Helpful if someone is hurt, upset or feeling ill	0	1	2
(j)	Constantly fidgeting or squirming	0	1	2
(k)	Has at least one good friend	0	1	2
(l)	Often fights with other young people or bullies them	0	1	2
(m)	Often unhappy, depressed or tearful	0	1	2
(n)	Generally liked by other young people	0	1	2
(o)	Easily distracted, concentration wanders	0	1	2
(p)	Nervous in new situations, easily loses confidence	0	1	2
(q)	Kind to younger children	0	1	2
(r)	Often lies or cheats	0	1	2
(s)	Picked on or bullied by other young people	0	1	2
(t)	Often volunteers to help others (parents, teachers, children)	0	1	2
(u)	Thinks things out before acting	0	1	2
(v)	Steals from home, school or elsewhere	0	1	2
(w)	Gets along better with adults than with other young people	0	1	2
(x)	Many fears, easily scared	0	1	2
(y)	Good attention span, sees chores or homework through to the end	0	1	2

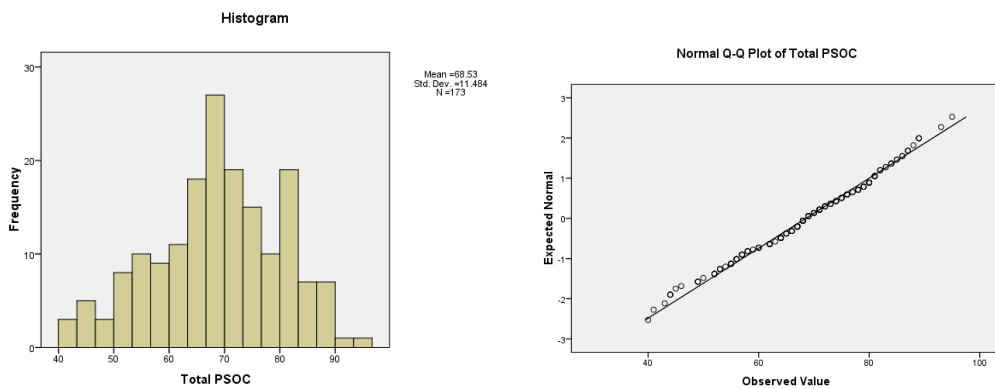


## APPENDIX F.

### Study 2: Normality Testing

#### F.1. Parent's Sense of Competence

Parent's Sense of Competence is being assessed using the Parent Sense of Competence Scale (PSOC) Total Scale. Inspection of Histograms and Normal Q-Q plot, indicated that the Total Scale approximated normality (see Figures F1 to F2). Kurtosis and Skewness levels were low and indicated data was widely dispersed and had a slight skew to the right. High scores relate to higher levels of competence in parenting as would be expected in a general sample of parents.



Figures F1 – F2

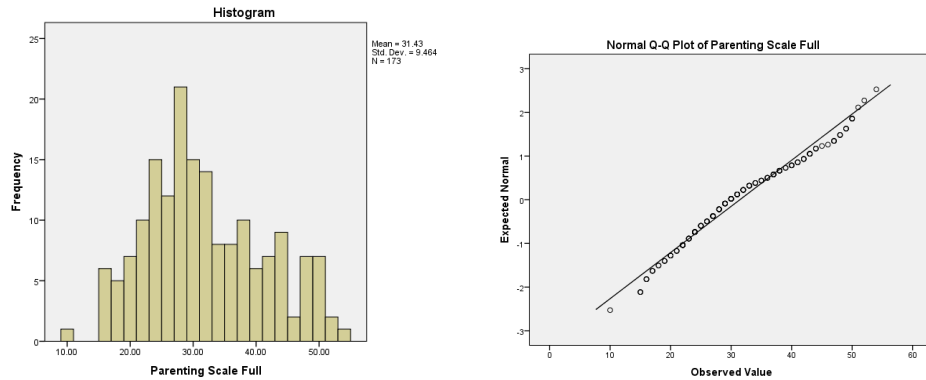
*Histograms and normal Q-Q plots for the Total PSOC*

#### F.2. Parenting Practices

Parenting Practices were assessed using the Alabama Parenting Questionnaire and the Parenting Scale.

Inspection of Histograms and Normal Q-Q plot for the Parenting Scale (Full Scale) indicated that the Over-reactivity subscale approximated normality with low positive skew (.36) and negative kurtosis (-.58) (Figures F3 – F4) indicating that scores were clustered more in the low range. As low scores indicated lower levels of dysfunctional parenting these results are to be expected in the current sample. Additionally, inspection of the Boxplot showed an extreme

outlier in Case ID 433403 with their score indicated an extremely low score. Removal of this case resulted in an improvement in Kurtosis (to .63) with values moving closer to zero.

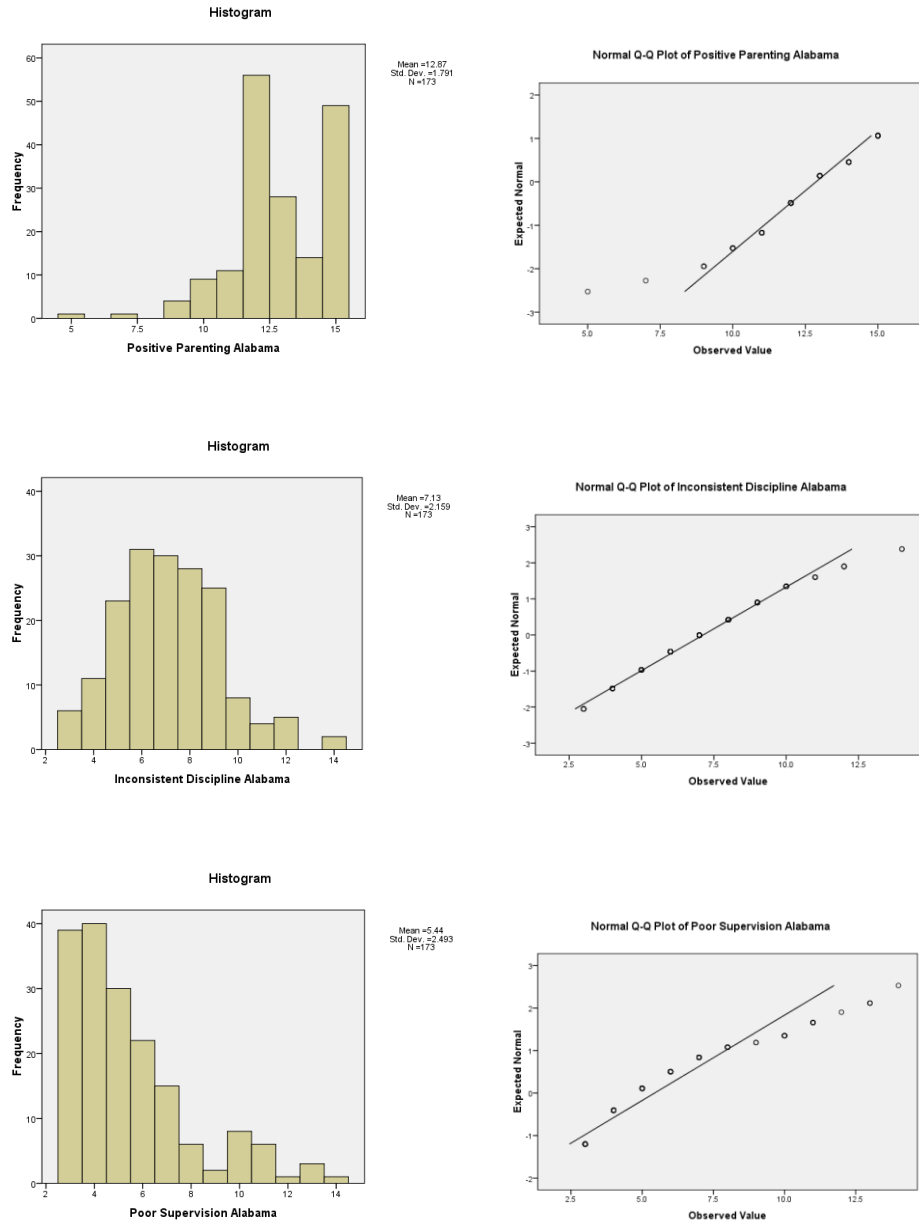


Figures F3 – F4

#### Histograms and normal Q-Q plots for the Parenting Scale

Inspection of Histograms and Normal Q-Q plot for the Alabama indicated that the Positive Parenting subscale had a positive skew with negative kurtosis (Figures F5 - F10) indicating that parents reported scores at the low end of this subscale which indicates lower levels of positive parenting. The Inconsistent Discipline and Poor Supervision had negative skew and kurtosis indicating scores at the higher end of the scale. High Scores on these two subscales indicate higher levels of dysfunction parenting practices related to discipline and supervision. However, the skewness and kurtosis was only concerning for the Positive Parenting and Poor Supervision subscales with kurtosis being over 1 for Positive Parenting and Poor Supervision values over 1 for both kurtosis and skewness. Inspection of the Boxplot showed extreme outliers for Positive Parenting in Cases ID 455430 and 531591 and for Poor Supervision in Cases ID 497938 and 673021 with their score indicated an extremely low level of Positive Parenting. Removal of the most extreme case (ID 455430) resulted in the best improvement in both Skewness (to  $-.397$ ) and Kurtosis (to  $-.141$ ) with values moving closer to zero. Removal of outliers from the Poor Supervision subscale did not substantively improve the distribution. As such a square root transformation was performed. Whilst results from the transformation did improve the skewness ( $.943$ ) and

kurtosis (.271), the overall distribution did not improve and so the original variable was retained.



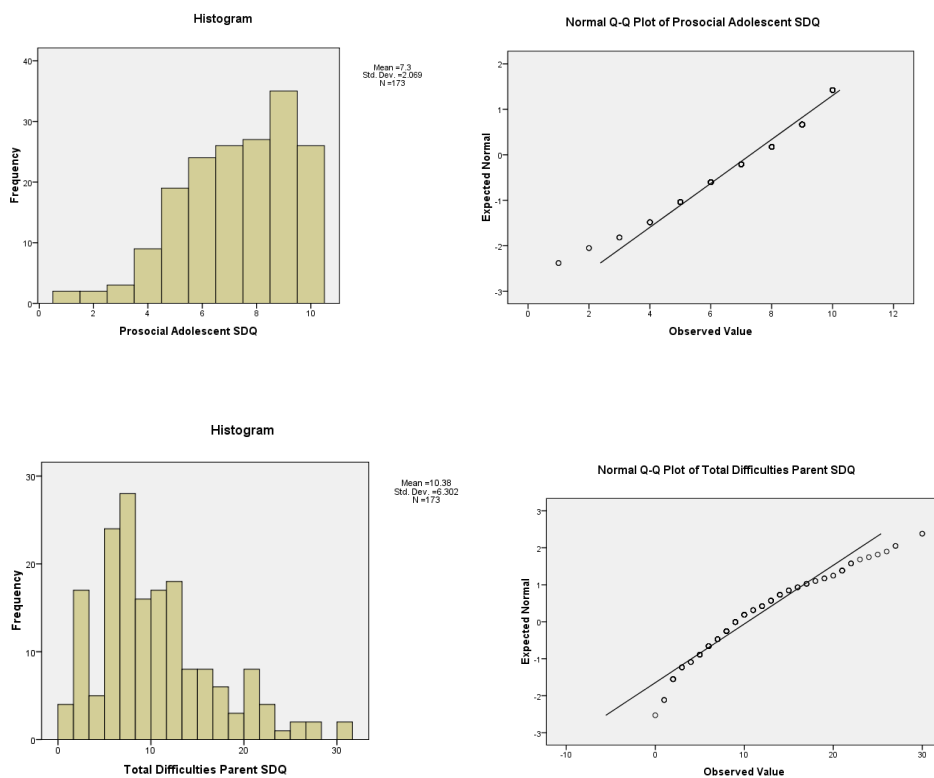
Figures F5 – F10

Histograms and normal Q-Q plots for the Alabama parenting questionnaire

### F.3. Adolescent Behaviour

Adolescent Behaviour was assessed using the Strengths and Difficulties Questionnaire (SDQ). Inspection of Histograms and Normal Q-Q plot for the SDQ indicated that all subscales violated assumptions of normality. Figures F11 – F14

provide the Histograms and Normal Q-Q Plots for the SDQ subscales. The Prosocial subscale, as could be expected, was negatively skewed with negative kurtosis, indicating that parents tended to score at the high end of the scale. High scores on this subscale represent normal levels of functioning, with higher levels of social skills in adolescents as viewed by their parents. Given that the study involved a general population sample these results are not surprising. The Total Difficulties subscale was positively skewed, indicating that parents rated their children at the low end. High scores on this scale are indicative of adolescent behaviour problems and would not be expected in a general sample parents. The Total Difficulties subscale had positive kurtosis indicating a distribution more clustered together with higher peaks.



Figures F11 – F14

Histograms and normal Q-Q plots for the SDQ Prosocial and Total Difficulties subscales

## APPENDIX G

### 19 Item Parental Psychological Flexibility Questionnaire

#### G.1. PPF Scale and Scoring Properties

The Parental Psychological Flexibility (PPF) contains a total of 19 items designed to measure the degree to which parents report psychological flexibility in relation to their parenting. High scores are designed to reflect high psychological flexibility and low scores to reflect low levels of psychological flexibility. High psychological flexibility is conceptualised as being characterised by high acceptance, low cognitive fusion, and low experiential avoidance.

Each item is rated on a seven point Likert scale from “1” to “7”. This rating scale is consistent with the AAQ-II (Bond et al., 2011) and was selected to allow comparisons with this and other measures of psychological flexibility.

The PPF is scored by first making appropriate reversals to items, then subscale scores are calculated by summing items together (after appropriate reversals have been made) and dividing by the total number of items in the subscale.

#### Cognitive Defusion

- 8 items
- Cronbach’s alpha  $\alpha = .81$
- All items reversed
- M= 5.6; SD = .96

Study 2 Item No.	Item
r7	My emotions get in the way of the being the type of parent I would ideally like to be
r5	My emotions cause problems in my relationship with my child
r8	My worries get in the way of me being successful as a parent
r6	It seems to me that most people are better parents than I am
r20	My painful memories prevent me from parenting the way that I would like
r10	My feelings stop me from doing what I know is best for my children
r3	I worry about not being able to control the feelings I have about my children
r11	I have to feel in the mood before I can give my child affection or attention

### Healthy Control

- 5 items
- Cronbach's alpha  $\alpha = .75$
- All Items Reversed
- M= 5.11; SD = .98

Study 2 Item No.	Item
r24	I could not cope with the guilt if my child did something wrong
r14	I don't let my child do many things with their friends because I don't think I could cope if something bad happened to him/her
r19	I have refused to let my child do things that were important to them because I would worry too much (e.g., spend time with friends, walk to school by themselves)
r16	I don't let my child do things that I'll worry about
r25	I am responsible for my child's behaviour

### Acceptance

- 6 items
- Cronbach's alpha  $\alpha = .71$
- Items not reversed
- M= 5.39; SD = .83

Study 2 Item No	Item
1	I can still take care of my parenting responsibilities even when I feel tired, stressed, sad or angry
13	I can get angry with my children and still be a good parent
4	I can have a good relationship with my children no matter what I am thinking and feeling
21	Watching my child deal with new experiences as he/she grows up (e.g., starting high school, first kiss, puberty) is interesting and exciting
30	I am able to separate how I respond to my children from how I am feeling
27	The unpredictability of being a parent is one of the things that makes parenting fun and rewarding



## APPENDIX H

### Study 2: Hypothesis Testing Results

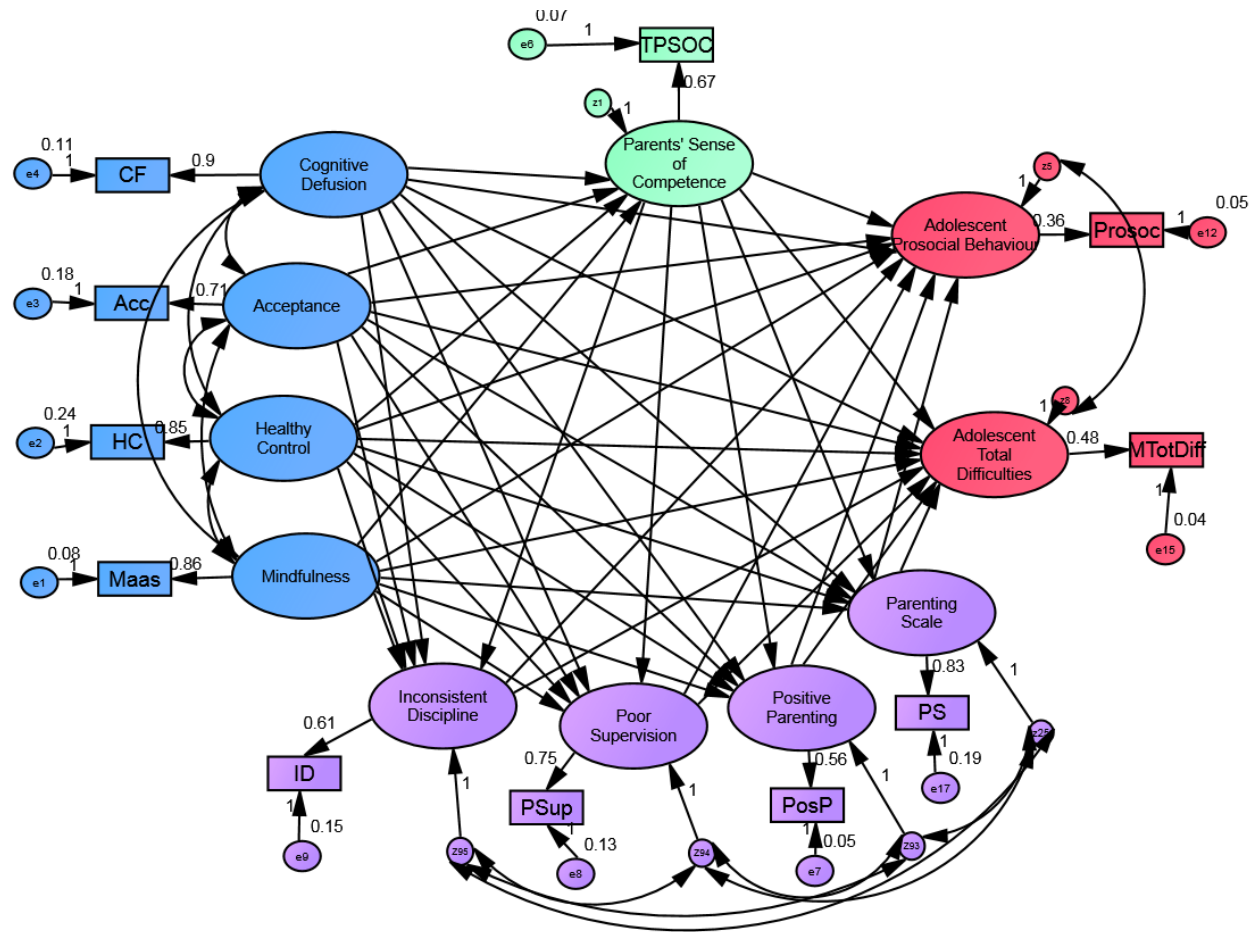


Figure H.1

*Hypothesised full structural model with Munck's values*



## Hypothesis Testing Based on a Saturated Model

Table H.1

*Unstandardised regression weights and p-values*

Regression Weights: (Group number 1 - Default model)

	Path		Unstandardised Regression Weight	p-value
PSOC	<---	Cognitive Defusion	.061	***
PSOC	<---	Acceptance	.035	***
PSOC	<---	Healthy Control	.007	.576
PSOC	<---	MAAS	.067	.452
Poor Supervision	<---	PSOC	-1.482	***
Parenting Scale	<---	Cognitive Defusion	-.041	.001
Parenting Scale	<---	MAAS	-.233	.018
Inconsistent Discipline	<---	Cognitive Defusion	-.113	.011
Inconsistent Discipline	<---	Healthy Control	-.221	***
Parenting Scale	<---	Acceptance	-.021	.076
Positive Parenting	<---	Acceptance	.213	***
Positive Parenting	<---	Healthy Control	-.108	.011
Positive Parenting	<---	Cognitive Defusion	-.005	.907
Poor Supervision	<---	Cognitive Defusion	-.068	.129
Parenting Scale	<---	PSOC	-.165	.144
Positive Parenting	<---	PSOC	-.097	.793
Inconsistent Discipline	<---	PSOC	-.268	.490
Poor Supervision	<---	Acceptance	.059	.160
Inconsistent Discipline	<---	Acceptance	.015	.724
Poor Supervision	<---	Healthy Control	-.051	.267
Parenting Scale	<---	Healthy Control	.004	.773
Positive Parenting	<---	MAAS	.370	.249
Poor Supervision	<---	MAAS	.553	.107
Inconsistent Discipline	<---	MAAS	.018	.958
Prosocial	<---	PSOC	1.646	.027
Prosocial	<---	Poor Supervision	-.366	.011
Total Difficulties	<---	Inconsistent Discipline	.018	.256
Total Difficulties	<---	PSOC	-.034	.650
Prosocial	<---	Acceptance	.066	.404
Total Difficulties	<---	Acceptance	.002	.761
Prosocial	<---	Healthy Control	-.065	.451
Total Difficulties	<---	Healthy Control	-.008	.374
Total Difficulties	<---	MAAS	-.061	.332
Prosocial	<---	MAAS	.960	.125

	Path		Unstandardised Regression Weight	p-value
Prosocial	<---	Inconsistent Discipline	.024	.879
Total Difficulties	<---	Cognitive Defusion	-.005	.568
Prosocial	<---	Parenting Scale	-.900	.330
Total Difficulties	<---	Positive Parenting	.009	.582
Total Difficulties	<---	Poor Supervision	.071	***
Prosocial	<---	Positive Parenting	.140	.403
Prosocial	<---	Cognitive Defusion	-.191	.021
Total Difficulties	<---	Parenting Scale	.134	.146

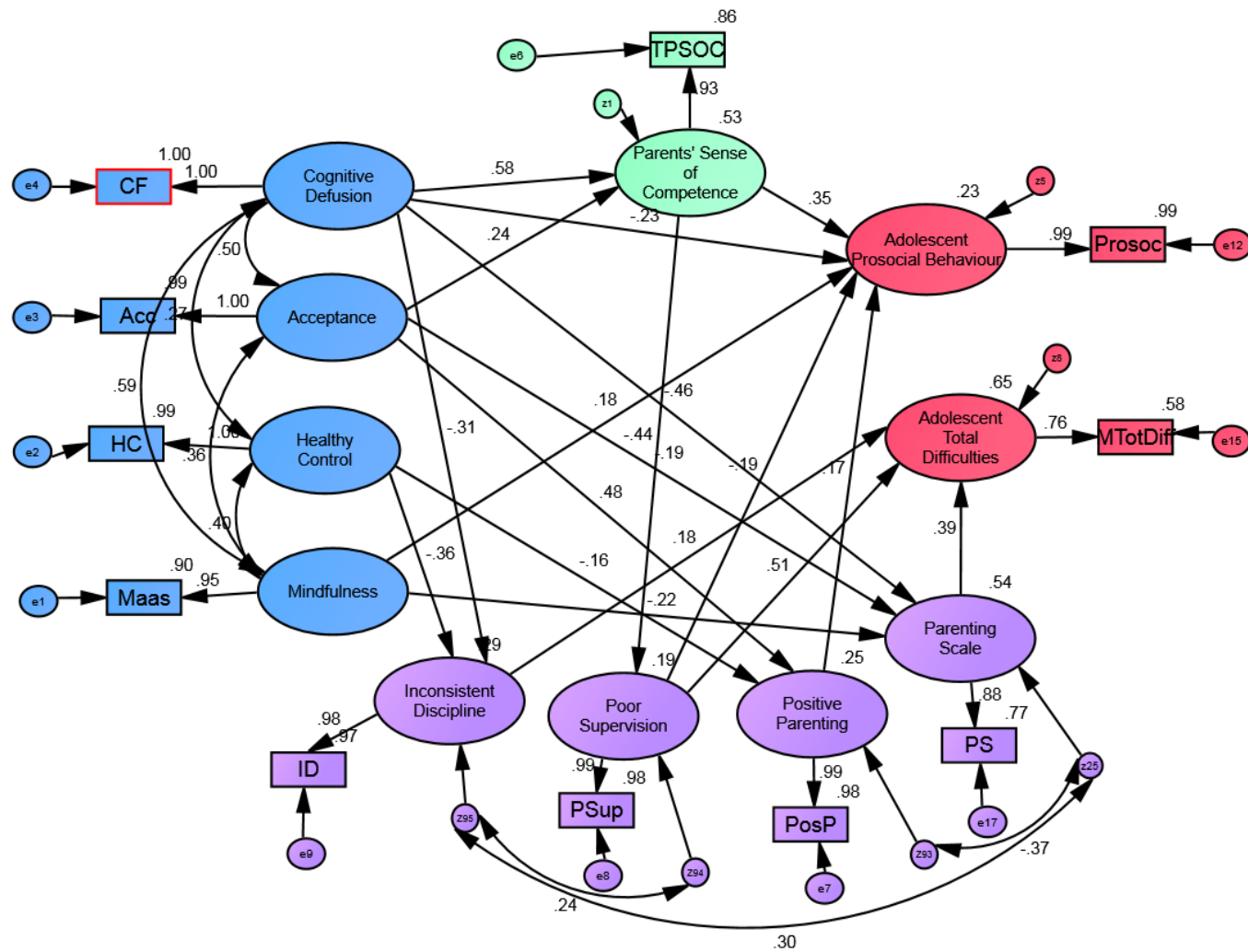


Figure H.2

Final mixed model standardised regression weights, measurement- error terms and covariances