Adolescent self-cognitions: From parental origins to their influence on depression

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2018

A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Clinical Psychology/ Doctor of Philosophy
This is to certify that, to the best of my knowledge, the content of this thesis is my own work. This thesis has not been submitted for any degree or other purposes.

I certify that the intellectual content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and sources have been acknowledged.

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Acknowledgments

Thank you to my primary supervisor, Professor Caroline Hunt for your ongoing support and encouragement over many years, research challenges, changes in enrolment status, and multiple pregnancies. I have always been able to rely on you to be there for me, no matter what I wanted to do with my research or what was going on in my life and I am grateful for that. Thank you to my secondary supervisor, Associate Professor Maree Abbott for her advice and encouragement and for convincing me that a PhD ‘wouldn’t be that much work’. You were wrong, by the way.

Thank you to the CPU staff for much research advice over the years. Thank you to Dr Dan Costa for statistical support. Thank you to my fellow DCPs for bringing fun and comradery to a long and challenging journey. I appreciate the support, understanding, advice and normalisation that you have been there to provide, and am so glad to have gone through this with you.

Thank you to my family. Mum and Dad, thank you for the many years of emotional and financial support of my tertiary education which have led to this point. I am grateful for your faith in me. Adrian, thank you for being there for me, for your unwavering belief in my abilities, for the sacrifices you have made to support me and for the knowledge that you are always there for me. I look forward to returning the favour. Akos and Adam, thank you for being you. I am so grateful for you.

Finally, thank you to all the adolescents, parents and teachers who participated in and supported this research and without whom this research would not have been possible.
Abstract

Self-cognitions are argued to develop most dramatically during the childhood and adolescent periods. Largely formed through feedback from significant others, parents are seen as the most influential figures in this process. As such, parent behaviour is expected to be a key influence on the development of children’s self-cognitions. Parents’ own self-beliefs are also likely to affect their parenting behaviours. Additionally, during this period the incidence of depression rises. Self-cognitions are theorised to play a central role in the development of depression during adolescence. Thus, the aim of this research was to examine how parents influence the development of their children’s self-cognitions and how those self-cognitions affect the development of depression.

Study 1 was a meta-analysis that examined the theoretical assumption that parenting behaviour influences the development of child and adolescent self-cognitions. Systematic review of six databases, containing published and unpublished research, resulted in the inclusion of 23 studies. Across these studies, data from 14,378 children (mean age = 12.4, range = 9.31 to 17 years) were extracted that measured parenting behaviour and child self-cognitions at Time 1 and child self-cognitions at Time 2 (at least six months later). Controlling for initial levels of self-cognitions, a small but significant relation was found between parenting behaviour and later child self-cognitions ($r = .12$). As such, parenting behaviour appears to have a small but robust influence on child self-cognitions during the late childhood and adolescent period.

Building on this finding, Study 2 explored the relations between specific types of parenting behaviour (behavioural control, support and psychological control) and particular child self-cognitions (self-esteem and self-criticism) in early adolescence. Behavioural control, which involves parents providing clear rules and guidance around appropriate behaviours, was a specific focus. The effect of this behaviour on adolescents is unclear,
although theoretically it is expected to be beneficial. Two-hundred and forty-three participants (mean age = 12.08) reported their parents’ behaviours at baseline (Time 1) and their own self-cognitions at baseline and again approximately 12- (Time 2) and 24-months (Time 3) later. Results unexpectedly indicated that behavioural control did not benefit self-beliefs and, in fact, was associated with increases in self-criticism in girls. These findings support the notion that parenting behaviours influence the development of child self-cognitions. Further, behavioural control in particular appears to lead to more negative self-beliefs, at least in girls.

Given the influence of parenting behaviour on child self-cognitions, Study 3 aimed to better understand the origins of parenting behaviours. Theory suggests that parental psychological wellbeing, which is influenced by parents’ own self-cognitions, is likely to affect parental behaviour. As such, parents with more positive self-beliefs are expected to use more helpful parenting approaches, while the reverse is expected for those with more negative self-beliefs. One-hundred and four mothers of Grade 7 students completed measures of their parenting behaviours and a range of self-cognitions (self-esteem, self-criticism and domain specific self-concepts). Results suggested that the combined influence of increased negative self-cognitions and decreased positive self-cognitions was related to greater use of psychological control. Support and behavioural control were not strongly associated with parents’ self-cognitions. Psychological control involves diminishing a child’s sense of worth to gain control over them. As such, parents who feel worse about themselves appear more likely to use a harmful parenting approach such as psychological control, which aims to make children feel worse about themselves.

As the results of Studies 1 and 2 suggested that parenting does influence child self-cognitions, Study 4 examined whether the development of self-cognitions was related to adolescent depression. Theories suggest that both reductions in self-esteem and increases in
self-criticism create vulnerability to depression and thus predict later increases in depression symptoms. Depression is not expected to predict either self-cognition. Using the same sample as Study 2, Study 4 examined, via growth curve modelling, whether changes in rates of self-criticism and self-esteem were related to changes in depression symptoms. Cross-lagged analysis was then used to examine pathways from all three variables from Time 1 to Time 2, and from Time 2 to Time 3. Growth curve modelling suggested that self-criticism and depression increased over the time-period, while self-esteem decreased, and these changes were all related. In the cross-lagged analysis, while reduced self-esteem at Time 2 did predict increased depression at Time 3, increased depression predicted reduced self-esteem from Times 1 to 2. Furthermore, self-criticism did not predict depression, nor did depression predict self-criticism. This pattern remained largely unchanged when gender was controlled, suggesting similar effects for boys and girls. As such, it appears that self-esteem plays a significant reciprocal role in the development of depression during early adolescence, but self-criticism does not.

Overall, these findings suggest that parenting behaviour does influence the development of child self-cognitions, although this relation is relatively small. Further, in early adolescence, it appears that, for girls at least, behavioural control has a particularly significant effect as it increases self-criticism. Parents’ behaviours appear linked to their own self-beliefs, although primarily only psychological control, with parents who have higher levels of negative self-beliefs more likely to use this approach. Further, self-cognitions have important clinical implications. The development of self-esteem and depression appear to be reciprocally related, with increased depression leading to decreased self-esteem and vice versa. However, self-criticism does not appear to influence depression. As such, these findings suggest complex relations between parenting, child self-cognitions and depression during the adolescent period. Given the role of parent behaviour in the development of
negative self-beliefs, they also indicate a possible crucial role for parents in the prevention and treatment of adolescent depression.
# Table of Contents

Acknowledgments .................................................................................................................. ii
Abstract...................................................................................................................................... iii
Table of Contents ....................................................................................................................... vii
List of Tables .......................................................................................................................... xi
List of Figures ......................................................................................................................... xii

1. Introduction .................................................................................................................................. 1
   1.1. Parenting and the Development of Self-Cognitions ............................................................. 1
       1.1.1. The development of the self ...................................................................................... 1
       1.1.2. Parents and the psychological development of children .............................................. 3
       1.1.3. Parenting and the development of the self ................................................................. 7
   1.2. The Origins of Parenting Behaviour .................................................................................. 10
   1.3. Self-Cognitions and Adolescent Depression ..................................................................... 14
       1.3.1. Self-cognitions and the development of depression ..................................................... 14
       1.3.2. Adolescence, self-cognitions and depression .............................................................. 17
   1.4. Conclusion ............................................................................................................................ 20
       1.4.1. Parenting, self-cognitions and adolescent depression ................................................. 20
       1.4.2. Limitations of previous research ............................................................................... 21
       1.4.3. Aims of the current research and hypotheses ............................................................... 22
       1.4.4. Outcomes and significance ....................................................................................... 24

2. Study 1: Do parents influence the development of their children’s self-concept? A meta-analysis ......................................................................................................................... 26
   2.1. Introduction .......................................................................................................................... 26
       2.1.1. Moderating factors ....................................................................................................... 29
       2.1.2. The current research .................................................................................................. 30
   2.2. Method .................................................................................................................................. 31
       2.2.1. Study selection ............................................................................................................ 31
       2.2.2. Inclusion/exclusion criteria .......................................................................................... 33
       2.2.3. Intercoder reliability of excluded studies ...................................................................... 34
       2.2.4. Study sample ............................................................................................................. 37
2.2.5. Quality assessment ................................................................. 38
2.2.6. Information extracted ............................................................ 40
2.2.7. Parent behaviour ................................................................. 41
2.2.8. Child self-cognitions ............................................................. 41
2.2.9. Meta-analytic method and analyses ........................................ 41
2.3. Results .................................................................................. 44
2.3.1. Quality assessment ............................................................... 44
2.3.2. Study-level analysis ............................................................... 44
2.3.3. Moderator analysis ............................................................... 47
2.4. Discussion ............................................................................. 48
2.4.1. Theoretical implications ......................................................... 49
2.4.2. Research implications ......................................................... 50
2.4.3. Strengths and Limitations .................................................... 50
2.4.4. Conclusion ........................................................................ 51
2.5. Studies in Meta-Analysis ......................................................... 52


3.1. Introduction ........................................................................ 57
3.1.1. Self-esteem ....................................................................... 60
3.1.2. Self-criticism .................................................................... 62
3.1.3. Parental support and psychological control ....................... 63
3.1.4. The current research ........................................................ 64
3.2. Method ............................................................................... 65
3.2.1. Recruitment ..................................................................... 65
3.2.2. Participants ...................................................................... 65
3.2.3. Procedure ........................................................................ 66
3.2.4. Materials ......................................................................... 67
3.2.5. Data preparation ............................................................... 68
3.2.6. Planned analysis ............................................................... 69
3.3. Results .............................................................................. 70
3.3.1. Descriptive statistics and correlations ............................... 70
3.3.2. Parenting behaviour (Time 1) as predictor of self-esteem (Time 2, Time 3) and self-criticism (Time 2, Time 3)........................................................................73

3.4. Discussion ................................................................................................................................................77

3.4.1. Conceptual and practical implications....................................................................................................79

3.4.2. Clinical implications.................................................................................................................................80

3.4.3. Strengths, limitations and future directions.............................................................................................81


4.1. Introduction ................................................................................................................................................83

4.2. Method .....................................................................................................................................................87

4.2.1. Participants .............................................................................................................................................87

4.2.2. Measures ..............................................................................................................................................88

4.2.3. Procedure .............................................................................................................................................90

4.3. Results .....................................................................................................................................................91

4.3.1. Correlation analyses ...............................................................................................................................91

4.3.2. Regression analyses ..............................................................................................................................93

4.4. Discussion ..............................................................................................................................................95

4.4.1. Clinical implications ...............................................................................................................................98

4.4.2. Strengths and limitations .......................................................................................................................99

4.4.3. Conclusion ..........................................................................................................................................100


5.1. Introduction .............................................................................................................................................102

5.1.1. The current research ............................................................................................................................107

5.2. Method .....................................................................................................................................................108

5.2.1. Participants .............................................................................................................................................108

5.2.2. Recruitment .........................................................................................................................................109

5.2.3. Procedure .............................................................................................................................................110

5.2.4. Measures .............................................................................................................................................110

5.2.5. Statistical analyses ...............................................................................................................................111

5.3. Results .....................................................................................................................................................113

5.3.1. Data preparation .....................................................................................................................................113

5.3.2. Descriptive statistics and correlations ................................................................................................113
5.3.3. Growth curve models ............................................. 114
5.3.4. Cross-lagged models ............................................ 117
5.4. Discussion ................................................................ 119
  5.4.1. Gender effects ...................................................... 121
  5.4.2. Clinical implications ............................................. 122
  5.4.3. Strengths and limitations ...................................... 122
  5.4.4. Conclusion .......................................................... 123

6. Discussion .................................................................. 124
  6.2. The Origins of Parent Behaviour .............................. 128
  6.3. Self-Cognitions and Adolescent Depression ............... 129
  6.4. Clinical Implications ................................................ 131
  6.5. Strengths and Limitations ........................................ 137
  6.6. Conclusion ............................................................. 140

7. References .................................................................. 142

Appendices .................................................................. 171
  Appendix A: Ethics Approval ........................................ 172
  Appendix B1: Parent Information Form .......................... 174
  Appendix B2: Parent Consent Form ............................... 176
  Appendix B3: Student Information Form ........................ 177
  Appendix B4: Student Consent Form ............................. 179
  Appendix C: Children's Report of Parent Behavior Inventory-30 ........................................... 180
  Appendix D1: Study 4 Growth Curve Model, Gender Effects ........................................ 182
  Appendix D2: Study 4 Cross-Lagged Model, Gender Effects .......................................... 183
# List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2.1</td>
<td>Overview of studies included in meta-analysis</td>
<td>35</td>
</tr>
<tr>
<td>Table 2.2</td>
<td>Quality assessment of included studies</td>
<td>39</td>
</tr>
<tr>
<td>Table 2.3</td>
<td>Overall correlations across studies</td>
<td>44</td>
</tr>
<tr>
<td>Table 3.1</td>
<td>Demographic information (Time 1)</td>
<td>66</td>
</tr>
<tr>
<td>Table 3.2</td>
<td>Means of independent and dependent variables</td>
<td>71</td>
</tr>
<tr>
<td>Table 3.3</td>
<td>Zero-order Pearson’s correlations between independent and dependent variables</td>
<td>72</td>
</tr>
<tr>
<td>Table 3.4</td>
<td>Hierarchical regression with parenting behaviour predicting self-esteem and self-criticism: Girls</td>
<td>74</td>
</tr>
<tr>
<td>Table 3.5</td>
<td>Hierarchical regression with parenting behaviour predicting self-esteem and self-criticism: Boys</td>
<td>76</td>
</tr>
<tr>
<td>Table 4.1</td>
<td>Mothers’ self-reported parenting behaviours and self-cognitions: Correlations and descriptive statistics</td>
<td>92</td>
</tr>
<tr>
<td>Table 4.2</td>
<td>Summary of simple regression analysis for parent behaviours regressed on separate self-cognition measures</td>
<td>94</td>
</tr>
<tr>
<td>Table 5.1</td>
<td>Demographic information (Time 1)</td>
<td>109</td>
</tr>
<tr>
<td>Table 5.2</td>
<td>Descriptive statistics and Pearson’s correlations</td>
<td>114</td>
</tr>
</tbody>
</table>
List of Figures

Figure 1.1  Hypothesised relations between variables across studies  24
Figure 2.1  Flow chart of study selection  32
Figure 2.2  Forest plot of studies included in primary analysis  46
Figure 5.1  Growth curve model  115
Figure 5.2  Cross-lagged model  117
Figure 6.1  Relations between variables demonstrated across Studies 2, 3, and 4  125
1. Introduction

The aim of this research is to explore how adolescents develop self-cognitions, particularly the role of parents’ behaviour in this process, and how self-cognitions relate to depression. Further, it will examine how parents’ own self-cognitions may influence this process. As such, this literature review will primarily examine theoretical models that describe links between these variables, while subsequent chapters will critique the empirical research in greater depth. ¹

1.1. Parenting and the Development of Self-Cognitions

1.1.1. The development of the self

How people develop an understanding of themselves has long interested psychologists. Social Interactionism, developed by figures such as George Herbert Mead and Charles Horton Cooley, asserts that the self is an essentially social construction. As such, the self cannot exist in the absence of an ‘other’. As Mead (1934) saw it, infants are not born with a sense of self, but rather develop it as a result of social experiences. As the child becomes exposed to social interactions, the self forms as a contrast to the other being experienced by the child. Thus, Mead argued, one’s image of their self is indelibly tied to their interactions with others.

Cooley’s (1902) term the ‘looking-glass self’ suggests that an individual’s understanding of their self is their belief about how they appear to others, based on experiences with others. Three elements work together to produce this understanding of the

¹ Studies 2, 3 and 4 are currently under review at various journals. The separate manuscripts are included here, and each contain separate Introduction, Method, Results and Discussion sections. As such, there is some level of unavoidable repetition across the thesis.
self. First, a belief about how one appears to others. Second, a belief about how others interpret that appearance. Finally, an emotional reaction to those beliefs regarding the self, such as pride or embarrassment. In this way the individual develops an image of who they are, which has a high level of complexity. Furthermore, this image contains some level of positive or negative valence. These characteristics are specifically a product of how the self is experienced in relation to others. The utility of the self is that, in contrasting the individual with another, it motivates the individual to better themselves in comparison to the other. Thus, according to Cooley, the self motivates activity and achievement through its ties to others.

Mead’s (1934) belief that it is not possible for a self to be experienced in the absence of any prior social experience has been examined via animal research. In Gallup’s (1977) research, a group of chimps were first given contact with their peers, then placed alone in cages with mirrors and were able to look at their reflections. Later, they were anesthetised, and red dots were inked above their eyes and on one of their ears. They were then returned to their cages and the number of times they touched the region above their eye and their ear was measured. After the inking the number of times the chimps touched these bodily regions significantly increased, suggesting that the chimps recognised the image they saw in the mirror as their own body. However, when the same experiment was conducted on chimps who had never had any social contact, no increase in touching of the inked areas was observed. The findings suggest that, to recognise the image in the mirror as themselves, the chimps needed to have a pre-existing understanding of the self, and this could not be formed without the experience of prior social interaction (Anderson, 1984).

For children, particularly infants, a large proportion of social contact occurs with parents, and thus much research has examined the specific role of parents in child
development. While the term ‘parent’ is used here, it should be broadly understood to refer to the primary adult caregiver/s in a child’s life.

1.1.2. Parents and the psychological development of children

Parents play an important role in the development of their children. They have an evolutionary drive to nurture and protect their children until the point at which the child can look after themself, thereby ensuring the continuity of the species (Geary & Flinn, 2001). As such, the role of the parent as primarily a provider of physical nurture via satiation of basic needs such as hunger, thirst and shelter has long been acknowledged. However, research that emerged in the 1940s and 1950s suggested that parents also play a significant role in the psychological development of children, and that physical nurture alone was not sufficient for healthy psychological development.

Harry Harlow’s work was some of the first laboratory research to examine links between parenting and psychological wellbeing in infants (Harlow, 1958; Harlow, Dodsworth, & Harlow, 1965). Newborn monkeys were separated from their mothers and placed in cages where they were well fed and could see, but not touch, other monkeys. The newborns soon became detached, showing stereotyped behaviour and sucking in the absence of food. They would self-harm, mutilating their bodies, and when later exposed to other monkeys, attack them. These effects were even more dramatic in monkeys kept in total isolation. If these monkeys experienced extensive interaction after three months of isolation, the negative effects could be largely reversed. However, if they experienced six months of isolation the monkeys remained permanently psychologically damaged, for example demonstrating stereotyped behaviour and self-harming (Harlow et al., 1965). This research suggested a central role of social interaction in the psychological formation of infants, and that the provision of food and shelter was not enough to promote healthy development.
John Bowlby (1969, 1973) was another researcher who began examining the role of parenting in the psychological development of their young during this period. Inspired by observations of the ill effects of separating children from their parents following World War II, Bowlby developed a theory which focused on the effects of the relationship between the child and their caregiver on the child’s psychological development (Van Der Horst, LeRoy, & Van der Veer, 2008). Attachment theory asserts that infants need to feel securely connected to their primary caregiver in order to develop in a psychologically healthy manner. To provide this secure connection the caregiver must be readily available to the child and responsive to their needs (Bowlby, 1969). In addition, Bowlby felt that supporting the development of independence by allowing children to explore their environment was an essential component of secure attachment. This combination of parenting behaviours, he felt, bred a sense of safety and security within the child which then enabled the child to interact with the world in a confident manner. When children experience this type of relationship with a parent, he argued, it creates a comfort in relationships which forms the basis of healthy psychological development.

Bowlby (1969, 1973) saw the drive for attachment – at its heart a drive for connection with an ‘other’– as being at the centre of a growing cognitive engagement between infants and their world. Humans are required to understand their surroundings to ensure their survival. To do so, they must form internal cognitive representations of the world, or as Bowlby termed them, ‘internal working models’. For an infant, the most salient aspect of their external world is their primary attachment figure. The attachment figure thus becomes central to an infant’s mental representation of the world. Not only does a child need to understand how the world works as an observer, they also need to be able to understand and predict how their behaviour will influence the world. As such, the effect of the infant’s behaviour towards their caregiver, and the reaction of their caregiver to them, play a major
role in their understanding of the world. Bowlby believed that attachment experiences early in life provide a cognitive framework for understanding the world, which would be carried through to adulthood and influence relationships throughout the lifespan.

In line with Bowlby’s (1969, 1973) approach, research suggests that parenting behaviour continues to influence children into adolescence, despite an increase in the influence of peers during this period. The influence of peers on the development of depressive symptoms, for example, increases during the adolescent period (Rudolph & Hammen, 1999; Wagner & Compas, 1990). However, evidence suggests that parents remain the key socialising influence, over and above that of peer influence. In research examining the influence of social support on the development of depression in adolescence, Stice, Ragan, and Randall (2004) examined a community sample of 496 girls (mean age = 13 years) and measured depressive symptoms, parents support and peer support at three time-points over three years. They found that reduced levels of parent support were predictive of increased levels of later depression symptoms, but peer support was not. Further, initial levels of depressive symptoms were not predictive of later parental support, suggesting that the effect was due to parents influencing adolescents, not the reverse. A similar effect was found in a mixed sex sample (Aseltine, Gore, & Colten, 1994). As such, it appears that the interactions between parent and child which Bowlby emphasised continue to influence psychological development throughout adolescence.

Current understanding of parenting behaviour has been greatly influenced by Attachment theory. Diana Baumrind (1968, 1971) was the first to promote what she termed “Authoritative” parenting as the optimal style of parenting behaviour for child development. Authoritative parenting consists of behaviour that is high on two factors. First, behaviour must be warm and empathic, encouraging the child in their pursuits. Second, it must also
firmly set boundaries around appropriate and inappropriate behaviour. The parent encourages autonomy whilst using their more extensive experience to guide the child’s behaviour away from dangerous or unacceptable behaviour. In this way, this approach encompasses the two primary principals outlined in Attachment theory, support and nurturance plus gradually allowing independence.

The benefits of this style of parenting have been widely documented (Steinberg, 2001). For example, a review of the effects of parenting behaviour and academic performance found a strong positive association between authoritative parenting and school achievement in adolescents (Spera, 2005). Becoña et al. (2012) found that adolescents with authoritative parents were less likely to use drugs and alcohol than adolescents raised using other parenting styles across the 44 articles in their review. As such, parenting behaviour appears to have significant implications for adolescent wellbeing, with authoritative behaviour found to be the most beneficial style of parenting, although there has been some suggestion that this may not be the case for non-Western cultures (Wang, Pomerantz, & Chen, 2007).

In more recent times, emphasis has been placed on examining different dimensions of parenting behaviour separately, rather than combining them into authoritative parenting. As Bean, Bush, McKenry, and Wilson (2003) have argued, this allows for a more nuanced understanding of how specific behaviours differentially influence children. In line with this approach, Barber, Stolz and Olsen (2005) have classified parenting behaviours into three separate major categories, based on Schaefer’s (1965) original theory. ‘Support’ includes the warmth of Baumrind’s (1968, 1971) authoritative parenting and encompassed the ways parents show affection for, and encouragement of, their children. ‘Behavioural control’ overlaps with the other dimension of authoritative parenting and involves the provision, by
parents, of limits around acceptable and unacceptable behaviours while also encouraging age-appropriate independent decision making in children. Both approaches are considered broadly beneficial to children. The third category, ‘psychological control’ is considered potentially highly detrimental to children. This behaviour involves using techniques such as guilt, shaming and love withdrawal to control children. The three types of behaviours have been associated with a range of psychosocial outcomes, such as social initiative, antisocial behaviour, anxiety and depression (Barber et al., 2005; McLeod, Weisz, & Wood, 2007; McLeod, Wood, & Weisz, 2007; Rapee, 1997).

1.1.3. Parenting and the development of the self

Theorists have also explored how parenting behaviour influences child self-cognitions. Stanley Coopersmith’s (1967) model focused specifically on the effect of parenting behaviour on the development of child self-esteem. His theory, derived from research with boys aged between 10 and 12 years and their mothers, suggests that parents play a key role in the development of children’s self-beliefs. As in authoritative parenting, Coopersmith viewed parental support, such as unconditional love and approval of the child, as paramount. He suggested that parental support creates a sense of self-worth within the child, conveying to the child that they have intrinsic value. Alternatively, rejection by parents detrimentally affects self-esteem by both leading to a sense of worthlessness in the child and leading the parents to create a less stimulating environment for the child, due to their reduced involvement with the child.

Like Baumrind (1968), Coopersmith (1967) also emphasised the importance of behavioural control in parents. He argued that permissive parenting, such as low demand that children meet parents’ predefined standards and inconsistent enforcement of rules, was detrimental to the development of child self-esteem. Coopersmith felt that, by being clear and
consistent in the enforcement of rules, parents help their children to develop a clear understanding of the world and guidelines for effective behaviour within it. This allows for greater success in interacting with their environment and reduces anxiety, which increases sense of safety, thereby building self-esteem. In addition, Coopersmith suggested that non-permissiveness assists children in the task of defining their selves. The enforcement of rules obliges the child to acknowledge the other, recognising that there are elements in their environment that are distinct from themself, thereby forcing them to come to greater clarity about how their self is differentiated from the other. Thus, behavioural control, like support, benefits self-esteem.

Coopersmith (1967) also argued that psychologically controlling behaviours, such as love withdrawal and physical withdrawal from the child, diminish a child’s belief in their inherent worth. This is in line with Barber’s (Barber, 1996; Barber & Harmon, 2002) theory of psychological control, which argues that it specifically aims to diminish a child’s feelings of self-worth in order to gain power over them.

Research examining the effect of parenting behaviour on child self-cognitions has repeatedly found a connection. Of the various areas of parenting behaviour examined, those behaviours that can be characterised as support have received the most attention. High levels of this type of behaviour has been consistently linked to positive self-beliefs. This effect is even demonstrated in studies that use longitudinal data and measure levels of self-cognitions and parent behaviour, at time 1, then measure self-cognitions again at time 2. As such, these studies can control for autoregressive effects of the self-cognition variable, which is likely to remain somewhat stable over time. They thus provide convincing evidence of links between parenting behaviour and child self-cognitions because they essentially test the influence of parent behaviour at time 1 on the variability in self-cognition from time 1 to time 2.
In a sample of 240 6th graders (mean age = 11.86 years), with initial child self-worth, maternal depression history, psychological control and behavioural control controlled for, maternal support significantly predicted child self-worth one year later (β = .14, p < .05) (Garber & Flynn, 2001). McMahon, Felix, and Nagarajan (2011) tested 85 African-American 6-8th graders and controlled for initial self-worth, neighbourhood disadvantage and teacher and peer support. They found that parent support significantly predicted self-worth 8 months later (β = .26, p < .05). Boudreault-Bouchard et al. (2013) used growth models to assess the influence of parenting behaviour on changes in self-esteem over a four-year period in a group of 1,176 14-year-olds. Controlling for age, gender and parental coercive control, both maternal and paternal support were found to predict self-esteem change over time (β = .37, p < .001, β = .18, p = .008, respectively).

Behavioural control has received more limited attention in the self-cognition literature. However, there is some evidence that it too influences child self-beliefs. Using fixed-effects modelling, Han and Grogan-Kaylor (2013) followed 3,263 Korean 8th graders over five years and found that, controlling for age and parental warmth and hostility, parental monitoring of their child’s behaviour significantly positively predicted changes in self-esteem, although the effect size was small (β = .06, p < .001).

Psychologically controlling behaviour has been linked to lower child and adolescent self-concept. In their study of 278 5th and 6th graders, Ojanen and Perry (2007), controlling for initial self-esteem, found that maternal psychological control significantly predicted reduced self-esteem, though only for boys (β = -.20, p < .05). Cheung and Pomerantz (2011) tested 380 Chinese and 341 American 7th graders separately four times over two years. Using growth-curve modelling they found that changes in psychological control predicted significantly lower self-perceived scholastic competence in Grade 8, but only in the Chinese
sample ($\beta = .20, p < .01$). Together, these studies provide some support for the beneficial effects of parental support and behavioural control, and detrimental effects of psychological control, as described by the theories of Coopersmith (1967), Baumrind (1968) and Barber et al. (2005). Further, they broadly emphasise the influence parents have on the development of child self-cognitions.

1.2. The Origins of Parenting Behaviour

Although research has examined relations between parent behaviour and child outcomes, much less is known about why parents use the approaches they do. Specifically, why some parents use more helpful behaviours and others use more harmful approaches remains unclear. Jay Belsky’s (1984) model of the determinants of parenting behaviour is the one of the few theories to explore this topic. The model recognises developmental experiences in the parent’s own history, including the behaviour that they experienced as a child from their own parents, as playing a role in influencing parenting behaviour. However, Belsky argued that other factors play a greater role in determining parenting behaviour. The model focuses on three primary factors: parent psychological wellbeing and personality, support systems available to the parent, and child characteristics. The model states that the child’s behaviour plays a significant role in eliciting parent behaviour as children with problematic behaviours can make parents distressed and lead to dysfunctional parenting. However, Belsky argued, of the three factors, this is the least influential and most easily compensated for via the other two factors. This is supported by research in toddlers, which has found that, although maternal behaviour is influenced by child behaviour, other factors such as level of social support and maternal personality were more predictive of parenting behaviour, at least for behavioural control (Smith, 2010).
Belsky’s (1984) model identifies a parent’s level of social support (from their partner, friends or family), as a key influence on their parenting behaviour. High levels of social support, the model postulates, result in improved wellbeing of parents, allowing them to be more positive in their interactions with their children. Research has shown links between parents’ level of social support and positive parenting behaviour. Andresen and Telleen’s (1992) meta-analysis of the effects of social support on maternal parenting behaviour found, across the 66 studies in the analyses, strong links between the two factors.

In addition to social support, Belsky (1984) argued that current parent psychological wellbeing, as well as parent personality more broadly, bares significant influence on parent behaviour. The theory posits that parents who use optimal approaches, such as those outlined by Baumrind (1968) and Coopersmith (1967), are able to recognise their child’s perspective and respond appropriately, whilst supporting their child in reaching developmental milestones. To demonstrate this level of sensitivity and emotional connection with the child, the parent themself must have a high level of maturity and emotional well-being. Thus, a parent’s current feeling of wellbeing is likely to influence how warmly they behave towards their child, as well as their ability and motivation to use firm, non-punitive strategies with their child. In this way wellbeing can be conceptualised as a sort of ‘emotional resource’ that influences a parent’s ability to use beneficial strategies. This resource is likely influenced by a range of emotional factors, including how the parent feels about themself. Furthermore, Belsky argued, parents with high psychological wellbeing are better able to obtain and maintain supportive relationships. Thus, parent psychological wellbeing is seen as central to determining parenting behaviour, because it has both direct effects and indirect effects, through its influence on social support.
In line with Belsky’s (1984) emphasis on the impact of parental psychological wellbeing on their behaviours, other researchers have similarly emphasised the influence of parents’ emotions on their parenting. Theodore Dix’s (1991) theory posits that, when an emotion is activated, the behavioural factors that follow will be affect congruent. The model suggests that negative affect leads to biases in the parent’s interpretation of their child and his or her behaviour. Thus, parents experiencing negative affect will expect more unwanted behaviour from their children, selectively attend to unwanted behaviour, and will be more likely to interpret behaviour negatively. Additionally, negative emotions can distract parents, leaving them with reduced attentional resources to direct towards the child, leading to more rigid, unresponsive parenting behaviour. Positive emotions lead to the reverse effects. This is supported by a meta-analysis of 63 (non-clinical sample) studies, which found a significant association between parent affect and behaviour, regardless of parent gender or child age (Rueger, Katz, Risser, & Lovejoy, 2011). As such, Dix’s theory and associated empirical research support Belsky’s notion that parental emotional states have considerable influence on their behaviour towards their child.

Extrapolation of Belsky’s (1984) theory suggests that parents’ positive self-cognitions would benefit their psychological wellbeing and thus are likely to influence parents’ use of particular parenting behaviours. However, little empirical research has been conducted to examine this link. Nevertheless, there is some preliminary evidence of a relation between parents’ self-cognitions and their parenting behaviours. Parental self-criticism has been linked to reduced support and increased psychological control and negative feedback. Amitay, Mongrain, and Fazaa (2008) examined a sample of 55 female undergraduates and their parents, measuring parental self-criticism and self-reported parenting behaviour (affectionate behaviour and controlling behaviour). They found that self-criticism in both mothers and fathers was positively related to controlling behaviour and negatively related to
affectionate behaviour. Yu and Gamble (2009) examined the relation between maternal self-criticism and parenting behaviour in a sample of 444 mother-child dyads (child mean age = 11.6 years). Warmth and power assertion (for example yelling at a child when they misbehave) were reported by both mother and child and parent/child responses were aggregated. They found that mothers’ self-criticism was significantly positively associated with power assertion and negatively associated with warmth. Ahmad and Soenens (2010) tested 298 adolescents (mean age = 15 years) and their mothers, examining the relation between maternal self-criticism and adolescent-reported maternal behaviour. A significant positive relation between maternal self-criticism and psychologically controlling behaviour was demonstrated, as was a significant negative relation between maternal self-criticism and supportive behaviour. Notably, all these studies measured data at a single time-point, and thus were essentially correlational in nature.

Observational data, in which researchers record and code parent behaviours, have shown similar associations. Thompson and Zuroff (1999) examined the relation between maternal self-criticism and parenting behaviour in 49 mothers of girls (mean age = 13.9 years). After mothers completed a self-criticism measure, observational data were recorded of mothers instructing their daughters in a computer task. Maternal self-criticism was significantly positively related to both levels of negative feedback and levels of explicit commands. Kaminer, Beebe, Jaffe, Kelly, and Marquette (2007) examined a community sample of 77 mothers of four-month-old infants. Mothers completed self-report measures of self-criticism and then played with their child for 10 minutes while observational data were recorded. Results demonstrated a significant positive relation between maternal self-criticism and negative speech towards the child, and a significant negative relation between self-criticism and positive speech.
As with self-criticism, low self-esteem in parents has been linked to negative parenting behaviours. Small (1988) examined a group of 139 children (mean age = 13.4 years) and one of their parents (41% fathers) at a single time-point. Parent self-esteem was self-reported and parenting behaviour was assessed through both parent and child reports. Based on parent-report data, Small found that maternal self-esteem was positively related to autonomy granting and positive mother-child communication. Furthermore, paternal self-esteem was positively related to positive father-child communication. When looking at child-reported parent behaviour, maternal self-esteem was significantly negatively related to punishment and fathers’ self-esteem was significantly negatively related to physical punishment.

As such, though limited, research generally supports Belsky’s (1984) assertion that parental wellbeing is a determinant of parenting behaviour. This suggests the existence of a pathway through which parent self-cognitions influence child self-cognitions, via parenting behaviour. Thus, it is important to determine the effects of self-cognitions, particularly whether they have clinical consequences. The most likely impact is on depression.

1.3. Self-Cognitions and Adolescent Depression

1.3.1. Self-cognitions and the development of depression

Negative self-cognitions have long been central to theories of depression (Abramson, Alloy, & Metalsky, 1989; A. T. Beck, 1967, 1987; Blatt, 1998; Hankin & Abramson, 2001). Cognitions such as low self-esteem and negative self-concept are not only a primary symptom of depressive disorders, they are also seen as a key etiological factor in the development of depression. Although major theories disagree on exactly how self-cognitions
contribute to the development of depression, they concur that self-cognitions are a significant part of the process.

Aaron Beck’s (1967, 1987) model singles out negative self-beliefs, along with negative beliefs about the environment and the future, as being central to the development of depression. This “cognitive triad” brings on other symptoms which, along with the cognitive symptoms, form a depressive episode. As such, a reduction in self-worth is often the key precipitant in the onset of a depressive episode (A. T. Beck, 1967).

Diathesis stress models of depression (e.g. Abramson et al., 1989; Hankin & Abramson, 2001) hypothesise that, when facing negative events, individuals who have maladaptive cognitive styles, such as negative beliefs about the self, are more vulnerable to developing depression. Abramson and colleagues (1989) theorised that, when an individual experiences a negative event, beliefs about why it occurred and what effects it will have – their attributions – are activated. Thus, when negative events occur, individuals who have pre-existing negative beliefs about themselves are more likely to believe that these events are directly caused by themselves and are due to their own short-comings. People who hold these beliefs are thus more vulnerable to developing depression. Metalsky, Joiner, Hardin, and Abramson (1993) found that attribution style interacts with self-esteem to influence depression. In a sample of 114 undergraduates they demonstrated that, for students with low self-esteem, the interaction between attribution style and failure on an exam was significantly predictive of a depressive response to exam results. A similar interaction effect between stressful experience, attributional style and self-esteem was also found in a sample of 155 teenagers (mean age = 16.5 years) for participants with minimal depressive symptoms at baseline (Southall & Roberts, 2002). Thus, these theories suggest that those with more negative self-cognitions are more likely to develop depression.
Sidney Blatt’s (1974, 1998) psychodynamic model of depression identifies a specific type of depression, ‘introjective’ or self-critical depression, which is formed when an individual experiences high levels of negative self-beliefs. Self-critical depression is defined by feelings of worthlessness, inferiority and guilt. In Blatt’s theory, these self-beliefs drive the depressive experience. Those who experience this depression have heightened awareness of others’ evaluations of them and are overly attuned to criticism, thus when negative feedback about the self is received it has a powerful influence on the individual’s affective state. Thus, at least for one type of depression, self-cognitions are the foremost predisposing factor. Numerous empirical studies have supported this theory (Abela, Webb, Wagner, Ho, & Adams, 2006; Nietzel & Harris, 1990; Zuroff & Mongrain, 1987). Together, these theories suggest that self-cognitions are a central precipitant in the development of depression.

Self-cognitions have been divided into two broad categories: global and domain-specific self-cognitions. Global self-cognitions, such as self-esteem and self-criticism, are those which conceptualise the self as a whole and measure the overall feelings towards the self broadly (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). Domain specific self-cognitions take a more in-depth view of the self, acknowledging that beneath this broad view there may be a range of beliefs about the self in different situations. While an individual might feel positively about themselves in one area, for example academic achievement, they may feel negatively about their ability to be romantically attractive (Harter, 1999; Marsh, Parada, & Ayotte, 2004). Global and domain-specific self-cognitions are not mutually exclusive and simply point to the complexity of self-cognitions that can exist within one individual. Both types of self-cognitions have been prospectively linked to depression (Cole, Martin, & Powers, 1997; Orth, Robins, & Roberts, 2008). However, like global self-cognitions, depression is a global construct, whereby it broadly affects an individual across a range of factors such as mood, interest in activities and energy levels. As such, these two
constructs are more closely matched than depression and domain-specific self-cognitions. Therefore global self-cognitions are expected to be more predictive of depression than domain-specific self-cognitions (Swann Jr, Chang-Schneider, & Larsen McClarty, 2007).

1.3.2. Adolescence, self-cognitions and depression

Self-cognitions are particularly central to the adolescent period. This developmental phase has long been regarded as a time in which a key task is to develop a clearer understanding of one’s own identity. This idea is driven by the work of Erik Erikson (1959, 1963, 1998), who proposed that developing a ‘defined self’ that is recognised both by the individual themself and the people around them, is a primary goal of adolescence. Erikson (1998) argued that throughout childhood, an individual collects different views of themself in different situations but it is not until adolescence that they summarise these views as a cohesive identity. Furthermore, many of the behaviours that characterise this developmental period are a product of this desire for identity. For example, Erikson suggested that the development of romantic relationships is not simply a product of increased sexual urges but the need for clear identity. He stated, “To a considerable extent adolescent love is an attempt to arrive at a definition of one’s identity by projecting one’s diffused self-image on another and by seeing it thus reflected and gradually clarified” (Erikson, 1968, p. 132). He asserted that the reason this push for identity occurs during this period is that there are fundamental tasks required of adolescents at this time, primarily career choice, which drives the need for a clear understanding of the self.

Erikson’s (1959, 1963, 1998) theory is reflected in the work of researchers such as Coopersmith (1967) and Morris Rosenberg (1986) who emphasised the centrality of identity development in adolescence. Susan Harter (2003) went further, arguing that development of self-concept is fundamentally linked to adolescence, because it is during this period that
young people first develop the cognitive ability to describe themselves in abstract terms and integrate these conceptions into a coherent sense of self. James Marcia (1980) concurred, arguing that adolescence is characterised by a confluence of physiological development, increased social pressures, and enhanced cognitive ability, which create the ability and motivation to form the clear identity that is needed in adulthood.

Additionally, there is clear evidence that the incidence of depression increases during the adolescent period. In a cross-sectional study, Ford et al. (2003) assessed 10,438 children in the UK aged 11 to 15 years. They demonstrated a significant increase in DSM-IV depressive disorders as participant age increased. Furthermore, this increase is particularly apparent in girls (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Hankin et al., 1998). While the drive to consolidate a sense of identity is rising in adolescents, so too are depression symptoms.

David Cole’s (Cole, 1991; Cole, Martin, et al., 1997; Jacquez, Cole, & Searle, 2004) model posits that self-cognitions are particularly central to the development of depression in the child and adolescent period because of the motivational factors present in this age group. Because beliefs about the self are a primary focus for this population, the impact of negative events on self-beliefs in this age group is typically more intense than at other life stages. As such, the model suggests that, because evaluation of the self is so important to individuals at this developmental stage, negative self-evaluations are the primary factor that leads to the development of depression in young people (Cole, Martin, et al., 1997).

There appear to be strong links between negative self-cognitions and depression in adolescents. Young people with depression have been found to have lower self-concept than healthy controls (Dozois, Eichstedt, Collins, Phoenix, & Harris, 2012; Heath & Brown, 1999; Marton, Connolly, Kutcher, & Korenblum, 1993). Moreover, low self-worth has been
repeatedly associated with a vulnerability to depressive symptoms in adolescents (Alfeld-Liro & Sigelman, 1998; Cole, Maxwell, & Martin, 1997; Harter & Whitesell, 1996; MacPhee & Andrews, 2006; McCarty, Vander Stoep, & McCauley, 2007; Neary & Joseph, 1994), whereas positive self-concept has been found to predict lower risk for depression (Van Voorhees et al., 2008).

Prospective studies have found that self-esteem is negatively predictive of later levels of depression in adolescents and young people. In Lee and Hankin’s (2009) study of 350 adolescents (mean age = 14.5 years), participants reported self-esteem, then depression symptoms five weeks later. When controlling for initial levels of depression symptoms, lower self-esteem significantly predicted later depression. Similar effects were found in a sample of 115 adolescents (mean age = 16.5 years) in whom self-esteem and depression symptoms were measured 14 weeks apart and initial depression levels were controlled (Southall & Roberts, 2002).

Furthermore, findings suggest that although self-esteem predicts depression, depression is not predictive of subsequent self-esteem levels. In a sample of 2,403 15 to 16-year-olds, Orth et al. (2008) Study 1 assessed self-esteem and depression at four time-points, each two years apart. They examined three pathways from self-esteem to depression (time 1 self-esteem – time 2 depression, time 2 self-esteem – time 3 depression, time 3 self-esteem – time 4 depression) and three equivalent pathways from depression to self-esteem. All pathways from self-esteem to depression were significant ($\beta$’s = -.09 to -.10, all $p$’s < .01), while no pathways from depression to self-esteem were significant ($\beta$ = -.04, all $p$’s > .05). In line with Beck’s (1967, 1987) theory, this research suggests that low self-esteem precedes depression, rather than simply being a facet of current depression. Additionally, this analysis supports Beck’s theory over other theories which suggest that depression symptoms may in
fact be the cause of reduced self-esteem in individuals with depression (Coyne & Whiffen, 1995).

The formation of negative self-cognitions appears to be an important element in the development of depression in young people. Increased societal pressures, as well as improved cognitive ability, create a newfound need and capacity for the development of a cohesive sense of self. This push for clear self-cognitions leads young people to be highly invested in the search for evaluative information about themselves. However, it also conveys vulnerability to depression because this process can result in the accumulation of negative beliefs about the self. To fully understanding how depression develops in adolescence, it is thus necessary to examine how self-cognitions are formed in individuals of this age.

1.4. Conclusion

1.4.1. Parenting, self-cognitions and adolescent depression

The current literature suggests that there is likely strong links between parenting behaviours and child self-cognitions. Both theoretical and empirical evidence suggests that parents have a notable influence on the formation of their adolescent children’s beliefs about themselves, with positive behaviours such as support and behavioural control likely to promote the formation of positive self-beliefs and psychological control likely to increase negative self-beliefs (Boudreault-Bouchard et al., 2013; Cheung & Pomerantz, 2011; Garber & Flynn, 2001; Han & Grogan-Kaylor, 2013; Ojanen & Perry, 2007). Furthermore, parents’ own self-cognitions may influence this process by affecting their parenting behaviours. Parents who have more negative beliefs about themselves may be more likely to use negative rather than positive strategies with their children, due to reduced emotional resources (Ahmad & Soenens, 2010; Kaminer et al., 2007; Small, 1988; Thompson & Zuroff, 1999; Yu &
Gamble, 2009). Research also suggests that adolescents’ self-cognitions are likely to increase their probability of developing depression (Orth et al., 2008). Those who form more negative beliefs about themselves appear to be more likely to develop depression.

1.4.2. Limitations of previous research

To date, no series of studies appears to have set out to examine a model measuring the influence of parent self-cognition on parent behaviour, parent behaviour on child self-cognition and child self-cognition on child depression. As such, although there is strong theoretical support for links between these three variables, this model has not been thoroughly tested. Furthermore, while research does examine these pathways, there are a number of limitations in the current literature.

Regarding the determinants of parenting behaviour, little research has examined personal factors. Although research has examined the influence of parenting self-efficacy beliefs on parenting behaviour (Coleman & Karraker, 1998), other types of self-cognitions that are not specifically related to parenting have received limited attention. Moreover, no study to date has examined the relations between a range of parent self-cognitions and the three major parenting behaviours (support, behavioural control and psychological control). There has also been no broad systematic analysis of the effect of parenting behaviour on child self-cognitions across the literature. Although one study has reviewed the association between these variables (Khaleque, 2013), it only included studies which used a specific measure of parenting behaviour, and only assessed warmth/acceptance parenting behaviour, excluding behaviours such as behavioural control and psychological control. There is also little research comparing how different types of parenting behaviour have different influences on child self-cognitions. Additionally, in the literature on the relation between parent behaviour and child self-cognitions, studies seldom control for the autoregressive effects of
self-cognitions, therefore interpretation of findings is problematic. Finally, few studies (Burwell & Shirk, 2006; Shahar, Blatt, Zuroff, Kuperminc, & Leadbeater, 2004; Shahar & Henrich, 2010) have used cross-lagged analysis to assess the relations between self-cognitions and depression in an early adolescent population. What is more, the studies that have been conducted have not concurrently examined the relations between multiple types of self-cognitions and depression using cross-lagged analysis.

1.4.3. Aims of the current research and hypotheses

The overall aim of the current research is to examine the associations between parent self-cognition, parenting behaviour, child self-cognition and child depression. This essentially suggests three primary pathways to be examined: relations between parent self-cognitions and parent behaviour, relations between parent behaviour and child self-cognitions, and relations between child self-cognitions and depression symptoms.

A series of studies will be conducted to examine these pathways. The aim of Study 1 is to broadly assess how parent behaviour and child self-cognitions are linked. The current empirical literature will be examined systematically, and a meta-analysis conducted. Longitudinal studies will be examined to see whether parents’ behaviours predict later child self-cognitions, controlling for initial levels of child self-cognition. We hypothesise generally that positive parent behaviours will significantly predict higher levels of positive self-beliefs in children and the reverse will be seen for negative parent behaviours.

Study 2 will explore the association between parent behaviour and child self-cognition in greater depth. It will aim to test the longitudinal links between three major types of parenting (behavioural control, support and psychological control) and two types of global self-cognitions (self-esteem and self-criticism). This will enable better understanding of how different types of parenting behaviours differently influence specific self-cognitions.
Particular attention will be payed to behavioural control as the effect of this behaviour on child outcomes is less clear than support or psychological control. We hypothesise that behavioural control and support will predict increases in self-esteem and decreases in self-criticism while the reverse will be seen for psychological control.

Study 3 will examine whether parents’ own self-cognitions influence their parenting behaviours. Parents will report on their self-cognitions, both global (self-esteem and self-criticism) and domain-specific (sociability, athletic abilities, physical appearance and intelligence), and their parenting behaviours (support, behavioural control, psychological control). Relations between these variables will then be examined. We hypothesise that support and behavioural control will be positively related to self-esteem and all domain-specific self-cognitions and negatively related to self-criticism, while the reverse will be seen for psychological control.

Study 4 will explore links between adolescent global self-cognitions (self-esteem and self-criticism) and depression symptoms. We will use cross-lagged modelling to assess whether self-cognitions predict changes in depression, or depression predicts change in self-cognitions. We hypothesise that self-esteem will negatively predict depression while self-criticism will positively predict depression, but depression will not predict either self-cognition.

A model of these pathways and hypothesised relations across all four studies is seen in Figure 1.1.
1.4.4. Outcomes and significance

This research will have a number of theoretical implications. Studies 1 and 2 will speak to the theories of Bowlby (1969, 1973) and his assertion of the importance of parents in the development of children’s internalised working model. They will also test Coopersmith’s (1967) theory, assessing whether parenting behaviours such as behavioural control and support benefit children’s self-cognitions and psychological control style parenting detrimentally affects them. Study 3 will assess Belsky’s (1984) theory that parents’ psychological resources, as seen in self-beliefs, will influence their likelihood of using helpful or unhelpful parenting behaviours. In combination, Studies 1 through 3 may suggest a transgenerational pathway via which self-cognitions are transmitted. Study 4 will assess Beck’s (1967, 1987) notion that self-cognitions increase risk for the development of depression in an early adolescent population. Better understanding of the links between parent behaviour, child self-cognitions and child depression will thus create a greater understanding of how and why depression develops in adolescents.

The findings from our research may support these theories or suggest specifications/modifications to them. This improvement in theoretical understanding will have important implications for interventions. First, if links are demonstrated between parenting behaviour and child self-cognitions and between child self-cognitions and depression, this will support the existence of a specific role of parents in the development of
adolescent depression. These findings may suggest the importance of addressing problematic parent behaviour in both the prevention and treatment of adolescent depression. Further, if parents’ own self-cognitions appear to be related to their use of particular problematic parenting behaviours, it may be important to address these cognitions to ultimately prevent these behaviours. Finally, if self-cognitions appear to play a strong role in the development of depression in this age group, this will suggest the importance of addressing this specific cognitive element of the disorder when implementing depression interventions.
2. Study 1: Do parents influence the development of their children’s self-concept? A meta-analysis

2.1. Introduction

Childhood and adolescence are believed to be the times during which individuals first develop an understanding of their self-concept and form a coherent set of self-cognitions. Erikson’s (1959) theory suggests that the development of a ‘defined self’ is a key goal of this developmental stage. Rosenberg (1986) and Coopersmith (1967) echo this notion, emphasising the centrality of identity development in childhood and adolescence. As such, a major focus of this period appears to be understanding the self and forming this into an integrated, cohesive self-concept. The aim of the current research is to examine how these self-beliefs develop, and in particular, the role of parenting in this process.

Not only are self-cognitions central to this developmental stage, they also play a key role in the development of psychopathologies in this age group. Conditions such as depression, anxiety, externalising problems and eating disorders have all been linked to the development of negative self-cognitions such as low self-esteem (Button, Sonuga-Barke, Davies, & Thompson, 1996; Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005; Lee & Hankin, 2009). When young people develop negative self-cognitions, this can have serious implications for their overall mental health. Thus, understanding how self-cognitions form is necessary to support adolescent mental wellbeing.

Many theories have been developed to understand the origins of self-cognitions. One of the most prominent theories is Symbolic Interactionist theory, which argues that self-cognitions are primarily formed from information gathered through social interactions (Cooley, 1902; Matsueda, 1992). When an individual is exposed to others’ assessments of them, they use this information to build an understanding of themself. As such, significant
individuals in a young person’s life are believed to have a powerful influence on the young person’s newly developing conceptualisation of themself.

Theories argue that there is no single greater influence than parents (Bowlby, 1969; Coopersmith, 1967). Bowlby’s (1969) Attachment theory argues that it is from parents that children learn fundamental schemas about themselves and the world. It suggests that children whose parents are nurturing and supportive, whilst also encouraging of their independence, will develop schemas of themselves as being strong, capable and worthy of love. Alternatively, children who are treated with inconsistency and who experience rejection from their parents will form views of themselves as incapable, unworthy and unlovable (Bowlby, 1969).

Coopersmith’s (1967) theory of the development of self-esteem also argues for the pivotal role of parents in this process. The theory suggests that parental acceptance, encompassing behaviours and attitudes such as positive evaluation, expression of affection, emotional support and involvement in the child’s life (Schaefer, 1965), is integral because it creates a sense of self-worth within the child and conveys to the child that they have intrinsic value. Furthermore, the theory argues, parents being clear and consistent in the enforcement of rules (often described in the literature as ‘behavioural control’; see Barber et al., 2005), help children to develop clear understanding of the world and guidelines for effective behaviour within it. This allows for greater success in interactions and reduces anxiety, thereby supporting self-esteem. Coopersmith’s theory also argues that psychologically controlling behaviour, such as inducing guilt or shame in the child, punishing them by stopping expressions of affection towards the child, and ostracising the child (Barber, 1996; Rogers, Buchanan, & Winchell, 2003), will diminish a child’s belief in their inherent worth.
Many studies have suggested that there is a relation between parent behaviour and child self-cognitions. For example, rejection by parents has been linked to more negative self-evaluation (Koestner, Zuroff, & Powers, 1991) and lower self-concept in children (Kakihara, Tilton-Weaver, Kerr, & Stattin, 2010). Alternatively, parental warmth and support have been found to benefit child self-cognitions (Sears, 1970). Firm control has been found to be positively related to self-beliefs in children (Koestner et al., 1991), and psychologically controlling parental behaviour has been linked to lower child self-concept (Kakihara et al., 2010; Kenny, Lomax, Brabec, & Fife, 1998).

However, much of the available literature is either cross-sectional or a simple prospective design and thus cannot be used to make causal inferences. Gollob and Reichardt (1991) outlined three conditions that are necessary for causal effects to be suggested. (Here IV delineates independent variable, DV dependent variable and subscript indicates the time at which the variable was measured.) First, an effect must occur over time, thus cannot be demonstrated by a cross-sectional model (e.g. IV \(_1 \rightarrow DV_1\)). Second, a variable can influence itself (e.g. DV \(_1 \rightarrow DV_2\)) and this potential influence, known as an autoregressive effect, needs to be taken into account, rather than assumed to be caused by the IV. Thus, a simple prospective model (e.g. IV \(_1 \rightarrow DV_2\)) cannot be used to make causal inferences. Third, effect size will be influenced by length of time between measurement occasions. To satisfy these conditions a lagged model (e.g. IV \(_1 \rightarrow DV_2\), controlling for DV \(_1\)) must be used to best support causal inferences in the absence of an experimental design.

Studies that have accounted for auto-regressive effects when examining whether parenting predicts child self-cognitions have produced mixed results. Ojanen and Perry (2007) conducted a structural equation model that controlled for Time 1 self-esteem and used three measures of maternal behaviour (psychological control, affectionate contact and...
knowledge of the child’s behaviour) to predict self-esteem at Time 2. They found that, for boys, only psychological control significantly predicted self-esteem, whereas for girls only affectionate contact significantly predicted self-esteem. In hierarchical multiple linear regression, after controlling for sex, social desirability and marital conflict, Doyle and Markiewicz (2005) found that neither behavioural control, warmth or psychological control alone accounted for a significant increase in variance accounted for in change in self-esteem from Time 1 to Time 2. However, together the three parenting variables did account for a small but significant increase in variance accounted for. In a structural equation model that controlled for Time 1 self-esteem, Colarossi and Eccles (2003) found that, when mother, father, peer and teacher support were included, only peer and teacher support significantly predicted self-esteem at Time 2. Thus, when initial levels of self-cognitions are controlled, the relation between parenting behaviour and the development of child self-cognitions becomes much less clear.

2.1.1. Moderating factors

If parenting does predict child self-cognition, it is possible that several factors may moderate this relation. Girls may be more sensitive to the influences of parenting behaviour than boys. Cross and Madson (1997) reviewed a wide range of studies and consistently found that, compared to males, females’ self-concepts were more affected by their relationships with others. It is also possible that mothers and fathers may have differing levels of influence. Mothers may have greater influence as children typically spend more time with them than their fathers (Larson, Richards, Moneta, Holmbeck, & Duckett, 1996). As children grow older, parental involvement generally reduces (Paulson & Sputa, 1996) and the influence of other factors, such as peers (e.g. Rudolph and Hammen, 1999), increases. Furthermore, longitudinal research has demonstrated that parents have the greatest impact on children at
younger ages (Hay & Ashman, 2003). Thus, the influence of parenting is likely to be stronger for younger children. As Gollob and Reichardt (1991) point out, length of lag between Time 1 and Time 2 is also likely to influence the extent of the relation between parenting and child self-cognition. It is likely that this will weaken as lag time increases.

2.1.2. The current research

Despite the prolific research looking at links between parenting and child self-cognitions, to date no comprehensive meta-analysis has been conducted across empirical studies. Although a previous meta-analysis (Khaleque, 2013) has examined the effect of parental acceptance on child outcomes, including self-esteem, it did not control for auto-regressive effects and was limited to studies that used a specific parenting measure.

The aim of this review was to examine whether parenting behaviour influences the development of child self-cognitions across studies. Further, we also aimed to assess whether the relation between parent behaviour and child self-cognition was moderated by child gender, parent gender, child age, and length of time lag. To address these aims a meta-analysis was conducted to examine longitudinal research and measure the relation between parent behaviour and later child self-cognitions, controlling for initial levels of child self-cognition. Based on Attachment (Bowlby, 1969) and Social Interactionist (Cooley, 1902; Matsueda, 1992) theories, we hypothesised that parenting behaviour at Time 1 would be significantly related to child self-cognition at Time 2. We hypothesised that the association would be significantly greater for girls than for boys (Cross & Madson, 1997) and stronger for mothers than fathers (Larson et al., 1996). We expected that the effect would be significantly moderated by child age and length of time lag, whereby the relation would reduce as children grew older and as lag grew longer (Hay & Ashman, 2003).
2.2. Method

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) system was used to guide the research process (Moher, Liberati, Tetzlaff, & Altman, 2009). It is a standardised evidence-based checklist that aims to ensure transparent reporting of review methodology and maintain the quality of the review. The checklist emphasises clear reporting of study rationale, detailed description of methodology such as search strategy, accurate presentation of results and appropriateness of conclusions drawn.

2.2.1. Study selection

The term ‘self-cognition’ was operationalised as an overarching term that included all thoughts about the content of the self and evaluations of the self (Trafimow, Triandis, & Goto, 1991). This included both positively (e.g. self-esteem, self-worth) and negatively (e.g. self-criticism) valanced cognitions, as well as more general understandings of the self, such as self-concept. It also encapsulated both global and domain-specific conceptualisations of the self.

Four databases of published studies (PsycInfo, Web of Science, PubMed and Cochrane Libraries) and two databases of unpublished studies (ProQuest Dissertations and Theses Global and OpenGrey) were searched for relevant quantitative research papers. The searches included texts up to June 2016. Search terms regarding parenting were developed from McLeod et al. (2007). There were: father*, maternal, mother*, parent*, paternal, rearing and sociali*. Self-cognition words were also included in the search: self-acceptance, self-cognition, self-concept, self-critic*, self-esteem, self-identity, self-perception, self-recognition, self-schema and self-worth. Unhyphenated versions of these terms (e.g. selfacceptance) were also included. Where search engines allowed, searches were restricted
to English language texts, human subjects, and search terms appearing in abstract, title or key words. Following completion of the search, authors of included papers were also contacted to provide relevant research, which resulted in six published studies and one unpublished study. Through this procedure 21,279 studies were identified and reviewed based on title. See Figure 2.1 for flow chart of study selection.

Figure 2.1. Flow chart of study selection.

Note. IV = Independent Variable. DV = Dependent Variable. Ps = Participants.
2.2.2. Inclusion/exclusion criteria

Studies included in the meta-analysis were required to meet the following criteria: a) measure of at least one parent’s behaviour specifically directed towards the child; b) measure of child self-cognitions; c) time lapse of at least six months between measurement of parenting behaviour and child self-cognitions; d) child participants mean age at Time 2 of ≤ 18 years and not university students; e) written in English; f) not case study/series; g) three correlations reported: parent behaviour (Time 1) and child self-cognition (Time 1), parent behaviour (Time 1) and child self-cognition (Time 2), child self-cognition (Time 1) and child self-cognition (Time 2). Alternatively, first order correlations controlling for only child self-cognition (Time 1); or standardised regression coefficients (beta) for regression of child self-cognition (Time 2) on parent behaviour (Time 1), controlling for child self-cognition (Time 1) with no other control variables included in regression. Where none of these statistics were reported but all other criteria were met, corresponding authors of published papers were contacted to provide relevant correlations or raw data. If provided, they were included in the analyses. The six-month minimum time-frame was selected because previous research has demonstrated significant changes to occur in self-cognitions within this period (e.g. Eccles et al., 1989).

As direct parenting behaviour was the focus of the inquiry, studies that included measures of attachment or family environment were excluded unless they clearly indicated assessing parent behaviour towards the child. Studies that assessed child populations with specific difficulties/characteristics were excluded (e.g. health populations, externalising symptoms, internalising disorders, substance abuse, sexual abuse, learning disabilities, LGBTQI, foster care/adoptees, incarcerated). This allowed for analysis of children with no other specific co-occurring factors, aside from specific ethnic groups. Studies that specifically
assessed adolescent parents were excluded, as were studies that used retrospective measures due to uncertain accuracy of retrospective data (Hardt & Rutter, 2004). Attributional style and locus of control were not classified as self-cognitions. Studies that were ambiguous in their descriptions of either parenting behaviour or child self-cognition measures were excluded. Twenty-three studies were identified that met inclusion criteria.

2.2.3. Intercoder reliability of excluded studies

All study selection was completed by CG. To ensure the inclusion and exclusion criteria were appropriately maintained, of the 1,579 studies which were reviewed by abstract and title, 300 were also coded by CH. Kappa was calculated and demonstrated a good level of reliability ($\kappa = .73$). Differences were discussed and resolved between the raters.
Table 2.1 Overview of studies included in meta-analysis

<table>
<thead>
<tr>
<th>Study</th>
<th>Gender</th>
<th>N</th>
<th>M age at T1</th>
<th>Time lag years</th>
<th>Parent behaviour (valence coding)</th>
<th>Parents reported separately</th>
<th>Self-cognition</th>
<th>Country</th>
<th>No. of r</th>
<th>SC1 → SC2</th>
<th>Pt1 → SC1</th>
<th>Pt1 → SC2</th>
<th>Pt1 → SC2 controlled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boudreault-Bouchard et al., 2013</td>
<td>Both</td>
<td>394</td>
<td>14</td>
<td>2</td>
<td>Support(+) ; Coercive control(-)</td>
<td>YES</td>
<td>Self-esteem</td>
<td>Canada (Quebec)</td>
<td>8</td>
<td>.39</td>
<td>.22</td>
<td>.11</td>
<td>.03</td>
</tr>
<tr>
<td>Bronstein et al., 1996</td>
<td>Both</td>
<td>43</td>
<td>10.5</td>
<td>2</td>
<td>Supportive guidance (+) ; Inattentive communication(-)</td>
<td>NO</td>
<td>Self-concept</td>
<td>USA</td>
<td>5</td>
<td>.60</td>
<td>.13</td>
<td>.12</td>
<td>.09</td>
</tr>
<tr>
<td>Cheung &amp; Pomerantz, 2011</td>
<td>Both</td>
<td>380</td>
<td>12.69</td>
<td>1.5</td>
<td>Parent involvement in learning (+) ; Psychological control (+)</td>
<td>NO</td>
<td>Perceived competence</td>
<td>China</td>
<td>3</td>
<td>.51</td>
<td>.18</td>
<td>.18</td>
<td>.12</td>
</tr>
<tr>
<td></td>
<td>Both</td>
<td>341</td>
<td>12.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>USA</td>
<td>3</td>
<td>.47</td>
<td>.25</td>
<td>.25</td>
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<td></td>
<td>USA</td>
<td>125</td>
<td>17</td>
<td>1</td>
<td>Support (+)</td>
<td>YES</td>
<td>Self-esteem</td>
<td>USA</td>
<td>2</td>
<td>.71</td>
<td>.28</td>
<td>.23</td>
<td>.09</td>
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<tr>
<td></td>
<td>Boys</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>.60</td>
<td>.18</td>
<td>.22</td>
<td>.16</td>
</tr>
<tr>
<td>Colarossi &amp; Eccles, 2003</td>
<td>Girls</td>
<td>161</td>
<td>13</td>
<td>2</td>
<td>Behavioural control (+) ; Warmth (+) ; Psychological control (-)</td>
<td>NO</td>
<td>Self-esteem</td>
<td>USA</td>
<td>3</td>
<td>.48</td>
<td>.28</td>
<td>.27</td>
<td>.18</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>159</td>
<td>11.1</td>
<td>2</td>
<td>Rejection (-)</td>
<td>YES</td>
<td>Scholastic self-concept</td>
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<td>*</td>
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<td>.26</td>
<td>.16</td>
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<td>Doyle &amp; Markiewicz, 2005</td>
<td>Both</td>
<td>162</td>
<td>10.39</td>
<td>1</td>
<td>Praise (+) ; Communication (+) ; Affection (-) ; Criticism (-) ; Punishment (-)</td>
<td>YES</td>
<td>Self-esteem</td>
<td>USA</td>
<td>10</td>
<td>.43</td>
<td>.29</td>
<td>.28</td>
<td>.19</td>
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<tr>
<td>Dubois et al., 1994</td>
<td>Both</td>
<td>176</td>
<td>11.86</td>
<td>1</td>
<td>Acceptance (+) ; Psychological control (-) ; Firm control (-)</td>
<td>YES (M only)</td>
<td>Self-worth</td>
<td>USA</td>
<td>1</td>
<td>.72</td>
<td>.62</td>
<td>.48</td>
<td>.08</td>
</tr>
<tr>
<td>Fenzel, 2000</td>
<td>Both</td>
<td>116</td>
<td>10.8</td>
<td>0.83</td>
<td>Support (+)</td>
<td>NO</td>
<td>Self-worth</td>
<td>USA</td>
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<td>.61</td>
<td>.27</td>
<td>.23</td>
<td>.12</td>
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<tr>
<td>Prius et al., 2005</td>
<td>Both</td>
<td>113</td>
<td>12.3</td>
<td>0.5</td>
<td>Supportiveness (+)</td>
<td>NO</td>
<td>Self-esteem</td>
<td>Netherlands</td>
<td>1</td>
<td>.61</td>
<td>.27</td>
<td>.23</td>
<td>.12</td>
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<td>Garber &amp; Flynn, 2001</td>
<td>Both</td>
<td>240</td>
<td>11.86</td>
<td>1</td>
<td>Acceptance (+) ; Psychological control (-) ; Firm control (-)</td>
<td>YES (M only)</td>
<td>Self-worth</td>
<td>USA</td>
<td>6</td>
<td>.50</td>
<td>.23</td>
<td>.22</td>
<td>.15</td>
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<tr>
<td>Hunter et al., 2015</td>
<td>Both</td>
<td>933</td>
<td>13.5</td>
<td>1</td>
<td>Support (+) ; Psychological control (-) ; Behavioural control (+)</td>
<td>YES</td>
<td>Self-esteem ; Self-derogation</td>
<td>USA</td>
<td>12</td>
<td>.50</td>
<td>.31</td>
<td>.24</td>
<td>.12</td>
</tr>
<tr>
<td>Study</td>
<td>Type</td>
<td>Sample Size</td>
<td>Age</td>
<td>Sample Quality</td>
<td>Variable(s)</td>
<td>Measure</td>
<td>Country</td>
<td>Time 1</td>
<td>Time 2</td>
<td>Time 3</td>
<td>Time 4</td>
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<td>Kaplan Toren &amp; Segner, 2015</td>
<td>Both</td>
<td>198</td>
<td>12</td>
<td>2</td>
<td>Academic socialisation(+)</td>
<td>NO</td>
<td>Self-worth, Academic competence</td>
<td>Israel</td>
<td>.36</td>
<td>.17</td>
<td>.16</td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td>Krenyi et al., 1998</td>
<td>Girls</td>
<td>132</td>
<td>13</td>
<td>1</td>
<td>Affective quality(+), Autonomy(+)</td>
<td>NO</td>
<td>Self-worth</td>
<td>USA</td>
<td>.39</td>
<td>.37</td>
<td>.37</td>
<td>.24</td>
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<tr>
<td>Leung et al., 2004</td>
<td>Both</td>
<td>346</td>
<td>12.8</td>
<td>0.67</td>
<td>Concern(+)</td>
<td>YES (M only)</td>
<td>Academic self-concept</td>
<td>China (Hong Kong)</td>
<td>.63</td>
<td>.20</td>
<td>.20</td>
<td>.12</td>
<td></td>
</tr>
<tr>
<td>McMahon et al., 2011</td>
<td>Both</td>
<td>85</td>
<td>11.84</td>
<td>0.67</td>
<td>Support(+)</td>
<td>NO</td>
<td>Self-worth</td>
<td>USA</td>
<td>.58</td>
<td>.29</td>
<td>.28</td>
<td>.17</td>
<td></td>
</tr>
<tr>
<td>Ojanen &amp; Perry, 2007</td>
<td>Both</td>
<td>278</td>
<td>12</td>
<td>1</td>
<td>Psychological control(-), Affectionate contact(+), Parental knowledge(+)</td>
<td>YES (M only)</td>
<td>Self-esteem</td>
<td>Finland</td>
<td>.52</td>
<td>.16</td>
<td>.17</td>
<td>.12</td>
<td></td>
</tr>
<tr>
<td>Shek, 1999</td>
<td>Both</td>
<td>378</td>
<td>14</td>
<td>1</td>
<td>Parenting style(+)</td>
<td>YES</td>
<td>Self-esteem</td>
<td>China (Hong Kong)</td>
<td>.54</td>
<td>.33</td>
<td>.27</td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td>Shek, 2007a</td>
<td>Both</td>
<td>2,598</td>
<td>12.65</td>
<td>1.2</td>
<td>Monitoring(+), Discipline(+), Responsiveness(+), Demandingness(+), Psychological control(-)</td>
<td>YES</td>
<td>Self-esteem</td>
<td>China (Hong Kong)</td>
<td>.47</td>
<td>.21</td>
<td>.16</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td>Sher-Censor et al., 2011</td>
<td>Both</td>
<td>134</td>
<td>10.83</td>
<td>2</td>
<td>Psychological autonomy(+), Psychological control(-)</td>
<td>NO</td>
<td>Self-worth</td>
<td>USA</td>
<td>.34</td>
<td>.17</td>
<td>.10</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Smokowski &amp; Altmaier, Both 2014</td>
<td>Both</td>
<td>4,119</td>
<td>12.8</td>
<td>1.2</td>
<td>Support(+)</td>
<td>NO</td>
<td>Self-esteem</td>
<td>USA</td>
<td>.37</td>
<td>.42</td>
<td>.21</td>
<td>.12</td>
<td></td>
</tr>
<tr>
<td>Stutts &amp; Schwarz, 2014</td>
<td>Both</td>
<td>228</td>
<td>11.62</td>
<td>1</td>
<td>Authoritarian control(-)</td>
<td>YES</td>
<td>Perceived academic competence</td>
<td>Switzerland</td>
<td>.55</td>
<td>.13</td>
<td>.11</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>Sweeting &amp; West, 1995</td>
<td>Girls</td>
<td>478</td>
<td>15</td>
<td>3</td>
<td>Strictness(+)</td>
<td>NO</td>
<td>Self-esteem</td>
<td>UK</td>
<td>.44</td>
<td>-.01</td>
<td>.03</td>
<td>.09</td>
<td></td>
</tr>
<tr>
<td>Zhao, 2016</td>
<td>Both Rural</td>
<td>184</td>
<td>9.31</td>
<td>1</td>
<td>Educational involvement(+), Leisure involvement(+)</td>
<td>YES (M only)</td>
<td>Perceived competence</td>
<td>China</td>
<td>.39</td>
<td>.15</td>
<td>.18</td>
<td>.17</td>
<td></td>
</tr>
</tbody>
</table>


*Statistic not reported in study and not necessary for primary analysis as first order correlation reported.
2.2.4. Study sample

Twenty-three studies, printed between 1989 and 2016, were included in the primary analyses (see Table 2.1 for study details). Only one study was unpublished (Zhao, 2016), which was a PhD thesis. Within these studies 128 relevant correlations were reported. For studies that reported data for boys and girls separately as well as combined, the separate analyses for each sex were included in the meta-analysis. Where grades were reported (rather than age), mean age was estimated as Grade 1 = 6 years, Grade 2 = 7 years, etc. Mean age at Time 1 across the 23 studies was estimated to be 12.41 years (SD = 1.59, range = 9.31-17). For studies that reported testing at the beginning and end of a single school year, delay was estimated at 0.67 years. Mean time lag between Time 1 and Time 2 was calculated as 1.40 years (SD = 0.69, range = 0.5-4). Nineteen of the included studies used samples from Western countries (North America, Europe or Israel), with five using Chinese/Taiwanese samples (one study used both a Western and Chinese sample). Of those studies that reported ethnicities of participants, most stated that the sample consisted of 70-100% ethnic majority (either Anglo-Saxon/European or Chinese). Only four studies used samples that were less dominated by the ethnic majority (DuBois, Eitel, and Felner, 1994, 54% African American; 46% Anglo-American; McMahon et al., 2011, 100% African American; Sher-Censor, Parke, and Coltrane, 2011, 100% Mexican-American; and Smokowski et al., 2014, 27% Caucasian; 28% American Indian/Native American; 23% African American; 8% Latino).

In three studies measures were completed at home, in three studies measures were completed both at home and school and in all other studies that reported on this, testing was completed at school or public location such as a community centre. One study reported a rural sample (Smokowski et al., 2014), one reported a rural sample and a separate urban sample (Zhao, 2016), and one study combined both rural and urban participants (DuBois et al.,
1994). All other studies that reported on location type indicated that all participants either lived in urban or suburban environments. A total of 14,378 child/adolescent participants were tested across the included studies. See Table 2.1 for an overview of studies.

2.2.5. Quality assessment

A quality assessment was conducted to assess general merit and risk of bias of the studies included in the primary analysis. Kmet et al.’s (2004) Manual for Quality Scoring of Quantitative Studies was used for this assessment, with questions pertaining specifically to intervention studies excluded. It was separately coded by both CG and CH to ensure reliability. Reliability was good (K = .72) with all disagreements between raters resolved via discussion. See Table 2.2 for quality ratings.
Table 2.2

Quality assessment of included studies

| Question / objective sufficiently described? | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Study design evident and appropriate? | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Method of subject selection described and appropriate? | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Subject characteristics sufficiently described? | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Outcome well defined, robust to measurement bias? Means of assessment reported? | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Sample size appropriate? | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 |
| Analytic methods described/justified, appropriate? | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Estimate of variance reported? | 2 | 0 | 2 | 1 | 2 | 1 | 0 | 2 | 1 | 1 | 0 | 1 |
| Controlled for confounding? | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 |
| Results reported in sufficient detail? | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 |
| Conclusions supported by the results? | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 |
| TOTAL (out of 22) | 22 | 18 | 21 | 20 | 21 | 20 | 21 | 20 | 20 | 17 | 19 | 19 |
| SUMMARY SCORE (Total/22) | 100 | 82 | 95 | 91 | 95 | 91 | 95 | 91 | 91 | 77 | 86 | 86 | 86 |
The following information was extracted from the included studies: gender of participating children, number of participants, length of delay between Time 1 and Time 2, mean age of participating children, country, area (urban/suburban versus rural) and ethnicity of sample. Location of data collection (school, home, other) was also recorded, as was whether a specific population was included. Regarding parenting behaviour, the following information was extracted: type of behaviour, informant (parent, child, observer), type of measurement (questionnaire, interview, observation) and which parent was being described. Regarding child self-cognition the following information was extracted: type of self-cognition, informant (parent, child, observer) and type of measurement (questionnaire, interview, observation). All relevant Pearson’s correlations (r) were also recorded.
Standardised regression co-efficients (β) were planned to be recorded but none were available in this sample.

2.2.7. Parent behaviour

Parent behaviour measures were classified as either positively valanced (e.g. support) or negatively valanced (e.g. psychological control). To ensure reliability these categorisations were coded by both CG and CH, showing good reliability (K= .83). All discrepancies were resolved through discussion.

All studies used questionnaires to measure parenting behaviour. Children reported on their parents’ behaviour in all studies except one where an observer reported on parent behaviour. Two studies used both child and parent report, measured separately.

2.2.8. Child self-cognitions

Child self-cognitions were classified as either positively valanced (e.g. self-esteem) or negatively valanced (e.g. self-criticism). All studies used questionnaires to measure child self-cognitions and all questions were completed by the children themselves.

2.2.9. Meta-analytic method and analyses

Four Pearson’s correlations from each sample were planned to be analysed: a) child self-cognition (Time 1) and child self-cognition (Time 2); b) parenting (Time 1) and child self-cognition (Time 1); c) parenting (Time 1) and child self-cognition (Time 2); d) parenting (Time 1) and child self-cognition (Time 2), controlling for child self-cognition (Time 1). Zero-order correlations for analyses a), b) and c) were extracted directly from the included studies and entered into the meta-analysis. For d), only one study reported this first-order correlation (DuBois et al., 1994), thus these correlations were computed separately for all
other samples. First, the following equation, as outlined by Cohen, Cohen, West, and Aiken (2013), as previously used in meta-analytic literature (Khazanov & Ruscio, 2016; Sowislo & Orth, 2013), was used to compute $\beta$s:

$$\beta_{Y_{1.2}} = \frac{r_{Y_1} - r_{Y_2}r_{12}}{1 - r_{12}^2}$$

$\beta_{Y_{1.2}}$ indicates the standardised regression coefficient for parenting (Time 1) and child self-cognition (Time 2), controlling for child self-cognition (Time 1). $r_{Y_1}$ indicates the correlation between parenting (Time 1) and child self-cognition (Time 2), $r_{Y_2}$ indicates the correlation between child self-cognition (Time 1) and child self-cognition (Time 2) and $r_{12}$ indicates the correlation between parenting (Time 1) and child self-cognition (Time 1). To convert the $\beta$s into a metric acceptable for meta-analysis, Peterson and Brown’s (2005) formula for $\beta$ to $r$ conversion for meta-analysis was employed:

$$r = .98\beta + .05\lambda$$

Here if $\beta > 0$, $\lambda = 1$ and if $\beta < 0$, $\lambda = 0$. This created first-order correlation statistics, which could then be imputed into the meta-analysis.

Meta-analyses were conducted using Comprehensive Meta-Analysis software, which has been found to be a valid program for this type of analysis (Bax, Yu, Ikeda, & Moons, 2007). All but four studies reported numerous correlations. The software weights each correlation based on sample size. Thus, to avoid increased influence of studies with higher numbers of correlations, as outlined by Borenstein and colleagues (2009) the correlations for each study were averaged, providing an overall correlation for the entire study. For studies that correlated either positive parenting behaviour and negative child self-cognition or negative parenting behaviour and positive child-self-cognitions, negative correlations were recorded as ‘Positive’ in the meta-analysis software, to be comparable to the other
correlations in the analyses (Comprehensive Meta-Analysis, n.d.). For studies that reported correlations for girls and boys separately, the combined correlations were kept separate for gender; thus some studies had two overall correlations. Cheung and Pomerantz (2011) reported on two separate samples (one from USA, one from China), as did Zhao (2016) (one urban, one rural), and the correlations for these samples were separately entered into our analyses. As such, a total of 29 correlations were included in the study-level analysis. The overall correlations for each study were used in the analyses, with the software automatically calculating effect sizes for each study. Cohen’s (1988) ‘rule of thumb’ was used to interpret effect sizes whereby \( r \geq .1 = \text{small}, r \geq .3 = \text{medium} \) and \( r \geq .5 = \text{large} \).

In addition to the inclusion of unpublished research in the search, a ‘fail safe N’ analysis was planned to assess for publication bias. Analyses were also planned to examine the heterogeneity (\( Q \) and \( I^2 \)) across the included studies. \( I^2 \) indicates the proportion of variability that reflects real differences between the studies, with mild < 30 and substantial > 55 (Higgins & Thompson, 2002). Hedges and Vevea (1998) have argued that, regardless of level of heterogeneity, a random-effects model is appropriate if the intention of the research is to make general inferences about a phenomenon, rather than inferences specific to the studies sampled. Thus random-effects models were planned. Analyses were also planned to assess moderator variables that, based on previous research (e.g. Brown, Craig, & Halberstadt, 2015; Cross & Madison, 1997; Hay & Ashman, 2003), were expected to possibly influence the relation between the two primary variables of interest. Moderators included child gender, parent gender, mean age at Time 1, mean age at Time 2, and quality assessment rating. To investigate parent gender, individual (rather than overall) correlations for each study were examined and, where available, one correlation for each aspect of the moderator variable was calculated. These alternate overall correlations were then used in the analyses.
2.3. Results

2.3.1. Quality assessment

Complete quality assessment scores are reported in Table 2.2. Ninety-one per cent (21/23) of included studies in the primary analysis scored 80% or higher on the quality assessment rating and 70% (16/23) scored 90% or more.

2.3.2. Study-level analysis

The primary analysis examined overall correlations between the following variables: child self-cognition (Time 1) and child self-cognition (Time 2); parenting (Time 1) and child self-cognition (Time 1); parenting (Time 1) and child self-cognition (Time 2); parenting (Time 1) and child self-cognition (Time 2), controlling for child self-cognition (Time 1). Twenty-nine correlations from 23 studies were included in the analyses, with data from 14,378 child and adolescent participants. These results are shown in Table 2.3.

Table 2.3

<table>
<thead>
<tr>
<th>Variable</th>
<th>Effect Size</th>
<th>Z value</th>
<th>p</th>
<th>Heterogeneity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC₁ → SC₂</td>
<td>.50</td>
<td>20.94</td>
<td>&lt;.001</td>
<td>202.14 &lt;.001 86.64</td>
</tr>
<tr>
<td>P₁ → SC₁</td>
<td>.24</td>
<td>8.50</td>
<td>&lt;.001</td>
<td>257.99 &lt;.001 89.15</td>
</tr>
<tr>
<td>P₁ → SC₂</td>
<td>.20</td>
<td>10.94</td>
<td>&lt;.001</td>
<td>92.86 &lt;.001 69.85</td>
</tr>
<tr>
<td>P₁ → SC₂ (controlling for SC₁)</td>
<td>.12</td>
<td>12.12</td>
<td>&lt;.001</td>
<td>30.98 .318 9.63</td>
</tr>
</tbody>
</table>

Note. All analyses are random-effects models.

For the primary outcome measure, parenting (Time 1) and child self-cognition (Time 2), controlling for child self-cognition (Time 1), the weighted effect size for the random effects model was $r = .12$ (95% CI = .10, .14, $p < .001$). Heterogeneity was non-significant ($Q = 30.98, p = 0.318$) with a low proportion of the variability demonstrating real differences between studies ($I^2 = 9.63$). A ‘fail-safe N’ analysis, using the 29 correlations suggested that 1,110 studies finding null results would be needed to make this effect non-significant. See Figure 2.2. for forest plot of included studies.
<table>
<thead>
<tr>
<th>Study name</th>
<th>Subgroup within study</th>
<th>Statistics for each study</th>
<th>Correlation and 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Correlation</td>
<td>Lower limit</td>
</tr>
<tr>
<td>Bourdeaut-Bouchaud et al, 2013</td>
<td>Both</td>
<td>0.002</td>
<td>-0.067</td>
</tr>
<tr>
<td>Bronston et al., 1996</td>
<td>Both</td>
<td>0.004</td>
<td>-0.405</td>
</tr>
<tr>
<td>Cheung &amp; Pomerantz, 2011 (China)</td>
<td>Both</td>
<td>0.124</td>
<td>0.024</td>
</tr>
<tr>
<td>Cheung &amp; Pomerantz, 2011 (USA)</td>
<td>Both</td>
<td>0.172</td>
<td>0.067</td>
</tr>
<tr>
<td>Colerossi &amp; Eccles, 2003</td>
<td>Boy</td>
<td>0.159</td>
<td>-0.147</td>
</tr>
<tr>
<td>Colerossi &amp; Eccles, 2003</td>
<td>Girl</td>
<td>0.068</td>
<td>-0.089</td>
</tr>
<tr>
<td>Doyle &amp; Markiewicz, 2005</td>
<td>Both</td>
<td>0.182</td>
<td>0.023</td>
</tr>
<tr>
<td>Dubois et al., 1994</td>
<td>Both</td>
<td>0.160</td>
<td>0.004</td>
</tr>
<tr>
<td>Felson &amp; Zielinski, 1989</td>
<td>Boy</td>
<td>0.074</td>
<td>-0.075</td>
</tr>
<tr>
<td>Felson &amp; Zielinski, 1989</td>
<td>Girl</td>
<td>0.150</td>
<td>0.037</td>
</tr>
<tr>
<td>Fenzel, 2000</td>
<td>Both</td>
<td>0.064</td>
<td>-0.100</td>
</tr>
<tr>
<td>Frijns et al., 2005</td>
<td>Both</td>
<td>0.119</td>
<td>0.062</td>
</tr>
<tr>
<td>Garber &amp; Flynn, 2001</td>
<td>Both</td>
<td>0.146</td>
<td>0.020</td>
</tr>
<tr>
<td>Hunter et al., 2015</td>
<td>Both</td>
<td>0.123</td>
<td>0.059</td>
</tr>
<tr>
<td>Kaplan Toren &amp; Seginer, 2015</td>
<td>Both</td>
<td>0.149</td>
<td>0.010</td>
</tr>
<tr>
<td>Kenny et al., 1998</td>
<td>Boy</td>
<td>0.344</td>
<td>0.175</td>
</tr>
<tr>
<td>Kenny et al., 1998</td>
<td>Girl</td>
<td>0.241</td>
<td>0.073</td>
</tr>
<tr>
<td>Loung et al., 2004</td>
<td>Both</td>
<td>0.124</td>
<td>0.019</td>
</tr>
<tr>
<td>McNichol et al., 2011</td>
<td>Both</td>
<td>0.170</td>
<td>-0.045</td>
</tr>
<tr>
<td>Ogren &amp; Perry, 2007</td>
<td>Both</td>
<td>0.117</td>
<td>-0.001</td>
</tr>
<tr>
<td>Shok, 1999</td>
<td>Both</td>
<td>0.153</td>
<td>0.053</td>
</tr>
<tr>
<td>Sheik, 2007a</td>
<td>Both</td>
<td>0.105</td>
<td>0.007</td>
</tr>
<tr>
<td>Shen-Censor et al., 2011</td>
<td>Both</td>
<td>0.038</td>
<td>-0.132</td>
</tr>
<tr>
<td>Smokowski et al., 2014</td>
<td>Both</td>
<td>0.123</td>
<td>0.093</td>
</tr>
<tr>
<td>Stulz &amp; Schwarz, 2014</td>
<td>Both</td>
<td>0.013</td>
<td>-0.117</td>
</tr>
<tr>
<td>Sweating &amp; West, 1996</td>
<td>Boy</td>
<td>-0.015</td>
<td>-0.109</td>
</tr>
<tr>
<td>Sweating &amp; West, 1995</td>
<td>Girl</td>
<td>0.066</td>
<td>-0.003</td>
</tr>
<tr>
<td>Zhao, 2016 (rural)</td>
<td>Both</td>
<td>0.169</td>
<td>0.025</td>
</tr>
<tr>
<td>Zhao, 2016 (urban)</td>
<td>Both</td>
<td>0.220</td>
<td>0.074</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.118</td>
<td>0.161</td>
</tr>
</tbody>
</table>

Figure 2.2. Forest plot of studies included in primary analysis.
2.3.3. Moderator analysis

Debate exists over whether it is appropriate to test for moderators in the absence of heterogeneity within the sample of studies. However, as Hall and Rosenthal (1991) point out, homogeneity does not negate the possibility of a significant moderator and assessment of variability may reflect real differences between the studies, thus is arguably appropriate. In the interest of fully examining these data, moderation analyses were conducted as planned. All moderation analysis was conducted on correlations between Time 1 parenting and Time 2 child self-cognitions, controlling for Time 1 child self-cognition.

**Gender of child.** Only four studies reported girls and boys separately. Mixed effect analysis revealed no significant differences between the two groups (\(Q = 0, p = .988\)).

**Gender of parent.** Sixteen studies reported data for mothers whereas 12 reported data for fathers. Mixed effect analysis indicated no significant difference between groups (\(Q = .46, p = .498\)).

**Age of child.** Mean ages of child (both at Time 1 and Time 2) were entered as continuous variables (years) and random effect meta-analysis regression conducted to examine the effect of these moderators. Age at Time 2 was calculated by adding age at Time 1 and length of delay. For studies that reported multiple follow-up time-points, a mean delay was calculated and added to Time 1 age. The effect of age at Time 1 on the correlation between parenting and child self-cognition (controlling for Time 1 child self-cognition) was non-significant (\(p = .083\)). Age at Time 2 significantly moderated the correlation between parenting behaviour and child self-cognition, with the relation reducing as age at Time 2 increased (\(\beta = -.013, S.E. = .006, p = .016\)).
**Length of time-lag.** Length of time-lag between Time 1 and Time 2 significantly moderated the relation between parenting and child self-cognition. The relation reduced as length of time-lag increased ($\beta = -.037$, $S.E. = .014$, $p = .007$).

**Quality assessment rating.** Quality assessment ratings were entered as a continuous variable to assess whether the quality of studies moderated the relation between child self-cognition and parent behaviour. A random effect meta-analysis regression indicated no significant relation ($p = .706$).

**2.4. Discussion**

This meta-analysis found a small, significant correlation between parenting behaviour and later child self-cognition when controlling for initial levels of child self-cognition, in line with the primary hypothesis. As expected, this relation was moderated by age at Time 2, whereby influence of parent behaviour on child self-cognition reduced as the mean age of children increased. Similarly, the effect reduced as length of lag between initial measurement and follow-up increased. Age at Time 1, gender of child and gender of parent did not moderate the relation.

Although the findings supported our hypothesis, the effect size of .12 was smaller than may have been expected. This appears to be because the auto-regressive effects of child self-cognition were controlled in the current analysis. This primary outcome shows a dramatic drop in effect size from correlational data ($r = .24$) and prospective data that does not control for initial of child self-cognition ($r = .20$). By controlling for the strong longitudinal relation between measurements of child self-cognition ($r = .50$), this analysis minimises any possible auto-regressive effects. Thus, the primary findings here are less likely to exaggerate the relation between these variables than previous research that does not control for this effect.
2.4.1. Theoretical implications

The small effect size found here contrasts with the assertion, within the theoretical literature, that parenting plays a fundamental role in the development of children’s self-cognitions (Bowlby, 1969; Coopersmith, 1967). It is possible that parents simply do not play a large role in this developmental process. These findings support a growing body of research that suggests that parents’ influence on a range of child developmental outcomes may not be as strong as has been assumed in the theoretical literature. For example, Milkie, Nomaguchi, and Denny (2015) found that the amount of time mothers spend with their children did not greatly influence child outcomes such as internalising and externalising problems. It may be that relationships with peers, which have been identified as having a significant relation with self-esteem (Shroff & Thompson, 2006), have a much more central role in the development of self-cognitions than parenting. Certainly, some empirical findings support this possibility (Colarossi & Eccles, 2003).

Alternatively, it may be that the age group measured in the current analysis ($M = 12.41$ at Time 1) does not capture the full extent of the effect. As our results indicate, effects weaken as children get older. This is in line with evidence that parents’ general influence on their children decreases as children get older (Steinberg & Silverberg, 1986). Thus, it is possible that, although parents have a small impact on changes self-cognitions during adolescence, the impact is more intense earlier in childhood. As such, these findings provide some theoretical specificity, suggesting that, if there is a time when parent behaviour towards their child extensively influences the developing self-concept, it is not during adolescence.

This possibility is supported by the theoretical literature. Bowlby (1980) asserts that the purpose of attachment as a biological mechanism is to connect vulnerable infants to caregivers who will protect them. Thus, attachment is particularly pertinent during the early
years when children are at increased risk of physical harm. Bowlby (1977) argues that attachment gradually declines from the age of three as children become more physically independent. It may be that, as attachment bonds gradually weaken as children grow older, so too do the influence of parents in a range of areas, including child self-cognitions.

Parents may also influence their children through means other than behaviour directed towards the child. Modelling of self-cognitions through behaviour that is not directed towards the child is another possible pathway. Coopersmith (1967), in line with Bandura’s (1986) social learning theory, suggests that children learn how to behave through copying the behaviour of significant others in their lives, such as parents. If children see their parents speaking highly of themselves (or alternatively criticising themselves), this may influence the development of their own beliefs about themselves. Thus, the full extent of parents’ influence on child self-cognition may not be captured in the current research.

2.4.2. Research implications

These findings indicate that research in this area that is not longitudinal and does not control for initial self-cognition levels has limited applicability as it likely overstates the extent of the relation between parent behaviour and child self-cognition. The small effect size demonstrated here also underlines the necessity of large samples when examining this phenomenon. Power analysis by G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) at .05 level of significance suggests that a sample of 743 would be necessary to detect this size of effect.

2.4.3. Strengths and Limitations

This study has several limitations that should be considered when interpreting the results. Children under the age of nine were not included as younger samples were not found
in our search. This is particularly pertinent given the finding that younger children are more influenced by parenting behaviour. Additionally, in this sample parent behaviour was largely reported by the children, rather than the parents themselves or observers. However, it may be more meaningful to use child-reported parent behaviour because it is the perception of the behaviour by the child, rather than the behaviour per se, that has been found to relate to outcomes (Gecas & Schwalbe, 1986). With only four of the included studies reporting results for girls and boys separately, there was a small sample size available to compare results for child gender. Thus, this finding should be interpreted with caution. Similarly, only 12 studies reported fathers’ behaviour separately from mothers’, which reduced the power to determine a difference in effect between mothers’ behaviour and fathers’ behaviour.

Despite these limitations, this is the first comprehensive meta-analysis to examine the relation between parent behaviour and child self-cognitions. By controlling for initial levels of self-cognition, it was able to examine the possible causal relation between these variables, thus test a long-standing theoretical assumption.

2.4.4. Conclusion

This meta-analysis demonstrated, across 23 studies, that parents’ behaviour influences the development of their children’s self-cognition, supporting the theoretical assertion that the ways parents interact with their children help children to build an understanding of themselves and determine their own value (Bowlby, 1969; Coopersmith, 1967). However, the effect size indicates that this influence is not large. Further, the influence decreases as children get older. Much of the empirical literature in this area may have overstated this relation by not controlling for initial levels of self-cognitions. It remains possible that parents do have a large influence on the development of child self-cognition but that this occurs in early childhood.
2.5. Studies in Meta-Analysis


Journal of Child and Family Studies, 20(3), 255-262. doi:
http://dx.doi.org/10.1007/s10826-010-9386-3


Zhao, S. (2016). *Parental involvements in children's educational and leisure activities: Relations with social, school, and psychological adjustment in urban and rural China.* (Ph.D.), University of Pennsylvania, Ann Arbor. ProQuest Dissertations & Theses Global database.
3. Study 2: Parental behavioural control in adolescence: How does it affect self-esteem and self-criticism?

Study 1 suggested that, although the relation is smaller than would be expected from the theoretical literature, parent behaviour does appear to influence the development of self-cognitions in adolescents. It examined the associations between parenting behaviours, in general, and child self-cognitions broadly. As such, a range of parenting behaviours were pooled, as were a range of self-cognitions, to provide a broad sense of the overall relations. Study 2 examined these associations in greater detail. Specific parenting behaviours that have been identified in the literature – behavioural control, psychological control and support (Barber et al., 2005) – were individually examined. Not only are they conceptually different, but factor analysis has also indicated that these three behaviours are structurally different (E. Schludermann & Schludermann, 1970). As such, they are expected to have different associations with child self-cognitions. Study 2 paid particular attention to behavioural control because, although there is strong reason to expect support to be positively related to self-cognitions and psychological control to be negatively related to them, the likely effect of behavioural control is more contentious.

Further, Study 2 explored the association between parent behaviours and specific types of self-cognitions to better understand this relation. It focused on two types of global self-cognitions, self-esteem and self-criticism, which have been found to have important clinical implications (Campos, Besser, Morgado, & Blatt, 2014; Donnellan et al., 2005; Orth et al., 2008). As such, Study 2 determined whether the three types of parenting behaviours have different relations with these two types of self-cognitions.

Study 1 additionally demonstrated the importance of controlling for initial levels of self-cognitions. The results found that the relation between parenting behaviour and self-
cognitions can be exaggerated when autoregressive effects are not controlled. As such, Study 2 ensured that initial self-cognition levels are controlled in all primary analyses to best test a possible causal relation between parenting and child self-cognitions.

3.1. Introduction

Parental behavioural control, also referred to as firm control (Lewis, 1981; S. Schludermann & Schludermann, 1988), describes parenting that aims to guide children to behave in ways that are appropriate and effective. Parents compose and communicate rules about acceptable and unacceptable behaviours, ensure they are aware of the child’s behaviours, firmly and consistently implement appropriate consequences for compliance and non-compliance and provide reasonable explanations for their demands on children’s behaviour (Barber, Olsen, & Shagle, 1994; Baumrind, 1971, 1996; Rollins & Thomas, 1979; Smetana & Daddis, 2002). Children are allowed to make decisions for themselves but this occurs within the limits set by overall parental guidelines (Baumrind, 1971, 1978). This parenting approach is notably distinct from psychological control in which parents employ techniques such as inducing guilt or shame in the child and punishing by stopping expressions of affection towards the child (Barber, 1996; Rogers, Buchanan, & Winchell, 2003). Psychological control aims to shape children’s behaviour by denigrating the child themself, rather than simply addressing their behaviour. Behavioural control is also distinct from overly strict parenting that can be harsh, punitive or involve unjust punishment and is recognised as being damaging to children (Baumrind, 1966; Gershoff, 2002; Janssens et al., 2015).

Baumrind’s (1966, 1968, 1971, 1978) theory emphasised the benefits of behavioural control, which she termed ‘demandingness’. The structure created by clear and reasonable parental rules provides children with an opportunity to understand the consequences of their
actions. They are encouraged to recognise their own agency and are helped to develop decision-making skills. This structure also provides a sense of security, which produces children who are more confident and explorative. Baumrind and others (e.g. Lamborn, Mounts, Steinberg, & Dornbusch, 1991) emphasised the benefits of high behavioural control combined with high parental support/warmth, known as ‘authoritative’ parenting. However, more recently, research has focused on the effects of separate dimensions of parenting behaviours (Bean et al., 2003; Garber & Flynn, 2001; Han & Grogan-Kaylor, 2013; Hunter, Barber, & Stolz, 2015; Ojanen & Perry, 2007). This approach allows research to isolate the effects of each type of behaviour and pinpoint how particular behaviours influence certain outcomes (Bean et al., 2013).

In the adolescent period one of the key areas that behavioural control is likely to influence is the development of self-cognitions. Developing a clear concept of one’s self-identity is a central goal of adolescence as it is necessary to enable adult decision-making (Dahl, 2004; Erikson, 1959; Rosenberg, 1986). Symbolic Interactionist theory suggests that self-beliefs develop as a result of feedback received during social interactions (Cooley, 1902; Mead, 1934). Parents in particular are known as key influences on their children (Bowlby, 1969, 1973). Thus, when a parent either reinforces or punishes behaviour, this is likely to influence how the child perceives themself.

The influence of behavioural control on self-cognitions is theoretically supported. Coopersmith’s (1967) theory of the development of self-esteem posits that behavioural control benefits self-esteem. By clearly and consistently enforcing rules, parents help their children to develop a clear understanding of the world and guidelines for effective behaviour within it. This increases success and reduces anxiety, thereby building self-esteem. Coopersmith (1967) also asserted that firmness is a demonstration of the parent’s attention and concern as it indicates to the child that their parent cares about them and is invested in
them. What is more, inherent in enforcement of rules is increased communication with the child. Thus, behavioural control shows children that they are valuable and benefits self-esteem. Coopersmith’s theory is echoed throughout developmental models, which emphasise the importance of parenting in self-cognition formation (Bretherton, 1991; Harter, 1999, 2003; Wylie, 1979). Blatt and colleagues (Blatt & Homann, 1992; Blatt & Luyten, 2009; Luyten & Blatt, 2013) have also argued that parenting environment is likely to play a key role in the development of self-cognitions. Derived from Erikson’s approach, this model suggests that by providing opportunities for children to achieve their goals, and thus develop a positive sense of self, parents create a key precipitant in the development of self-concept (Luyten & Blatt, 2013). Arguably, parental behavioural control may support this process.

Another self-cognition that develops during adolescence is self-criticism. Like self-esteem it is a global attitude towards the self as a whole, however it involves self-punishment, which occurs following a failure to meet internalised standards (Rosenberg et al., 1995; Thompson & Zuroff, 2004). Rules provided by parents encourage the development of internal expectations, thus it appears likely that self-criticism is influenced by behavioural control. However, the direction of the effect of behavioural control on self-criticism is unclear. It is possible that, in line with Coopersmith’s (1967) theory of self-esteem, behavioural control may increase the likelihood of success, thus reduce external criticism (e.g. low grades) and lead to less self-criticism.

There is a tension at the centre of behavioural control. As Barber et al. (1994) pointed out, children require, on one hand, the ability to control their behaviours so that they can learn to be effective members of society, but on the other require autonomy to develop self-sufficiency and competence. This is in line with Deci and Ryan’s (2000) self-determination theory, which argues for the importance of ‘relatedness’ – connection with others – and ‘autonomy’ – influence over one’s own outcomes. These two needs exist as opposites of the
same spectrum and extreme levels of control and extreme levels of autonomy are both problematic. Further, children frequently desire more control than parents feel is appropriate, often agitating for greater autonomy. The challenge for parents thus lies in determining the point between these two polarities that is most beneficial to children. This question becomes particularly apparent as children reach adolescence and are primed to focus on developing the skills needed to become adults who can function independently (Dahl, 2004), thus increased autonomy needs become apparent. As Baumrind (1968, 1978) noted, the aim of behavioural control is to teach children to understand adult reasoning and ultimately to be able to make decisions for themselves. Thus, the benefit of behavioural control becomes less clear as children enter adolescence. Previous research on the effect of behavioural control on adolescent self-cognitions has shown varied results. Findings for two major global types of self-cognitions, self-esteem and self-criticism, are examined here.

3.1.1. Self-esteem

Self-esteem has long been regarded as a central component of wellbeing (Baumeister, 1998). In prospective studies of adolescents, low self-esteem has been implicated in a range of psychopathologies, including depression, externalising problems and eating disorders (Donnellan et al., 2005; Lee & Hankin, 2009; Orth et al., 2008; Southall & Roberts, 2002; Stice, Presnell, & Spangler, 2002). Comprehensive data that examine the relation between parental behavioural control and child self-esteem are limited. It is widely understood that controlling for initial levels of the variable of interest is necessary to ensure that the relation between variables is not exaggerated (Gollob & Reichardt, 1991). However, only a small number of published studies have examined the effect of behavioural control on self-esteem, controlling for initial self-esteem. In a sample of 175 adolescents, mean age 13 years, Doyle and Markiewicz (2005) examined whether behavioural control predicted self-esteem two
years later. Controlling for self-esteem at Time 1, sex, social desirability and marital conflict, behavioural control did not predict self-esteem. Ojanen and Perry (2007) conducted a structural equation model with a sample of 278 adolescents aged 11-13 years and included Time 1 self-esteem, psychological control, affectionate contact, and maternal knowledge in the model. Maternal knowledge did not significantly predict self-esteem one year later.

Garber and Flynn (2001) used a sample of 240 6th graders to examine whether mothers’ firm control predicted child self-worth one year later. Controlling for Time 1 self-worth and mothers' depression history, when entered with mothers’ acceptance and psychological control, behavioural control did not uniquely predict self-worth at Time 2.

Other studies have demonstrated a significant relation between parental behavioural control and self-esteem, however directions of the effect are mixed. In a sample of 3,263 Korean adolescents aged 15-16 years, Han and Grogan-Kaylor (2013) used fixed-effects regressions to examine how parental monitoring related to self-esteem/confidence over a five year period. They found that, controlling for socio-economic status (SES), neighbourhood efficacy and school adaptability, monitoring significantly positively predicted self-esteem change over time. Kakihara et al. (2010) used a sample of 1,022 Swedish adolescents, mean age 14.28 years, to test the relation between parental rules and parental restrictions (measured at Time 1) on adolescent self-esteem at Time 3, two years later. In a structural equation model that controlled for self-esteem at Time 2 and included feeling over-controlled, feeling connected, coldness-rejection, restrictions of freedom, and rules at Time 1, rules significantly negatively predicted Time 3 self-esteem. This disparity may be a function of the differences in measures used. Han and Grogan-Kaylor’s measure described parents’ knowledge of their child’s whereabouts and activities, while Kakihara et al.’s measure assessed more interventive parenting, such as requirements for children to obtain permission for activities.
3.1.2. Self-criticism

Like self-esteem, self-criticism has been linked to a range of psychopathologies in adolescents, such as internalising, externalising and eating problems (Campos et al., 2014; Fennig et al., 2008). However, although research examining the influence of other parenting behaviours on self-criticism is more prevalent, prospective literature on the influence of behavioural control on self-criticism is scant (Kopala-Sibley & Zuroff, 2014). Only a handful of studies in this area use measures that may somewhat reflect behavioural control and few have examined the association between fathers’ behaviour and child self-criticism. Cheng and Furnham (2004) used a sample of 356 students tested at one time-point. They examined a measure termed “discouragement of behavioural freedom” and found that mothers’ discouragement of behavioural freedom significantly correlated with increased females’ self-criticism and fathers’ significantly correlated with increased females’ and males’ self-criticism. However, the measure included questions regarding reduced decision-making opportunities, which may have particularly influenced this sample as it contained almost 25% university students. Koestner et al. (1991) examined the relation between parental restrictiveness (measured at age 5) and self-criticism (measured at age 12) in a sample of 156 children with restrictiveness assessed via parent interview. They found that maternal restrictiveness significantly positively correlated with girls’ self-criticism and paternal restrictiveness significantly positively correlated with boys’ self-criticism. However, the measure included items such as “severe toilet training” and “high use of physical punishment” and thus may have assessed a construct more akin to harsh discipline than behavioural control. As such, the empirical evidence for the effect of parental behavioural control on adolescent self-criticism to date is limited and inconclusive.
3.1.3. Parental support and psychological control

Barber, Stolz and Olsen’s (2005) model of parenting, derived from Schaefer’s (1965) theory, argues that, as well as behavioural control, parental support and psychological control are major types of parent behaviour and together form the three primary parenting behaviours. Given that they may all be important pathways via which parent behaviour influences adolescent self-cognitions, when assessing the impact of behavioural control it is therefore necessary to examine this effect in the context of the other two behaviours (Bean et al., 2003).

Parental support includes behaviours such as acceptance, warmth, involvement, praise and general positive regard towards the child. The evidence for the beneficial effect of support on self-cognitions in adolescents is strong. Doyle and Markiewicz (2005) found that parental warmth predicted a significant increase in self-esteem, while Garber and Flynn (2001) found that maternal acceptance significantly predicted higher self-worth. Ojanen and Perry (2007) found that maternal affectionate contact significantly predicted self-esteem in girls, although not in boys. Han and Grogan-Kaylor (2013) found that parental warmth significantly predicted increased self-esteem/confidence. Self-criticism has also been found to be predicted by lower parental support in high-risk adolescents (Thompson, Zuroff, & Hindi, 2012).

Theoretically, psychological control is closely related to self-cognitions because it denigrates the child’s sense of self (Barber, 1996); thus it is particularly important to control for. Ojanen and Perry (2007) found that psychological control predicted reduced self-esteem for boys but not for girls. Cheung and Pomerantz (2011) found that psychological control predicted reduced perceived scholastic competence over time in Chinese adolescents, although this effect was not seen in American adolescents. Other studies have found no
effects of psychological control on self-esteem or self-worth (Doyle & Markiewicz, 2005; Garber & Flynn, 2001). Cross-sectional research has suggested that psychological control may increase self-criticism (Ahmad & Soenens, 2010).

3.1.4. The current research

This study aimed to examine how parental behavioural control influences the development of self-esteem and self-criticism in adolescents, while controlling for parental support and psychological control. We examined the relation between adolescent-reported behavioural control, support and psychological control (Time 1) and later self-esteem and self-criticism (Time 2 and Time 3) in a sample of secondary school students. To clarify the influence of behavioural control as the provision and enforcement of rules, a measure operationalising the construct in this way was used (S. Schludermann & Schludermann, 1988). An auto-regressive design that controlled for Time 1 self-esteem/self-criticism was employed. Empirical research is limited and has demonstrated mixed results regarding the relations between behavioural control and self-cognitions (Han & Grogan-Kaylor, 2013; Kakihara et al., 2010). As such, we used Coopersmith’s (1967) theory to hypothesise that behavioural control would benefit the development of adolescent self-concept, thus predicted increases in self-esteem and decreases in self-criticism. We also expected that parental support would benefit self-concept, such that it would be associated with increased self-esteem and decreased self-criticism and that psychological control would relate to reduced self-esteem and increased self-criticism. While some studies have found that parental behaviour differentially affects girls’ and boys’ self-cognitions (Felson & Zielinski, 1989; Rueger, Malecki, & Demaray, 2010), and there is some suggestion that parenting behaviour may have a stronger influence on girls than boys (Koestner et al., 1991), other studies have
not supported this (Colarossi & Eccles, 2003). As such, we examined girls and boys separately but did not make specific predictions about an effect.

3.2. Method

3.2.1. Recruitment

Thirty independent schools across the greater urban area of Sydney, Australia were initially approached to participate in the study. Six schools provided permission for their Grade 7 students to be approached by the researchers. Students were recruited via email, newsletter and flyer advertisements.

3.2.2. Participants

Two-hundred and forty-three students (126 girls, 52%) participated at Time 1, 225 (117 girls, 52%) at Time 2 and 201 (105 girls, 52%) at Time 3 testing, illustrating an approximately 83% retention rate from Time 1 to Time 3. Mean age at Time 1 was 12.08 years ($SD = 0.43$). Seventeen (7%) participants reported living with one parent (only), 11 (5%) reported dividing their time between two parents’ homes and all other participants reported living with two parents together. Of those participants who reported parents born outside Australia, most were born in Western countries (e.g. in Europe, North America, New Zealand). The largest non-Western group of parents was Asian-born (e.g. China, Vietnam, India), with 12 (5%) participants reporting at least one parent born in Asia. See Table 3.1 for further demographic details.
Table 3.1

Demographic Information (Time 1)

<table>
<thead>
<tr>
<th>Participant born</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>199 (82%)</td>
</tr>
<tr>
<td>Europe</td>
<td>16 (7%)</td>
</tr>
<tr>
<td>Asia</td>
<td>14 (6%)</td>
</tr>
<tr>
<td>North America</td>
<td>9 (4%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parents born</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Both Australia</td>
<td>131 (54%)</td>
</tr>
<tr>
<td>One overseas</td>
<td>64 (26%)</td>
</tr>
<tr>
<td>Both born overseas</td>
<td>48 (20%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overseas born parents (n = 160)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
</tr>
<tr>
<td>Asia</td>
</tr>
<tr>
<td>North America</td>
</tr>
<tr>
<td>New Zealand/Pacific</td>
</tr>
<tr>
<td>Middle East</td>
</tr>
<tr>
<td>South America</td>
</tr>
<tr>
<td>Africa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parent education (n = 242)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both completed university degree</td>
</tr>
<tr>
<td>One completed university degree</td>
</tr>
<tr>
<td>Both completed high school (only)</td>
</tr>
<tr>
<td>One completed high school (only)</td>
</tr>
<tr>
<td>Neither completed high school</td>
</tr>
</tbody>
</table>

3.2.3. Procedure

Participants completed a questionnaire battery at three time-points (2014, 2015, 2016). Each testing session was conducted approximately 12 months apart. Questionnaires were completed at schools, either via computer or paper-and-pen. Each school conducted individual testing sessions and questionnaires were administered by the researchers and/or school counselling staff. Students were seated individually, and each testing session was completed within one hour. This study was part of a broader data collection by the authors which also measured other child outcomes within this sample (Study 4) and another sample of parent responses (Study 3). This research was approved by The University of Sydney Human Research Ethics Committee (HREC; Appendix A). All participants provided written
consent from themselves and a parent/guardian and were free to withdraw from the study at any time (Appendix B1-4).

3.2.4. Materials

Parenting Behaviours (Time 1). *Children's Report of Parent Behavior Inventory-30 (CRPBI-30; Schludermann & Schludermann, 1988).* This questionnaire was used to measure parental behavioural control, support and psychological control, as reported by the child (Appendix C). The CRPBI-30 is an abbreviated version of Schaefer’s (1965) Children’s Report of Parenting Behaviour Inventory and is well regarded (Hawes & Dadds, 2013). It has been repeatedly used to measure child-reported parent behaviour (Jago et al., 2011; Lumley, Dozois, Hennig, & Marsh, 2012; Vannatta, Ramsey, Noll, & Gerhardt, 2010). Each of the three subscales contain 10 questions rated on a three-point Likert scale with higher scores indicating more behaviour. Scores range from 10 to 30 for each subscale. In the Firm Control subscale – described here as ‘behavioural control’ – questions primarily pertain to having rules and enforcing them (e.g. “My [parent] believes in having a lot of rules and sticking with them”) and lack of discipline (reverse scored; “My [parent] lets me off easy when I do something wrong”). The Acceptance subscale – described here as ‘support’ – measures affection demonstrated (“My [parent] often praises me (e.g., tells me that I did a good job”) and emotional support (“My [parent] is easy to talk to”). The Psychological Control subscale assesses behaviours such as emotional manipulation (“My [parent] tells me if I really cared for [him/her], I would not do things that cause [“him/her] to worry”) and use of guilt (“My [parent] reminds me of all the things that [he/she] has done for me”). In this study participants completed each subscale twice (i.e. once for each parent) unless they did not live with mother and father. The CRPBI has been found to have good reliability and internal consistency (S. Schludermann & Schludermann, 1988). Here reliability of behavioural
control (α’s mother, father, respectively = .74, .77), support (α’s mother, father, respectively = .89, .92) and psychological control (α’s mother, father, respectively = .78, .83) was acceptable.

**Self-Esteem (Time 1, Time 2, Time 3).** *Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965).* Used here to measure self-reported global self-esteem, the RSE has been extensively used in research with adolescents (Campbell et al., 1996; Hagborg, 1993; Orth et al., 2008). The RSE contains 10 questions, score range 10 - 40. Higher scores indicate higher self-esteem. Items include “On the whole, I am satisfied with myself”. Research has found it to be reliable and valid (Gray-Little, Williams, & Hancock, 1997). Here reliability was good (α’s T1, T2, T3, respectively = .87, .89, .91).

**Self-Criticism (Time 1, Time 2, Time 3).** *Levels of Self-Criticism Scale – Internalised Self-Criticism subscale (LOSC; Thompson & Zuroff, 2004).* This measure was used to assess self-reported self-criticism and was designed to examine criticism that arises from not meeting internalised self-standards. The 10 items are rated on a seven-point Likert scale, higher scores indicating greater self-criticism, scores range: 10 - 70. Questions include “I feel like a failure when I don’t do as well as I would like”. The LOSC has been used with children aged 12-15 years (Clark & Coker, 2009). It displays good convergent validity with Depressive Experiences Questionnaire- Self-Criticism (Blatt, D'Afflitti, & Quinlan, 1976) and reliability (Thompson & Zuroff, 2004). In this sample reliability was good (α’s T1, T2, T3, respectively = .88, .88, .89).

### 3.2.5. Data preparation

Outliers were examined following guidelines by Tabachnick and Fidell (2001) but none were identified. Distribution was assessed and found to be largely normal, with all measures of squewness and kurtosis < 1. Using Little’s MCAR test all measures were found
not to have data missing completely at random except Time 1 Self-Esteem and Time 1 Self-Criticism. However, as all measures had < 2% missing values, i.e. negligible (Schafer, 1999), it was appropriate to replace missing values. Where participants attempted a questionnaire but did not complete every item, relative mean substitution was used to estimate missing values (Raaijmakers, 1999). This method uses information from items completed by the participant, as well as the overall sample mean, to create a relative mean for each individual missing response. Research suggests that it is more accurate than simple mean substitution and it is argued to have advantages over model-based estimation techniques such as maximum likelihood (ML) (Raaijmakers, 1999). Given that others have argued for the benefits of the ML approach (Schafer & Graham, 2002), the analysis was also run using this technique with 20 imputations (Graham, Olchowski, & Gilreath, 2007), and the differences for significant effects are reported in the tables. Multicollinearity was assessed in all the regression analyses and was not present (all VIF’s < 2).

3.2.6. Planned analysis

To assess how behavioural control influences the development of self-esteem and self-criticism, hierarchical regressions were planned that examined the relations between mothers’ and fathers’ behavioural control, support and psychological control (Time 1) and later levels of self-esteem and self-criticism (Time 2, Time 3), controlling for initial levels of self-esteem or self-criticism (Time 1). Regressions on the total sample revealed that, when gender main effect was included in the model and Time 1 self-cognition was controlled, gender and mother’s behavioural control significantly interacted (Time 2 $p = .04$; Time 3 $p = .001$). As such, results were analysed separately for girls and boys.
3.3. Results

3.3.1. Descriptive statistics and correlations

Means and standard deviations for the dependent and independent variables are reported in Table 3.2. Pearson’s correlations between all variables are shown in Table 3.3.²

² Verbal description of the results was omitted, with results appearing in tabular form only, due to word limits of the journal to which the manuscript has been submitted.
Table 3.2

Means for Independent and Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>Mother's Behavioural Control</th>
<th>Father's Behavioural Control</th>
<th>Mother's Support</th>
<th>Father's Support</th>
<th>Mother's Psychological Control</th>
<th>Father's Psychological Control</th>
<th>Self-Esteem</th>
<th>Self-Criticism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>21.85 (3.36)</td>
<td>22.36 (3.28)</td>
<td>26.51 (4.09)</td>
<td>25.34 (4.91)</td>
<td>17.06 (3.97)</td>
<td>16.38 (4.21)</td>
<td>30.78 (5.19)</td>
<td>36.32 (13.37)</td>
</tr>
<tr>
<td>Boys</td>
<td>21.37 (3.24)</td>
<td>21.85 (3.91)</td>
<td>26.69 (3.50)</td>
<td>25.39 (4.34)</td>
<td>17.48 (3.97)</td>
<td>16.96 (4.61)</td>
<td>30.28 (4.91)</td>
<td>33.67 (12.10)</td>
</tr>
<tr>
<td>Time 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>29.66 (5.01)</td>
<td>39.75 (12.81)</td>
</tr>
<tr>
<td>Boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>31.03 (5.73)</td>
<td>37.62 (11.86)</td>
</tr>
<tr>
<td>Time 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>29.13 (5.23)</td>
<td>42.76 (11.61)</td>
</tr>
<tr>
<td>Boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30.49 (6.16)</td>
<td>38.84 (12.26)</td>
</tr>
</tbody>
</table>

*Note.* Standard deviations appear in parentheses.
Table 3.3 *Zero-order Pearson’s Correlations between Independent and Dependent Variables*

<table>
<thead>
<tr>
<th></th>
<th>Mother Behavioural Control</th>
<th>Father Behavioural Control</th>
<th>Mother Support</th>
<th>Father Support</th>
<th>Mother Psychological Control</th>
<th>Father Psychological Control</th>
<th>Self-Esteem Time 1</th>
<th>Self-Esteem Time 2</th>
<th>Self-Esteem Time 3</th>
<th>Self-Criticism Time 1</th>
<th>Self-Criticism Time 2</th>
<th>Self-Criticism Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mother Behavioural Control</strong></td>
<td>0.57**</td>
<td>-0.23</td>
<td>-0.11</td>
<td>0.33**</td>
<td>0.22</td>
<td>-0.28**</td>
<td>-0.19</td>
<td>0.01</td>
<td>0.28**</td>
<td>0.14</td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td><strong>Father Behavioural Control</strong></td>
<td>0.50**</td>
<td>-0.05</td>
<td>-0.34**</td>
<td>0.16</td>
<td>0.43**</td>
<td>-0.23</td>
<td>-0.23</td>
<td>-0.07</td>
<td>0.30**</td>
<td>0.15</td>
<td>0.20</td>
<td></td>
</tr>
<tr>
<td><strong>Mother Support</strong></td>
<td>-0.45**</td>
<td>0.22</td>
<td>0.53**</td>
<td>-0.33**</td>
<td>-0.03</td>
<td>0.41**</td>
<td>0.28**</td>
<td>0.20</td>
<td>-0.16</td>
<td>0.07</td>
<td>-0.12</td>
<td></td>
</tr>
<tr>
<td><strong>Father Support</strong></td>
<td>-0.22</td>
<td>-0.38**</td>
<td>0.62**</td>
<td>-0.07</td>
<td>-0.32**</td>
<td>0.42**</td>
<td>0.38**</td>
<td>0.42**</td>
<td>-0.20</td>
<td>-0.09</td>
<td>-0.21</td>
<td></td>
</tr>
<tr>
<td><strong>Mother Psychological Control</strong></td>
<td>0.45**</td>
<td>0.20</td>
<td>-0.47**</td>
<td>-0.17</td>
<td>0.65**</td>
<td>-0.43**</td>
<td>-0.18</td>
<td>-0.11</td>
<td>0.23</td>
<td>0.06</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td><strong>Father Psychological Control</strong></td>
<td>0.17</td>
<td>0.37**</td>
<td>-0.23</td>
<td>-0.27**</td>
<td>0.66**</td>
<td>-0.38**</td>
<td>-0.21</td>
<td>-0.25</td>
<td>0.26**</td>
<td>0.16</td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td>Self-Esteem Time 1</td>
<td>-0.29**</td>
<td>-0.27**</td>
<td>0.61**</td>
<td>0.57**</td>
<td>-0.30**</td>
<td>-0.24**</td>
<td>0.58**</td>
<td>0.41**</td>
<td>0.43**</td>
<td>-0.24</td>
<td>-0.25</td>
<td></td>
</tr>
<tr>
<td>Self-Esteem Time 2</td>
<td>-0.27**</td>
<td>0.23</td>
<td>0.46**</td>
<td>0.47**</td>
<td>-0.24**</td>
<td>-0.28**</td>
<td>0.67**</td>
<td>0.62**</td>
<td>0.28**</td>
<td>-0.35**</td>
<td>-0.34**</td>
<td></td>
</tr>
<tr>
<td>Self-Esteem Time 3</td>
<td>-0.22</td>
<td>-0.18</td>
<td>0.22</td>
<td>0.33**</td>
<td>-0.13</td>
<td>-0.21</td>
<td>0.62**</td>
<td>0.70**</td>
<td>-0.22</td>
<td>-0.12</td>
<td>-0.29**</td>
<td></td>
</tr>
<tr>
<td>Self-Criticism Time 1</td>
<td>0.32**</td>
<td>0.33**</td>
<td>-0.31**</td>
<td>-0.29**</td>
<td>0.25**</td>
<td>0.24**</td>
<td>-0.46**</td>
<td>-0.41**</td>
<td>-0.37**</td>
<td>0.51**</td>
<td>0.52**</td>
<td></td>
</tr>
<tr>
<td>Self-Criticism Time 2</td>
<td>0.32**</td>
<td>0.19</td>
<td>-0.28**</td>
<td>-0.36**</td>
<td>0.17</td>
<td>0.23</td>
<td>-0.37**</td>
<td>-0.49**</td>
<td>-0.41**</td>
<td>0.51**</td>
<td>0.61**</td>
<td></td>
</tr>
<tr>
<td>Self-Criticism Time 3</td>
<td>0.37**</td>
<td>0.31**</td>
<td>-0.11</td>
<td>-0.16</td>
<td>0.13</td>
<td>0.11</td>
<td>0.39**</td>
<td>-0.41**</td>
<td>-0.50**</td>
<td>-0.40**</td>
<td>0.51**</td>
<td></td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level. Note. Correlations for girls appear below diagonal. Correlations for boys appear above diagonal.**
3.3.2. Parenting behaviour (Time 1) as predictor of self-esteem (Time 2, Time 3) and self-criticism (Time 2, Time 3)

A series of hierarchical multiple regressions assessed whether mothers’ or fathers’ behavioural control, support and psychological control predicted later self-esteem or self-criticism, controlling for initial levels of either dependent variable (DV). Step 1 of the regressions contained the control variable (either Self-Esteem Time 1 or Self-Criticism Time 1). Step 2 contained the behavioural control, support and psychological control measures (either mothers’ or fathers’). For boys, mothers’ behaviours did not significantly predict either DV. Similarly, fathers’ behaviour did not predict boys’ self-criticism, nor did it predict girls’ self-esteem. $R^2$ change was not significant in any of these models. However, other significant relations between parenting and child self-cognitions were found and appear in Table 3.4 (girls) and Table 3.5 (boys).
Table 3.4

Hierarchical Regression with Parenting Behaviour Predicting Self-Esteem and Self-Criticism: Girls

<table>
<thead>
<tr>
<th>Step</th>
<th>Independent Variable</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Self-Esteem T1</td>
<td>0.64</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$R^2 = .44, F(1,113) = 87.04, p &lt; .001$</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mother Behavioural Control</td>
<td>-0.06</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>Support</td>
<td>0.07</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>Psychological Control</td>
<td>-0.03</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$R^2$ change = .01, $F$ change(3,110) = 0.50, $p = .680$</td>
<td></td>
</tr>
<tr>
<td>Self-Criticism</td>
<td></td>
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</tr>
<tr>
<td>1</td>
<td>Self-Criticism T1</td>
<td>0.49</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$R^2 = .26, F(1,113) = 39.03, p &lt; .001$</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mother Behavioural Control</td>
<td>0.77</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td>Support</td>
<td>-0.25</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td>Psychological Control</td>
<td>-0.27</td>
<td>0.32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$R^2$ change = .04, $F$ change(3,110) = 2.17, $p = .096$</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>$R^2$ change = .11, $F$ change(3,98) = 4.91, $p = .003$</td>
<td></td>
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<tr>
<td></td>
<td>Self-Criticism T1</td>
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</tr>
<tr>
<td>1</td>
<td></td>
<td>0.49</td>
<td>0.08</td>
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</tbody>
</table>

\[ R^2 = .27, F(1,109) = 40.62, p < .001 \]

<table>
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<tr>
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<th>Father Behavioural Control</th>
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<td>2</td>
<td></td>
<td>-0.27</td>
<td>0.37</td>
<td>-.07</td>
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<td>.476</td>
<td>0.73</td>
<td>0.36</td>
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</table>

\[ R^2 = .20, F(1,97) = 24.17, p < .001 \]

<table>
<thead>
<tr>
<th></th>
<th>Support</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>-0.61</td>
<td>0.23</td>
<td>-.24</td>
<td>-2.68</td>
<td>.009</td>
<td>0.05</td>
<td>0.23</td>
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<table>
<thead>
<tr>
<th></th>
<th>Psychological Control</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>0.24</td>
<td>0.27</td>
<td>.08</td>
<td>0.89</td>
<td>.376</td>
<td>-0.14</td>
<td>0.28</td>
</tr>
</tbody>
</table>

\[ R^2 \text{ change} = .06, F \text{ change}(3,106) = 2.97, p = .035 \]
\[ R^2 \text{ change} = .04, F \text{ change}(3,94) = 1.42, p = .241 \]
Table 3.5

Hierarchical Regression with Parenting Behaviour Predicting Self-Esteem and Self-Criticism: Boys

<table>
<thead>
<tr>
<th>Step</th>
<th>Independent Variable</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$B$</td>
<td>$SE_B$</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Self-Esteem T1</td>
<td>0.74</td>
<td>0.11</td>
</tr>
</tbody>
</table>

$R^2 = .40, F(1,102) = 67.14, p < .001$

| 2    | Father                     | Behavioural Control | -0.18 | 0.13 | -.13 | -1.43 | .156 | 0.24 | 0.16 | .16 | 1.48 | .142 |
|      |                            | Support           | 0.16  | 0.12 | .12  | 1.34  | .183 | 0.42 | 0.15 | .30 | 2.77 | .007 |
|      |                            | Psychological Control | 0.19  | 0.11 | .16  | 1.68  | .096 | -0.10 | 0.14 | -.08 | -0.69 | .491 |

$R^2$ change $= .03, F(3,99) = 1.91, p = .133$

$R^2 = .21, F(1,89) = 22.89, p < .001$

$R^2$ change $= .08, F(3,86) = 2.92, p = .038$
3.4. Discussion

Parental behavioural control largely did not benefit self-esteem or self-criticism in adolescents. In fact, for girls it led to increases in self-criticism. Correlations revealed that parents who were more supportive (as perceived by their child) generally had children who had higher self-esteem, although support largely did not lead to changes in self-esteem. Psychological control was somewhat negatively correlated with self-esteem and positively with self-criticism, particularly for girls, but did not appear to influence changes in either self-cognition. Overall, these findings suggest that, when parents use high levels of behavioural control, adolescents do not feel better about themselves and daughters, in particular, become more self-critical up to two years later.

For adolescents aged 12 to 14, behavioural control does not seem to benefit self-esteem. Nor did this analysis find that parental support benefitted self-esteem over time. Previous research has found that support predicts increased self-esteem, however this was largely found in younger samples (Garber & Flynn, 2001; Ojanen & Perry, 2007) or in analyses that did not control for other parenting behaviours (Doyle & Markiewicz, 2005). Unexpectedly, reduction in girls’ Time 3 self-esteem was predicted by mothers’ support. It is possible that this may be a function of regression to the mean, whereby those with high self-esteem at Time 1 (and therefore high maternal support) are participants whose self-esteem reduces by Time 3.

These results suggest that Coopersmith’s (1967) theory that behavioural control benefits the development of self-esteem is not supported in an early adolescent population. It appears that, in fact, girls’ self-criticism is increased by their parents’ rule making and enforcement, although boys’ self-criticism is not. These findings support extensive previous research which has demonstrated that females are more influenced by social interactions than
males (Cross & Madson, 1997). It may be that, during adolescence, strict rules are interpreted by girls as an indication that their parents do not believe they are capable and thus reduce girls’ feelings of competence. This criticism is internalised, leading to increased self-criticism. Additionally, due to the increased desire for independence, adolescents may be less likely to comply with parental guidelines. Therefore, they may receive more negative feedback from parents where previously they had received positive reinforcement for compliance, and this feedback is particularly salient for girls.

Another factor may be that, while parental behavioural control may increase adolescents’ likelihood of success, the need to practice independence supersedes the need for success in this age group. Adolescents would perhaps rather make their own decisions than take instruction from their parents, despite increased risk of failure. As psychological priorities change for adolescents, so too may the impact of parental behaviours.

It may be that there is a specific aspect of behavioural control that negatively affects self-cognitions. The measure used in the current study, which focused on providing and enforcing rules and involves parents being relatively instructive towards their children, was similar to Kakihara and colleagues’ (2010) “Rules” measure, which emphasised the need for adolescents to obtain permission and explain their activities to parents. Both studies demonstrated negative effects, suggesting that highly directive, active types of parental behavioural control undermine adolescent self-cognitions. In contrast, Han and Grogan-Kaylor (2013) demonstrated positive effects of “Monitoring” on adolescent self-concept. One reason for this difference may be cultural factors. Kakihara et al. and the current study used Western samples, while Han and Grogan-Kaylor assessed Korean adolescents. Previous research has suggested that parenting behaviours have different effects, depending on cultural context (Wang, Pomerantz, & Chen, 1997). However, it is also possible that the contrasting results may reflect different aspects of behavioural control assessed. Han and Grogan-Kaylor
measured parents’ awareness of their child’s behaviour which appears to be a more passive type of behavioural control. Thus, different forms of behavioural control may have different effects on self-cognitions.

3.4.1. Conceptual and practical implications

This research highlights the complexity of behavioural control as a construct (Barber, Olsen, & Shagle, 1994) and that a nuanced approach is needed to fully understand its effects on children. Parents are required to balance providing limits, consistently enforcing them, and ensuring that those limits are reasonable and clearly explained, while supporting some level of autonomy. Furthermore, what is reasonable, what needs to be explained to children and how much autonomy is appropriate is not clear-cut, and is continually shifting, depending on the child’s age and developmental stage. One result of this is that it is difficult to clearly differentiate ‘behavioural control’, as conceptualised here, and expected to be beneficial, from over control, which is excessive, unreasonable and ultimately repressive, and thus likely to be harmful (Blatt, 1974; Blatt & Zuroff, 1992).

As such, it is difficult to operationalise this construct, and to ensure that it discriminates between these two types of control. Others have tried to address this issue, dividing behavioural control into various subcategories (Janssens et al., 2015), but the problem of what is beneficial based on the child’s developmental stage remains an issue. The measure used here ultimately assesses whether rules are firmly implemented but does not assess how reasonable these rules are, nor whether any autonomy is granted. These findings suggest that firm implementation of rules broadly does not benefit these self-cognitions, however it is unclear whether this relation would remain if rules were implemented in conjunction with reasonable explanations for them and age-appropriate autonomy granting. This is a limitation of the current study and an area that requires further research.
These findings, when taken in conjunction with those of Kakihara et al. (2010) and Han and Grogan-Kaylor (2013), suggest that parental behavioural control of adolescents should be relatively passive, or risk detrimentally affecting self-cognitions, particularly for girls. Strong control that dictates appropriate behaviours and punishes non-compliance may impinge upon newly developing self-determinism and increase self-criticism. Control that involves awareness of the adolescent’s behaviours, but limited intervention, may be more beneficial. This may provide a sense of security to adolescents but not constrict them. It may also allow adolescents to feel that they can consult with parents about decisions, without their independence being impinged upon (Gottman & DeClaire, 1997; Kehoe, Havighurst, & Harley, 2014).

3.4.2. Clinical implications

Self-criticism is known to play a significant role in the aetiology of disorders, particularly depression (Blatt, 1974), and as such, understanding how it develops may be key in preventing this disorder. Negative self-beliefs are argued to be particularly important in the development of depression during adolescence because forming a clear self-concept is so important in this period (Cole, 1991; Cole, Maxwell, et al., 1997; Jacquez et al., 2004). These results may suggest an important way that parenting influences depression. The finding that behavioural control influences self-criticism in girls but not boys is especially significant. Given that during adolescence, although depression rates rise for both sexes, this increase is particularly sharp for girls compared to boys (Costello et al., 2003; Hankin et al., 1998), these findings may suggest one factor which contributes to this discrepancy. Thus, addressing issues with behavioural control may be important in the treatment and prevention of depression in girls.
3.4.3. Strengths, limitations and future directions

Only independent school students were used in this study. Although schools were from a variety of areas across Sydney, demographic data indicate that most participants had at least one parent who had completed a university degree, suggesting high socio-economic status (SES). It is unclear whether these findings would generalise to adolescents from families of lower SES. Parenting behaviour was reported by adolescents, thus may not accurately reflect actual parenting behaviour. However, child-reported parent behaviour is arguably more meaningful than parent-reported behaviour because it is the child’s interpretation of behaviour that is expected to influence the child (Gecas & Schwalbe, 1986). A proportion of the sample reported parents born in Asia and this may have influenced our results, given that research has demonstrated that parenting behaviours may have different implications in Western samples compared to Eastern samples (Wang et al., 2007). However, it remains unclear whether this is also seen for children of Asian heritage living in a Western context. Further, as these participants only made up 5% of the sample, this effect is likely to be minimal.

The sample size of the current study is limited. The influence of parenting behaviours on child self-cognitions is generally small and large samples are needed to fully test whether a relation is present (Study 1). In particular, increased power is needed to demonstrate longitudinal effects that control for autoregressive influences (Gollob & Reichardt, 1991). Thus, it is possible that the current study failed to detect additional significant results. Conversely, this also suggests that the significant relations that were found are likely to be strong effects.

It is unclear from the current research whether the relation between behavioural control and self-esteem and self-criticism is stronger for pre-adolescent children than
adolescents. Developmental theory suggests that younger children are at greater need for behavioural guidelines (Baumrind, 1971). Behavioural control may benefit self-cognitions in this age group. However, it is also possible that firm behavioural control does not benefit self-beliefs for children of any age. Further research is needed to assess this question.

Similarly, theory suggests that behavioural control should allow children and adolescents to make some decisions for themselves, but there should still be rules preventing inappropriate behaviours (Baumrind, 1971, 1978). It is not clear from the current data whether, within the overall rules, parents allow their children to make decisions for themselves. It is possible that allowing some decision making may moderate the relation demonstrated here.

This research adds to the limited longitudinal research on the effect of behavioural control on adolescent self-cognitions. Furthermore, it appears to be one of the first to prospectively examine how parental behavioural control influences the development of self-criticism. Given the importance of self-criticism in a range of disorders (Campos et al., 2014; Fennig et al., 2008), this research makes an important contribution to understanding the development of these conditions and the role of parenting. The relation between parental behavioural control and girls’ self-criticism demonstrated here in particular provides key information about why girls develop negative self-beliefs. More broadly, these findings give important insight into how best to parent adolescents.
4. Study 3: What influences parenting behaviour? The role of parent self-concept

The combined findings of Studies 1 and 2 support the assertion that parent behaviour influences how children’s self-cognitions develop. Study 1 suggested that there is a small but robust effect of parenting behaviour, broadly, on child self-cognitions. Study 2 suggested that, in girls, self-criticism increased when parents used more behavioural control. As parenting behaviour does appear to affect child self-cognitions, these behaviours warrant further examination. Study 3 aimed to elucidate how parenting behaviours develop and what might cause parents to use certain approaches. In particular, the study examined the relation between parents’ own self-cognitions and their parenting behaviours.

4.1. Introduction

Parenting behaviour has a strong influence on child psychological outcomes. Attachment theory asserts that the relationship between child and parent forms the foundation of the child’s psychology. It is through this relationship that the child understands themself, others, and their world (Bowlby, 1969, 1973). Empirical research supports the importance of parents in child development. For example, meta-analyses have demonstrated relations between parenting behaviour and foundational child cognitions, such as self-cognitions (Study 1, Study 2), as well as between parenting and higher-order issues such as anxiety, depression and conduct problems (McLeod, Weisz, et al., 2007; McLeod, Wood, et al., 2007; Rothbaum & Weisz, 1994). As children age, the influence of other socialising factors, such as peers, increase (Rudolph & Hammens, 1999; Wagner & Compas, 1990). However, in line with attachment theory, evidence suggests that parents remain the primary social influence for children, over and above that of peers (Aseltine et al., 1994; Stice et al., 2004).

Extensive research has identified which parent behaviours support child development, and which adversely affect children. Authoritative parenting has emerged as the optimal form
of parenting, at least in Western populations. It has repeatedly been associated with benefits across a range of areas including improved school performance, reduced substance use, reduced anxiety and depression, and improved self-esteem (Steinberg, 2001). Authoritative parenting involves high levels of two types of parenting behaviours: support and behavioural control (Baumrind, 1968; Lamborn et al., 1991). Support involves showing warmth and acceptance towards the child. Behavioural control, also known as firm control, is the use of clear boundaries around acceptable and unacceptable behaviour (e.g. curfews). An additional type of parenting behaviour, psychological control, has been found to be deeply damaging to children (Barber & Harmon, 2002; Barber et al., 1994). Psychological control aims to control children by influencing how they feel about themselves, for example through the use of shame and guilt and the strategic withdrawal of love (Barber, 1996). As such, it is clear from the literature that certain parent behaviours benefit children’s psychology, while other behaviours damage it.

However, though it is understood that parent behaviour affects children, very little is known about what leads parents to use helpful versus harmful behaviours. There is suggestion that parents’ behaviours are influenced by the behaviours they have seen modelled by their own parents (Van Ijzendoorn, 1992). But it is also likely that factors specific to the current parent/child situation are likely to play a key role in influencing parents’ behaviours. Theories in this area suggest that parent self-concept may be a key determinant of parenting behaviour. Belsky’s (1984) theory argues that there are three primary influences on parenting behaviour: the child, social support, and the parent themself. The theory acknowledges that all three factors play a role in determining parent behaviours but suggests that parent characteristics may be particularly influential. They have both a direct effect on parent behaviour and indirect effects through influence on the parent’s ability to maintain social support.
Belsky's (1984) theory suggests that the general emotional wellbeing of the parent is likely to influence their ability to parent. Those with high emotional resources, for example those who feel good about themselves and are not being drained by negative self-beliefs, are better able to meet the challenges of parenting and maintain beneficial behaviours. Thus theoretically, any self-cognition, no matter how seemingly unrelated to parenting, should influence parent behaviour, because it will either add to or detract from these resources. These self-cognitions are thus likely to have an additive effect, whereby the more positive, and fewer negative, self-beliefs a parent has, the greater their likelihood of using positive parenting strategies.

Dix’s (1991) theory of behaviour is consistent with Belsky’s approach, suggesting that parents’ overall self-concept will influence their behaviour. Dix argues that, in general, an individual’s emotional state has a strong influence on their behaviour. It influences what they notice, and how they respond to it. As such, parents who have negative self-concept, for example, and therefore are experiencing a negative emotional state, are more likely to overlook positive behaviours, experience their children more negatively, and be more negative in their reaction to them. As such, in line with Belsky’s (1984) theory, Dix’s theory suggests that parent self-cognitions influence parenting behaviour, and that even self-beliefs that are unrelated to parenting are likely to influence how parents behave towards their children.

Empirical literature examining links between parent behaviour and parent self-concept is limited. However, there is some evidence emerging of a relation. In a sample of 55 sets of parents, Amitay et al. (2008) showed a positive relation between parent self-criticism and controlling behaviour, and a negative relation with self-criticism and affectionate behaviour. Similarly, in a sample of mother-child dyads (mean age child = 11.6 years), a significant positive relation between mothers’ self-criticism and maternal power assertion.
(e.g. yelling at child) was seen, with a negative relation demonstrated between maternal self-criticism and warmth (Yu & Gamble, 2009). In a study of 289 mothers of adolescents, self-criticism was positively linked to psychologically controlling behaviour and negatively to supportive behaviour (Ahmad & Soenens, 2010). Small (1988) found that parental self-esteem was positively related to mother self-reported autonomy granting and positive communication, and to fathers’ self-reported positive communication. Thompson and Zuroff (1999) found that self-rated maternal self-criticism was positively related to observed negative feedback towards their teenage daughters. This relation has been demonstrated even for mothers of very young children. In a sample of mothers of four-month-olds, Kaminer and colleagues (2007) found a positive relation between self-reported maternal self-criticism and observed negative speech towards the child, with the reverse shown for positive speech.

The aim of the current study was to examine the relation between parent self-cognitions and parenting behaviour. In contrast to previous research, which has typically examined the relations of specific self-cognitions with parent behaviours, we aimed to examine both the individual relations and the additive relations of a range of self-cognitions with parent behaviours. This enables thorough exploration of Belsky’s (1984) theory that emotional wellbeing in general influences parenting behaviours. Thus, a broad range of self-cognitions were examined. Two global self-cognitions (self-esteem and self-criticism) and four domain-specific self-concept measures were examined (social skill, athletic ability, physical attractiveness and intelligence). Global measures are expected to broadly relate to parenting behaviours, as global variables are expected to influence an individual’s behaviours generally (Shavelson, Hubner, & Stanton, 1976). The domain specific measures were selected to examine a range of areas that were not specifically related to parenting, which, according to Belsky’s theory should nevertheless influence parents’ emotional resources and thus relate to parenting behaviours.
Further, unlike previous research which has generally focused on a single parenting behaviour, we aimed to examine the relation between parent self-cognitions and the three major types of parenting behaviour, as identified by Barber, Stolz and Olsen (2005): support, behavioural control and psychological control. This enabled better understanding of the relation between self-cognitions and parenting behaviour on a broad level.

We hypothesised, in line with Belsky’s (1984) theory, that all self-cognitions would correlate with all three types of parenting behaviour. As such, we expected that self-esteem, sociability, athletic abilities, physical appearance and intelligence would positively correlate with support and behavioural control, while negatively correlating with psychological control. Similarly, we expected self-criticism to negatively correlate with support and behavioural control, and positively correlate with psychological control. Moreover, we hypothesised that self-cognition variables would have additive effects, such that when all self-belief variables were considered together they would account for a greater amount of variance in all three parenting behaviours.

4.2. Method

4.2.1. Participants

One hundred and four mothers were recruited from six independent schools (defined as school not administered by either the state government or Catholic education systems) from a variety of suburbs across Sydney, Australia. All parents of Grade 7 students at participating schools were invited to be involved and were asked to follow a link to the online questionnaire that was included in school newsletters and emails sent to parents. Additionally, consent forms for other research involving the Grade 7 students (Studies 2 and 4) included the option for parents to provide their own and their partners’ email addresses to be sent a link to the study. Although some of the parents who participated in the current
research also had children who completed the additional study, the questionnaires were issued at a separate time and were unlikely to influence parents’ responses. As only 27 fathers completed the study these data were excluded from the analyses.

Schools were recruited to the study via direct contact from the researchers, with 30 schools initially approached. Only independent schools were approached because of complex approval processes that are prohibitive towards research in other schools. Schools were approached based on size (larger schools approached first), until enough schools consented to participate, such that approximately 1000 students and their parents would be approached to participate. Schools who chose to participate consented to have the researchers recruit from their Grade 7 students and parents.

The mean age of mothers who completed the study was 46.08 years ($SD = 4.35$). Of those, 42% of their children in Grade 7 were daughters. One hundred and one (97%) had completed high school, while 66 (64%) had also completed a bachelor’s degree or higher at university. Ninety-one mothers (88%) identified their primary ethnicity as Anglo-Australian, six (6%) identified as Mediterranean, while the remaining (6%) identified as Asian, Middle Eastern or another ethnicity. Ninety-five mothers (91%) reported being married or de facto, while the remaining participants described themselves as single, divorced or widowed. All participants described themselves as the Grade 7 child’s mother, except one who described herself as a step-mother.

4.2.2. Measures

Independent variables.

Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965). This measure was used to assess global feelings of self-worth. It contains 10 questions, with scores ranging between 10 and 40. Higher scores indicate higher levels of self-esteem. The RSE is one of the most well-
used measures of self-esteem and has been found to have good construct validity and high reliability (Gray-Little et al., 1997; Robins, Hendin, & Trzesniewski, 2001). The internal consistency was high in this sample (Cronbach’s $\alpha = .90$).

**Levels of Self-Criticism Scale – Internalised self-criticism subscale (LOSC; Thompson & Zuroff, 2004).** This subscale of the LOSC is designed to assess self-reported self-criticism that arises over an individual’s inability to meet internal standards that they have set for themselves. It contains 10 items including questions such as “I am very frustrated with myself when I don’t meet the standards I have for myself” and “I often get very angry with myself when I fail”. Scores are rated on a seven-point Likert scale and range from 10 to 70. Higher scores indicate higher self-criticism. The LOSC has been well used in research (e.g. Clark & Coker, 2009; Trumpeter, Watson, & O’Leary, 2006; Thompson & Zuroff, 2004). It has been found to display good convergent validity with the Depressive Experiences Questionnaire – Self-Criticism (Blatt, 1974) and good reliability (Thompson & Zuroff, 2004). In the current sample, internal consistency was high (Cronbach’s $\alpha = .90$).

**Self-Perception Profile for Adults (SPPA; Messer & Harter, 2012).** In this study selected subscales of this tool were used to measure adult self-concept in a range of domains. The following subtests were used in this study: Sociability, Athletic Abilities, Physical Appearance and Intelligence. Each question is phrased to present two polarities of the same scenario, separated by the term “but”, for example, “Some adults feel uncomfortable when they have to meet new people BUT other adults like to meet new people”. Respondents are asked to read the full sentence and select which of the two polarities is most applicable to them. They are then asked to select either “Really true for me” or “Sort of true for me”. Higher scores indicate higher levels of perceived competence. The SPPA has been previously used in a variety of adult populations (Lynch & Graham-Bermann, 2004; McArdle, Lea,
Briscoe, & Hall, 2007). In the current sample, the internal consistency ranged from Cronbach’s $\alpha$ of .77 to .84.

### Dependent variables.

**Children's Report of Parent Behavior Inventory-30 (CRPBI-30; Schludermann & Schludermann, 1988).** The CRPBI-30 is well regarded (Hawes & Dadds, 2013) as an abbreviated version of Schaefer’s (1965) original 108 question Children’s Report of Parenting Behavior Inventory. Research confirms that the CRPBI-30 is closely comparable to the original measure, demonstrating a similar factor structure (E. Schludermann & Schludermann, 1970). This measure was originally designed for use on child populations but has been widely used to measure parents’ self-report of their behaviour towards children (Garber, Robinson, & Valentiner, 1997; Schwarz, Bartonhenry, & Pruzinsky, 1985; Vannatta et al., 2010). It asks parents, for example, “As a parent, I feel that I am a person who…”, with responses indicated on a three-point Likert scale. The measure is divided into three subscales: Acceptance (e.g. “smiles at my child very often”), Firm Control (e.g. “insists that my child do exactly as he/she is told”) and Psychological Control (e.g. “tells my child that if he/she really cared for me, he/she would not do things that cause me to worry”). In line with Barber et al.’s (2005) theory, these factors are described here as ‘support’, ‘behavioural control’ and ‘psychological control’, respectively. Scores for each subscale ranged 10-30, with higher scores indicating higher levels of the behaviour. It has been found to demonstrate good internal reliability and strong discriminant validity between reports of mother and father behaviour (Schludermann & Schludermann, 1970). In the current study Cronbach $\alpha$’s of .81, .62, .67 for support, behavioural control and psychological control, respectively, were found.

### 4.2.3. Procedure

Parents were asked to participate in an online study by completing a series of questionnaires, which would take approximately 10 minutes. Participation was voluntary and
no specific inducement to participate was provided beyond aiding research and understanding. The questionnaires were completed in one sitting in a location of the participant’s choosing. This study was approved by the University of Sydney Human Research Ethics Committee (HREC).

4.3. Results

4.3.1. Correlation analyses

Zero-order Pearson’s correlations were conducted to examine the relations between the individual parent self-cognitions and the three parenting behaviours. Correlations, means and standard deviations for all variables are reported in Table 4.1.
Table 4.1

Mothers' Self-Reported Parenting Behaviours and Self-Cognitions: Correlations and Descriptive Statistics (N = 104)

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
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<tbody>
<tr>
<td>1. Support^a</td>
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<tr>
<td>2. Behavioural Control^a</td>
<td>-.19</td>
<td></td>
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<tr>
<td>3. Psychological Control^a</td>
<td>-.31**</td>
<td>.37***</td>
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<tr>
<td>4. Self-Esteem^b</td>
<td>.15</td>
<td>-.22*</td>
<td>-.23*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Self-Criticism^c</td>
<td>-.03</td>
<td>.26**</td>
<td>.27**</td>
<td>-.62***</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6. Sociability^d</td>
<td>.29**</td>
<td>-.15</td>
<td>-.27**</td>
<td>.63***</td>
<td>-.40***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Athletic Abilities^d</td>
<td>.18</td>
<td>-.05</td>
<td>-.12</td>
<td>.46***</td>
<td>-.21*</td>
<td>.41***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Physical Appearance^d</td>
<td>.12</td>
<td>-.17</td>
<td>-.21*</td>
<td>.65***</td>
<td>-.58***</td>
<td>.47***</td>
<td>.38***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Intelligence^d</td>
<td>.05</td>
<td>-.16</td>
<td>-.28**</td>
<td>.64***</td>
<td>-.49***</td>
<td>.40***</td>
<td>.30**</td>
<td>.51***</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>27.57</td>
<td>22.79</td>
<td>13.60</td>
<td>32.57</td>
<td>34.74</td>
<td>3.00</td>
<td>2.49</td>
<td>2.82</td>
<td>3.17</td>
</tr>
<tr>
<td>SD</td>
<td>2.76</td>
<td>2.41</td>
<td>2.50</td>
<td>4.79</td>
<td>11.75</td>
<td>0.68</td>
<td>0.66</td>
<td>0.60</td>
<td>0.65</td>
</tr>
</tbody>
</table>


*p < .05. **p < .01. ***p < .001
4.3.2. Regression analyses

Three regressions were also conducted on the parent behaviour variables in which all self-cognition variables (self-esteem, self-criticism, sociability, athletic abilities, physical appearance and intelligence) were entered together. The purpose was to examine the additive relation of the self-cognition variables with the parenting behaviours. (See Table 4.2.) For support, self-cognition variables did not significantly account for variance in scores ($R^2 = .10$, $F_{1,6} = 1.83$, $p = .102$). However, within the model, sociability significantly predicted support, with higher sociability predictive of higher levels of support, $p = .017$. None of the other individual self-cognition variables significantly predicted support. Self-cognition variables did not significantly account for variance in behavioural control scores ($R^2 = .08$, $F_{1,6} = 1.32$, $p = .257$), nor did any of the individual self-cognition variables in the model. However, self-cognition variables did account for a significant amount of variance in psychological control scores ($R^2 = .13$, $F_{1,6} = 2.31$, $p = .04$). None of the individual self-cognition variables in the model accounted for a significant level of variance in psychological control.
Table 4.2

Summary of Simple Regression Analyses for Parenting Behaviours Regressed on Separate Self-Cognition Measures (N = 104)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Support&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Behavioural Control&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Psychological Control&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
<td>β</td>
</tr>
<tr>
<td>Self-Esteem&lt;sup&gt;b&lt;/sup&gt;</td>
<td>&lt; 0.01</td>
<td>0.10</td>
<td>.00</td>
</tr>
<tr>
<td>Self-Criticism&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0.02</td>
<td>0.03</td>
<td>.10</td>
</tr>
<tr>
<td>Sociability&lt;sup&gt;d&lt;/sup&gt;</td>
<td>1.25</td>
<td>0.51</td>
<td>.31*</td>
</tr>
<tr>
<td>Athletic Abilities&lt;sup&gt;d&lt;/sup&gt;</td>
<td>0.35</td>
<td>0.46</td>
<td>.09</td>
</tr>
<tr>
<td>Physical Appearance&lt;sup&gt;d&lt;/sup&gt;</td>
<td>0.15</td>
<td>0.63</td>
<td>.03</td>
</tr>
<tr>
<td>Intelligence&lt;sup&gt;d&lt;/sup&gt;</td>
<td>-0.27</td>
<td>0.54</td>
<td>-.06</td>
</tr>
<tr>
<td>R&lt;sup&gt;2&lt;/sup&gt;</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>1.83</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Children's Report of Parent Behavior Inventory-30.<sup>b</sup>Rosenberg Self-Esteem Scale. <sup>c</sup>Levels of Self-Criticism Scale – Internalised subscale. <sup>d</sup>Self-Perception Profile for Adults.

* p < .05. ** p < .01. *** p < .001
4.4. Discussion

Parent self-cognitions were related to self-reported parenting behaviour, particularly psychological control. Correlation analyses revealed that mothers who reported lower levels of self-esteem, higher levels of self-criticism and believed themselves to be less sociable, less intelligent and less physically attractive were more likely to report using psychological control with their children. When considered together in regression analysis, these self-cognitions individually did not predict psychological control, however together accounted for a significant amount of variance in this behaviour. Additionally, those mothers who felt they were more sociable reported more support towards their children, with this association seen in both correlation and regression analyses. Mothers who reported lower self-esteem and higher self-criticism levels reported more use of behavioural control, as demonstrated via correlations, however when all self-cognitions were entered in a regression, these associations were no longer significant.

The links demonstrated in previous literature between parental global self-beliefs and parenting behaviour received mixed support in correlational analyses of this study. The relation between self-criticism and increased negative parenting shown here supports a connection that has repeatedly been demonstrated. Self-criticism has been associated with psychological control (Ahmad & Soenens, 2010), power assertion (Yu & Gamble, 2009), controlling behaviour (Amitay et al., 2008) and negative feedback towards the child (Kaminer et al., 2007; Thompson & Zuroff, 1999). In contrast, negative relations between self-criticism and positive parenting behaviours such as affection and support found in previous research (Ahmad & Soenens, 2010; Amitay et al., 2008; Kaminer et al., 2007; Yu & Gamble, 2009) were not supported. Similarly, the association between parental self-esteem and greater positive parenting found by Small (1988) was not supported. Thus, parental self-
criticism does generally appear to relate to unhelpful parenting, although other associations between global self-cognitions and parent behaviours are less clear.

These findings provide support for our hypothesis, suggesting that the combined influence of a range of parents’ self-cognitions does relate to parenting behaviour, but only psychological control. As such, our results support the idea, derived from Belsky’s (1984) theory, that parenting behaviour may be affected by the amount of emotional resources parents have available to them. Negative feelings about self-competence in areas unrelated to parenting appear to accumulate and diminish capacity to parent positively. However, this appears only to be the case for psychological control.

As such, these findings both support Belsky’s (1984) model and provide greater specificity for it. The model describes parenting behaviour generally, rather than identifying different types of parenting behaviour. Analyses demonstrate that different types of parenting behaviour form separate factors (Barber et al., 1994; Schludermann & Schludermann, 1970). The current findings suggest that one behaviour in particular, psychological control, is related to self-beliefs. With only 13% of the variance in psychological control accounted for by self-cognitions, it is certainly likely that other factors also contribute to this type of parenting. Nevertheless, these results suggest one important determinant.

The finding that lower levels of self-esteem and higher levels of self-criticism were associated with more use of behavioural control was unexpected. As behavioural control is believed to benefit children (Baumrind, 1966, 1968), it was predicted to relate to positive self-cognitions in parents. However, this was not the case. Although this pattern of results was not expected, there is some previous research that support these findings. Small (1988) demonstrated a negative relation between maternal self-esteem and parents’ control over decisions involving child (such as curfews) in a cross-sectional study. There are various explanations for these findings. It is possible that lower levels of self-esteem and higher
levels of self-criticism aid parents in being firmer in enforcing boundaries. Alternatively, it is possible that parents who use behavioural control develop worse self-cognitions. Parents who use more behavioural control may have children who misbehave more often, and it is the experience of raising this type of child that leads to greater self-criticism and lower self-esteem in parents. In addition, behavioural control is a complex construct, as described in detail elsewhere (Study 2), which may in fact have more negative implications than is typically assumed in the theoretical literature.

These findings suggest that parents who use psychological control are more likely to have negative beliefs about themselves. This is consistent with Barber’s (Barber, 1996; Barber & Harmon, 2002) theory of psychological control, which argues that the reason parents use this technique is because of their desire to feel dominant over their child, to possess the child and to enmesh with them. These psychological needs are likely to be closely connected to negative self-cognitions. The findings may also be explained by downward social comparison theory (Wills, 1981), which argues that individuals with low self-esteem often derogate others. This enables them to feel that they are superior to the other person, thereby enhancing their self-worth and improving their own affective state. As such, parents who have lower self-worth may use psychologically controlling techniques to put down their children in an attempt to increase their own sense of worth.

While it is unclear from the current data if parents’ negative self-cognitions lead to more controlling behaviour or if the use of controlling behaviour leads parents to feel worse about themselves, it is likely that a reciprocal relation exists. In this case, negative parent self-cognitions would lead to controlling parenting behaviours, which creates more misbehaviour from children, and misbehaviour in children leads to greater parental control and more negative self-beliefs in parents. Further research, particularly examining parent beliefs about child behaviour, is needed to elucidate this relation.
4.4.1. Clinical implications

Parents are pivotal in child psychological therapy because they can be involved in treatment, thus greatly enhancing it (Sanford et al., 2006). Treatment that specifically addresses unhelpful parenting behaviours and provides parents with support also appears to significantly benefit children (Carr, 2009; Diamond, Siqueland, & Diamond, 2003; Dowell & Ogles, 2010; Siqueland, Rynn, & Diamond, 2005). Furthermore, problematic parenting is known to be a significant factor in child psychopathology (McLeod, Weisz, et al., 2007; McLeod, Wood, et al., 2007; Rapee, 1997). Thus, identifying factors that drive problematic parenting has important implications for child psychological treatment. The current research suggests that problematic parenting may be driven by parent self-cognitions and thus addressing this underlying factor may improve this behaviour. At present, parent cognitions are typically not a focus of treatment. For programs that do address parent cognitions, typically only cognitions related specifically to parenting or to the child themself are attended (Dadds & Hawes, 2006; Markie-Dadds, Sanders, & Turner, 1999; Sanders, 1999). There is potentially an important area – parent self-cognitions – that is currently neglected in treatment of child psychopathology.

Greater understanding of psychological control, in particular, has major clinical implications because of the severity of its detrimental effects on children. Psychological control has been repeatedly linked to worse internalising symptoms, externalising symptoms, self-cognitions and academic performance (Barber & Harmon, 2002; Barber et al., 1994). Despite this, when parenting behaviours are targeted in treatment, psychological control is typically not the focus (Waite, Parkinson, Willetts, & Creswell, 2014). One notable exception is the Attachment-Based Family Therapy (ABFT) model developed by Diamond and colleagues (Diamond, Reis, Diamond, Siqueland, & Isaacs, 2002; Diamond et al., 2003;
Shpigel, Diamond, & Diamond, 2012; Siqueland et al., 2005), which, among other goals, specifically aims to reduce psychological control (Shpigel et al., 2012). As well as being found to be effective in reducing depression and anxiety in adolescents, ABFT has been shown to reduce psychologically controlling behaviour in parents (Diamond et al., 2003; Shpigel et al., 2012; Siqueland et al., 2005). The current research provides further support for this approach and suggests that one of the mechanisms underlying the reduction in psychological control may be the focus on parents’ own concerns. Furthermore, additional focus on parent self-cognitions specifically may further enhance this effect.

4.4.2. Strengths and limitations

Measurement of data at a single time-point limited the inferences that could be drawn from the findings as direction of causality could not be ascertained. Only self-reported parent behaviours were measured, which may not reflect actual parent behaviour, although lack of uniform relation between self-cognitions and the three parent behaviours suggests that there was not an overall issue with reporter bias. The sample consisted of only mothers of Grade 7 students. There are likely to be developmental differences between older and young children which may affect parent self-cognitions and/or parenting behaviours, therefore these findings may not generalise to parents of children in different age groups. Additionally, all mothers were parents to independent school students. Although schools sampled covered a variety of socio-economic areas, parents from the lowest socio-economic cohorts would not have been included in the sample. However, as indicated by the Index of Socio-Cultural Educational Advantage, none of the schools were significant outliers as compared to other Australian schools. Although Belsky’s (1984) theory does not suggest that the factors which affect parenting behaviours differ for mothers and fathers, it cannot be confirmed that the current findings also apply to fathers.
This study expands the limited empirical literature on the relation between parent self-cognitions and parenting behaviours. The systematic examination of both the individual and additive relations of a range of self-cognitions has not been previously performed, nor has the exploration of these factors in relation to the three theoretically prominent types of parenting behaviours. Few studies before have sought to examine in detail the assumptions of Belsky’s (1984) theory. As such, this research provides new insight into why parents use problematic parenting behaviours.

4.4.3. Conclusion

These findings suggest that parenting behaviour is linked to parents’ self-cognitions. They support the notion that parents’ self-beliefs in general may affect their likelihood of using psychological control towards their children. When addressing problematic parenting – and related child psychopathology – it appears important to address the underlying factors that may reduce parents’ capacity to parent positively.
5. **Study 4: Self-criticism and self-esteem in early adolescence: Do they predict depression?**

The results of Study 3 suggested that there is a link between parents’ own self-cognitions and their parenting behaviours. Those with more negative self-beliefs and fewer positive self-beliefs were more likely to use psychological control towards their children. Additionally, Study 3 found in correlational analysis that those with higher levels of self-criticism were more likely to use behavioural control. Study 2 found that use of behavioural control led to increases in self-criticism in girls. Taken together, the findings of Studies 2 and 3 suggest that parents who are more self-critical use more behavioural control, which in turn leads daughters to become more self-critical. Thus, these results suggest a possible pathway via which self-cognitions are transmitted intergenerationally.

However, it is notable that primary findings of Studies 2 and 3 did not suggest a direct pathway between parent self-cognitions, parent behaviour and child self-cognitions. In regression analyses Study 3 found that parents’ own self-cognitions related to their use of psychological control, but generally not behavioural control or support. Study 2 failed to demonstrate effects of psychological control on self-cognitions but did find apparent effects of behavioural control. This suggests a more complex relation between parents’ self-cognitions and their children’s. Generally, it is not simply that parents who are high on certain self-beliefs are likely to influence, through their behaviours, their children to develop a similar self-cognition profile. Rather, it appears that negative self-beliefs in parents may lead them to use negative parenting styles, particularly psychological control, which other research has been found to increase various psychopathologies, such as internalising and externalising issues (Barber & Harmon, 2002; Barber et al., 1994), although not, our research would suggest, negative self-cognitions. At the same time, the current findings suggest that other forms of parenting such as behavioural control, do appear to detrimentally affect
adolescents’ self-cognitions, namely girls’. These findings suggest the importance of parenting for the development of child self-cognitions. To further explore the broader implications of child self-cognitions, Study 4 examined whether negative self-cognitions have clinical effects. As such, the relations between self-criticism and self-esteem, and depression were examined.

5.1. Introduction

Beck’s (1967, 1987) theory of depression posits that if an individual develops a negative conceptualisation of themself, they become more prone to depression. This cognitive style creates a vulnerability which is triggered when negative events occur. As such, the theory suggests that negative self-beliefs, along with negative beliefs about the environment and the future, are a central step in the development of depression.

The importance of self-cognitions in depression is argued to be especially relevant in adolescents. Theorists have long argued that a key goal of adolescence is to develop a cohesive self-concept (Coopersmith, 1967; Erikson, 1959, 1963, 1998; Rosenberg, 1986). In line with this, Cole’s (Cole, 1991; Cole, Martin, et al., 1997; Jacquez et al., 2004) model posits that, because of this developmental need to understand the self, negative self-beliefs have a particularly powerful effect on young people and thus are the pivotal component of depression in adolescents and children.

Beck’s (1967, 1987) notion that negative self-beliefs precipitate depression has come to be known as the ‘vulnerability’ model. Others suggest alternate possibilities. The ‘scar’ model proposes that it is the experience of depressive symptomatology that leads individuals to experience reductions in their self-esteem, with depression causing individuals to interpret themselves more negatively (Coyne & Whiffen, 1995; Lewinsohn, Steinmetz, Larson, & Franklin, 1981; Shahar & Davidson, 2003). Others suggest a ‘reciprocal-causality’ model,
whereby both pathways are present, such that self-esteem levels influence depression but
depression also influences self-esteem (Shahar et al., 2004). Despite these alternatives, the
vulnerability model has dominated the literature and has strong empirical support (Orth et al.,
2008; Rieger, Göllner, Trautwein, & Roberts, 2016), particularly in older adolescents and
adults.

Beck’s (1967, 1987) theory broadly implicates negative self-cognitions in the
development of depression. Empirical research has largely focused on self-esteem
specifically, that is, the general attitude towards the self as a whole (Rosenberg et al., 1995).
Beck (1967) highlights self-esteem as particularly important because the overall tendency of
self-esteem, whether positive or negative, will direct the overall cognitive structure towards
or away from depressive thinking.

In support of the vulnerability model, longitudinal studies have found that self-esteem
predicts later depression in adolescents. Lee and Hankin (2009) found that, in a sample of
350 adolescents (mean age = 14.5 years), controlling for earlier depression symptoms, self-
esteeem significantly predicted depression five weeks later. Similar effects were found in a
sample of 115 adolescents (mean age = 16.5 years) in whom self-esteem and depression
symptoms were measured 14 weeks apart (Southall & Roberts, 2002).

In research specifically comparing the vulnerability and scar models, Orth et al.
(2008) Study 1 supported the vulnerability model in a sample of 2, 403 adolescents aged 15-
16 years at baseline. Assessed at three additional time-points, each two years apart, cross-
lagged modelling examined three paths (Time 1 self-esteem – Time 2 depression, Time 2
pathways from depression to self-esteem were also assessed. All pathways from self-esteem
were significant (β’s =-.09 to -.10, all p’s < .01), while no pathways from depression to self-
esteem were significant (all β’s = -.04, all p’s > .05). In older populations, stronger support for vulnerability is found. In a similar design, Orth and colleagues’ (2008) Study 2 (mean age = 18.3), found pathways from self-esteem to depression (β’s = -.20 to -.22, all p’s < .01). Replicating these findings, Rieger et al. (2016), in a sample of 2,512 participants with mean age = 21.5, found similar pathways (β’s = -.23, -.24, p’s < .01). Both found minimal support for depression to self-esteem pathways.

Despite most evidence thus supporting Beck’s theory (1967, 1987), there have been some studies that have presented contradictory evidence. Shahar and Henrich (2010) argued against Orth and colleagues’ (2008) Study 1 conclusions, suggesting that although β < .10 (absolute value) may be statistically significant when sample sizes are very large, the practical meaning is questionable. Furthermore, the relation between self-cognitions and depression appears to differ depending upon participant age. Shahar and Henrich (2010) divided a sample of 4,520 adolescents, who were tested at two points one year apart, into age groups. Cross-lagged modelling found, for those aged 14 to 16 at Time 1, that self-esteem did not predict depression, nor vice versa, above the β = .10 level. However, for those aged 12-13 at Time 1, depression predicted self-esteem (girls: β = -.17, p = .020, boys: β = -.19, p = .008), but not the reverse, supporting the scar model. In a sample of 110 adolescents (mean age 13.6 years) measured at baseline and after a 6-8 month interval, cross-lagged analysis suggested that self-esteem both predicted depression (β = -.30, p < .05) and was predicted by depression (β = -.22, p < .05), supporting the reciprocity model (Burwell & Shirk, 2006). As such, while most research supports, to some extent, the vulnerability model regarding self-esteem and depression in older adolescents and young adults, this relation is not entirely clear in younger adolescents.
Another self-cognition, self-criticism, stands out as being relevant to depression. Self-criticism is the punishment or derogation people deliver to themselves when they assess that they have not met internally instigated standards (Shahar & Henrich, 2013; Thompson & Zuroff, 2004). As such, it is a broad pattern of thinking regarding the self that occurs in response to any perceived failure. Thus, like self-esteem it is a global self-cognition which theoretically should create a negative schema that forms the basis of depressive thinking (A. T. Beck, 1967).

However, research that has empirically examined the prospective links broadly between self-criticism and depression in adolescents has been mixed. In support of the vulnerability model Auerbach, Ho, and Kim (2014) examined a sample of 157 adolescents (mean age = 13.99 years), with five data collections over six months, finding that self-criticism predicted depression symptoms. In a sample of 1,150 adolescents (mean age = 16.26), J. R. Cohen et al. (2013) found that self-criticism predicted depression over a six-month period, with measurements taken monthly, although the effect size was small (β = .06, \( p < .01 \)).

Other research has found that self-criticism did not predict depression. Little and Garber (2000), using hierarchical regressions that controlled for sex, initial depression levels and concurrent levels of anger/aggression, examined a group of 486 5th and 6th graders (mean age = 11.4 years). Self-criticism did not significantly predict depression three months later. Kopala-Sibley, Zuroff, Hankin, and Abela (2015) sampled 241 adolescents (mean age = 12.57) who were tested at baseline, then two years later. In a structural equation model controlling for dependency, life events and anxiety, Time 1 self-criticism did not predict Time 2 depression. Abela and Taylor (2003) examined 303 3rd and 7th graders, using a hierarchical regression that contained both self-criticism and self-esteem, and found that after
a six-week delay, self-criticism individually did not predict depression in either group. Similarly, Adams, Abela, Auerbach, and Skitch (2009) followed 56 children (mean age = 10.6 years) over six weeks and found that self-criticism alone did not significantly predicted depression symptoms.

Shahar et al. (2004) compared the vulnerability and scar models, examining self-criticism and depression in a two time-point cross-lagged study of 6th and 7th graders. Four hundred and sixty students (50% girls) completed measures at baseline and 12 months, with no significant relations between the two variables found for boys. However, for girls, both pathways were significant, with self-criticism predicting depression and depression predicting self-criticism. Thus, reciprocal causality was seen, but only for girls.

With few exceptions (Abela & Taylor, 2003), previous research examining self-criticism has generally not included self-esteem in the measurement models. Given the conceptual closeness of these two constructs, and more well-established relations between self-esteem and depression found, this oversight is problematic. Beck’s (1967) model suggest that self-esteem and self-criticism are separate constructs that both increase vulnerability to depression. But, given that self-esteem is the broad valuation of the self as a whole, it is possible that all other self-cognitions, including self-criticism are, to some extent, subsumed by self-esteem. As such, it is possible that any relation demonstrated between self-criticism and depression is merely a function of the relation between self-esteem and depression.

Furthermore, little research has examined the changes over time in these variables during adolescence, in relation to each other. While it appears clear that depression increases during adolescence (Ford et al., 2003) and self-esteem decreases (Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002) – although some research has suggested a less linear change in self-esteem (e.g. Wigfield et al., 1991) – the trajectory of self-criticism is unclear. Given
the theoretical links (A. T. Beck, 1967) between self-criticism and depression, it is reasonable to expect that, like depression, self-criticism increases during this period. Likewise, based on theory it would be expected that these changes are connected, although this has not been tested empirically. This study is thus the first to examine the growth of adolescent self-criticism, self-esteem and depression in relation to each other. It is also one of few to examine whether self-criticism and self-esteem predict depression, controlling for the effects of each.

5.1.1. The current research

The aim of the current research was to examine the relations between self-criticism, self-esteem and depression in a sample of early adolescents. The research focused on addressing the following questions:

1. Do self-criticism levels in adolescents change over time (ages 12 to 14)? If so, is this change related to changes in self-esteem and depression levels?

If these are answered in the affirmative it will be an indication that further analysis is appropriate and thus the following question will be addressed:

2. Do self-criticism and self-esteem predict depression symptoms (vulnerability model) or is the reverse seen (scar model) during early adolescence?

As some research has demonstrated gender effects (Shahar et al., 2004), we also intended to test for this possibility. To address these aims we measured self-criticism, self-esteem and depression symptoms in a community sample of 7th graders (Time 1; T1), again at approximately 12 months (Time 2; T2) and again at approximately 24 months from baseline (Time 3; T3).

Regarding Question 1, we hypothesised that all three variables would display significant linear change over the testing period (self-criticism and depression increase and
self-esteem decrease) (Ford et al., 2003; Robins et al., 2002). Based on theoretical assumptions (A. T. Beck, 1967), we also expected that all three changes would be correlated (self-criticism increase would positively relate to depression increase and negatively to self-esteem decrease, and self-esteem decrease would negatively relate to depression increase).

Regarding Question 2, we made hypotheses in line with the vulnerability model. Although there has been some dissent regarding the empirical veracity of this model (Shahar & Henrich, 2010), theoretical models guided by the vulnerability hypothesis remain dominant (Abramson et al., 1989; A. T. Beck, 1967) and the empirical evidence weighs most strongly towards vulnerability (Orth et al., 2008; Rieger et al., 2016). As such, we expected that self-esteem would negatively predict depression symptoms from T1 to T2 and T2 to T3, but depression would not predict self-esteem from T1 to T2 or T2 to T3. Given the mixed findings for self-criticism and similar dominance of the vulnerability model in this area, we also used this model to guide hypotheses for self-criticism. As such, we expected that self-criticism would positively predict depression symptoms from T1 to T2 and T2 to T3, but depression would not predict self-criticism from T1 to T2 or T2 to T3.

5.2. Method

5.2.1. Participants

Two-hundred and forty-three (52% female) Grade 7 students participated at T1. Mean age was 12.08 (S.D. = 0.43), range 11-13 years. At T2, 245 (50% female) students participated, and at T3, 219 (51% female) participated. This represented a drop-out rate of 10% from T1 to T3. At T1, 82% of participants were Australian born, 7% born in Europe, 6% born in Asia and 4% were North American born. Fifty-four per-cent reported having two Australian-born parents, 26% reported having one parent born outside Australia and 20%
reported having two parents born outside Australia. See Table 5.1 for further demographic details.

Table 5.1

Demographic Information (Time 1)

<table>
<thead>
<tr>
<th>Overseas born parents (n = 160)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>71 (44%)</td>
</tr>
<tr>
<td>Asia</td>
<td>35 (22%)</td>
</tr>
<tr>
<td>North America</td>
<td>15 (9%)</td>
</tr>
<tr>
<td>New Zealand/Pacific</td>
<td>14 (9%)</td>
</tr>
<tr>
<td>Middle East</td>
<td>11 (7%)</td>
</tr>
<tr>
<td>South America</td>
<td>9 (6%)</td>
</tr>
<tr>
<td>Africa</td>
<td>5 (3%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parent education (n = 242)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Both completed university degree</td>
<td>163 (67%)</td>
</tr>
<tr>
<td>One completed university degree</td>
<td>51 (21%)</td>
</tr>
<tr>
<td>Both completed high school (only)</td>
<td>10 (4%)</td>
</tr>
<tr>
<td>One completed high school (only)</td>
<td>15 (6%)</td>
</tr>
<tr>
<td>Neither completed high school</td>
<td>3 (1%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Living situation (N = 243)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Both parents</td>
<td>215 (88%)</td>
</tr>
<tr>
<td>Dividing time between two parents’ homes</td>
<td>11 (5%)</td>
</tr>
<tr>
<td>One parent (only)</td>
<td>17 (7%)</td>
</tr>
</tbody>
</table>

5.2.2. Recruitment

Participants were recruited from six independent schools (defined as school not administered by either the state government or Catholic education systems) across the greater Sydney area after approximately 30 schools were approached. Although all schools were fee-paying, Index of Socio-Cultural Educational Advantage scores indicate that they did not significantly deviate from other schools in Australia. Participating schools allowed the researchers to advertise the study via email, newsletter announcements and school presentations, and distributed information and consent forms to all Grade 7 students. No inducement to participate was provided beyond a broad report for schools describing the
overall scores of their student group. Only those who provided written consent from both student and a parent/guardian were included in the study.

5.2.3. Procedure

Participants completed a battery of measures at three time-points, each approximately 12 months apart. This testing was part of a larger data collection, with other findings regarding relations between parenting and child self-cognitions reported elsewhere (Study 2). Parents were also invited to complete measures, with findings reported in Study 3. Testing sessions were conducted at each participating school by the researchers and/or school counselling staff. Students were seated individually, with measures administered via computer or paper-and-pen, and testing was completed within approximately 30 minutes. Participants could withdraw from the research at any time. Students who scored in the very elevated range for depression symptoms were identified to school counsellors. All data were then de-identified prior to analysis. This study was approved by The University of Sydney Human Research Ethics Committee (HREC).

5.2.4. Measures

Self-criticism.

*Levels of Self-Criticism Scale – Internalised Self-Criticism subscale* (Thompson & Zuroff, 2004). This subscale of the LOSC was used to assess self-criticism that arose from not meeting internalised standards, with high scores indicating greater self-criticism. It contains 10 items on a seven-point Likert scale. The measure has been used with adolescents (Clark & Coker, 2009) and found to have good convergent validity with Depressive Experiences Questionnaire- Self-Criticism (Blatt, 1974) and reliability (Thompson & Zuroff,
In this study reliability was good (α’s T1, T2, T3, respectively = .88, .88, .89). Questions include, “I feel like a failure when I don’t do as well as I would like”.

**Self-esteem.**

*Rosenberg Self Esteem Scale* (Rosenberg, 1965). The RSE is a widely used measure with adolescents (Campbell et al., 1996; Hagborg, 1993; Orth et al., 2008) that assesses global self-esteem. There are 10 items (scores range 1 to 4); high scores indicate high self-esteem. It displays good reliability and validity (Gray-Little et al., 1997). Here reliability was good (α’s T1, T2, T3, respectively = .87, .89, .91). Questions include, “On the whole, I am satisfied with myself”.

**Depression symptoms.**

*Children's Depression Inventory-2 Self-Report Short* (Kovacs, 2010). CDI-2 is an updated version of the original measure developed by Kovacs (1992) to assess depression symptomology in children aged 7 to 17 years. The CDI is the most widely used self-report measure for depression in young people and has been shown to display good validity when compared to a structured interview for depression (Timbremont, Braet, & Dreessen, 2004). In the CDI-2 Short Form depression symptoms are measured via 12 questions (scores range 0 to 3), with higher scores indicating more depression symptoms. Here internal reliability was good (α’s T1, T2, T3, respectively = .84, .83, .83).

5.2.5. Statistical analyses

To address Question 1, growth curve modelling was applied using observed variables of total scores for self-criticism, self-esteem and depression symptoms at T1, T2 and T3. Latent variables for intercept (indicating mean score on the measure at T1) and slope (indicating the rate of change in the measure across T1, T2 and T3) were assessed for each of
the three constructs, with regressions to the intercept variable constrained to 1 and regressions to the slope intercepts constrained to 0, 1 and 2 for T1, T2 and T3 (to specify linear change over time), respectively. Covariances between all the latent variables were estimated to determine whether changes in the measures were related to each other. Gender as a time-invariant predictor was then added to the model, with regressions from gender to all intercept and slope variables, to assess whether scores at T1 and rate of change over time were different for girls compared to boys. Residuals were estimated for all endogenous variables.

To address Question 2, cross-lagged modelling was employed. This involved observed variables of the total scores of all three variables at all three time-points in a single model. Regressions between the same construct from T1 to T2 and T2 to T3 were included to control for autoregressive effects. To examine predicted relations between the three constructs, regressions were included from each variable at T1 to the other two variables at T2, and the same from T2 to T3. Covariances between the three variables at T1 were estimated, and similarly variables at T2 and T3. Gender was added to the model, with regression lines from gender to all observed variables, to assess whether mean scores of the variables differed for girls and boys, controlling for autoregressive effects.

In line with previous research in this area (Cheung & Pomerantz, 2011), fit indices selected to assess all models were the Comparative Fit Index (CFI), the Tucker–Lewis Index (TLI) and the Root Mean Square Error of Approximation (RMSEA), in addition to $\chi^2$. For CFI and TLI > .95 demonstrates good fit and > .90 demonstrates adequate fit, and for RMSEA < .05 demonstrates good fit, while < .08 demonstrates adequate fit (Bentler, 1992; Hu & Bentler, 1999). All structural equation modelling was conducted using SPSS AMOS 22.
5.3. Results

5.3.1. Data preparation

The data were assessed using guidelines developed by Kline (2016) to confirm appropriateness for SEM analysis. They were found to be non-singular with eigenvalues > 0 and no extreme collinearity was found, as demonstrated by \( R^2 < .90 \) when each variable in the model was regressed on all the other variables. No outliers were observed when assessed as per guidelines (Tabachnick & Fidell, 2001). All variables met assumptions of normality and therefore no transformations were conducted. Testing indicated that it was appropriate to replace missing data, thus Relative Mean Substitution (Raaijmakers, 1999) and Maximum Likelihood (ML) procedures in AMOS were implemented.

5.3.2. Descriptive statistics and correlations

See Table 5.2 for correlations, means, standard deviations and ranges. All variables were significantly correlated at the 0.01 level. As per Hinkle et al.’s (2003) rule of thumb, .7 to .9 indicates high correlation, .5 to .7 indicates moderate correlation, .3 to .5 indicates low correlation and less than .3 displays little correlation. Correlations from T1 to T2 and T2 to T3 of the same variable were moderately correlated (.51 to .70). Similarly, correlations between self-esteem and depression, from T1 to T2 and T2 to T3, and the same periods from depression to self-esteem were moderate (-.53 to -.57). However, relations between these two variables and self-criticism during the same time periods were notably lower, in the little to low correlation range (self-criticism/depression: .22 to .37; self-criticism/self-esteem: -.28 to -.37).
5.3.3. Growth curve models

The planned model was constructed and initially only complete cases were used to enable use of modification indices (MI) to improve model fit, as MI cannot be implemented in AMOS with ML (Byrne, 2016). Covariances seen in Figure 5.1 reflect changes that best
improved model fit, as indicated by modification indices. Once this identification of the model was complete, the full dataset was analysed. Model fit was found to be good: $\chi^2 (17, N = 292) = 20.199$, $p = .264$, CFI = .997, TLI = .993, RMSEA = .025.

Figure 5.1. Growth curve model. Standardised estimates are displayed. All statistics displayed are significant at $p < .05$. Estimates for the latent variables appear inside the ovals. Estimates for covariances appear above or below curved, double-headed arrows.

Note. T1 = Time 1; T2 = Time 2; T3 = Time 3; Self-Crit = Self-Criticism; Self-Estm = Self-Esteem; Dep = Depression symptoms; E = residual.
**Estimates.** Estimates for the latent variables appear in Figure 5.1. Notably, self-criticism significantly increased over time (estimate = 2.89, \(S.E. = .42, p < .001\)), self-esteem decreased (estimate = -.39, \(S.E. = .17, p = .027\)) and depression increased (estimate = .33, \(S.E. = .13, p = .013\)). Estimates for covariances between latent variables also appear in Figure 5.1. The self-criticism and depression slopes were significantly correlated (4.01, \(S.E. = .90, p < .001\)), as were the self-criticism and depression slopes (-4.05, \(S.E. = 1.13, p < .001\)) and self-esteem and depression slopes (-3.08, \(S.E. = .40, p < .001\)).

**Gender effects.** Gender (coded boys = 0, girls = 1) was added to the model. Initial fit was good: \(\chi^2 (20, N = 292) = 26.409, p = .154, CFI = .995, TLI = .985, RMSEA = .033\). However, when non-significant regressions from gender were sequentially removed from the model (i.e. regression with highest p-value removed first), until only significant regressions remained, a better fit was found: \(\chi^2 (23, N = 292) = 27.787, p = .224, CFI = .996, TLI = .990, RMSEA = .027\). This more parsimonious model was assessed and included three significant regression paths from gender to the latent variables (see Appendix D1). Girls’ self-esteem reduced at a significantly greater rate than boys’ (\(\beta = -.24, p = .006\)), and girls’ depression symptoms increased at significantly greater rate than boys’ (\(\beta = .15, p = .014\)). Additionally, self-criticism was significantly higher for girls at T1 (\(\beta = .16, p = .012\)). In this model, the self-esteem and depression slopes were no longer significant (\(p’s = .067, .180, \text{respectively}\)), with boys scores remaining relatively stable over time. However, the self-criticism slope remained significant (30.88, \(S.E. = 1.85, p < .001\)), with both boys’ and girls’ increasing in self-criticism. The intercepts remained significant (all \(p’s < .001\)) and the correlations between all three slopes demonstrated in the initial model remained significant (all \(p’s < .001\)).
5.3.4. Cross-lagged models

In the initial model, although $\chi^2$ was significant, $(9, N = 292) = 18.793, p = .027$, other indices indicated adequate fit: CFI = .992, TLI = .958, RMSEA = .061. See Figure 5.2 for model.

![Figure 5.2. Cross-lagged model. Standardised estimates are displayed. Dotted lines indicate non-significant pathways. Covariances and error terms have been excluded from figure for clarity.](image)

*Note.* Time 1; T2 = Time 2; T3 = Time 3.

* $p < .05$; *** $p < .001$

**Estimates.** Estimates for regression weights are displayed in Figure 5.2. As expected, T2 self-esteem predicted T3 depression ($\beta = -.32, p < .001$), however T1 self-esteem did not
predict T2 depression ($p = .748$). Furthermore, T1 depression predicted T2 self-esteem ($\beta = -.26, p < .001$) although T2 depression did not predict T3 self-esteem ($p = .590$). Self-criticism did not predict depression or self-esteem at any point, nor did depression predict self-criticism, although T2 self-esteem did predict T3 self-criticism ($\beta = -.17, p = .045$)

**Gender effects.** Gender was added to this model to assess whether it influenced these results, with regression pathways from gender to all observed variables. Model fit remained similar, but when non-significant pathways from gender were removed sequentially, model fit was improved: $\chi^2 (15, N = 292) = 23.114, p = .082$, CFI = .993, TLI = .975, RMSEA = .043 and this more parsimonious model was retained (see Appendix D2). Three pathways from gender were significant: gender to T1 self-criticism ($\beta = .13, p = .016$), suggesting that girls’ self-criticism was significantly higher than boys’ at T1, gender to T2 self-esteem ($\beta = -.14, p = .002$), suggesting that girls’ self-esteem was significantly lower than boys’ at T2 and gender to T2 depression ($\beta = .09, p = .030$), suggesting that girls’ depression symptoms were significantly higher than boys’ at T2. Regressions from T2 self-esteem to T3 depression and T1 depression to T2 self-esteem remained significant ($p$’s $< .001$), as did the regression from T2 self-esteem to T3 self-criticism ($p = .046$).

**Post-hoc analysis (removing self-esteem).** Given the unexpected finding that self-criticism did not predict depression, we tested the possibility that relations may be present if self-esteem was removed from the model. This enabled assessment of possibility that relations demonstrated between self-criticism and depression in other literature may have reflected the influence of self-esteem, rather than self-criticism per se. As the model including gender was a better fit, it was retained and pathways to and from self-esteem to depression and self-criticism were removed. Model fit was reduced: $\chi^2 (23, N = 292) = 67.301, p = .000$, CFI = .962, TLI = .910, RMSEA = .081. Further, all pathways from self-
criticism to depression and from depression to self-criticism remained non-significant (all $p$’s > .149).

5.4. Discussion

Growth curve analysis found that both depression and self-criticism significantly increased from Grade 7 to Grade 9, while self-esteem significantly decreased. It also found that these changes were significantly associated with each other. Furthermore, cross-lagged analysis found that Time 1 depression negatively predicted self-esteem at Time 2, and Time 2 self-esteem negatively predicted Time 3 depression. Self-criticism did not significantly predict either depression or self-esteem, although Time 2 self-esteem did predict Time 3 self-criticism. This pattern remained unchanged when gender was controlled.

These findings ultimately support the reciprocal-causality model in this population. Although pathways from self-esteem to depression and the reverse for both time-lapses were not seen, there was nevertheless a sense of reciprocity seen across the two-year period. Thus, depressed mood appears to influence how adolescents evaluate their own worth, and negative beliefs about the self as a whole appears to increase the likelihood of developing depressed mood.

The evidence for some reciprocity between self-esteem and depression rather than vulnerability may reflect the age of the current sample. Much of the research which has supported the vulnerability model over the scar model has been on older adolescents (15 years) and adults (Orth et al., 2008; Rieger et al., 2016). Shahar and Henrich (2010) supported the scar model but only in a young adolescent sample, aged 12 to 13. Similarly, Burwell and Shirk (2006), in a sample with a mean age of 13.6, demonstrated reciprocity between self-esteem and depression. Shahar and Henrich (2010) argued that, in line with
developmental theory (Erikson, 1963, 1998), self-beliefs are more changeable during this period, thus they are more susceptible to influence from factors such as depressed mood.

These results suggest a refinement of Beck’s (1967, 1987) theory that all types of negative beliefs about the self generally create vulnerability to depression. At least for early adolescents, self-esteem appears to be more important than self-criticism in the development of depression. Although changes in self-criticism and depression appear associated, these variables do not specifically predict each other. Our findings are in line with previous research, which has failed to demonstrate prospective links between self-criticism alone and depression (Abela & Taylor, 2003; Adams et al., 2009; Little & Garber, 2000; Wigfield et al., 1991). Post-hoc analysis confirmed that self-criticism did not predict depression, nor vice versa, even when self-esteem was removed from the model.

These findings may speak to the conceptual differences between the two self-cognition constructs. Self-esteem is considered a general attitude towards the self as a holistic object (Rosenberg et al., 1995). In contrast, self-criticism is a general approach to the self as a whole, but is contingent upon self-perceived failure (Thompson & Zuroff, 2004). While Beck (1967) specified that negative life events are necessary in combination with negative self-cognitions to increase risk for depression, this may be more true for self-criticism – a thinking style that may lay dormant unless activated by a negative event – than for self-esteem – a more ongoing sense of self rather than response to events. There is some empirical evidence to suggest that high self-criticism alone is not enough to confer increased vulnerability to depression and that negative life events are also necessary. Adams et al. (2009) found that while self-criticism alone did not predict depression, a significant interaction effect between self-criticism and negative life events was present, such that when participants with higher
levels of self-criticism experienced a negative life event, this combination significantly predicted depression symptoms.

5.4.1. Gender effects

Suggesting further refinement of Beck’s (1967; 1987) theory, these analyses demonstrated some significant gender differences. At age 12, boys and girls demonstrated both similar levels of self-esteem and of depression symptoms, however girls’ self-criticism was higher than boys’. At 13 years, controlling for initial levels of the variables, girls’ self-esteem was significantly lower, and depression symptoms significantly higher, than boys’. However, self-criticism levels were not significantly associated with gender. At 14 years, controlling for autoregressive effects, no significant association with gender was seen. Further, girls’ depression symptoms increased, and self-esteem decreased at a significantly greater rate than boys’. When gender was included in the growth curve model, the changes in self-esteem and depression symptoms were no longer significant, suggesting that boys’ scores in these measures were relatively stable, while both boys and girls increased in self-criticism during this period.

Despite these differences, the major relations demonstrated between the three variables remained unchanged when gender was added to the models. In the growth curve model, the changes in the variables remained significantly related. Similarly, in the cross-lagged model, Time 1 depression continued to predict Time 2 self-esteem and Time 2 self-esteem continued to predict Time 3 depression, while self-criticism continued not to predict depression or self-esteem.
5.4.2. Clinical implications

The current findings have important implications for the treatment of adolescents with, or at risk of, depression. First, the finding that low self-esteem conveys risk for depression supports previous research that encourages intervention targeting these negative self-beliefs to prevent the development of depression. Second, the evidence of a reciprocal relation between self-esteem and depression suggests that, as part of relapse prevention, it is important to ensure any sense of negative self-esteem is addressed. Finally, the closer links between self-esteem and depression than self-criticism and depression is of particular relevance when addressing this disorder via cognitive therapy. Clinicians such as Greenberger and Padesky (1995) have recommended focusing on ‘hot’ cognitions – those that are the most emotionally salient to the client – when conducting cognitive treatment. The findings here suggest that, in addition to this approach, it may also be particularly important to ensure cognitions relating to negative self-esteem are also addressed, regardless of whether they are especially emotive to the client.

5.4.3. Strengths and limitations

These results should be interpreted in light of the following limitations. The observational nature of these data limits the causal assumptions that can be drawn from this research. Although cross-lagged models are designed to address this issue, for example through controlling for autoregressive effects, nevertheless causal relations cannot be definitively determined. Furthermore, although depression symptoms were measured, it is unclear whether these results would generalise to clinically diagnosed depression.

This research also has a number of strengths. It is one of few studies to examine self-criticism and self-esteem together in relation to depression and, as such, is one of the first
studies to uncover the links between these three constructs. Furthermore, by using both growth curve and cross-lagged approaches we were able to address two related but separate issues: whether the change in these variables is related and whether they predict each other. By using three data-points rather than two, we were able to examine the repeated relations and thus develop a more comprehensive understanding of these connections.

5.4.4. Conclusion

Overall, these findings suggest that, from ages 12 to 14, self-esteem appears closely connected to depression, however the relation is somewhat reciprocal rather than strictly predictive. In contrast, self-criticism, although related to depression, does not predict it, nor is it predicted by depression. Initially, depression symptoms predict lower self-esteem, but later low self-esteem predicts greater depression. As such, the results suggest that the vulnerability model or scar model alone are not enough to explain the relation between these variables in young adolescents. The vulnerability model may apply during late adolescence and early adulthood when self-cognitions become more crystallised. However, in the early adolescent years while these cognitions are still developing, there appears to be a more reciprocal relation between self-esteem and depression, with each influencing the other.
6. Discussion

The overall intention of this research was to explore how self-cognitions develop in adolescents and what effect those beliefs have on clinical outcomes. Specifically, we wanted to examine the role that parents play in the development of their children’s self-cognitions and whether those cognitions influence the development of depression. Further, we aimed to explore whether parents’ own self-cognitions influenced this process, thereby examining transgenerational transferral of self-cognitions and potential influence on depression.

The review of previous literature suggested a relatively straightforward model. Parents’ own self-cognitions influence their parenting behaviours, parenting behaviours influence child self-cognitions and self-cognitions influence the development of depression (see Figure 1.1). However, when our research examined these suggested pathways via four empirical studies, more complex associations between these variables emerged. Parents’ own self-cognitions related to their use of psychological control but, in the primary analysis, largely did not relate to their use of behavioural control or support (Study 3). Positive parenting behaviour generally did predict children’s positive self-cognitions (with the reverse seen for negative behaviours and self-cognitions), but the size of this effect was relatively small (Study 1). Further, when specific parent behaviours and child self-cognitions were examined, behavioural control predicted increased self-criticism in girls but not boys and did not predict self-esteem, while support and behavioural control largely did not predict changes in self-criticism or self-esteem (Study 2). Finally, self-esteem demonstrated a somewhat reciprocal relation with depression, both influencing and being influenced by it, while self-criticism did not appear to be predictive of, or predicted by, depression symptoms (Study 4). See Figure 6.1 for illustration of these overall findings.
Our expectation of a strong relation between parent behaviours and child self-cognitions was, on a theoretical level, largely drawn from Attachment theory and Social Interactionist theory. Bowlby (1969, 1973) suggested that primary caregivers (typically parents) play a dominant role in shaping their children’s thinking. While children are growing up, they develop understandings of themselves and their world which Bowlby termed ‘internalised working models’. These schemas are formed through their interactions with their caregivers; thus, the parenting they receive is likely to have a strong influence on their working models, including those about the self. In line with this, Mead (1934) and Cooley (1902) argued that beliefs about the self are a product of interactions an individual has with significant others in their life. These interactions give an indication of who they are and their
value to others. Furthermore, Coopersmith’s (1967) theory about the influence of parents on the development of child self-esteem similarly suggests that positive parent behaviours towards children benefit self-esteem, while negative behaviours negatively affect it. Together these theories suggest that parental interactions with their children likely play a large role in shaping the self-beliefs that develop. Some empirical research has certainly found support for this theory (e.g. Doyle & Markiewicz, 2005; Garber & Flynn, 2001; Kenny et al., 1998).

However, when we systematically explored this question across current literature and controlled for the auto-regressive effects of child self-cognitions, only a small relation between parent behaviour and child self-cognitions was found (Study 1). Further, when we examined specific parent behaviours in detail, only behavioural control appeared to demonstrate a significant influence on child self-cognition, and only for girls (Study 2).

One strong possibility is that the relation between parent behaviour and child self-cognitions is primarily apparent in the years prior to adolescence. The mean age for participants in our meta-analysis was 12.9 years. Furthermore, our analysis found that participant age moderated the relation between parent behaviour and child self-cognition, with the effect generally stronger in younger participants. This suggests that either working models of the self have begun to stabilise by adolescence or parental influence is not as strong in adolescence. Theoretically, the first possibility is unlikely, with people such as Erikson (1959, 1963, 1998) arguing that it is precisely during adolescence that self-cognitions are primarily formalised, due to a young person’s impending need to have a coherent understanding of themself as they become an adult. Our research empirically supported this, with significant changes in self-esteem and self-criticism occurring between the ages of 12 and 14 (Study 4, growth-curve analysis). It appears more likely that the reason for the small effect size in Study 1 and the limited relations between parent behaviours and child self-cognitions in Study 2 are because parents are more influential during earlier periods.
Thus, with regard to the development of working models of self, further specification to Bowlby’s (1969, 1973) original theory may be appropriate. During the formation of self-related working models, parents possibly have greatest influence prior to adolescence. This is in line with evidence demonstrating the increased importance of others, such as peers, in the teen years (Rudolph & Hammen, 1999; Wagner & Compas, 1990). Some studies have examined the links between parent behaviour and child self-cognitions in young children. Houck and LeCuyer-Maus (2002) found some evidence of higher self-concept and social competence in children aged 12 to 36 months whose mothers had a high behavioural control/high support parenting style, as compared to those whose mothers used inconsistent or indirect approaches. In a sample of 4-year-olds, Brown, Mangelsdorf, Neff, Schoppe-Sullivan, and Frosch (2009) found some significant relations between mothers’ and fathers’ parenting approaches and their children’s views of themselves, although this was largely moderated by child temperament. However, few other studies have examined this question in such young samples. The practical reasons for the lack of research in this area are obvious, given the difficulty of measuring self-cognitions in young children. Nevertheless, this is an important area which deserves greater attention. Furthermore, longitudinal studies are needed to assess whether this relation weakens as children get older and enter adolescence. To fully examine whether parents do have a stronger influence on the development of child self-cognitions in the pre-adolescent years than the adolescent years, more research is needed.

Despite this possibility that the relation between parent behaviour and child self-cognition is stronger in young children, our research did find some association between parent behaviour and child self-cognitions in a largely adolescent population. Study 1 demonstrated a small but significant effect ($r = .12$) across 23 studies. Study 2 suggested that both mothers’ and fathers’ behavioural control significantly increased girls’ self-criticism, although this was not seen in boys. As such, self-criticism appears to be particularly
susceptible to parenting influence, at least in girls. Together these findings suggest that, in line with Bowlby (1969, 1973) and Coopersmith (1967), parents do have an influence on the development of their adolescents’ self-cognitions. Furthermore, it supports Mead’s (1934) and Cooley’s (1902) assertion that feedback from others influences the beliefs individuals develop about themselves.

6.2. The Origins of Parent Behaviour

Our research adds to the currently limited understanding of why parents use certain parenting behaviours towards their children. Belsky’s (1984) theory suggests that a number of factors influence parenting, including their own psychological state. Those with greater psychological wellbeing are better able to employ positive parenting strategies. As such, whether parents’ own self-cognitions were generally positive or negative was expected to relate to whether they employed positive or negative parenting strategies. Our findings uncovered greater complexity than was suggested by Belsky’s theory. Self-cognitions did relate to parent behaviour, but primarily only psychological control. Those with more negative self-beliefs were more likely to use psychological control. Support and behavioural control were not strongly related to self-cognitions. While few studies have explored the relation between parent self-cognitions and parenting behaviours, there has been some evidence of links between certain parent self-cognitions, such as self-criticism, and parental support (Ahmad & Soenens, 2010; Small, 1988; Yu & Gamble, 2009). However, previous research typically has not examined relations across a range of parent self-cognitions, and thus has not thoroughly examined this variable. Our findings suggest an important refinement of Belsky’s theory. The theory suggests that there are numerous factors that influence parent behaviours. Our findings additionally suggest that different factors may differentially influence the specific types of parenting behaviour. Parents’ own self-cognitions may
influence their use of psychological control but there may be other factors that influence their use of support and behavioural control.

6.3. Self-Cognitions and Adolescent Depression

Beck’s (1967, 1987) theory suggests that negative self-cognitions create a vulnerability to depression. As such, we expected that self-cognitions would play an important role in the development of depression in adolescents. This received mixed support. Study 4 demonstrated that the changes in self-cognitions and depression between the ages of 12 and 14 years (increases in self-criticism and depression and decreases in self-esteem) were related in our sample. Further, lower self-esteem at age 13 predicted increased depression symptoms at 14. However, depression at age 12 predicted lower self-esteem at 13 but the opposite relation was not seen. Self-criticism did not predict depression at 13 or 14 years, nor did depression predict self-criticism.

With regard to self-esteem, this finding suggests an important modification to Beck’s (1967, 1987) model for the development of depression. Although there is support for his vulnerability model in older age groups (approximately 15 years and over; Orth et al., 2008; Rieger et al., 2016), the relations between self-esteem and depression appear more complex in early adolescents. In this age group, self-esteem appears to both influence and be influenced by depression, a finding also supported in other research on early adolescents (Shahar et al., 2004). This may be a function of more fluid nature of self-esteem during this period, as it is constantly changing and being influenced by a range of factors, including low mood.

Our findings also suggest that self-criticism broadly does not influence the development of depression in young adolescents. This suggests a further refinement to Beck’s (1967, 1987) theory, suggesting that not all negative self-beliefs broadly create
vulnerability to depression in this age group. Different self-cognitions may function differently with regard to depression vulnerability. For self-criticism, it is possible that, because self-critical thinking is activated in response to perceived failures, the effect of self-criticism on depression is contingent upon perceived failures. As such, it is possible that self-criticism does relate to depression, but this relation is moderated by negative life events. This is in line with Blatt’s (1974, 1998; Blatt & Zuroff, 1992) theory, which suggests that, for those with a tendency towards self-criticism, depression typically emerges after the occurrence of events that trigger self-criticism. Previous research supports this, with Adams et al. (2009) finding the relation between self-criticism and depression symptoms was fully moderated by negative life events.

Further research is needed to fully examine this supposition. The current research included both self-esteem and self-criticism to ensure that any relations demonstrated between self-criticism and depression were not simply a function of links between self-esteem and depression. Although this possibility was not seen in our research, it may emerge if a life events variable is included in the model. As such, further research examining a possible moderating effect of life events should include not only self-criticism and depression but also self-esteem.

Nevertheless, although it is possible that self-criticism does not influence the development of depression, it certainly appears to play an important role in current depression. Research has repeatedly found that individuals who are currently clinically depressed display higher levels of self-criticism than non-depressed samples (Klein, Harding, Taylor, & Dickstein, 1988; Luyten et al., 2007). Furthermore, self-criticism is positively associated with depression severity (Dinger et al., 2015). For those receiving treatment, reductions in self-criticism have been associated with reductions in depression (Chui, Zilcha-
Mano, Dinger, Barrett, & Barber, 2016). As such, it appears important to address self-criticism in the treatment of depression.

6.4. Clinical Implications

These findings paint a complex picture of how parent behaviours and child self-cognitions relate to adolescent depression and the implications for intervention. First, they suggest that self-cognitions, particularly self-esteem, should be a focus of the treatment and prevention of adolescent depression. Treatments for adolescent depression such as Cognitive Behaviour Therapy (CBT) do generally aim to address negative self-beliefs. The current research emphasises the benefit of this approach because of the central role these cognitions appear to play in the development of depression in this age group. Second, these findings speak to the role of parents in the treatment and prevention of adolescent depression.

Our research provides some support for the possible benefit of parental involvement in interventions. Parent behaviour does appear to influence the development of child self-cognitions (Study 1). Parental behavioural control, in particular, appears to influence girls’ self-criticism (Study 2). Self-cognitions influence the development of depression, but this appears to only be largely only the case for self-esteem and not self-criticism (Study 4). Despite this, self-criticism does appear to be a major factor in current depression (Chui et al., 2016; Dinger et al., 2015; Luyten et al., 2007). Therefore, parenting behaviour appears to play some role in the development and maintenance of adolescent depression, via its influence on self-cognitions. Of course, parenting behaviour also appears to influence depression via other pathways, which has been demonstrated in other literature (see Yap, Pilkington, Ryan, & Jorm, 2014 for review).

Thus, it may be beneficial for psychological interventions to address unhelpful parenting strategies, particularly behavioural control. Behavioural control involves providing
some limits around what behaviours are acceptable, whilst also allowing opportunity for children to make some decisions independently. As such, it is conceptualised as having beneficial effects on children (Barber et al., 1994; Baumrind, 1996). However, we unexpectedly found negative relations between behavioural control and child self-cognitions between the ages of 12 and 14 years. Our research examined a specific element of behavioural control: generally having firm rules and enforcing them. This behaviour in both mothers and fathers predicted increased self-criticism in girls (Study 2). As such, broadly implementing firm rules about how children should behave without definite use of autonomy granting, appears detrimental to girls, at least in this age group. Parents of these children should be discouraged from using this type of behavioural control, particularly if their daughters are, or are at risk of becoming, depressed.

Furthermore, parents’ own self-cognitions appear to be linked to their use of psychological control, with negative self-cognitions associated with increased use of psychological control. Our research did not find links between psychological control and child self-cognitions, but others have demonstrated that the use of psychological control is associated with greater depression symptoms (Barber & Harmon, 2002). As such, our findings suggest that, to reduce parents’ psychological control, it may be important to address parents’ own self-cognitions as an underlying causal and maintaining factor of depression in adolescents.

To date, little empirical support has been demonstrated for the involvement of parents broadly in treatment and prevention of adolescent depression, although few studies have examined this question (Waite et al., 2014). In a sample of 107 depressed adolescents, CBT, without parental involvement in treatment, was found to display significantly greater reduction in depression symptoms compared to Systemic Behaviour Family Therapy, in
which parents were involved in treatment, or non-directive supportive counselling (Brent et al., 1997). The family therapy focused on recognising unhelpful patterns of interactions between family members, improving communication between members and enhancing problem-solving skills to address issues. As such, it did not appear to target specific unhelpful parenting behaviours. In a study of 123 depressed and dysthymic adolescents, both an adolescent CBT group and an adolescent CBT group plus parent group, were more effective in reducing depression symptoms than waitlist control. However, the effects of the two active treatments were not found to be significantly different (Clarke, Rohde, Lewinsohn, Hops, & Seeley, 1999). An earlier study with similar design found comparable results (Lewinsohn, Clarke, Hops, & Andrews, 1990). In this research the parent group was largely taught the same skills as the adolescents, so that parents could support and encourage the use of these skills outside of therapy. As such, the parent component did not appear to specifically address the parent-child relationship or parenting behaviours. Thus, it does not appear that, in general, the involvement of parents in treatment of adolescent depression benefits outcomes.

As these studies demonstrate, interventions typically have not focused on addressing the three major parenting behaviours (behavioural control, support and psychological control; Barber, Stolz, & Olsen, 2005), despite the evidence of their effect on child psychological outcomes. For examples, although extensive research has examined how issues such as low parental support leads to problems in children (Boudreault-Bouchard et al., 2013; Garber & Flynn, 2001; McMahon et al., 2011), little is known about how to change this behaviour. One manualised treatment, Attachment-Based Family Therapy (ABFT; Diamond, Diamond, & Levy, 2014), specifically targets the parent-child relationship as the mechanism of change, which includes addressing problematic parenting behaviours. This approach was developed primarily to target depression and suicidality in teenagers. Derived from Attachment theory, it suggests that an adolescent’s difficulties are either a product of, or exacerbated by, poor
connection and communication with parents or caregivers. The invention essentially provides opportunity and support for adolescents to talk to their parents, for parents to be receptive and supportive of this communication, and for them to work together to address any issues the child is facing. As such, it aims to increase parental support. Furthermore, therapists also specifically aim to assist parents in not using psychological control and encourage them to promote psychological autonomy (Shipgel et al., 2012). Thus, the ABFT model suggests that specifically working to strengthen the connection between parent and child, reduce harmful behaviours and increase helpful behaviours, conveys benefits to adolescents.

Another manualised treatment, the ‘Tuning in to kids’ (Havighurst & Harley, 2007) and ‘Tuning in to teens’ (TINT; Havighurst, Harley, Kehoe, & Pizarro, 2012) programs, similarly focuses on improving the child-parent relationship and parenting behaviours to reduce internalising and externalising symptoms. It is a broadly preventative approach that is derived from Gottman and DeClaire’s (1997) ‘emotion coaching’, which teaches parents how to reflectively and empathetically listen to their children’s concerns and help children to determine solutions to problems where necessary. As such, it too can be conceptualised as aiming to increase parental support. By teaching parents to acknowledge and validate their children’s emotions, it also aims to reduce the use of psychological control (Kehoe et al., 2014).

Empirical research of these two interventions is promising but currently limited. Thirty-two depressed adolescents were randomised to either 12 weeks of ABFT or 6 weeks wait-list control. Post-treatment, those in the ABFT group were significantly less likely to meet criteria for Major Depressive Disorder (MDD) than control (81% vs 47%, \( p = .04 \); Diamond, Reis, Diamond, Siqueland, & Isaacs, 2002). In a sample of 66 suicidal adolescents who were randomised to ABFT or general community psychotherapy control, post-treatment
the ABFT group was found to be significantly more likely to display normal levels of suicidal ideation compared to control group (87.1% vs 51.7%, \( p = .003 \)). A trend suggested that the ABFT group was also more likely to displayed non-clinical levels of depression symptoms than the control group (54.8% vs 31.0%, \( p = .06 \)). However, these findings may have been influenced by the higher drop-out rate in the control group compared to ABFT (2.9 sessions vs 9.7 sessions; Diamond et al., 2010). In a community sample, TINT was compared to a non-active control group and found to be more effective at reducing depression symptoms pre- to post-intervention (\( \beta = -.47, p < .001 \)), although this was only seen in parent-reported and not child-reported symptoms (Kehoe et al., 2014).

Research on both ABFT and TINT has also demonstrated significant changes to specific parent behaviours. In a sample of 18 depressed adolescents and their mothers who completed ABFT, parental psychological control was found to significantly reduce (\( t(17) = 2.29, p < .04 \)) during treatment, while psychological autonomy granting significantly increased (\( t(17) = 2.99, p < .01 \)), as indicated by observer ratings of parent behaviour (Shpigel et al., 2012). Compared to non-active control, TINT was found to significantly reduce parents’ emotional dismissing, as reported by both parents and children (\( \beta = .29, p < .001; \beta = .14, p = .009 \), respectively), and reduce parent self-reported difficulties with emotional awareness and regulation (\( \beta = -.02, p = .030 \)), and internalising symptoms (\( \beta = -.30, p = .033 \); Kehoe et al., 2014). It also reduced family conflict, as reported by both parents and children (\( \beta = -.69, p = .004; \beta = -.54, p = .049 \), respectively; Havighurst, Kehoe, & Harley, 2015). These preliminary results suggest that parenting interventions may be effective in reducing unhelpful parenting behaviours towards adolescents.

Neither of ABFT nor TINT appear to explicitly address behavioural control. To date, the impact of either intervention on behavioural control has also not been assessed. Review of
the broader literature suggests that no studies have yet examined the effects of an intervention which aims to support parents using helpful behavioural control, while avoiding harmful types of control. Given our findings of the potential negative effects of behavioural control on self-cognitions, this is an important area and, as such, further research is needed to assess interventions targeting behavioural control.

At present, the most empirically supported treatment for adolescent depression is CBT, both individually delivered and in a group format. Weersing et al.’s (2017) review identified 27 randomised control trials which have assessed the effects of CBT on adolescents who were either depressed or had elevated depression symptoms. Of these, 15 demonstrated benefits of CBT over other approaches or non-active control, while 12 found null effects. They note that, of those demonstrating null effects, numerous studies used severely depressed or co-morbid trauma samples or had no inert control group. As such, the authors identified CBT as a well-established treatment for depression. Interpersonal Psychotherapy (IPT) was also found to be a well-established treatment for this population, however, one study comparing IPT to CBT for depressed adolescents found that while both were effective, depression symptoms were significantly lower in the CBT condition than the IPT condition post-treatment (Rosselló, Bernal, & Rivera-Medina, 2012).

CBT aims to teach skills that specifically reduce depression symptoms. The client develops the ability to ‘be their own therapist’, learning to recognise what is causing their distress and apply cognitive and behavioural strategies to remediate these issues (J. S. Beck, 2014). These are considered skills that can be repeatedly drawn upon in the future to prevent recurrence of pathology. In contrast, approaches such as ABFT and TINT, while also intending to reduce depression symptoms, ultimately aim to improve child outcomes by strengthening the parent-child relationship. As such, improving unhelpful parenting
behaviour is paramount to these interventions, and thus take into account the research that has demonstrated detrimental outcomes of negative parenting behaviours on child psychological outcomes. In these approaches, a strong parent-child relationship is believed to be a resource that directly provides social support to the child. In addition, this relationship is also internalised as working model of the self in relations to others, forming a template for future relationships. It teaches children that they deserve to be treated well and thus to seek out supportive and positive relationships throughout their lives.

As such, CBT and ABFT offer important, but different, benefits for adolescents with depression. It is possible that an intervention that both teaches CBT skills to address depression symptoms and strengthens the parent-child relationship via an ABFT-style approach would be the most powerful treatment for adolescent depression. This is a question that needs further investigation.

6.5. Strengths and Limitations

The current research has several limitations, the most prominent of which is the use of observational rather than experimental data. Participants were not randomised to conditions; thus, it is possible that additional, unmeasured constructs may have contributed to the relations demonstrated here. As such, it is not possible to make strong statements about causality from these data. We have endeavoured to address this issue as effectively as possible. This was primarily done, in Studies 1, 2 and 4, through the use of longitudinal data and controlling for initial levels of the dependent variable. In this way we essentially explored whether the independent variable predicted changes in the dependent variable, controlling for the autoregressive effects of the dependent variable over time. While not completely addressing the issue of observational data, this strengthened our ability to make suggestions about the likely direction of causality.
A related issue was the use of self-report data. We intended to address this issue, to some extent, by using multiple informants of parent behaviour (both parent- and child-report) in Studies 2 and 3. However, although reasonably large sample sizes were achieved for both parent and adolescent groups, unexpectedly there was little overlap between the groups. Most of the parents who participated did not have children who participated, and vice versa. As such, we were unable to use multiple informants. Child-report of parenting behaviours does not directly represent actual parenting behaviour. Undoubtedly, some level of correlation between child self-report self-cognitions and parent behaviour can be accounted for by the influence of self-cognitions on the child’s account of their parents’ behaviours. Gecas and Schwalbe (1986) have argued for the advantage of using child-report parent behaviour because it is their perception of the behaviour, rather than the behaviour per se, that is expected to influence children. Nevertheless, this remains a confounding factor that should be recognised when interpreting these results. Similarly, all four studies rely upon self-report self-cognition data. While this is by far the most widely used measurement approach to this variable, it is heavily reliant upon insight from participants. Although there are alternative measurement techniques, such as observational measures, these present their own interpretation problems. As such, it is important to remember when viewing this research that it reflects self-perceived self-cognitions.

Another issue was the sample used for Studies 2, 3 and 4. Due to practical limitations related to ethics protocols, only independent schools were approached to be involved in the research. Examination of Index of Socio-Cultural Educational Advantage, which is calculated for all Australian schools, revealed that all schools in this research were within two standard deviations above the national mean. Thus, while no schools were excessively deviant from the norm of Australian schools, families attending these schools were nevertheless of higher socio-economic status (SES) than average. It is possible that the relations demonstrated here
between the variables may not be apparent in lower SES groups. This issue is typical of research of non-clinical samples in the Australian context. Additionally, these findings are specific to an Australian, largely Caucasian population. There is evidence that some of the relations examined here, such as between parent behaviours and child outcomes, differ for other cultural groups (Wang et al., 2007). Further, this sample was limited to children aged approximately 12 years, who were followed until the age of 14. As such, while the results are informative about this specific developmental period, they may not apply to older or younger children. These findings may not generalise to all adolescents and their parents.

With the finding in Study 1 of stronger effects for shorter time-lags between measurement of parent behaviour and child self-cognition, the choice of a 12-month time-lag is arguably a limitation of Study 2. There does not appear to be a theory that specifies how long these processes are likely to take to occur. Further, there is no consensus in the empirical literature on the most appropriate time-lag to use. As such, it is difficult to ascertain the most appropriate lag to employ. The search in Study 1 found studies with lags ranging from 0.5 to 4 years (although 6-month minimum time-lag was an inclusion criterion of the search strategy). The average lag was 1.4 years, while the mode lag was 1 year (9 of 23 studies). As such, to ensure our results were comparable to previous research, a 1-year lag appeared the appropriate choice for Study 2. Similarly, for Study 4 there was no clear guidance on the best lag to employ, with other studies using lags as long as 2 years and as short as 1 month. Shorter lags did not necessarily result in stronger effects in this literature (e.g. Abela & Taylor, 2003; Adams et al., 2009). Given the variables of interest, analytical approach and sample age, the aims of our study most closely replicated Shahar and colleagues’ (2004) research, which examined the cross-lagged relations between self-criticism and depression in 6th and 7th graders. Employing a 12-month lag, they found significant relations between these variables, suggesting that this was an appropriate lag for our research. Thus, a 12-month lag
was used for both Studies 2 and 4 with data for both studies simultaneously collected. It remains possible that the use of a shorter time-lag may have demonstrated stronger effect sizes than found here, particularly in Study 2. This research also has a number of notable strengths. The use of longitudinal data improved our ability to assess development over time. By measuring adolescents at three time-points over two years we were able to track changes in the variables of interest, rather than a static snap-shot from cross-sectional data. This design enabled changes to be assessed not once but twice, from 12 to 13 years and from 13 to 14 years. There was also a relatively large gap between testing periods, allowing more opportunity for developmental changes to be captured. The relatively large sample size, although not as large as other studies in this field, nevertheless allowed for the use of a range of statistical analyses which would not have been possible with fewer participants and strengthened the statistical power to detect effects. Further, the use of different samples (adolescents, parents, meta-analysis) enabled us to examine a range of related questions from different angles. This enriched the overall picture demonstrated by the findings across our studies and brought to light a level of complexity that may otherwise not have been apparent.

By planning a series of studies that examined the connection between a number of variables (parent self-cognitions, parenting behaviours, child self-cognitions and child depression) we were able to examine a large-scale picture of how these variables are connected.

6.6. Conclusion

Overall, this research provides a nuanced picture of how parenting behaviours relate to the development of child self-cognitions, how parents’ own self-cognitions relate to their parenting behaviours and how self-cognitions relate to depression in adolescents. A simple relation was expected from theoretical writings. Instead, these variables emerged as being related to one another in a variety of ways. Parents do appear to influence the development of
their children’s self-cognitions and their own self-cognitions do appear to relate to their parenting behaviours. However, these relations are not typically broad. They appear to be more apparent for certain types of self-cognitions and certain parent behaviours than others. Similarly, there appear to be important relations between self-cognitions and depression, but it is not simply that all negative self-cognitions create vulnerability for depression. By examining the relations between these variables across a variety of studies we were able to bring a new richness to the theories that we examined and suggest refinements that deepen the understanding of the relations between parenting, child self-cognitions and depression.
7. References


160


doi:http://dx.doi.org/10.2307/1127032


doi:10.1007/bf00938114

(Eds.), *Evidence-Based CBT for Anxiety and Depression in Children and Adolescents: A Competencies-Based Approach* (pp. 275-300). Chichester, England: Wiley-Blackwell.


doi:10.1080/15374410903103528

Appendix A: Ethics Approval

Research Integrity
Human Research Ethics Committee

Tuesday, 3 September 2013

Dr Caroline Hunt
Psychology, Faculty of Science
Email: caroline.hunt@sydney.edu.au

Dear Dr Caroline Hunt,

I am pleased to inform you that the University of Sydney Human Research Ethics Committee (HREC) has approved your project entitled "The Self-Esteem and Depression in Adolescents Study".

Details of the approval are as follows:

Project No.: 2013/682
Approval Date: 3 September 2013
First Annual Report Due: 4 September 2014
Authorised Personnel: Hunt Caroline; Abbott Maree; Gittins Catherine

Documents Approved:

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<th>Date Uploaded</th>
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<tr>
<td>09/07/2013</td>
<td>Participant Info Statement</td>
<td>Updated Parent PIS</td>
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<tr>
<td>10/08/2013</td>
<td>Participant Info Statement</td>
<td>Consent form for children</td>
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<td>09/07/2013</td>
<td>Participant Consent Form</td>
<td>Consent form for parents</td>
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<td>09/07/2013</td>
<td>Recruitment Letter/Email</td>
<td>Letter for school counsellors</td>
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<td>09/07/2013</td>
<td>Advertisements/Flyer</td>
<td>Information for school newsletters</td>
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<td>09/07/2013</td>
<td>Questionnaires/Surveys</td>
<td>Questionnaires for Parents and Children</td>
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HREC approval is valid for four (4) years from the approval date stated in this letter and is granted pending the following conditions being met:

Condition/s of Approval

- Continuing compliance with the National Statement on Ethical Conduct in Research Involving Humans.
- Provision of an annual report on this research to the Human Research Ethics Committee from the approval date and at the completion of the study. Failure to submit reports will result in withdrawal of ethics approval for the project.
- All serious and unexpected adverse events should be reported to the HREC within 72 hours.
- All unforeseen events that might affect continued ethical acceptability of the project should be reported to the HREC as soon as possible.
• Any changes to the project including changes to research personnel must be approved by the HREC before the research project can proceed.

Chief Investigator / Supervisor’s responsibilities:

1. You must retain copies of all signed Consent Forms (if applicable) and provide these to the HREC on request.

2. It is your responsibility to provide a copy of this letter to any internal/external granting agencies if requested.

Please do not hesitate to contact Research Integrity (Human Ethics) should you require further information or clarification.

Yours sincerely

Professor Glen Davis
Chair
Human Research Ethics Committee

This HREC is constituted and operates in accordance with the National Health and Medical Research Council’s (NHMRC) National Statement on Ethical Conduct in Human Research (2007), NHMRC and Universities Australia Australian Code for the Responsible Conduct of Research (2007) and the CPMP/ICH Note for Guidance on Good Clinical Practice.
Appendix B1: Parent Information Form

Clinical Psychology Unit
School of Psychology
Faculty of Science

ABN 15 211 513 464

Caroline Hunt / Associate Professor
Maree Abbott / Senior Lecturer
Catherine Gittins / PhD Candidate

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PARENT/GUARDIAN INFORMATION STATEMENT

What is the study about?
The Self-Esteem and Depression in Adolescents (SEDA) study is researching how young people develop their self-esteem and the relationship to depression. The more we can learn about self-esteem, the better we will be able to prevent and treat depression. We are looking at many factors which may influence self-esteem such as friends, parents and life experiences.

Who is carrying out the study?
This research is being conducted by Associate Professor Caroline Hunt, Dr Maree Abbott and Catherine Gittins of the University of Sydney.

What does the study involve?
The study involves your child completing a set of questionnaires. This will occur three times (Term 2 in year 7, Term 2 in year 8 and Term 3 in year 9). If you agree to your child’s involvement, you and your child’s other parent/guardian (if available) will each be asked if you would also like to complete a short set of online questionnaires.

We do not believe that there are any risks associated with being part of this research. However, in the unlikely event that your child becomes distressed during the study, trained staff will be available to provide immediate support and comfort to your child, and they will be immediately withdrawn from the study.

How much time will the study take?
Each testing session will take approximately 30 to 40 minutes and will occur during class time. Parents’ questionnaires will take approximately 10 minutes.

Can my child withdraw from the study?
Being in this study is completely voluntary and you are under no obligation to provide consent for your child. Your child can withdraw from the study at any time without needing to give a reason. Your decision whether or not to permit your child to participate will not prejudice you or your child’s relationship with the University of Sydney or your child’s school, either now or in the future.
Will anyone else know the results?
All aspects of the study will be kept strictly confidential and only the researchers will have access to this information, unless disclosure to a government body is required by law. If we believe that your child is at risk of harm, we are obligated to inform you and the Department of Family and Community Services. In the unlikely event that your child is identified as demonstrating clinical levels of depression, the school counsellor will be informed who will then inform you.

Data collected for the SEDA study will be published in academic research journals. The school will also be given a brief report of the overall results for their school. However, no individuals will be identifiable in either of these reports.

Will the study benefit me?
Your school will be given an overall snapshot of the mental health status of the students in this grade to gain a better understanding of their students. We hope that the information gathered by this study will help tailor more effective interventions within your school that will improve your child’s overall experience and psychological wellbeing. However, we cannot guarantee that your child will receive any benefits from the study.

If your child demonstrates clinically significant level of depression, he or she will be identified to the school counsellor who will inform you.

Can I tell other people about the study?
Yes, you are free to talk to whomever you wish about the study.

What if I require further information about the study or my child’s involvement?
You are welcome to ask for more information at any stage throughout the research. Feel free to contact Catherine Gittins on cgit5705@uni.sydney.edu.au or 0409 920 523. Alternatively, you can contact Assoc Prof Caroline Hunt directly on 9351 5446.

What if I have a complaint or any concerns?
Any person with concerns or complaints about the conduct of a research study can contact the Manager, Human Ethic Administration, The University of Sydney, on +61 2 8627 8176 (telephone), +61 2 8627 8177 (facsimile) or ro.humanethics@sydney.edu.au (email).

This information sheet is for you to keep.
Appendix B2: Parent Consent Form

Clinical Psychology Unit
School of Psychology

Caroline Hunt / Associate Professor
Maree Abbott / Senior Lecturer
Catherine Gittins / PhD Candidate

Mackie Building (K01)
The University of Sydney
NSW 2008 AUSTRALIA
Telephone: +61 2 9351 5446
Email: caroline.hunt@sydney.edu.au

PARENTAL (OR CAREGIVER) CONSENT FORM

I, .................................................................................................................[PRINT PARENT’S NAME],

☐ agree
☐ do not agree

to permit ..................................................................................[PRINT CHILD’S NAME], who is aged ........ years, to participate in the research project.

TITLE: THE SELF-ESTEEM AND DEPRESSION IN ADOLESCENTS (SEDA) STUDY

In giving my consent I acknowledge that:
1. The procedures required for the project and the time involved for my child’s participation in the project have been explained to me, and any questions I have about the project have been answered to my satisfaction.
2. I have read the Information Statement and have been given the opportunity to discuss the information, my involvement and my child’s involvement in the project with the researcher/s.
3. I understand that being in this study is completely voluntary – I am not under any obligation to consent to my child’s participation.
4. I understand that, by filling in my contact details on this form, I consent to be contacted by the researchers and given the opportunity to complete some questionnaires for the study. I agree that the contact details will be used for the sole purpose of being contacted by the SEDA Study researchers for this study, after which my contact details will be deleted.
5. I understand that my involvement and my child’s involvement is strictly confidential. I understand that research data gathered from the results of the study may be published however no information about my child nor I will be used in any way that is identifiable.
6. I understand that I can withdraw my child from the study at any time without prejudice to my or my child’s relationship with the researcher/s or the University of Sydney or my child’s school now or in the future.
7. I understand that if I have any questions about my child’s involvement in this study I can contact Catherine Gittins on 0409 920 523 or cggitt5705@uni.sydney.edu.au who will be happy to answer them.
8. I acknowledge receipt of a copy of this Consent Form and the Participant Information Statement.

Please tick:
☐ Mother
☐ Father
☐ Other (please specify).................................................................

........................................................................................................
Signature of Parent/Caregiver
Please PRINT name
Date

If you and/or your partner is interested in completing a 10 minute questionnaire as part of this study, please provide your email address:

Mother’s email address:....................................................................................

Father’s email address:....................................................................................

176
Appendix B3: Student Information Form

STUDENT INFORMATION STATEMENT

What is the study about?
The Self-Esteem and Depression in Adolescents (SEDA) study is researching how young people develop their self-esteem and the relationship to depression. The more we can learn about self-esteem, the better we will be able to prevent and treat depression. We are looking at many factors which may influence self-esteem such as friends, parents and life experiences.

Who is carrying out the study?
This research is being conducted by Associate Professor Caroline Hunt, Dr Maree Abbott and Catherine Gittins of The University of Sydney.

What does the study involve?
The study involves you completing a set of questionnaires. This will happen three times (Term 2 in year 7, Term 2 in year 8 and Term 3 in year 9).

We do not believe that there are any risks associated with being part of this research. However, in the unlikely event that you feel distressed during the study, trained staff will be available to give immediate support and comfort to you, and you will be immediately withdrawn from the study.

How much time will the study take?
Each testing session will take approximately 30 to 40 minutes and will occur during class time.

Can I withdraw from the study?
Being in this study is completely voluntary and you do not have to take part if you don’t want to. You can stop being in the study at any time without needing to give a reason. Your decision whether or not to be involved will not affect your relationship with the University of Sydney or your school, either now or in the future.

Will anyone else know the results?
All aspects of the study will be kept strictly confidential and only the researchers will have access to this information, unless required by law. If we believe that you are at risk of harm, we are obligated to inform you and the Department of Community Services. If you show clinical levels of depression, the school counsellor will be informed who will then tell your parents.
Data collected for the SEDA study will be published in academic research journals. The school will also be given a brief report of the overall results for their school. However, you will not be identifiable in either of these reports.

Will the study benefit me?
Your school will be given an overall snapshot of the mental health status of the students in your grade to gain a better understanding of you and your peers. We hope that the information gathered by this study will help tailor more effective interventions within your school that will improve your overall experience. However, we cannot guarantee that you will receive any benefits from the study.

Can I tell other people about the study?
Yes, you are free to talk to whomever you wish about the study.

What if I require further information about the study or my child's involvement?
You are welcome to ask for more information at any stage throughout the research. Feel free to contact Catherine Gittins on cgitt5705@uni.sydney.edu.au or 0409 920 523. Alternatively, you can contact Assoc Prof Caroline Hunt directly on 9351 5446.

What if I have a complaint or any concerns?
Any person with concerns or complaints about the conduct of a research study can contact the Manager, Human Ethic Administration, The University of Sydney, on +61 2 8627 8176 (telephone), +61 2 8627 8177 (facsimile) or ro.humanethics@sydney.edu.au (email).

This information sheet is for you to keep.
Appendix B4: Student Consent Form

Clinical Psychology Unit
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Faculty of Science

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Maree Abbott / Senior Lecturer
Catherine Gittins / PhD Candidate

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Facsimile: +61 2 9351 2984
Email: caroline.hunt@sydney.edu.au
Web: http://www.sydney.edu.au/

STUDENT CONSENT FORM

I, [PRINT NAME],

☐ agree
☐ do not agree

to participate in the research project.

TITLE: THE SELF-ESTEEM AND DEPRESSION IN ADOLESCENTS (SEDA) STUDY

In giving my consent I acknowledge that:

1. The things that I need to do to participate in this study and the amount of time that it will take have been explained to me. Any questions I have about the study have been answered to my satisfaction.

2. I have read the Information Statement and have been given the opportunity to discuss the information and my participation in the study with the researcher/s.

3. I understand that being in this study is completely voluntary – I do not have to agree to participate if I do not want to.

4. I understand that my being a part of this study and everything I write or say in this study is strictly confidential. I understand that the information from this study may be published but I will not be identifiable in any way from that information.

5. I understand that I can withdraw from the study at any time without it affecting my relationship with the researcher/s or the University of Sydney or my school now or in the future.

6. I understand that if I have any questions about my participating in this study I can contact Catherine Gittins on 0409 920 523 or cglt5705@uni.sydney.edu.au who will be happy to answer them.

7. I acknowledge receiving a copy of this Consent Form and the Participant Information Statement.

Signature of Student

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Please PRINT name .................................................. Date .................
Appendix C: Children's Report of Parent Behavior Inventory-30

Schludermann & Schludermann (1988)

Note: items in bold are reverse scored.

Please rate how like your mother (father) these statements are:

1 = not like her
2 = somewhat like her
3 = like her

Acceptance (Support)
1. My mother makes me feel better after I discuss my worries with her.
4. My mother smiles at me very often.
7. My mother is able to make me feel better when I am upset.
10. My mother enjoys doing things with me.
13. My mother is able to cheer me up when I am sad.
16. My mother gives lots of care and attention to me.
19. My mother believes in showing her love for me.
22. My mother often praises me (e.g., tells me that I did a good job).
25. My mother is easy to talk to.
28. My mother makes me feel like the most important person in her life.

Psychological Control
2. My mother reminds me of all of the things that she has done for me.
5. My mother tells me if I really cared for her, I would not do things that cause her to worry.
8. My mother is always telling me how I should behave.
11. My mother would like to be able to tell me what to do all of the time.
14. My mother wants to control whatever I do.
17. My mother tries to change things about me.
20. My mother only keeps rules when it suits her.

23. My mother is less friendly with me when I do not see things her way.

26. My mother will avoid looking at me when she is disappointed in me.

29. My mother stops talking to me when I have disappointed her, until I have pleased her again.

Firm Control (Behavioural Control)

3. My mother believes in having a lot of rules and sticking with them.

6. My mother insists that I do exactly as I am told.

9. My mother is very strict.


15. My mother is easy on me.

18. My mother lets me off easy when I do something wrong.

21. My mother gives me as much freedom as I want.

24. My mother lets me go any place I want without asking permission.

27. My mother lets me go out any time I want.

30. My mother lets me do anything I would like to do.
Appendix D1: Study 4 Growth Curve Model, Gender Effects
Appendix D2: Study 4 Cross-Lagged Model, Gender Effects