Friend or Foe: Early Adolescent Emotion Regulation and Adjustment within the Context of Friendship

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A Thesis
In the Department
of
Psychology

Presented in Partial Fulfillment of the Requirements
For the Degree of
Doctor of Philosophy (Psychology) at
Concordia University
Montreal, Quebec, Canada

November 2013

CONCORDIA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

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DOCTOR OF PHILOSOPHY (Psychology)

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ABSTRACT

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Youth experience various physiological and psychosocial changes as they enter early adolescence, which are compounded by significant changes in the experience and expression of emotion (Rosenblum & Lewis, 2003). Difficulty learning to modulate and manage emotional experiences is believed to underlie many emotional and behavioural difficulties (Thompson & Goodman, 2010). Indeed, emotion dysregulation has been associated to a host of psychosocial difficulties, while adaptive emotion regulation (ER) has been linked to well-being and social functioning (e.g., Silk, Steinberg, & Morris, 2003). Gottman and Mettetal (1986) proposed that early adolescents develop their ER skills as they explore and analyze their emotions in conversations with close friends, relationships that grow increasing important in early adolescence (Rubin, Bukowski, & Parker, 2006). The intimate nature of early adolescent friendships likely stimulates frequent emotion-laden discussion and friends' responses in these discussions can help or hinder the development of ER skills. This work explored the developmental course of ER in early adolescence, how emotion socialization experiences with best friends impacted ER, and how such translated to adjustment. This longitudinal study followed 253 5th and 6th graders for one academic year. Adolescent self-reports on the ER skills used when angry or sad/anxious, perceptions of how best friends responded to emotional displays,

depressed affect and anxiety as well as peer reports about aggressive and prosocial behaviour were collected. Growth curve and path analytic methods were used to model initial levels and changes in latent ER constructs over time as well as predictors and outcomes of regulatory skills. Results showed that early adolescents' use of ER skills was reflective of the emotional turmoil marking this developmental period; relative to the few significant decreases in the use of maladaptive ER skills, youth showed many more decreases in the use of functional skills. The ways in which close friends directly socialized emotion and supported ER's positive development were similar to relationships observed in the parental emotion socialization childhood literature. Finally, many more stable predictions from ER to internalizing forms of adjustment were apparent relative to those with aggression. This study was the first to outline the influential role that best friends have on early adolescent ER.

Acknowledgments

Over the past four years there have been many moments where I visualized being at the point of writing my dissertation acknowledgments; yet, now that the moment is here, I find myself somewhat speechless and unsure of where to begin. What a long adventurous road it has been!

Without a doubt, the lighthouse guiding me throughout this whole voyage has been my partner and friend Aaron. I cannot thank you enough for absolutely everything you have done in the past six years to support me. From writing thoughtful and encouraging notes, to cooking me dinner after very long days, to listening to my thoughts, fears, and excitement, to doing everything in your power to make sure I had the strength I needed to face the many challenges along the way – you have always been there doing anything you could to lighten the load, help me to regulate my own emotional experiences, and make me smile along the way. Each one of my success in the past six years is also your own, for it would not have come to fruition without your aid. I would not have grown into the person I am today had you not been by my side every second of the way. For all these reasons and so many more, thank you.

Behind every successful thesis is a great professor, and I must express deep gratitude to my exceptionally knowledgeable supervisor, Dr. William Bukowski – a wonderful human being who generously took me under his wing and supported me every step of the way. Bill you have not only taught me many invaluable academic lessons, but many important life lessons that I believe have complimented and broadened my professional development. Thank you for having given me the opportunity to work with you.

There have been so many other wonderful professors that have mentored me throughout this academic journey. The contributions of two in particular must be acknowledged for their help in making this thesis come to life: Drs. Michel Dugas and Erin Barker. Your reflections on this work have been integral to its success.

There is another very important professor that I must thank; she someone who I both look up to and aspire to be. She is someone who has guided me like a gentle loving breeze guides a sailboat on a sunny day, all the while nourishing my love of inquiry in my academic and personal lives. She is someone who I am proud to call family and friend – my aunt Dr. Louise Simard. Louise, when I was little, auntie Lyne showed me something that left an amazing impression on me – your own dissertation. Even as a child I realised the almost immeasurable effort that went into its production and I was in awe. You are the one that made me first realise that I could also achieve something similar. Words cannot aptly capture the love and gratitude I have for you. You are my angel on earth.

In fact, I must express an immense gratitude to my whole family. As a team, you nourished and encouraged a passion for learning and perseverance. I am largely the person I am today because of your love and care. To my parents – Livia and Mike – who gave me the inspiration for my career path. From our adventures in Jamaica to the West Island of MTL, your life lessons have always been a ride. Thank you for teaching me how to be strong and for holding me up in every way you could along the way. I love you both. To my Nana Dorille who has spoiled me, protected me, and cared for me in more ways than I could have every asked for. I must especially thank you for all the amazing lunches you packed me throughout many of my university years – they fuelled

me in so many ways! To my auntie Lyne who nurtured creativity in me as a child and still does till this day. Thank you for showing me how to make something beautiful out of nothing. To my Nana Daisy and my dear departed Grampa Alex who never let me forget how proud you are and were of me. Thank you to all of you.

Being that this thesis is largely about the provisions of friendship, this acknowledgement would not be complete without a special word to my own friends. To my Nasar, Jenny, Jen, Cat and Tal – I could not have been blessed with better friends. You accept me for who I am, support me, push me to be better, and always lift me up with your love and laughter. Thank you for standing by me in the past 6 years and understanding every time I had to lock myself up to study, write a text, or lifted me up when I was down. You have embodied all the amazing parts of friendship and shown me what a beautiful gift it really is.

Finally, to the lab members, children, and families that made this thesis possible – thank you! Megan, thank you for the exceptional work you did organizing and making sure the data collection process was fluid! Caroline, thank you for listening to me vent, supporting me in my times of need, and becoming a wonderful friend!

I am truly blessed to have had so many special people help me in this journey – guiding me along the various paths required to achieve what I have. There is a bit of every one of you in this work.

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Chapter 1: Introduction

Relative to many periods of the lifespan, early adolescence is arguably one of the most tumultuous and challenging. Shifts in cognitive ability, physiology, and social demands move early adolescents away from childhood and ever closer to the responsibilities of adulthood (Rosenblum & Lewis, 2003). These transformations are accompanied by important changes in the experience and expression of emotion, whereby youths experience decreased positive emotions and increased negativity as well as greater variety and lability in their emotional experiences (Rosenblum & Lewis, 2003). Given that close peer relations take on new precedence in the lives of early adolescents, changes of the emotional system are increasingly experienced within the context of friendships (Rubin, Bukowski, & Parker, 2006). The ability to appropriately manage and modify the multitude of emotions experienced in such relationships (e.g., anger or sadness over a disagreement) would, thus, be essential for their well-being. The successful navigation of intense emotional experiences would not only support appropriate social behaviour within the context of friendship, but would promote overall adjustment and well-being. Indeed, a wealth of research in childhood has shown that the ability to appropriately manage the experience and expression of affect, or adaptive emotion regulation, is predictive of social skills and well-being (e.g., Rydell, Thorell, Bohlin, 2007), while emotional dysregulation has consistently been associated with externalizing (e.g., aggression) as well as internalizing problems (e.g., depression; e.g., Eisenberg et al., 2001) as well as poor social relations (e.g., Raver, Blackburn, Bancroft, & Torp, 1999).

Similar associations between regulatory profiles and adjustment in adolescents have very recently been identified in the literature (e.g., Laible, Carlo, Panfile, Eye, & Parker, 2010). Despite research identifying links between emotion regulation and adjustment, the current understanding of ER and the processes underlying its development during the turbulent time of early adolescence as well as how such associations translate into adjustment is severely limited. The current project aims to address this gap in the literature by investigating how experiences within close friendships during early adolescence influence emotion regulation and, consequently, adjustment in early adolescence.

Early Adolescence and Emotion

Adolescence is a time in the life cycle that is marked by great change and uncertainty. As individuals move away from childhood and into early adolescence they begin to experience significant hormonal changes as well as developments in cognition that further compound the demands brought forth by the many new social expectations and roles adolescents are now confronted with (Rosenblum & Lewis, 2003). This maturational process is also a time where youth are at increased risk for experiencing a range of mental health difficulties as well as participating in risky and potentially harmful behaviours (Rosenblum & Lewis, 2003; Silk et al., 2009). Evidently, it appears as though adolescent youth suffer under a 'pile-up' of significant and often challenging life stressors placing them in a 'sink or swim' position where they must struggle to cope (Silk et al., 2009). Understandably, this period is marked by substantial emotional upheaval (Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). Early adolescents are forced to

expand upon the skills and strategies developed in childhood so that they are capable of managing and modulating their expanding emotional system in accordance with the novel societal expectations facing them as they move through a world-wind of new and demanding experiences.

Further compounding these stressors are significant changes in the emotional system of early adolescents. Not only do adolescent youth suffer changes in the frequency and form of emotional experiences, but they also experience increased variability and instability in their emotions. Compared with later adolescents, early adolescents experience higher levels of negative affect which is further propelled by diminishing levels of positive emotions (Larson & Lampman-Petraitis, 1989; Larson, Moneta, Richards, & Wilson, 2002; Ciarrochi, Heaven, & Supavadeeprasit, 2008). Larson, Csikszentmihalyi, and Graef (1980) have also shown that adolescents appear to oscillate more quickly between emotions and spend more time at the extreme positive and negative ends of the emotional spectrum as compared to adults. However, the duration of each emotional experience is much shorter for adolescents when compared to their older counterparts (Larson et al., 1980), indicating substantial lability in the adolescent emotional system. Interestingly, the greatest level of emotional instability seems to occur in early adolescence and slows as youth enter late adolescence (Larson et al., 2002). While concurrent developments in cognition may allow adolescents to form new understandings about the complexities of emotional experiences and increase empathetic understanding, it may also work against well-being by contributing to increased levels of negative emotions (Hauser & Safyer, 1994). This change may be especially true for early adolescents whose cognitive advances are just beginning, causing

added confusion. Not surprisingly, the overall mood state of adolescents appears to be significantly lower than those of adults (Larson, et al., 1980).

For adolescents, learning to manage their developing emotional system, particularly the experience of negative emotions, has important implications for their emotional and behavioural well-being (Thompson & Goodman, 2010; Werner & Gross, 2010; Goossens, 2006). Difficulties in the ability to down-regulate negative emotions, like sadness or anxiety, and upregulate positive emotions are believed to underlie internalizing disorders such as depression or anxiety disorders (Cole, Michel, & Teti, 1994). Adolescents who report experiencing increased negativity and emotional lability have also been found to suffer from high levels of depressive symptomology (Larson, Raffaelli, Richards, Ham, & Jewell, 1990; Silk, Steinberg, & Morris, 2003). The inability to down-regulate negative affect has also been associated with higher scores in depressive symptomology and problem behaviour in adolescents (Silk et al., 2003). Externalizing disorders are also marked by dysregulated affect, particularly anger (Bradley, 2000; Dearing et al., 2002). In stark contrast to these results are indications that well-regulated youngsters are socially competent and accepted by peers (e.g., Rubin, Coplan, Fox, & Calkins, 1995).

While certain emotions are proposed to play a more prominent role in particular disorders, there is evidence for nonspecific emotion dysregulation (e.g., anger, sadness, and anxiety) across internalizing and externalizing difficulties in adolescents (McLaughlin, Hatzenbuehler, Mennin, & Nolen-Hoeksema, 2012; Silk, et al., 2003; Steinberg & Avenevoli, 2000). For instance, Neumann, van Lier, Frijns, Meeus, and Koot (2011) showed that variability in happiness, anger, anxiety, and sadness were all

predictive of changes in adolescent's anxiety and depressive symptoms, while aggressive behaviour was predicted by variations in the same negative emotions. Similarly, a recent longitudinal study by McLaughlin and colleagues (2012) demonstrated that emotion dysregulation (a construct they operationalized as lacking emotional understanding, dysregulated sadness and anger expression, and ruminative responses) preceded increased symptoms of anxiety and aggression in early adolescent youth whereas symptomology was not predictive of dysregulated affect. Furthermore, when the individual components of their ER construct were examined, dysregulated sadness and anger regulation as well as rumination were unidirectionally predictive of depressive symptoms. Together, these results provide compelling evidence that learning to manage affective experiences is critical for adjustment and the inability to develop such skills may act as a risk-factor for many forms of psychopathology.

The immense changes in physiological, cognitive, and social systems experienced in adolescence force youth to progressively develop new methods of coping with the novel emotional stressors they face. The significant body of research linking poor affective management to psychopathology suggests that the skills youth learn to use in the regulation of emotional arousal, or the lack thereof, may lay the groundwork for short and long-term functioning (e.g., McLaughlin et al., 2012, Rosenblum & Lewis, 2003). As such, a central task of early adolescence seems to be the development of emotion regulation skills (Thompson & Goodman, 2010).

Emotion Regulation

A widely supported conceptualization of emotion regulation (ER) posited by Thompson in 1994 describes it as consisting of the extrinsic (i.e., behaviour of others) and intrinsic (i.e., neurophysiology, cognitive evaluations, and subjective experiences) processes that monitor, evaluate, and modify both positive and negative emotional reactions (Thompson, 1994; Zeman, Cassano, Perry-Parrish, & Stegall, 2006; Thompson & Meyer, 2007; Calkins & Hill, 2007; Thompson & Goodmann, 2010). These processes may vary to the extent to which they are conscious or unconscious, automatic or effortful and act to diminish, heighten, or maintain one's emotional arousal so that adaptive goals can be accomplished (Thomson & Goodman, 2010; Calkins & Hill, 2007; Thompson & Meyer, 2007). ER is, hence, an active process working to change the dynamics of an emotion and not the emotion itself (Thompson & Meyer, 2007). While emotion can be both up- or down-regulated, the main focus of the present study is on the reduction, or down-regulation, of negative emotions (i.e., anger, sadness, anxiety) given that most behavioural and emotional problems are typically characterised by excessive levels of them (Werner & Gross, 2010).

The development of ER is multifaceted and involves a variety of intrinsic and extrinsic factors. Intrinsic factors are considered innate to the individual and include such things as temperament or disposition, cognitive ability, as well as the underlying physiological and neural systems that are involved in the regulation of arousal (Calkins & Hill, 2007; Fox & Calkins, 2003). Extrinsic factors are external to the individual and consist of the many ways in which parents, siblings, peers, and other caregivers respond to and ultimately socialize emotional responses (Calkins & Hill, 2007; Fox & Calkins,

2003). The maturation of intrinsic processes is believed to act as the foundation upon which increasingly complex regulatory skills develop (Calkins, Graziano, & Keane, 2007). However, biological processes do not act independently, but are subject to the socialization influences of environmental factors (e.g., Rutter, Moffitt, & Caspi, 2006, Caspi et al., 2003, Calkins & Fox, 2002). Ultimately intrinsic and extrinsic processes interact throughout development to give rise to the different facets of ER, including the skills/strategies used to modulate affective experiences (e.g., Rutter, Moffitt, & Caspi, 2006, Caspi et al., 2003, Calkins & Fox, 2002). The development of ER is clearly embedded in interactions with others.

Although humans are born with some self-regulatory abilities, they make great developmental strides in ER during childhood with the help of caregivers (Sroufe, 1996, 2000; Cassidy, 1994). Infants rely on reflexive behaviours, such as head turning or sucking, to tolerate or alter low levels of distress (Kopp, 1989), but depend on caregiver's provisions to modulate higher levels of discomfort. Increases in neurophysiological functioning in toddlerhood allow for more graded responses (e.g., differing levels and stages in the progression of emotional arousal) and complex emotions to emerge. This decrease in emotional lability aids caregivers in their attempts to manage their youngsters' emotional arousal as they transition from tactual to more vocal means of affect regulation (Thompson, 1994; Kopp, 1989). In the toddler years children are preoccupied with the differentiation of basic emotions (e.g., anger, fear, joy), the association of emotional expression to situations, and the development of language, which allows them to label and describe emotional experiences (Zeman, Cassano, Perry-Parrish, & Stegall, 2006). Caregivers begin to teach their children how to manage

distress and impulses by talking through emotionally eliciting situations or communicating distress to others (Calkins, 1994). Youth are now not only simply aware of their emotional distress, but they have acquired the capacity to understand its causes and that they can act to change their experience (Kopp, 1989). As children experience developments in memory, attention, and cognitive ability they form an increasingly large repertoire of strategies to manage emotions with regards to situational or social demands (Zeman et al., 2006). They come to use culturally defined rules that guide emotional behaviours in ways consistent with social and contextual demands (Zeman et al., 2006), such as putting on a 'happy face' when actually disappointed by a great aunt's gift. With increasing development, socialization environments outside of the immediate parent-child relationship colour the ER skills learned and practiced.

Typically developing youths' ability to adaptively manage emotions is believed to increase as they move into and through adolescence (Zeman & Shipman, 1998; Zeman et al., 2006), yet to this author's knowledge there are no published works examining normative ER development in adolescence or the mechanisms supporting its adaptive development. This literature gap is rather surprising given the potential for emotional upheaval experienced in early adolescence in conjunction with the great biological, cognitive, and social changes of this time period (Rosenblum & Lewis, 2003; Simmons et al., 1987). Furthermore, adolescent youth who report more intense and labile emotionality display greater difficulties down-regulating affect (Silk et al., 2003). Because emotional instability is greatest in early adolescence (Larson et al., 2002) and learning to manage evocative emotions appears critical to adjustment, early adolescence

presents as a vulnerable time period within which the need to understand ER and its development is paramount.

Given the many factors that exhort force on the development of ER, individuals can develop a multitude of ways of managing their emotional responses to evocative stimuli. The functionalist perspective of emotion offers a way in which to conceptually organize these ER strategies. This framework regards emotion as essential to adaptive functioning because emotional experiences provide essential situational information enabling persons to adaptively respond across various contexts. For instance, the experience of anger may inform one that something has interfered with goal attainment, or having feelings of anxiety or fear may alert individuals to threat. Following this line of thought, ER strategies/responses that make use of the information provided by emotional experiences would be considered adaptive since they require processing the emotion(s) in question, which consequently allows for behaviours that support adaptive goals (Phillip & Power, 2007). On the other hand, a maladaptive ER strategy would be one that prevents the processing of emotion based information in useful ways, potentially through rejecting or blocking the emotional experience, or perhaps by punishing oneself for having it (Phillip & Power, 2007). Such dysfunctional strategies likely prevent one from developing tolerance to uncomfortable emotions (e.g., Chapman, Specht, & Celluci, 2005) and can amplify the undesired emotion through generation of secondary emotions (e.g., Linehan, 1993), for example feeling bad about having experienced jealousy about a friend's success. In line with such ideas is evidence in the adult literature suggesting there are indeed 'healthy' (e.g., reappraisal) and 'unhealthy' (e.g., suppression) forms of ER skills (John & Gross, 2004). As such, ER strategies can be conceptually organized

into those that are adaptive/functional or maladaptive/dysfunctional and the overall "style" of ER strategies one adopts can have strong implications for well-being.

Despite knowing very little about the mechanisms supporting the adaptive development of ER skills in adolescence, recent research with community samples has highlighted strategies that appear to help or hinder functioning. A recent study by Zalewski, Lengua, Wilson, Trancik, and Bazinet (2011) showed early adolescents who are more effective at regulating emotions during anxiety eliciting and frustration tasks also used higher levels of positive appraisal and active coping (e.g., thinking about choices and solutions, planning) in addressing their problems. In contrast, youth with greater difficulty regulating their anxiety showed higher levels of threat appraisal and avoidant coping. Similar findings were obtained by Silk and colleagues (2003) who identified cognitive restructuring strategies to be associated with greater down-regulation of anger, but not with sadness or anxiety down-regulation. Silk et al. (2003) also showed that disengagement strategies, such as avoidance, denial, or escape, and rumination were associated with less down-regulation of anger and sadness, but not anxiety. Some differences in the strategies boys and girls used were also identified by Silk et al. Girls reported using strategies such as seeking help and problem solving more often than boys; yet no differences were found in the use of cognitive restructuring or disengagement skills. A study adopting a vignette methodology to gather self-reports of ER goals and strategies in children and early adolescents showed that youth endorsed verbal regulation strategies more for anger and sadness than pain. Girls endorsed verbal strategies more than boys, whereas boys endorsed more aggressive strategies (Zeman & Shipman, 1998). Thus, clear differences can be seen in which strategies help or hinder functioning, as well

as in how boys and girls may differentially use these skills. Furthermore, differences in what strategies facilitate regulation may differ across emotions.

Youth meeting diagnostic criteria have also been shown to use more maladaptive strategies. Garber and colleagues found that young adolescents diagnosed with a depressive disorder reported using less problem focused and active distraction strategies (e.g., focusing on a pleasant activity) and more avoidant, passive, and aggressive strategies than controls (Garber, Braafladt, & Zeman, 1991; Garber, Braafladt, & Weiss, 1995). These results have been echoed in works by several others showing depressive symptomology being associated with avoidance and rumination and the limited use of active strategies such as support seeking, problem solving, and cognitive restructuring (Herman-Stahl, Stemmler, & Petersen, 1995; Nolen-Hoeksema& Morrow, 1993; Sandler, Tein, & West, 1994). These results corroborate those from the coping literature suggesting approaching or engaging with a stressor is linked to better adjustment (Compas, Connor, Saltzman, Thomsen, & Wadsworth, 1999).

Because affect management appears a critical milestone of adolescence and successful ER development is essential to adjustment, identifying factors that influence the development of ER is of exceptional importance. In particular, a better understanding of the extrinsic factors that support or thwart the development of ER would have direct practical implications for prevention and treatment efforts. Given the increasingly important role of peers in the lives of adolescents and the nature of early adolescent peer relationships, it is likely that friendship functions as an important socialization context for ER.

Close Friendships in Early Adolescence

A further developmental change marking adolescence is the increasingly important role that close social relationships play in the lives of youth (e.g., Buhrmester & Furman, 1987). Relative to prior developmental periods, early adolescence sees large increases in the proportion of time spent with peers. For example, in the preschool period 10% of social interactions involve peers, while in the late childhood period bordering early adolescence the analogous figure is 30% (Rubin et al., 2006). This amount only continues to increase as youth progress into and through adolescence (Rubin et al., 2006). While earlier social interactions occurred in the home and daycare, the range of settings in which early adolescent peers come into contact increases significantly in breadth (e.g., school, phone conversations, texting, online-chatting, hanging out, travelling to and from school, listening to music and watching TV; Zarbatany, Hartmann, & Rankin, 1990). Interactions among adolescent American best friends have been found to occur on a daily basis, consume many hours each day, and only less than 10% of adolescents have been found to lack regular contact with friends outside of school (Csikszentmihalyi & Larson, 1984; Hartup, 1993). Evidently, interactions with friends account for a significant proportion of time in the daily lives of early adolescents. As such, adolescent friends have increasing opportunities to influence their peer's developmental outcomes.

Friendships are a "quintessential form of peer interactions and a basic feature of human life" (Bukowski et al., 2009, p. 217) that largely function as important socializing contexts. Harry Stack Sullivan's influential developmental model of interpersonal relationships identifies adolescent friendships as satisfying the growing need for intimacy and desire to share thoughts and emotions (Buhrmester, 1990). Sullivan (1953) described

the close intimate mutual relationships youth establish with same-sex peers in early adolescence as being quite distinct from the hierarchical parent-child relationship and the concrete play-based peer interactions that dominated childhood in that adolescent friendships are more egalitarian in nature. Accordingly, given the mutual and voluntary nature of chumships, Sullivan argued that close friendships are also the venue where youths first experience feelings of self-validation, likely from the voluntary positive regard and care shown to them by chums (Bukowski, Brendgen, & Vitaro, 2007, p. 358). This view emphasizes close friends functioning as dependable and understanding companions who offer many positive provisions for emotional development (Hartup, 1993).

Indeed, the research literature corroborates the intimate and emotional nature of early adolescent friendships. Youth's descriptions of friends first begin to include comments about shared feelings and self-disclosure during the transition to early adolescence and increasingly thereafter (Berndt, 1982; Bigelow & LaGaipa, 1980; Furman & Bierman, 1984; Furman & Buhrmester, 1992). Loyalty and trust also emerge as particularly important aspects of adolescent friendships (Bigelow & LaGraipa, 1980). Typically, disclosure about personal problems and accompanying emotions serves to further strengthen relationships by building trust and closeness (Buhrmester & Prager, 1995), which reciprocally increases their longevity and the propensity of disclosure within. Furthermore, as ratings for shared intimacy with same-sex friends increase in adolescence they are accompanied by a reduced tendency to disclose to adults (Buhrmester & Furman, 1987; del Voile, Bravo, & Lopez, 2010). Thus, close friends in early adolescence seem to hold a unique place in fulfilling the need to self-disclose and

provide a unique equalitarian venue within which friends can collaboratively explore the emotions accompanying disclosure.

While closeness and intimacy appear to be core qualities of early adolescent friendships, there are differences in how they manifest among boys and girls. Both boys and girls disclose emotional content to their friends and have more positive than negative outcome expectations for disclosure (Rose et al., 2012); yet girls disclose more often relative to boys (e.g., Rose & Rudolph, 2006; Rose et al., 2012). Unlike girls, however, when boys do disclose they are reportedly more likely to feel awkward or uncomfortable about doing so (Rose et al., 2012). It may be that sharing emotional content is more acceptable in the relationships of girls. Such findings may also be a product of how intimacy is typically conceptualized, which generally does not adequately account for structural differences in the friendships of boys and girls. Girls' friendships appear to function more in isolation among dyads, whereas boys' friendships occur within a group context (Baumeister & Sommer, 1997). Moreover, boys'and girls' friendships are characterized by differing interests. Boys appear to engage in more competitive behaviour and physical activity, while girls' friendships are typically marked by more cooperative activities and one-on-one interactions. Naturally, one-on-one interactions may be more supportive of what is traditionally thought of as self-disclosure and intimate exchange (Leaper, 1994; Underwood, 2004) than group settings (Rose & Smith, 2009). However, a group context does not necessarily negate intimacy, in that interpersonal disclosure may be achieved through alternate means. It has been suggested that boys may form "collaborative friendships in which sensitivity to needs and validation of worth are achieved through actions and deeds, rather than through interpersonal thoughts and

feelings" (Buhrmester & Furman, 1987, p. 1111-1112). Coupled with the clear observation of gender segregation, where youth prefer to interact with their own sex up until and including early-adolescence (Gottman & Mettetal, 1986; Maccoby & Jacklin, 1987), this framework of differences in intimate reciprocity suggests that socialization of emotion may occur differently in the same-sex friendships of pre-adolescent boys and girls.

As a whole, the caring and intimate nature of close friendship in early adolescence suggests these relationships function as an ideal venue for emotional development and, perhaps, for learning how to manage the emotional upheaval experienced in this developmental period; yet, how this unfolds may differ for boys and girls. While it largely remains unclear how friends socialize strategies for affect management, arguably, these skills could potentially lay the groundwork for later functioning and adjustment.

Friends as Emotion Socialisers

While peer relations researchers have highlighted many qualities of early adolescents' close friendships that likely socialize emotion, very few scholars have explicitly theorized about how interactions within these relationships may actually foster or hinder emotional development. One of the first scholars to emphasize the importance of friendship to emotional development, particularly in early adolescence, was Peter Blos (1967). Blos argued that the influence of peers would be most apparent during the process of individuation and restructuring of parent-child relationships inherent to early adolescence. He argued that the ability to cope with the turmoil of adolescence hinged on being able to form supportive relationships with peers, to whom youth could turn to for

"stimulation, belongingness, loyalty, devotion, empathy, and resonance" in an effort to manage their emotions (Blos, 1967, p. 177). A more recent conceptualization of friends as important emotion socializing agents was proposed by Gottman and Mettetal (1986). Following careful observations of interactions among peers, these scholars proposed a developmental account of how youth manage their emotions within the context of close relationships. They proposed that in early adolescence youth make use of their newly developed reasoning skills to explore and analyze their emotions in conversations with friends. These scholars highlight the importance of emotion-laden conversations as well as peer's responses in these discussions as being important to development.

Indeed, the emerging desire for self-disclosure is likely to prompt lengthy and frequent emotion-laden discussions among early adolescents. The opportunity to explore the emotional self within a validating and equalitarian relationship may act as a scaffold for increasingly complex operational thought about affect management and may do so in ways not possible in more power-laden relationships (i.e., parent-child relationships; Piaget, 1932). Nevertheless, just as parental responses to emotion displays are known to socialize ER in childhood (Thompson & Meyer, 2007), friends' contingent reactions to emotional displays are also likely to differentially reinforce the development of certain affect management skills (Bandura, 1977). Together, such notions suggest that beginning in early adolescence, the exchange of emotional information is an integral aspect of friendship and that close friends reactions within such conversations play an important socializing role in the development of ER.

Emotion Socialization

While the development of ER is a relational process and the strategies one acquires result from interactions among a large network of intrinsic and extrinsic factors, there is compelling evidence suggesting that ER is largely shaped by experiences with important socializing agents (Thompson & Meyer, 2007; Thompson, 1994; Denham, Bassett, & Wyatt, 2007). Typically, socialization experiences with caregivers in the home are regarded as the most influential in shaping emotional development, especially in the early years of life. An abundance of empirical work underscores mothers as particularly important socializers of childhood emotion (e.g., Klimes-Dougan et al., 2007); however, much less is known how about how peers may function as emotion socializing agents in later stages of development.

Regardless of the interpersonal context where it occurs, parent or peer, effective emotion socialization involves helping youth to experience all possible emotions, to understand their own emotions and those of others, as well as how to regulate their emotional experiences (Hastings & De, 2008). Emotion socialization occurs in everyday interactions in numerous direct (e.g., conversations about emotion, responses to emotional displays) and indirect (e.g., social referencing, imitating friends) ways (Hastings & De, 2008). Such interactions provide youngsters with information about the nature of emotions as well as how they should be experienced and expressed that will ultimately help or hinder healthy emotional development (Denham et al., 2007). However, how emotion is directly and indirectly socialized can sometimes differ for boys and girls (e.g., Zahn-Waxler, 2000). For instance, anger, and its behavioural expression of aggression, is generally seen as a masculine emotion that is less acceptable for girls.

Relatedly, girls are frequently more encouraged to embrace their emotional experiences and are believed to experience a wider variety of emotions and more intensely so than boys do, perhaps with the exception of anger and pride (Brody & Hall, 1993).

Ultimately, youth are believed to encode and integrate the many messages they directly or indirectly receive about emotion in a way that allows them to form an emotional repertoire, complete with patterns of responding, upon which they can rely upon when encountering emotionally challenging situations that require affect regulation (Denham et al., 2007). While both direct and indirect methods of socializing emotion are important, this work focuses primarily on how emotions are shaped directly through contingency learning. In essence, how youth learn to regulate emotions based on how others respond to their emotional displays. Of particular interest are best friend's direct response or contingent reactions to negative emotions, such as anger, sadness, and anxiety, given that their dysregulation appears to underlie the development of psychopathology.

Although no work has yet examined how friends directly socialize ER, the emotion socialization work in the parenting literature can be particularly informative in this regard. One of the most influential frameworks for the study of direct emotion socialization has been formulated by Malatesta-Magai and her colleagues (Malatesta & Wilson, 1988; Malatesta-Magai, 1991; O'Neal & Magai, 2005) in their work on parents' contingent reactions to children's emotional displays. This framework describes five strategies parents commonly use to socialize negative emotions of anger, sadness, and anxiety. Reward strategies are those that offer comfort and acceptance of the emotional experience as well as provide the child with support in managing the emotion or the

situation that gave rise to it. Dismissing or distracting behaviours (e.g., saying "Cheer up") are overriding responses that acknowledge the emotional experience but quickly move towards de-emphasizing the emotion. Magnifying responses essentially reflect emotional contagion in that the socializing agent experiences and mirrors back the same emotion expressed by the child. Neglect responses are those where parents ignore or fail to notice emotional displays. Finally, punitive responses are those where parents express disapproval towards the child's emotional display either directly or through ridicule.

Using a functionalist framework of emotion the above emotion socialization responses can be conceptualized into those that either help or hinder ER. Responses that acknowledge, validate, or aid in problem solving without heightening emotional arousal, such as reward and override, would facilitate the processing of the emotional experience and provide opportunities for learning adaptive ER response without causing the child to become overwhelmed by emotion. In contrast, responses that intensify and overwhelm or invalidate the emotional experience, such as magnify, neglect, or punish, would prevent processing of the experience, thwart learning adaptive responses, and amplify the emotional experience. These latter responses would support the learning of maladaptive ER strategies where one may cope by pushing away or avoiding the emotional experience.

Indeed evidence in the parental literature shows that the open acknowledgement and discussions of emotion in a way that prevents extensive and extreme emotional arousal is related to behavioural well-being (Gottman, Katz, & Hooven, 1997), while emotion socialization responses that extend or heighten emotional arousal are related to maladjustment and maladaptive ER in children. For example, Eisenberg and her

colleagues (1999) conducted a longitudinal study to examine relations between parental reactions to children's negative emotions and children's appropriate/problem behaviour. Parents' punitive and distress reactions to children's negative emotions at 6-8 years of age were found to predict problem behaviours at 10-12 years of age. Another study conducted by Eisenberg and her associates (2001), showed that negative maternal emotion socialization was negatively related to reports of grade-school children's ER.

More recently, there has been research extending our knowledge of emotion socialization as it occurs in adolescence. Klimes-Dougan et al. (2007) administered questionnaires gathering youth's and parents' perceptions of how mothers and fathers responded to adolescent's emotional displays and examined how responses were associated with functioning. Youth in the clinical range on either the externalizing or internalizing subscales of the Child Behaviour Checklist or Youth Self-Report Form reported more parental neglect in response to their sadness as well as more use of punish, neglect and magnify emotion socialization responses to anger. In contrast, youth without clinical significant internalizing or externalizing difficulties were more likely to report parents responding with reward to all three negative emotions (sadness, anger, fear) and responded with override to sadness. Again, this supports the above conceptualization of which emotion socialization strategies would benefit development.

Evidence for Friends Functioning as Emotion Socialisers

While research in the area of early adolescent friendship implies that close friends make direct and important contributions to the development of early adolescents ER abilities, to this author's knowledge, there are currently no published empirical inquiries

directly examining such relationships. Instead, findings from the emotion socialization, peer relations and coping literature each provide evidence suggesting that youth indeed reach out to friends when in emotional distress and that, in turn, friends act as important ER coaches.

Firstly, as of early adolescence, friends are sought out as emotional guides. While mothers and fathers have been found to be the most frequent providers of support in childhood, as youth enter into adolescence they begin perceiving friends to be just as supportive as parents and, more importantly, friends become the most frequent provides of support (e.g., Furman & Buhrmester, 1992). Findings from studies on coping suggest that both boys and girls seek out social support following evocative social situations, but that girls may do so more often (e.g., Eschenbeck, Kohlmann, & Lohaus, 2007). Indeed, Rose et al. (2012) showed that both boys and girls disclosed to friends, but girls did so significantly more than boys and this difference remained constant regardless of an overall increasing rate of disclosure from childhood into adolescence. While both adolescent boys and girls hold more positive (e.g., talking about problems would release bottled up feelings, make them feel better) than negative (e.g., worry about being judged) outcomes expectations for emotional disclosure to friends, perhaps differences in disclosure exist, in part, because only boys seem to believe that talking about emotions would make them feel "weird" or as if they are wasting their time (Rose et al., 2012). This work highlights that all youth rely on friends when in emotional distress but that the frequency and form in which this occurs may differ for boys and girls.

Secondly, friends are not only aware of but responsive to their chum's emotional displays. Friends have been found to be much more sensitive to the emotional cues and

states of their friends compared to non-friends (e.g., Foot, Chapman, & Smith, 1977). In an effort to capture youths' perceptions of their friends' responses to emotional displays Klimes-Dougan and colleagues (in press) adjusted Malatesta-Magai's work to reflect how adolescent peers may directly socialize emotion. In this adaptation, the first four strategies (reward, override, neglect, magnify) continue to be conceptualized in the same manner, but punishing responses are divided into those that reflect relational and overt aggression in order to better represent the peer social world in adolescence. Using this framework, Klimes-Dougan (in press) discovered that friends are perceived as being more likely to respond to negative emotions (i.e., aggregated mean score of friends responses to sadness, anxiety and anger) with supportive (reward and override) rather than punitive reactions; however, findings demonstrated that boys and girls differed in their perceptions of how best friends responded. Across two time-points, girls reported that their friends used higher levels of reward, override, and magnify responses compared to boys, whereas boys reported their friends as using overt and relational aggression as well as neglect more often than girls. This paints a portrait of girls being more welcoming of emotional talk while boys may respond in more punitive or dismissive ways. Indeed, such perceptions may also account for girls increased tendency to disclose to friends and boys' perceptions of feeling odd or wasting their time when doing so (Rose et al., 2012).

Lastly, studies in the coping literature suggest that when faced with difficulties the actions of friends are indeed related to affect management. Work by Denton and Zarbatany (1996) has shown that when asked to describe upsetting events, pre-adolescents report feeling better after talking with friends, most especially after receiving

support that functions to distract from the troubling emotional stimulus (Denton & Zarbatany, 1996). In exploring dyadic coping, support-giving, and friendship closeness among college friends, Chow and Buhrmester (2011) demonstrated that youth were more willing to reach out to others to manage their problems when they also had friends who offered empathetic, comforting, and affectionate responses. In contrast, youth were more likely to demonstrate a tendency to prolong their emotional experiences through rumination and self-blame when their friends became overinvolved in their difficulties (e.g., critical, controlling, enmeshment) or became disengaged by showing disinterest in helping or providing comfort. This work also showed that girls offered more responsive/empathetic support to stressed friends, whereas boys used more inadequate responses such as disengaging or becoming over-involved.

Together this work indicates that all adolescent youth disclose to their friends, but friends will vary in the ways they respond to emotional displays and how such responses are related to affective coping will fluctuate depending on the nature of the response, particularly across boys and girls. It seems that the friendships of girls provide greater acceptance of and opportunities to explore emotional content. As such, girls may have increased potential to develop adaptive regulatory skills within a validating and empathetic friendship context whereas boys may be less likely to have such opportunities. However, given that certain emotions are more socially acceptable in males (i.e., anger) versus females (i.e., sadness), perhaps boys experience more adequate coaching for emotions deemed socially appropriate in male relationships, such as anger. Overall, this work points to best friends as being important emotion socializers who influence the management of emotion in both boys and girls. Understanding how

emotions are experienced within early adolescent friendships appears critical given that these relationships are both deeply meaningful and increasingly less controlled by adults making them particularly important and strong extrinsic influences on which strategies youth learn to rely on in regulating strong negative emotions (Underwood et al., 2006).

Model of Best Friend Emotion Socialization and Emotion Regulation

The peer relations and emotion development literatures paint a portrait of early adolescent best friendships acting as a unique and intimate venue within which the exchange of emotional information between participants is fundamental. Hence, close friends take on an important socializing role as youth learn about managing intense emotional experiences. Depending on the quality of emotion socialization behaviours used by best friends (e.g., empathetic/problem-solving versus dismissing or punishing), they likely inspire the broadening or narrowing of existing ER skills. In line with social expectations, friends' responses likely differ for varying emotions and across the relationships of boys and girls. Ultimately, it is the development of adaptive or functional ER skills and the reduction of maladaptive/dysfunctional skills that would not only be essential for the successful navigation of the many novel demands that present in adolescence but across the lifespan. In turn, the ER skills one develops will form a response style that will largely contribute to overall adjustment and well-being.

Goals and Hypotheses of the Current Project

The current project explored the development of ER skills in early adolescence within the context of best friendships and how this process relates to functioning in an

effort to address the paucity of work in this area. Its primary question concerns the nature of adolescent ER and its developmental course. This paper modeled changes in adaptive and maladaptive ER skills used for managing anger or sadness/anxiety across a single academic year. From this, explorations of how best friend emotion socialization responses influence ER were layered on to from the second query of interest. The last question regarded how relationships among ER and best friend emotion socialization worked together to predict adjustment longitudinally.

This project is predicated on the functionalist framework of emotions and examined how functional and dysfunctional, internally (e.g., self-talk) and externally (e.g., seeking advice, taking problems out on others) directed ER skills were used to manage anger and sadness/anxiety over the course of one academic year. The expected direction of change in ER was unclear given the paucity of work examining its developmental course in early adolescence; changes could reflect either the maturation of systems or the emotional flux and instability of adolescence. In line with expectations of youth becoming more adept affect modulators with age, it was hypothesized that functional ER strategies would increase while dysfunctional ER strategies would decrease over time. However, in line with the emotional lability and increases in negative emotions experienced in early adolescence, it was also hypothesized that early adolescents may instead suffer decreases in their ability to manage such evocative emotions (decreases in functional ER skills or/and increases in dysfunctional ER skills) as they haven't yet had sufficient learning opportunities or advances in cognition allowing them to adjust or build upon the affect regulation skills of childhood. Based on the existent work, it was also hypothesized that girls and boys would differ in their use of

certain ER skills. Girls were expected to rely more on externally directed functional skills (e.g., asking advice), while boys would be more likely to adopt externally directed dysfunctional ER responses (e.g., taking it out on others). No differences were predicted in internally directed dysfunctional or functional skills.

The second goal of this project was to examine the largely unexplored role of best friends as important socializing agents of ER skills given their increasingly important role in the lives of early adolescents. In line with work in the emotion socialization and coping literature, it was expected that reward and override strategies would positively predict adaptive/functional ER skills while magnify, neglect and punish (overt and relational aggression) would positively predict maladaptive ER strategies. Because of differences in expectations for sharing emotions and gender differences in emotion socialization, it was expected that associations with more invalidating or punitive emotion socialization responses, such as neglect or punish, would be more prominent for boys than girls.

Finally, how relationships between emotion socialization and ER are related to adolescent functioning over time was explored. Because difficulties modulating negative emotions have not been associated to internalizing or externalizing difficulties in any specific manner, each ER skill for anger or sadness/anxiety was examined in relation to depressed affect, anxiety, relational aggression and overt aggression. Prosocial behaviour was also included given adaptive ER has been found to be positively related to social functioning. Adaptive ER strategies were expected to be positively associated with prosocial behaviour and negatively associated with difficulties. Maladaptive ER

strategies (internal and external) were expected to be positively related to difficulties and negatively related to prosociality.

Chapter 2: Methods

Participants

Participants for both studies were recruited from 13 classes within three mixed-sex schools in the Greater Montreal area of Quebec. In an effort to obtain a representative sample of the educational structure within Quebec, where the primary language of most schools is French but is also home to a number of English schools, two of the participating schools were from the French language sector while the third's language of instruction was English. Of the 301 children solicited to participate in the study, 272 returned parental consent forms allowing them to participate resulting in a 90% participation rate across all classes. From this initial sample, six children withdrew their consent over the course of the study. In addition, participant data from one class was not included in the final sample given it attained considerably less than a 75% participation rate, thereby limiting the use of peer report data. As such, the final sample consisted of 253 early adolescents (109 boys and 144 girls) between the ages of 10 and 12.6 years (M = 11.17, SD = .61) from the 5th and 6th grades. Forty-seven percent of the final sample was schooled in English, while the remaining participants were schooled in French. French was the primary language spoken in the home for 59 % of the sample, 27% of participants reported English as the dominant language used at home, and 11 % reported a main language spoken at home other than English or French; information

regarding the language spoken at home was not available for the remaining participants. Thirty-five percent of participants self-identified as being Canadian, 32% identified as <<Québecois>>, 26% identified as having a cultural identity other than these (e.g., Latino, Asian etc.), and information for the remaining 8% of the sample was unavailable. With regards to socioeconomic status, parental reports of annual household income before taxes ranged from under $15,000 to over $100,000 Canadian. Specifically, 14.4 % reported a total household income of $35,000 or less, 12.2% reported a household income of over $35,000 to $55,000, 17.2 % grossed a household income of over $55,000 and $75,000, 15 % indicated a total household income of over $75,000 to $100,000, and 25% of the sample reported household earnings over $100,000. These values show that this sample was both economically and culturally diverse.

Procedure

Following ethical approval from Concordia University's Human Research Ethics Committee, school personal (e.g., principals, school governing boards) were contacted so that the purposes and methods of the current study could be presented to them. After obtaining all relevant school-level permissions, the students of participating schools were visited in their classroom so that the study could be described to them. A letter describing the objectives and methods of the study and a consent form were sent home with students (see Appendix A) for parents to read and indicate whether or not they provided permission for their child to participate. To encourage the return of consent forms any student who returned a signed parental consent form, regardless of whether parental consent was provided, was given a "Concordia" pen as an expression of our

gratitude. Only the children who had received parental permission were allowed to take part in the study.

A classroom-based questionnaire procedure was adopted to collect data at five time-points over the course of one academic year. Data collection began in the second month of classes (i.e., October) and continued until just before the end of the school year (i.e., May). Each collection occurred at six to seven week intervals, depending on the availability of schools. The first (T1) and last (T5) data collections included two separate one-hour visits to classrooms, while the second (T2), third (T3), and fourth (T4) visits each consisted of only a single hour-long session. Child assent was collected at the initial data collection visit (see Appendix B). In addition, questionnaires were sent home to parents at T1 (see Appendix B and C) and those who returned completed forms received two movie passes for a local theatre as remuneration.

At each data collection session the participating children were reminded of their rights as participants and of the confidentiality of their answers prior to questionnaire being given out. Children completed questionnaires either in English or French in accordance with their school's language of instruction. Prior to data collection, the English items to be included in questionnaires were presented to French-speaking researchers native to Quebec for translation into French so that the original meaning and relevance of the items would be maintained. Following the last data collection session, children were visited in their classrooms and presented with a gift (i.e., T-shirt with the study logo) as thanks for their participation and a brief written report of study findings.

Measures

Demographics. Both parents and participating youths provided demographic information. The parent questionnaire sent home with youths asked about a variety of information, including queries about family composition (e.g. marital status, how many children in the home) and socioeconomic information (e.g., household annual income) (see Appendix C). Children provided information regarding their perceived cultural identity and languages spoken in the home by completing an in-class questionnaire (see Appendix C).

Behavioural and Emotional Adjustment. Both self-report and peer-reports were used to gather measures of participants' adjustment at T1 and T5. Self-report measures were used to assess aspects of adjustment considered internal in nature, specifically depressed affect and anxiety. Nine items, based on the second edition of the Child Depression Inventory (Kovacs, 2010), were used to assess both somatic (i.e., "I feel tired, I don't feel like eating, and I have trouble sleeping") and affective (i.e., "I am unhappy", "I am in a bad mood", and "I feel lonely", "I feel that nothing will ever work out for me", "I am sad", and "I am cranky") aspects of depressed affect. The depressed affect scale had good reliability at both time-points, with an alpha of 0.86 and 0.89 respectively. In contrast, the somatic scale showed an unacceptable reliability at T1 (α = 0.54) and a permissible reliability at T5 (α = 0.67); thus, the unstable nature of the somatic scale's reliability eliminated its use from analyses. Anxiety was measured with the following three items: "I am nervous or tense", "I get stressed a lot", and "I worry a lot." Good reliabilities were found for this anxiety measure at both T1 (α = 0.84) and T5 (α = 0.85).

A classroom-based unlimited-choice peer assessment questionnaire procedure (Bukowski, Cillessen, & Velasquez, 2012) was used at T1 and T5 to gather peer reports about participants' characteristics considered to be largely observable (e.g., externalizing behaviours). The participants were presented with a list of items describing potential characteristics of their participating classmates and then asked to nominate students for whom these characteristics were true. Children were able to nominate as many or as few of their classmates as they saw fit, but were unable to nominate themselves. Of those items included in the questionnaire only those composing the following constructs are of relevance for the current study: relational aggression, overt aggression, and prosocial behaviour. Two items were used to measure prosocial behaviour "someone who helps others when they need it," and "someone who helps others with their problems." This measure showed good reliability at both T1 ($\alpha = 0.85$) and excellent reliability at T5 ($\alpha = 0.91$). Relational aggression was measured with three items "someone who talks bad about others behind their backs to hurt them", "someone who tries to keep others out of the group", and "someone who when mad at someone, ignores or stops talking to him/her." This measure was found to have good reliability at T1 ($\alpha = 0.80$) and acceptable reliability at T5 ($\alpha = 0.71$). Three items were also used to assess overt aggression "someone who hits or pushes people", "someone who hurts others physically", and "someone who gets involved into physical fights." This measure showed excellent reliability at T1 ($\alpha = 0.92$) and T2 ($\alpha = 0.94$).

Correcting for classroom size bias in peer nominations. A well-known and troublesome phenomenon for researchers who use peer nomination techniques is the existence of variations in the potential size of observations given the naturally occurring

differences in the number of students across classrooms. Specifically, the potential for increased nominations grows with class size, possibly magnifying measured characteristics unrealistically. Yet, it is also possible that this effect is a real one. For instance, it is conceivable that levels of aggression may be higher in larger groups as it is adopted as a means to maintain social order or due to the a lower levels of direct personal connection between individuals in a larger social structure. In an effort to circumvent such issues, the current study adopted a novel technique developed by Valasquez, Bukowski, and Saldarriaga (2013) that makes use of a regression based procedure to correct for the effects of class size variation whist maintaining the original metric of the items. This method required linear and quadratic effects of classroom size (deviations from the overall average classroom size and deviations squared) to be entered as predictors of the mean number of received same-sex peer nominations at T1 and T5. Results of these regression analyses indicated that classroom size explained a total of 9% of the variance in same-sex peer nominations at T1 and 6% of the variance at T5. Linear effects accounted for 4% of the variance at T1 and 12% at T5, while quadratic effects accounted for 11% of the variance at T1 and 1% at T5. Linear *b*s were 0.03 at T1 and 0.06 at T5, while quadratic *b*s were 0.02 at T1 and 0.01 at T5. These non-standardized regression weights were subsequently used to compute the amount of bias expected for each class. The expected amount of bias was then subtracted from observed peer nomination scores to create the final adjusted peer nomination scores for relational aggression, overt aggression, and prosocial behaviour.

Emotion Regulation. Participants provided self-reports about their ER abilities. Items used to assess ER in the current sample were developed from the Regulation of

Emotions Questionnaire (REQ; Phillips & Power, 2007), a 19-item questionnaire designed to assess individual differences in the frequency with which late adolescents make use of internally (i.e., use of internal resources such as self-talk) and externally (e.g., use of external resources such as talking to a peers) directed adaptive or maladaptive (e.g., those which may be harmful to the self or others) ER strategies. Select items of the REQ were administered to participants based on their relevance to an early adolescent population following several adjustments making them 1) within the reading comprehension level of 5th and 6th grade students, and 2) specific to the emotions of anger and sadness/anxiety. As a result, a 24-item questionnaire comprised of four 3-item subscales was used to assess both the adaptive and maladaptive, internal and external ER strategies youths use when angry and sad/anxious (i.e., angry internal adaptive, angry internal maladaptive, angry external adaptive, angry external maladaptive, sad/anxiety internal adaptive, sad/anxiety internal maladaptive, sad/anxiety external adaptive, and sad/anxiety external maladaptive). These items can be found in Appendix D. Youths provided self-reports about their use of ER strategies on a 5-point Likert scale questionnaire where 1 represented "never true" and 5 represented "always true". Given these eight aspects of ER are the main constructs of interest in the current project it was considered desirable to maximize power by removing measurement error by creating latent constructs for use in analyses. Information about the reliability of these constructs can be found in the results section.

Peer Emotion Socialization. An adapted version of the You and Your Friends questionnaire (YYF), initially developed from a parental measure of emotion socialization (the Emotions as a Child Scale; Magai, 1996, Klimes-Dougan et al., 2007)

and Crick's and Grotpeter's (1995, 1996) relational victimization scales, was used to gather youths perceptions of how best friends respond to their displays of anger and sadness/anxiety at T1. While the original YYF assess friend's responses to sadness, worry, and fear, the version used in the current study asked about best friend's responses to displays of anger and sadness/anxiety in an attempt to match target emotions to the behavioural and emotional adjustment outcomes assessed in this work. This questionnaire (see Appendix E) presented youths with vignettes asking them to imagine themselves experiencing very strong feelings of anger or sadness/anxiety while in the presence of their best friend. Participants were asked to rate how likely it was that their best friend would use a particular responses on a 5-point Likert scale (1 = never true to 5 = always true). Youths were asked to rate 18 different reactions their friends may use in response to each emotional display (i.e., anger and sadness/anxiety). Together these items produce the following six categories of peer emotion socialization: reward (i.e., problem solving, providing comfort and empathy), override (i.e., brief acknowledgement and distraction from the emotion), magnify (i.e., matching and mirroring back the emotion), neglect (i.e., ignoring the emotion), overt punishment (i.e., over physical or verbal aggression of the emotional display), and relational punishment (i.e., using relational aggression as a means to punish the emotional display). Each of the six subscales were composed of three items.

In terms of the items assessing peer emotion socialization responses to displays to anger, the subscales of reward ($\alpha = 0.72$), neglect ($\alpha = 0.77$), and relational punishment ($\alpha = 0.82$) all showed acceptable reliability. The overt punishment subscale could be improved to a reliability of 0.63 if the item "say that he/she don't like it when you act this

way" was removed; the decision to keep this two-item scale is justified given this questionnaire is young in its development. The override scale ($\alpha = 0.67$) was maintained for the same reason. However, the magnify scale could not be improved beyond the unacceptable range and was thus not included in analyses.

With respect to peer emotion socialization responses to displays of sadness/anxiety, the subscales of reward ($\alpha = 0.77$), neglect ($\alpha = 0.84$), and relational punishment ($\alpha = 0.80$) showed acceptable reliability. The subscale of overt punishment achieved acceptable reliability ($\alpha = 0.72$) if, once again, the item "say that he/she don't like it when you act this way" was dropped. As before, the override subscale ($\alpha = 0.68$) was kept given the novel nature of this questionnaire. The magnify scale was again dropped as its reliability could not be improved beyond the unacceptable range.

Chapter 3: Results

Overview of Analyses

The complete data set was initially screened for problems with normality and the rate of missing data. The methods used to manage missingness are explained in great detail below given the novel technique adopted. Subsequently, descriptive statistics, correlations as well as latent mean and covariance structures were explored to consider the distribution of data and provide an initial examination of hypothesized relationships. Finally, functioning within a structural equation modeling (SEM) framework, the process of establishing factorial invariance of latent constructs over time (Little, Preacher, Selig, & Card, 2007) was conducted for each of the eight aspects of ER. Finally, omega reliability measures, which are considered to be a more appropriate method of assessing

the reliability of latent constructs than Cronbach's alpha (Revelle & Zinbarg, 2009), were calculated for each aspect of ER individually following McDonald's (1999) recommendations. All SEM analyses were conducted using Mplus Version 6.0 (Muthén & Muthén, 2010).

Data Screening

Prior to analyses all items used to measure aspects of ER, peer emotion socialization, and adjustment were examined for normality and missingness using IBM SPSS Version 19. All items used to measure aspects of ER and participants' adjustment (depressed affect, anxiety, overt and relational aggression, and prosocial behaviour) were within acceptable limits of skewness and kurtosis. All items used to measure aspects of emotion socialization (both in response to displays of anger and sadness/anxiety) were within acceptable limits, save for four items from the relational and overt punishment subscale which showed low levels of kurtosis and positive skew. Given the low level of non-normality in these items, transformations were not performed in order to maintain consistency in the metric across variables in the data set. Finally, it was necessary to correct univariate outliers (i.e., $| z | > 3$) on 15 items by converting these values to the next most extreme score within three standard deviations of the mean (Kline, 2011).

Missing data procedures. In screening the data set, a range of 1.6 to 13.8 % of data was found to be missing across items over the four measurement occasions. Working under the assumption of data missing at random, multiple imputation procedures were adopted to ultimately produce 20 imputed data sets from which analyses were conducted (Enders, 2010). Further detail on the creation of these sets is warranted.

In selecting variables to include in the imputation procedure, all items expected to underlie latent constructs of ER as well as mean scores of peer emotion socialization and participants' adjustment were included. Consequently, the total number of items in the required data set was so large that it was impossible to impute the full item set whilst respecting the required proportion of observations to parameter estimates in the missing data model (i.e., N > P; Honaker, King, & Blackwell, 2010). As such, it was necessary to adopt a novel technique proposed by Little and colleagues from the University of Kansas Center for Research Methods and Data Analysis (Little, Howard, McConnell, & Stump, 2011), which makes use of Principal Component Analysis to create anchor variables capturing the variance within the entire data set and subsequently using these terms as anchors in the imputation model.

Imputing with principal components as anchors. This approach makes use of a Principal Component Analyses (PCA) to reduce the variance in a large data set down to a limited number of anchor variables, which are then used as auxiliary variables in imputation analyses (Little, Howard, McConnell, & Stump, 2011). The steps outlined for the PCA method by Little and colleagues (2011) were followed. Firstly, stochastic regression imputation was used as an intermediate step to obtain a complete data set allowing for the proper estimation of principal components. A PCA was then run on all variables within the data set (i.e., items underlying ER constructs, all mean scores), except for age, sex, and ordinal variables (i.e., grade) or nominal variables with more than 2 categories (i.e., school, language spoken at home, ethnicity). It was deemed desirable to maintain the full variability of age and sex in imputation model in order to maximize their contributions when predicting missingness. A total of 10 factors scores,

together representing 43% of the total variance in the data set, were used along with sex, age, grade, school, language spoken at home and ethnicity as anchor variables in imputing missingness. In order to satisfy the parameter to observation ratio required of the imputation process, the entire data set was divided into 72 "mini" data sets each including the aforementioned anchor variables and a portion of the variables from the larger set. Each mini data set was then independently imputed using the software *Amelia II* (Honaker, King, & Blackwell, 2010). Corresponding imputations (i.e., all first imputations from all mini-data sets were merged into one complete dataset, all second imputations from all mini-data sets were merged into one complete dataset etc.) were recombined to result in 20 imputed data sets upon which analyses were conducted using the TYPE = IMPUTATION command in Mplus Version 6.0 (Muthén & Muthén, 2010), which summarizes parameter estimates using Rubin's (1987) rules.

Reliability of Model and Parameter Estimation

There are few guidelines providing rules about an appropriate ratio of sample size to path estimation in the world of SEM, particularly with regards to longitudinal analyses. Furthermore, it has been suggested that traditional heuristics (e.g., 5:1, 10:1) are not adequate for SEM analyses (Little, 2013). Work by Little (2013) suggests that samples of 100 to 150 would most often be appropriate for social science questions given that the rate of error in estimation falls within an acceptable range at this sample size and little more is gained with larger samples. Furthermore, calculations by Little (2013) show that the ability to detect even small effects is sufficient with a sample size of about 120. Finally, with latent constructs that are locally justified and mean score variables with

good reliability (such as the latent constructs and means scores of this work), it has been proposed that one can reliably estimate a model, regardless of model size (i.e., number of estimated parameters; Little, 2013). The current work relies upon these proposed guidelines given that its sample size, even when conducting multigroup comparisons, meets these requirements.

Fit Guidelines

As has been recommended (Weston & Gore, 2006; Kline, 2011; Little, 2013), model fit was established by examining the following absolute and relative indices in combination: the Comparative Fit Index (CFI; Bentler, 1990), Tucker-Lewis Index (TLI; Tucker & Lewis, 1973), Root Mean Error of Approximation (RMSEA; Steiger, 1990), the RMSEA confidence intervals, and the Standardized Root Mean Square Residual (SRMR; Bentler, 1995). Following Weston and Gore (2006) and Kline (2011), stronger emphasis was placed on the RMSEA, RMSEA confidence intervals, CFI, and SRMR when making decisions about models testing hypotheses. While there remains much controversy regarding what is considered acceptable fit, empirical research suggests that CFI values between .90 and .95, RMSEA values between .05 and .10, and SRMR values between .08 and .15 are within acceptable bounds given the current sample size (Weston & Gore, 2006). Recommended guidelines for the TLI and CFI suggest that values of .85 and .90 indicate a mediocre fit, .90 to .95 represent acceptable fit, values between .95 to .99 suggest close fit and 1 represents exact fit (Little, 2013). Following recommendations by Weston and Gore, less stringent criteria will be used in the current study given the sample size is below 500.

Factorial Invariance

Consistent with recommendations in the literature (Little et al., 2007), factorial invariance was examined for each of the eight latent ER constructs in order to verify whether the respective indicators representing these constructs remained constant over time. Following the specification of an appropriate null model, each aspect of ER was independently fitted to and evaluated in the following sequence of steps: 1) the most unconstrained model, the configural model, 2) the weak/loading invariant model, and 3) the strong/intercept invariant model. As is suggested in the literature, the strict invariance model, where residuals of corresponding items over time are made to be equal, was not examined (Little et al., 2007).

Throughout the process of establishing factorial invariance, the adequacy of structural equation models are typically judged using practical fit indices, which includes absolute (i.e., RMSEA, SRMR) and relative (i.e., CFI, TLI) fit indices (Little, 2013; Kline, 2011). Relative fit indices provide measures of model fit relative to the default null model adopted by a given statistical program. Typically, the default null model used in SEM software packages is the independence null model, which assumes "zero covariances among indicators [...] in a model, but freely estimates the variances of these indicators" (Little et al., 2007, p. 360). This null model is an appropriate one for a single-group or single-occasion models, but not longitudinal or multi-group models – such as those of the current work – as it does not account for the covariances or associations among mean levels of indicators across time. As such, all models in the current work were evaluated using an alternate, more appropriate, null model in order to establish factorial invariance (Little et al., 2007). This alternate null model builds upon the

independence null model by placing additional parameter constraints specifying that indicator means and variances do not differ across time and group (i.e., gender, given above theory regarding its importance in emotion systems). As such, changes over time and across groups are more adequately captured by the alternate null model and, if change is present within the data, model fit improves relative to the use of the independence null model. This null model was manually specified and its fit information used to manually calculate the various *relative* fit indices (i.e., CFI, TLI) for all the models used to establish factorial invariance.

Once the alternate null models were specified, factorial invariance was examined for each of the eight ER constructs separately. In accordance with the literature (Little et al., 2007), the configurally invariant model tested the relationships or loadings of indicators to their corresponding constructs using a confirmatory factor analysis (CFA). The fixed-factor method of scaling was adopted, residuals of corresponding indicators were allowed to correlate across time (i.e., allowing the item-specific variability to covary); no further constraints were placed on model parameters. Following the establishment of an adequate latent measurement model (i.e., acceptable model fit of the configural invariant model), the second level of factorial invariance was specified, weak invariance. In the weak invariance model, corresponding indicator loadings were made to be equal over time (Little et al., 2007). If this level is successfully established, changes in the reliable variance of indicators are represented as changes in the latent constructs (i.e., common variance). Lastly, strong measurement invariance was established by maintaining previous constraints and additionally constraining corresponding indicator intercepts across time. If these conditions result in satisfactory model fit indices, changes

in the means of latent constructs adequately represent changes in the indicator intercepts (i.e., means). Model adequacy at each level of invariance was judged by examining changes in the model fit indices. Specifically, the CFI drop test (i.e., changes in CFI cannot be greater than 0.01; Cheung & Rensvold, 2002) and whether RMSEA values of two subsequent steps (e.g., weak and strong factorial invariance) fell within one another's confidence intervals (Timmons, 2010) were the two guidelines used to determine if factorial invariance held as constraints increased. Factorial invariance was successfully established for each ER construct and model fit statistics for these can be found in Tables 1 through 8.

Omega Reliability for ER

Of all the available methods to determine latent construct reliability, McDonald's omega (McDonald, 1999) has been determined to be the most accurate coefficient (Revelle & Zinbarg, 2009). This index of reliability is derived from the true score variance and error variances obtained from a single factor CFA (McDonald, 1999). For every time point, a 1-factor CFA solution was produced for each aspect of ER (Revelle & Zinbarg, 2009). Standardized indicator factor loadings and unique variances were then used to calculate omega reliabilities (McDonald, 1999). Across measurement points, omega reliabilities ranged from .73 to .80 for external functional sadness/anxiety ER strategies, from .70 to .82 for external dysfunctional sadness/anxiety ER strategies, from .63 to .73 for internal functional sadness/anxiety ER strategies, from .58 to .67 for internal dysfunctional sadness/anxiety ER strategies, from .65 to .75 for external functional anger ER strategies, from .70 to .81 for external dysfunctional anger ER

Table 1

Model fit statistics for tests of invariance in external functional ER responses to sadness/anxiety across 4 waves

Model Tested	χ^2	*df*	*p*	$\Delta\chi^2$	Δdf	*P*	RMSEA	RMSEA 90% CI	CFI	ΔCFI	TLI	Pass?
Null Model	1268.54	84	--	--	--	--	--	--	--	--	--	--
Measurement Model Estimates												
Configural Invariance	33.40	30	.30	--	--	--	.021	.000;.054	.997	--	.992	Yes
Weak Invaraince	35.85	36	.48	--	--	--	.000	.000;.045	1.00	.003	1.00	Yes
Strong Invaraince	44.38	42	.37	--	--	--	.015	.000;.046	.998	.002	.996	Yes
Latent Model Estimates												
Variance/Covariance	50.46	46	.31	5.98	4	.200	--	--	--	--	--	Yes
Latent Means	53.64	44	.15	9.26	2	.010	--	--	--	--	--	Yes

Note. *p*-values for latent structure at 0.005.

Table 2

Model fit statistics for tests of invariance in external dysfunctional ER responses to sadness/anxiety across 4 waves

Model Tested	χ^2	*df*	*p*	$\Delta\chi^2$	Δdf	*P*	RMSEA	RMSEA 90% CI	CFI	ΔCFI	TLI	Pass?
Null Model	1376.71	84	--	--	--	--	--	--	--	--	--	--
Measurement Model Estimates												
Configural Invariance	29.90	30	.47	--	--	--	.000	.000;.047	1.000	--	1.000	Yes
Weak Invaraince	37.38	36	.41	--	--	--	.012	.000;.047	.999	.001	.998	Yes
Strong Invaraince	59.90	42	.04	--	--	--	.041	.011;.06	.986	.013	.972	Yes
Latent Model Estimates												
Variance/Covariance	70.41	46	.012	10.51	4	.033	--	--	--	--	--	Yes
Latent Means	66.28	44	.017	6.37	2	.041	--	--	--	--	--	Yes

Note. *p*-values for latent structure at 0.005.

Table 3

Model fit statistics for tests of invariance in internal functional ER responses to sadness/anxiety across 4 waves

Model Tested	χ^2	*df*	*p*	$\Delta\chi^2$	Δdf	*P*	RMSEA	RMSEA 90% CI	CFI	ΔCFI	TLI	Pass?
Null Model	978.85	84	--	--	--	--	--	--	--	--	--	--
Measurement Model Estimates												
Configural Invariance	12.93	30	.990	--	--	--	.000	.000;.000	1.019	--	1.053	Yes
Weak Invaraince	25.10	36	.914	--	--	--	.000	.000;.018	1.012	.007	1.028	Yes
Strong Invaraince	41.84	42	.478	--	--	--	.000	.000;.043	1.000	.012	1.000	Yes
Latent Model Estimates												
Variance/Covariance	42.90	46	.603	1.06	4	.899	--	--	--	--	--	Yes
Latent Means	51.96	44	.192	10.12	2	.006	--	--	--	--	--	Yes

Note. *p*-values for latent structure at 0.005.

Table 4

Model fit statistics for tests of invariance in internal dysfunctional ER responses to sadness/anxiety across 4 waves

Model Tested	χ^2	*df*	*p*	$\Delta\chi^2$	Δdf	*P*	RMSEA	RMSEA 90% CI	CFI	ΔCFI	TLI	Pass?
Null Model	975.46	84	--	--	--	--	--	--	--	--	--	--
Measurement Model Estimates												
Configural Invariance	39.32	30	.119	--	--	--	.035	.000;.063	.990	--	.971	Yes
Weak Invaraince	46.83	36	.107	--	--	--	.035	.000;.060	.988	.002	.972	Yes
Strong Invaraince	55.19	42	.084	--	--	--	.035	.000;.059	.985	.003	.970	Yes
Latent Model Estimates												
Variance/Covariance	62.31	46	.055	7.12	4	.129	--	--	--	--	--	Yes
Latent Means	84.84	44	.000	29.65	2	.000	--	--	--	--	--	No
Gender	156.44	95	.001	101.26	53	.000	--	--	--	--	--	No
Time	149.01	94	.000	93.83	52	.000	--	--	--	--	--	No

Note. *p*-values for latent structure at 0.005.

Table 5

Model fit statistics for tests of invariance in external functional ER responses to anger across 4 waves

Model Tested	χ^2	*df*	*p*	$\Delta\chi^2$	Δdf	*P*	RMSEA	RMSEA 90% CI	CFI	ΔCFI	TLI	Pass?
Null Model	1126.00	84	--	--	--	--	--	--	--	--	--	--
Measurement Model Estimates												
Configural Invariance	24.01	30	.772	--	--	--	.000	.000;.034	1.006	--	1.016	Yes
Weak Invaraince	31.35	36	.689	--	--	--	.000	.000;.036	1.010	.001	1.010	Yes
Strong Invaraince	39.65	42	.575	--	--	--	.000	.000;.039	1.005	.002	1.005	Yes
Latent Model Estimates												
Variance/Covariance	46.276	46	.461	6.63	4	.157	--	--	--	--	--	Yes
Latent Means	50.66	44	.227	11.02	2	.004	--	--	--	--	--	No
Gender	141.27	95	.002	101.62	53	.000	--	--	--	--	--	No
Time	115.89	94	.062	76.24	52	.016	--	--	--	--	--	Yes

Note.*p*-values for latent structure at 0.005.

Table 6

Model fit statistics for tests of invariance in external dysfunctional ER responses to anger across 4 waves

Model Tested	χ^2	*df*	*p*	$\Delta\chi^2$	Δdf	*P*	RMSEA	RMSEA 90% CI	CFI	ΔCFI	TLI	Pass?
Null Model	1410.84	84	--	--	--	--	--	--	--	--	--	--
Measurement Model Estimates												
Configural Invariance	32.04	30	.366	--	--	--	.016	.000;.051	.998	--	.996	Yes
Weak Invaraince	34.09	36	.560	--	--	--	.000	.000;.042	1.001	.003	1.003	Yes
Strong Invaraince	44.75	42	.357	--	--	--	.016	.000;.047	.998	.004	.996	Yes
Latent Model Estimates												
Variance/Covariance	51.33	46	.273	6.57	4	.160	--	--	--	--	--	Yes
Latent Means	50.01	44	.247	5.26	2	.0722	--	--	--	--	--	Yes

Note. *p*-values for latent structure at 0.005.

Table 7

Model fit statistics for tests of invariance in internal functional ER responses to anger across 4 waves

Model Tested	χ^2	*df*	*p*	$\Delta\chi^2$	Δdf	*P*	RMSEA	RMSEA 90% CI	CFI	ΔCFI	TLI	Pass?
Null Model	771.85	84	--	--	--	--	--	--	--	--	--	--
Measurement Model Estimates												
Configural Invariance	25.69	30	.691	--	--	--	.000	.000;.038	1.006	--	1.018	Yes
Weak Invaraince	28.08	36	.824	--	--	--	.000	.000;.028	1.012	.005	1.027	Yes
Strong Invaraince	38.81	42	.612	--	--	--	.000	.000;.038	1.005	.007	1.009	Yes
Latent Model Estimates												
Variance/Covariance	53.20	46	.217	14.39	4	.006	--	--	--	--	--	Yes
Latent Means	49.03	44	.278	10.22	2	.006	--	--	--	--	--	Yes

Note.*p*-values for latent structure at 0.005.

Table 8

Model fit statistics for tests of invariance in internal dysfunctional ER responses to anger across 4 waves

Model Tested	χ^2	*df*	*p*	$\Delta\chi^2$	Δdf	*P*	RMSEA	RMSEA 90% CI	CFI	ΔCFI	TLI	Pass?
Null Model	1040.77	84	--	--	--	--	--	--	--	--	--	--
Measurement Model Estimates												
Configural Invariance	63.11	30	.00	--	--	--	.066	.043;.080	.965	--	.903	Yes
Weak Invaraince	73.48	36	.00	--	--	--	.064	.043;.085	.961	.005	.909	Yes
Strong Invaraince	79.24	42	.00	--	--	--	.059	.039;.079	.961	.000	.922	Yes
Latent Model Estimates												
Variance/Covariance	80.68	46	.001	1.440	4	.837	--	--	--	--	--	Yes
Latent Means	107.255	44	.000	28.01	2	.000	--	--	--	--	--	No
Gender	170.89	95	.000	91.64	53	.000	--	--	--	--	--	No
Time	164.94	94	.000	85.70	52	.002	--	--	--	--	--	No

Note.*p*-values for latent structure at 0.005.

strategies, from .54 to .70 internal functional anger ER, and from .64 to .69 for internal dysfunctional anger ER strategies. Given that this work is novel both in its area of study and its measurement of ER, the decision to make use of all ER constructs was made despite the presence of some lesser reliabilities.

Descriptive Statistics and Preliminary Analyses

Descriptive information for the mean scores and latent variables as well as the correlations among variables can be found in Appendix F. Tests were conducted for each of the eight ER models in order to determine whether latent covariance/variance and mean structures were homogeneous across the four measurement occasions and groups (i.e., gender). These analyses were done to rule out a moderating effect of time of measurement on ER as well as to determine for which ER constructs subsequent analyses should be conducted separately for boys and girls so that the moderating effects of gender could be appropriately captured. Chi-squared difference tests are typically used to judge models testing the homogeneity of covariance/variance and mean structures in relation to the statistical fit information of the strong invariance model. In the current work, a *p* value of 0.005 was selected in order to account for family-wise error and the sensitivity of the chi-squared difference test given the current sample size. First, omnibus tests were performed to test for the stability of the covariance/variance and, subsequently, the mean structures of each ER construct. No significant differences in the covariance structures were noted supporting a steady rate of change across time. Gender differences in the mean structures were noted for the following ER constructs: external functional angry, internal dysfunctional angry, and internal dysfunctional sadness/anxiety. As such,

analyses considering these three ER constructs were conducted separately for boys and girls, while the remaining constructs (i.e., external functional sadness/anxiety, external dysfunctional sadness/anxiety, internal functional sadness/anxiety, external dysfunctional angry, internal functional angry) were tested across the two groups. Results of these tests of homogeneity can be found in Tables 1 through 8.

Research Question 1: How Does Each Aspect of ER Change Over Time?

Given the lack of work examining adolescent ER, it was a goal to explore initial use and proposed linear changes in eight different ER aspects over the course of one school year. Second-order growth curve models were produced for each of the four ER strategies (i.e., external functional, external dysfunctional, internal functional, internal dysfunctional) for each emotion (i.e., anger, sadness/anxiety) separately. In order to test the hypothesis of linear growth across all ER strategies, eight separate linear change models were examined. For each model, the repeated measure first-order latent ER variables were used to model the second-order latent variables: the intercept and slope. In order to achieve an identified model whilst estimating the means and variances for both the intercept and slope, it was necessary to fix the indicator mean loadings of the first-order ER construct at Time 1 to 0. Initial levels of ER strategies were reflected in the intercept mean and variability in this value was captured by estimating the variance around the mean. Changes in ER over time were estimated with a slope mean and variability in the rate of change was captured by estimating the interindividual variation around the mean. A linear trend was specified by fixing each of the intercept loadings to 1, while the loadings for the slope were fixed to 0 at Time 1, 1 at Time 2, 3 at Time 4,

and 4 at Time 5. Specifying the slope loadings in this way accounted for the time delays across data collection. Additionally, the latent intercept and slope were allowed to covary. Additionally, growth curves were freely estimated for boys and girls separately (i.e., mean and variance of the intercept and slope were not constrained to be equal across groups) in the three models were preliminary analyses suggested sex differences (i.e., external functional angry, internal dysfunctional angry, and internal dysfunctional sadness/anxiety). In order to test equality across groups, each latent value (i.e. slope mean, slope variance, intercept mean, and intercept variance) was successively constrained to be equal for boys and girls. Comparisons of the constrained and free models were made using the χ^2 difference test in order to determine the model that best represented the data.

Growth curve: External functional ER responses to sadness/anxiety (EFSA). A model was run to test the hypothesis that EFSA would change in a linear fashion over time. The direction of change was not uniquely specified given reasonable expectations for either direction. Model fit indices for the linear EFSA model suggested a good fit to the data, $\chi^2_{(46,\, n = 253)} = 51.78$, $p = .26$; RMSEA = $.02_{(.00;\, .049)}$; SRMR = .043; TLI = .99; CFI = .99, supporting a hypothesis of linear change across the school year. The unstandardized mean intercept value was estimated at $M_i = 3.063$, $p = .00$ and the unstandardized mean slope value at $M_s = -.068$, $p = .00$ indicating change occurred in a downward fashion. Model estimation revealed the unstandardized intercept variance to be $D_i = .734$, $p = .00$ and the slope variance as $D_s = .022$, $p = .00$. The estimated correlation between the intercept and slope was $r_{is} = -.401$, $p = .02$, a moderate effect. These results suggest a significant amount of variability around the initial level and

change in external functional ER responses to sadness/anxiety. Specifically, it seems that over the course of the academic year, youth significantly decreased in their self-reported average use of external functional ER strategies used in response to experiences of sadness/anxiety. This decline was particularly strong for those initially reporting lower levels of external functional ER responses to sadness/anxiety at Time 1. In contrast, the decline in skills was not as strong for those reporting higher average use of external functional ER skills in response to sadness/anxiety at Time 1. Additionally, there is variability in the starting point and change trajectories of external functional sadness/anxiety ER strategies supporting subsequent analyses exploring potential predictors of this variability (Byrne, 2012, p.338). This growth curve is depicted in Figure 1.

Growth curve: External dysfunctional ER responses to sadness/anxiety (EDSA). A model was run to test the hypothesis that EDSA would change linearly over time. Together, review of all model fit indices for the linear EDSA model suggested a close fit $\chi^2_{(46,\, n = 253)} = 82.73$, $p = .00$; RMSEA = $.056_{(.04;\ .08)}$; SRMR = .060; TLI = .97; CFI = .96, supporting the linear change hypothesis. The unstandardized mean intercept value was estimated at $M_i = 1.496$, $p = .00$ and the unstandardized mean slope value at $M_s = -.008$, $p = .59$, indicating non-significant decreases over time. Model estimation revealed the unstandardized intercept variance to be $D_i = .270$, $p = .00$ and the slope variance as $D_s = .018$, $p = .00$. The estimated correlation between the intercept and slope was $r_{is} = -.440$, $p = .00$. As such, those who reported higher use of external dysfunctional ER skills in response to sadness/anxiety showed smaller decreases in the use of these skills over time. The significant amount of variability around the initial level and change

in ER responses provides reason to further explore potential predictors of this heterogeneity. This growth curve is depicted in Figure 1.

Growth curve: Internal functional ER responses to sadness/anxiety (IFSA). A model was run to test the hypothesis that IFSA would change linearly over time. Model fit indices for the linear IFSA model suggested a close/good fit $\chi^2_{(46,\, n = 253)} = 49.608$, $p = .33$; RMSEA = $.018_{(.00;\, .046)}$; SRMR = .074; TLI = .99; CFI = 1, which supports a hypothesis of linear change across the school year. The unstandardized mean intercept value was estimated at $M_i = 2.506$, $p = .00$ and the unstandardized mean slope value at $M_s = -.055$, $p = .00$, thus indicating decreases in IFSA over time. Model estimation revealed the unstandardized intercept variance to be $D_i = .281$, $p = .00$ and the slope variance as $D_s = .005$, $p = .23$. The estimated correlation between the intercept and slope was $r_{is} = -.088$, $p = .772$, indicating initial levels and changes in IFSA were not related. It seems that, over time, youth report decreasing levels of internal functional ER skills in response to experiences of sadness/anxiety and this decrease remains consistent regardless of initial levels of IFSA skills. This growth curve is depicted in Figure 1.

Growth curve: Internal dysfunctional ER responses to sadness/anxiety (IDSA). A model was run to test the hypothesis that IDSA would decrease linearly over time. Given preliminary analyses indicated sex differences in IDSA, a test of linear change was run for boys and girls separately. Based on Weston and Gore's (2006) guidelines, fit indices for the freely estimated model suggested an acceptable fit $\chi^2_{(97,\, n = 253)} = 151.22$, $p = .00$; RMSEA = $.067_{(.045;\, .087)}$; SRMR = .097; TLI = .91; CFI = .94. In the model for boys, the unstandardized mean intercept value was estimated at $M_{ib} = 1.81$, $p = .00$ and the unstandardized mean slope value at $M_{sb} = -.073$, $p = .00$. Model

estimation revealed the unstandardized intercept variance to be D_{ib} = .121, p = .46 and the slope variance as D_{sb} = .006, p = .30. The estimated correlation between the intercept and slope was non-significant at r_{isb}= .14, p = .88. Results for the girls' model produced an intercept value was estimated at M_{ig} = 1.984, p = .00 and the unstandardized mean slope value at M_{sg} = -.079, p = .00. Model estimation revealed the unstandardized intercept variance to be D_{ig} = .221, p = .00 and the slope variance as D_{sg} = .005, p = .24. The estimated correlation between the intercept and slope was non-significant at r_{isg} = .015, p = .95.

Testing for the equality of the intercept and slope values across groups followed in order to establish if these sex differences in IDSA were meaningful. Model fit statistics and the results of χ^2 difference tests comparing each model with a single fixed path to the entirely free model can be seen in Table 9. As indicated by the χ^2 difference tests results in Table 9, models where the intercept variance, slope variance, and mean slope were fixed were equally as good as the free model. The model where the intercept mean was free to vary was significantly different from the model where it was fixed. Thus, the final IDSA model allowed the intercept mean to vary across groups and all other latent growth constructs were fixed. The final model suggested an acceptable fit using Weston and Gore's standards (2006), $\chi^2_{(100,\, n = 253)}$ = 152.95, p = .00; RMSEA = $.065_{(.043;\, .085)}$; SRMR = .102; TLI = .92; CFI = .94. Across boys and girls the mean unstandardized slope value was M_{sf} = -.076, p = .00, the variance around the slope was D_{sf} = .006, p = .11, and the unstandardized intercept variance was D_{if} = .179, p = .00. The unstandardized mean intercept value for the boys was estimated at M_{ibf} = 1.816, p = .00 and at M_{igf} = 1.979, p = .00 for the girls. Thus, boys and girls showed decreasing levels of dysfunctional internal

ER skills (e.g., negative self-talk) in response to experiences of sadness/anxiety over time; however, because girls began the year using slightly more of these skills, they continued to make use of more negative cognitive ER strategies at the end of the year than did boys. The heterogeneity in latent constructs supports the exploration of predictor variables. These growth curves are shown in Figure 1.

Growth curve: External functional ER responses to anger (EFA). A model was run to test the hypothesis that EFA would change in a linear fashion over time. Given preliminary analyses indicated sex differences in EFA, a test of linear change was run for boys and girls separately. Fit indices for the freely estimated model suggested a close fit $\chi^2_{(97,\, n=253)} = 105.37$, $p = .26$; RMSEA = $.026_{(.00;\, .055)}$; SRMR = .072; TLI = .99; CFI = .99, providing support for linear change in EFA over the course of the academic year. For the boys' model, the unstandardized mean intercept value was estimated at $M_{ib} = 2.806$, $p = .00$ and the unstandardized mean slope value at $M_{sb} = -.098$, $p = .00$. Model estimation revealed the unstandardized intercept variance to be $D_{ib} = .695$, $p = .00$ and the slope variance as $D_{sb} = .022$, $p = .035$. The estimated correlation between the intercept and slope was non-significant at $r_{isb} = -.23$, $p = .322$. Results for the girls' model produced an intercept value was estimated at $M_{ig} = 3.249$, $p = .00$ and the unstandardized mean slope value at $M_{sg} = -.051$, $p = .046$. Model estimation revealed the unstandardized intercept variance to be $D_{ig} = .419$, $p = .00$ and the slope variance as $D_{sg} = .021$, $p = .037$. The estimated correlation between the intercept and slope was non-significant at $r_{isg} = -.258$, $p = .36$.

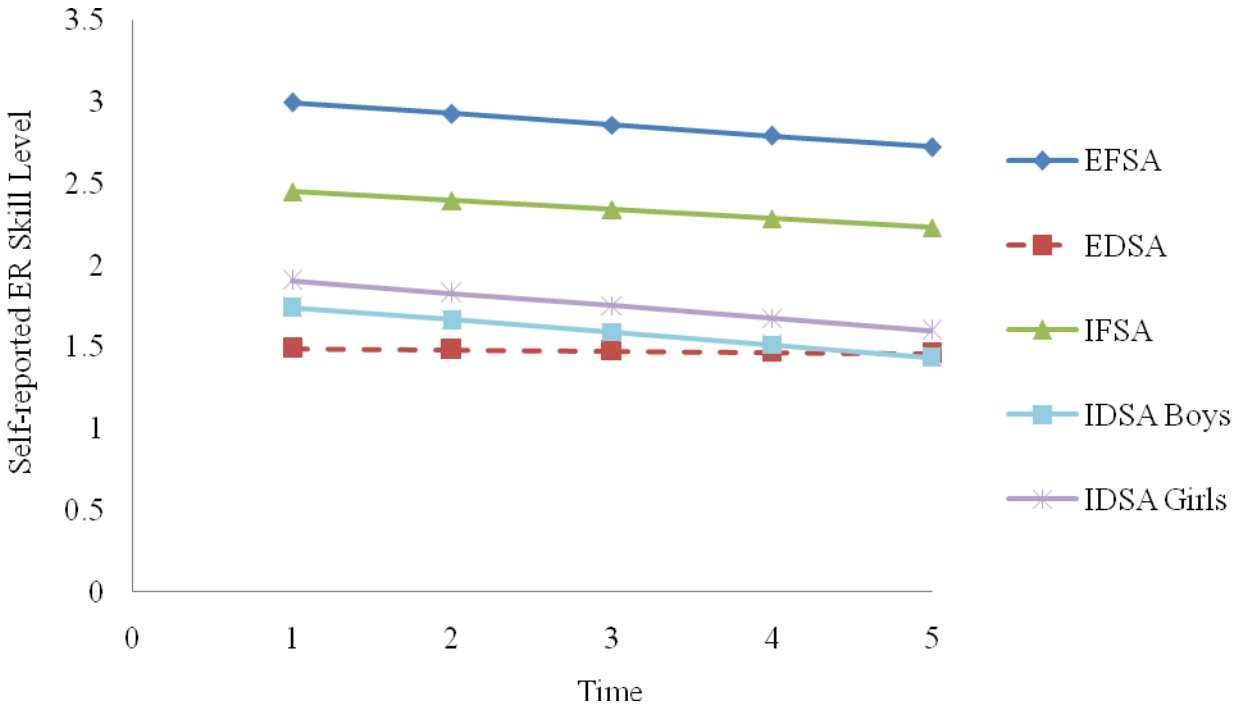

Figure 1. Changes in emotion regulation strategies used in response to sadness/anxiety. The dashed line represents a non-significant slope and the solid lines represent significant slopes. EFSA = external functional responses to sadness/anxiety; EDSA = external dysfunctional responses to sadness/anxiety; IFSA = internal functional responses to sadness/anxiety; IDSA = internal dysfunctional responses to sadness/anxiety.

Table 9

Testing for the equality of the IDSA intercept and slope values across boys and girls

Model Tested	χ^2	*df*	*P*	$\Delta\chi^2$	Δdf	*p*	RMSEA	RMSEA 90% CI	SRMR	CFI	TLI	Decision
All Paths Freely Estimated	151.22	97	.00	--	--	--	.067	.045;.087	.097	.94	.91	--
					Fixing Paths							
Fix intercept variance	152.52	98	.00	1.29	1	.25	.066	.045;.086	.101	.94	.91	Retain
Fix slope variance	151.10	98	.00	.12	1	.73	.066	.044;.086	.097	.94	.92	Retain
Fix intercept mean	155.86	98	.00	4.64	1	.03	.068	.047;.088	.099	.93	.91	Reject
Fix slope mean	151.42	98	.00	.2	1	.65	.066	.044;.086	.097	.94	.92	Retain

Testing for the equality of the intercept and slope values across groups followed in order to establish if these sex differences were meaningful. Model fit statistics and the results of χ^2 difference tests comparing each model with a single fixed path to the completely free model can be seen in Table 10. As indicated by the χ^2 difference tests results in Table 10, models where the intercept variance, slope variance and slope mean were fixed across genders were equally as good as models where they were free to vary. However, the model where mean initial levels of EFA were fixed could not be retained given the χ^2 difference test result as shown in Table 10. Consequently, the final EFA model freed the intercept mean and fixed all other values equal across groups. This final model suggested a good/close fit $\chi^2_{(100,\, n = 253)} = 109.80$, $p = .24$; RMSEA = $.028_{(.00;\, .056)}$; SRMR = .081; TLI = .99; CFI = .99, providing support for linear change in EFA over the course of the academic year. Across boys and girls the mean unstandardized slope value was $M_{sf} = -.074$, $p = .00$, the unstandardized variance around the slope was $D_{sf} = .023$, $p = .00$, and the unstandardized intercept variance was $D_{if} = .547$, $p = .00$. For the boys' curve, the unstandardized mean intercept value was estimated at $M_{ibf} = 2.761$, $p = .00$ and the girls' unstandardized mean intercept value was estimated at $M_{igf} = 3.293$, $p = .00$. As such, change was linear and occurring in a decreasing fashion. Both girls and boys both showed decreases in the EFA skills used over the school year, yet girls appear to report higher initial levels of functional external skills used in response to anger; thus, at the end of the year, girls are left with higher levels of EFA skills relative to boys who started the year at a "deficit." These growth curves are depicted in Figure 2.

Table 10

Testing for the equality of the EFA intercept and slope values across boys and girls

Model Tested	χ^2	*df*	*P*	$\Delta\chi^2$	Δdf	*p*	RMSEA	RMSEA 90% CI	SRMR	CFI	TLI	Decision
All Paths Freely Estimated	105.37	97	.26	--	--	--	.026	.00;.055	.072	.99	.99	--
					Fixing Paths							
Fix intercept variance	107.36	98	.24	1.99	1	.16	.028	.00;.056	.08	.99	.99	Retain
Fix slope variance	105.39	98	.29	.04	1	.87	.024	.00;.054	.072	.99	.99	Retain
Fix intercept mean	116.91	98	.09	11.54	1	.00	.039	.00;.064	.086	.98	.98	Reject
Fix slope mean	107.51	98	.24	2.14	1	.14	.028	.00;.056	.073	.99	.99	Retain

Growth curve: External dysfunctional ER responses to anger (EDA). A model was run to test the hypothesis that EDA would change linearly over time. Model fit indices for the linear EDA model suggested a close fit $\chi^2_{(46,\, n = 253)} = 59.58$, $p = .08$; RMSEA = $.034_{(.00;\, .057)}$; SRMR = .059; TLI = .99; CFI = .99, which supports a hypothesis of linear change across the school year. The unstandardized mean intercept value was estimated at $M_i = 1.775$, $p = .00$ and the unstandardized mean slope value at $M_s = .006$, $p = .67$. Model estimation revealed the unstandardized intercept variance to be $D_i = .40$, $p = .00$ and the slope variance as $D_s = .008$, $p = .019$. The estimated correlation between the intercept and slope was non-significant at $r_{is} = -.274$, $p = .15$, indicating initial levels and changes in EDA were not related. Thus, youth reported using low levels of external dysfunctional ER skills in response to experiences of anger and these levels increased, albeit, by a non-significant and minimal over the year; however, there was significant heterogeneity around the intercept and change factors. This growth curve is depicted in Figure 2.

Growth curve: Internal functional ER responses to anger (IFA). A model was run to test the hypothesis that IFA would change in a linear way over time. Model fit indices for the linear IFA model suggested a close fit $\chi^2_{(46,\, n = 253)} = 56.50$, $p = .14$; RMSEA = $.03_{(.00;\, .054)}$; SRMR = .059; TLI = .98; CFI = .98, which supports a hypothesis of linear change across the school year. The unstandardized mean intercept value was estimated at $M_i = 2.62$, $p = .00$ and the unstandardized mean slope value at $M_s = -.052$, $p = .00$. Model estimation revealed the unstandardized intercept variance to be $D_i = .248$, $p = .00$ and the slope variance as $D_s = .003$, $p = .431$. The estimated correlation between the intercept and slope was non-significant at $r_{is} = -.401$, $p = .70$. These results showed

that youth used less internal functional strategies in response to anger over the course of the school year and this change was consistent regardless of how often these skills were initially used. This growth curve is depicted in Figure 2.

Growth curve: Internal dysfunctional ER responses to anger (IDA). A model was run to test the hypothesis that IDA would change linearly over time. Given that preliminary analyses indicated sex differences in IDA, a test of linear change was run for boys and girls separately. Fit indices for the freely estimated model suggested an acceptable fit $\chi^2_{(97,\, n = 253)} = 168.99$, $p = .00$; RMSEA = $.077_{(.057;\, .096)}$; SRMR = .099; TLI = .90; CFI = .92. In the linear model for boys, the unstandardized mean intercept value was estimated at $M_{ib} = 2.168$, $p = .00$ and the unstandardized mean slope value at $M_{sb} = -.072$, $p = .00$. Model estimation revealed the unstandardized intercept variance to be $D_{ib} = .231$, $p = .01$ and the slope variance as $D_{sb} = .001$, $p = .84$. The estimated correlation between the intercept and slope was non-significant at $r_{isb} = -.70$, $p = .60$. Results for the girls' model produced an intercept value was estimated at $M_{ig} = 2.293$, $p = .00$ and the unstandardized mean slope value at $M_{sg} = -.073$, $p = .00$. For the girls, the unstandardized intercept variance to be $D_{ig} = .292$, $p = .00$ and the slope variance as $D_{sg} = .001$, $p = .85$. The estimated correlation between the intercept and slope was non-significant at $r_{isg} = -.36$, $p = .66$.

Testing for the equality of the intercept and slope values across groups followed in order to establish if sex differences were meaningful. Individual intercept and slope mean and variances terms were sequentially fixed and χ^2 difference tests used compare results to the free model. These analyses (model fit indices and χ^2 difference tests are seen in Table 11) showed that every model with a fixed term was not significantly

different from the model where the corresponding term was free, suggesting that analyses with a single group was most appropriate. A linear growth curve was then conducted across groups, which resulted in a mediocre but passable fit using Weston and Gore's (2006) guidelines, $\chi^2_{(47,\, n = 253)} = 120.57$, $p = .00$; RMSEA = $.080_{(.063;\ .098)}$; SRMR = .091; TLI = .88; CFI = .92. Furthermore, the novel nature of this work substantiated the decision to continue exploration of this model. The unstandardized mean intercept value in the final model was estimated at $M_{if} = 2.262$, $p = .00$ and the unstandardized mean slope value at $M_{sf} = -.077$, $p = .00$. Model estimation revealed the unstandardized intercept variance to be $D_{if} = .281$, $p = .00$ and the slope variance as $D_{sf} = .002$, $p = .53$. Youth self-reports indicated the use of internally directly dysfunctional ER strategies in response to anger decreased over the course of the year. There was also substantial variability in the reported initial levels of internally directly dysfunctional ER strategies in response to anger. This curve can be seen in Figure 2.

Research Question 2: How Does Best Friend Emotion Socialization Predict ER?

The following models explored how best friend's responses to emotional displays predicted initial levels and changes in ER skills for anger and sadness/anxiety separately. Predictors were entered into each of the retained models in order to identify if variations in initial levels and changes in ER could be accounted for by dimensions of best friend emotion socialization. In each model, latent ER terms were regressed onto the mean scores representing best friend's responses to anger or sad/anxiety: reward, override, neglect, overt aggression, and relational aggression. Model fit was established in the same manner as in the first research question.

Table 11

Testing for the equality of the IDA intercept and slope values across boys and girls

Model Tested	χ^2	*df*	*P*	$\Delta\chi^2$	Δdf	*p*	RMSEA	RMSEA 90% CI	SRMR	CFI	TLI	Decision
All Paths Freely Estimated	168.99	97	.00	--	--	--	.077	.057;.096	.099	.92	.90	--
					Fixing Paths							
Fix intercept variance	169.53	98	.00	.98	1	.32	.076	.056;.095	.100	.92	.90	Retain
Fix slope variance	168.97	98	.00	.027	1	.87	.076	.056;.095	.099	.92	.90	Retain
Fix intercept mean	170.97	98	.00	1.97	1	.16	.077	.057;.096	.10	.92	.90	Retain
Fix slope mean	169.09	98	.00	.096	1	.75	.076	.056;.095	.099	.92	.90	Retain

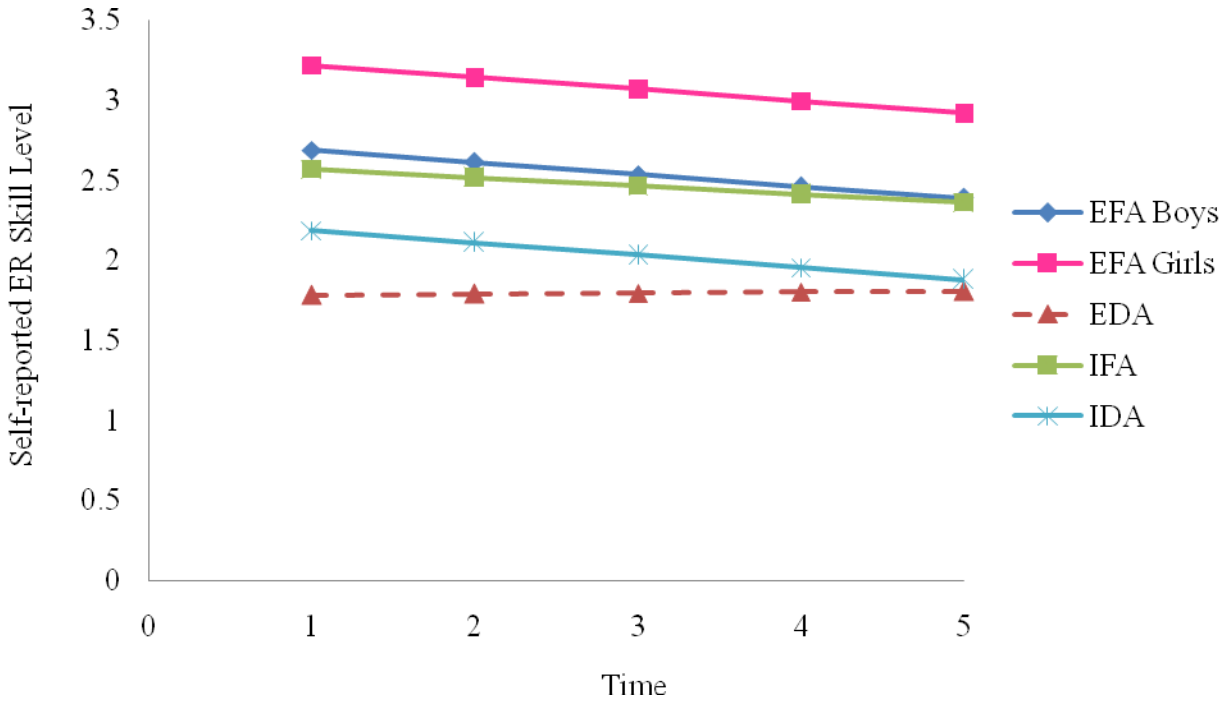

Figure 2. Changes in emotion regulation strategies used in response to anger. The dashed line represents a non-significant slope and the solid lines represent significant slopes. EFA = external functional responses to anger; EDA = external dysfunctional responses to anger; IFA = internal functional responses to anger; IDA = internal dysfunctional responses to anger.

Best friend emotion socialization predicting external functional ER responses to sadness/anxiety (EFSA). Model fit indices for the model with emotion socialization predictors suggested a close/good fit $\chi^2_{(96,\, n = 253)} = 97.11$, $p = .45$; RMSEA = $.007_{(.00;\, .034)}$; SRMR = .037; TLI = .99; CFI = .99. Reward and override strategies were expected to positively predict EFSA. Results indicated that reward had moderately strong and associations with initial levels (β =.45, $p = .00$) and changes (β = -.42, $p = .01$) in EFSA. No other emotion socialization term significantly predicted initial levels of changes in external functional ER strategies in response to sadness/anxiety. The more youth perceived their best friend as responding to their displays of sadness/anxiety with empathetic and problem-solving responses the more likely they were to use functional external ER responses when sad/anxious at Time 1. Additionally, the more youth perceived their best friend as responding to their displays of sadness/anxiety with empathetic and problem-solving responses the less quickly their external functional ER responses to experiences of sadness/anxiety decreased. A diagram including these paths can be seen in Figure 3.

Best friend emotion socialization predicting external dysfunctional ER responses to sadness/anxiety (EDSA). Review of all fit indices in combination suggested the model with emotion socialization as predictors of EDSA suggested a good fit $\chi^2_{(96,\, n = 253)} = 132.75$, $p = .01$; RMSEA = $.039_{(.021;\, .054)}$; SRMR = .051; TLI = .96; CFI = .97. Neglect, overt aggression, and relational aggression were expected to positively predict EDSA. Results indicated that youths emotion socialization responses of a relationally aggressive flavour moderately and positively predicted initial levels of external dysfunctional ER skills (β =.34, $p = .00$). Youths responses of an overtly

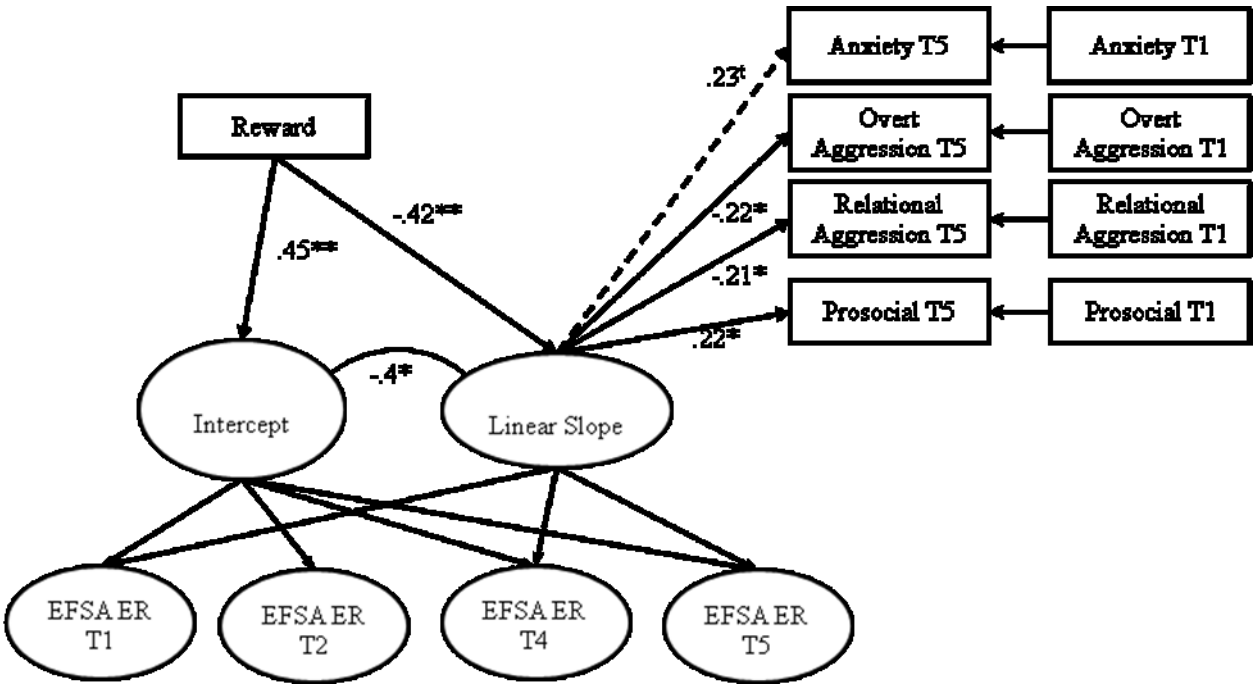

Figure 3. Final model depicting associations between best friend emotion socialization, externally directed functional ER responses to sadness/anxiety, and adjustment. EFSA = external functional responses to sadness/anxiety. $^{**}p \leq .01$. $^{*}p < .05$. $t < .1$.

aggressive manner to displays to sadness/anxiety negatively and moderately predicted changes in external dysfunctional ER skills over time (β = -.32, p = .02). The more youth viewed their best friends as responding to their displays of sadness/anxiety with relational aggression behaviours the higher their initial levels of dysfunctional external responses to experiences of sadness/anxiety. Similarly, the more youths viewed their best friends as responding to their sadness/anxiety with overt aggression the smaller the decreases were seen in their dysfunctional external ER responses to sadness/anxiety. These paths can be seen in Figure 4.

Best friend emotion socialization predicting internal functional ER responses to sadness/anxiety (IFSA). Model fit indices for the IFSA model with emotion socialization constructs as predictors of the ER latent constructs suggested a exceptional/perfect fit $\chi^2_{(96,\, n = 253)} = 87.77$, p = .71; RMSEA = $.00_{(.00;\, .026)}$; SRMR = .065; TLI = 1; CFI = 1. Reward and override strategies were expected to positively predict IFSA. Only reward was a significant and strong predictor of initial levels of IFSA (β = .53, p = .00). There were no associations with changes in IFSA; an understandable result given the low variability in this construct. Thus, youth who reported higher levels of functional internally directed ER responses to the experience of sadness/anxiety perceived their friends as being empathetic and validating of these emotions. This association can be seen in Figure 5.

Best friend emotion socialization predicting internal dysfunctional ER responses to sadness/anxiety (IDSA). Model fit indices for the multigroup (i.e., boys and girls) IDSA model with emotion socialization constructs as predictors suggested an

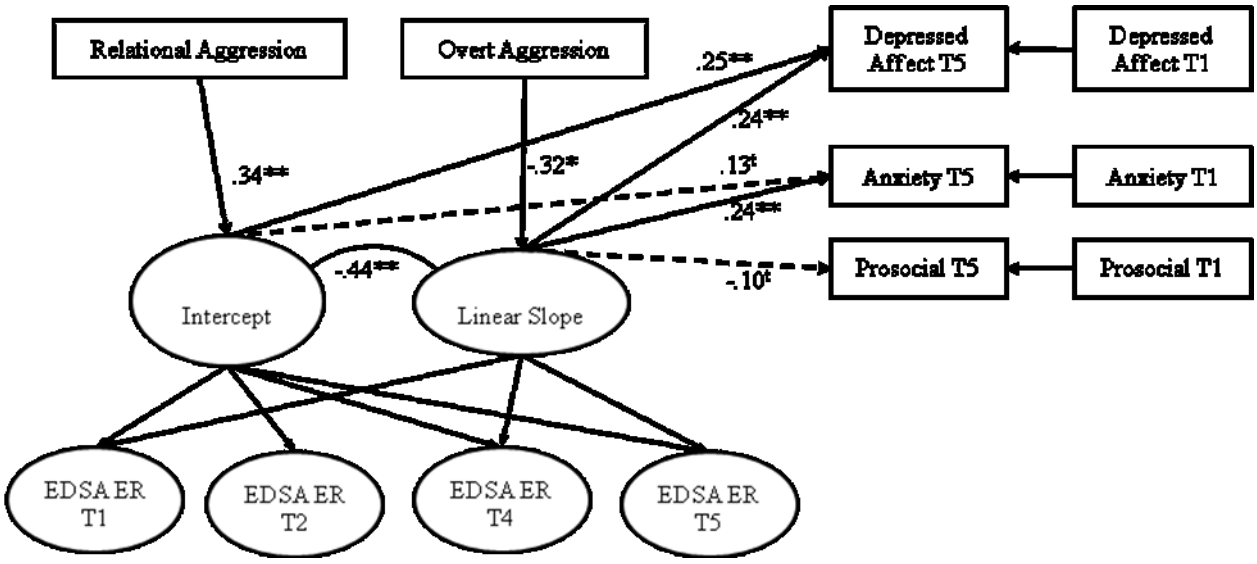

Figure 4. Final model depicting associations between best friend emotion socialization, externally directed dysfunctional ER responses to sadness/anxiety, and adjustment. EDSA = external dysfunctional responses to sadness/anxiety. $^{**}p \leq .01$. $^{*}p < .05$. $t < .1$.

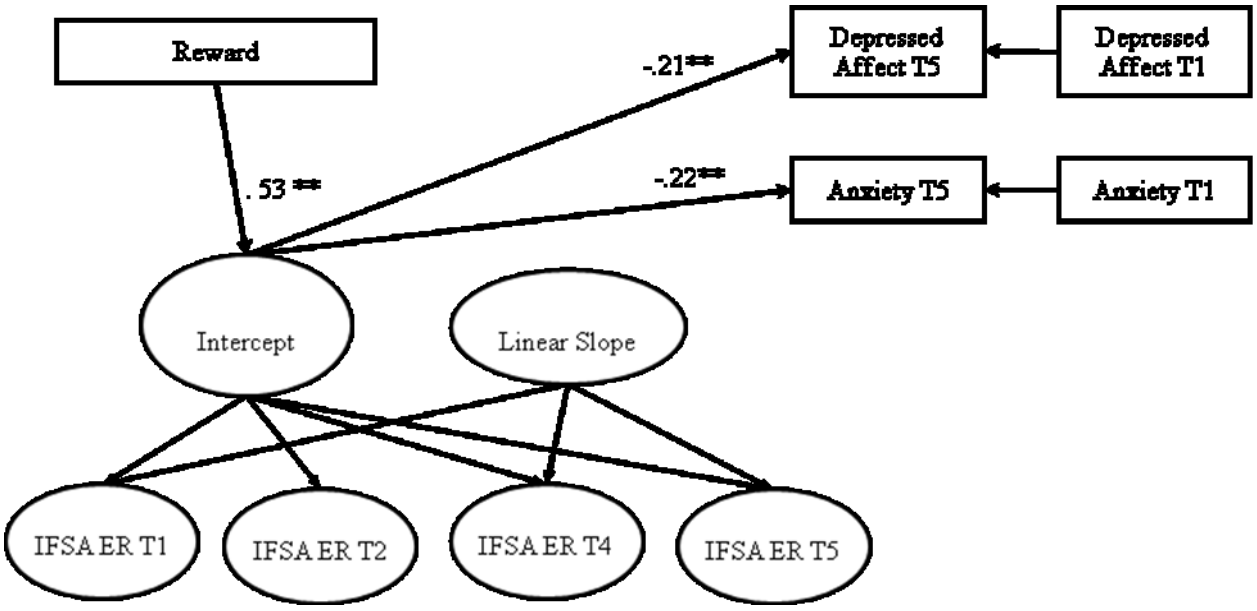

Figure 5. Final model depicting associations between best friend emotion socialization, internally directed functional ER responses to sadness/anxiety, and adjustment. IFSA = internal functional responses to sadness/anxiety. $^{**}p \leq .01$.

acceptable fit given Weston and Gore's (2006) standards, $\chi^2_{(200,\, n = 253)} = 262.70$, $p = .00$; RMSEA = $.050_{(.031;\, .066)}$; SRMR = .088; TLI = .91; CFI = .93. Neglect, overt aggression, and relational aggression were expected to positively predict IDSA, particularly in boys' relationships. For boys, only the emotion socialization construct of neglect was moderately associated with initial levels of IDSA (β = .35, $p = .04$). In the girl's model there were no associations with the emotion socialization constructs and initial levels or changes in IDSA. Thus, boys who perceived their friends as dismissing of their experiences of sadness/anxiety reported higher levels of internally directed dysfunctional responses to sadness/anxiety at the outset of the study. No associations were found between best friend emotion socialization and internal dysfunctional ER for girls. A diagram of the final model can be seen in Figure 6.

Best friend emotion socialization predicting external functional ER responses to anger (EFA). Model fit indices for the multigroup (i.e., boys and girls) final EFA model with emotion socialization constructs as predictors suggested a good/close fit, $\chi^2_{(200,\, n = 253)} = 217.62$, $p = .19$; RMSEA = $.026_{(.00;\, .048)}$; SRMR = .068; TLI = .98; CFI = .98. Reward and override strategies were expected to positively predict EFA, especially in the relationships of girls. For boys, reward (β = .50, $p = .00$) had a strong and override (β = .31, $p = .026$) a moderate positive association with initial levels of EFA. Reward had a negative and strong association with changes in boys' EFA (β = -.55, $p = .01$) and relational aggression socialization responses had a moderate and positive association with changes in EFA (β = .47, $p = .03$). In the girls' model, there were also moderately strong positive associations among reward (β = .38, $p = .02$) and override (β = .34, $p = .03$) on initial levels of EFA. In terms of changes in girls' levels of EFA over time, there was a

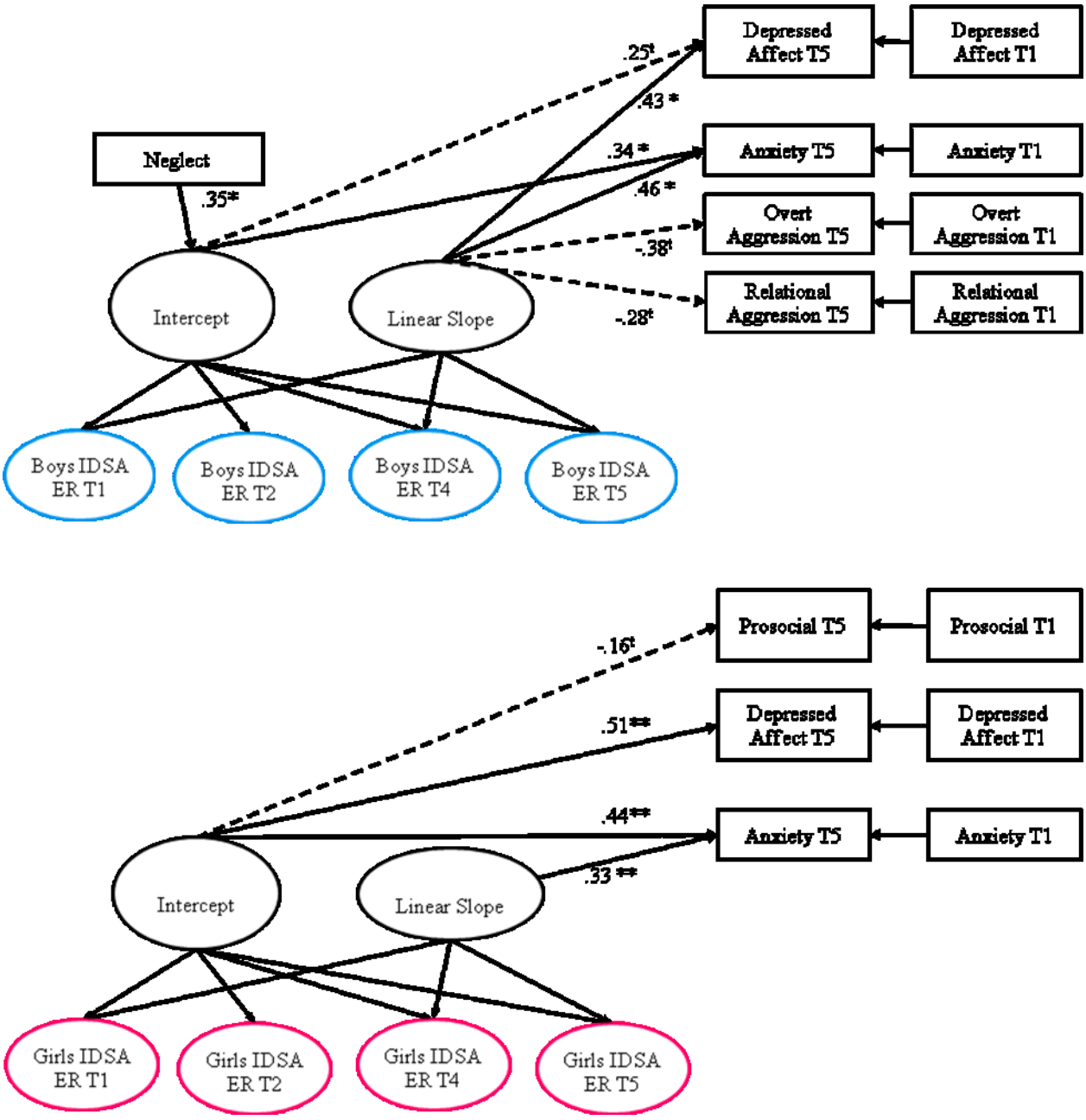

Figure 6. Final models depicting associations between best friend emotion socialization, internally directed dysfunctional ER responses to sadness/anxiety, and adjustment in boys and girls. IDSA = internal dysfunctional responses to sadness/anxiety. $^{**}p \leq .01$. $^{*}p < .05$. $t < .1$.

trend with override (β = -.39, p = .07). For both boys and girls, the more youths perceived their best friends as using strategies that communicated empathy, validated, and acknowledged – but did not dwell upon – their emotional experience the more they used externally directed functional ER skills to manage their anger at Time 1. Differences occurred in what predicted changes in EFA skill use over time. For boys, the more close friends used empathetic and problem-solving responses, the less quickly they experienced declines in EFA ER skills over time. Additionally, the more boys viewed their friends as responding to their anger with social aggression, the faster they decreased in the use of externally directed functional ER skills over time. For girls, a trend suggested that the more close friends acknowledged and validated their experience, but then promptly moved on to discussing other things, the less quickly they appeared to suffer decreases in their use of functional externally directed skills to manage their anger. A diagram of the final model can be seen in Figure 7.

Best friend emotion socialization predicting external dysfunctional ER responses to anger (EDA). The model with emotion socialization constructs as predictors of EDA showed good model fit indices, $\chi^2_{(96,\, n = 253)}$ = 136.37, p = .00; RMSEA = $.041_{(.024;\, .056)}$; SRMR = .056; TLI = .96; CFI = .97. Neglect, overt aggression, and relational aggression were expected to positively predict EDA. However, no measures of best friend emotion socialization significantly predicted initial levels or changes in EDA. There were, however, two trends. Relational aggression emotion socialization responses had a positive relationship with initial levels of EDA (β = .22, p = .06) and neglect had a negative association with changes in EDA (β = -.28, p = .09). Youth who saw their close

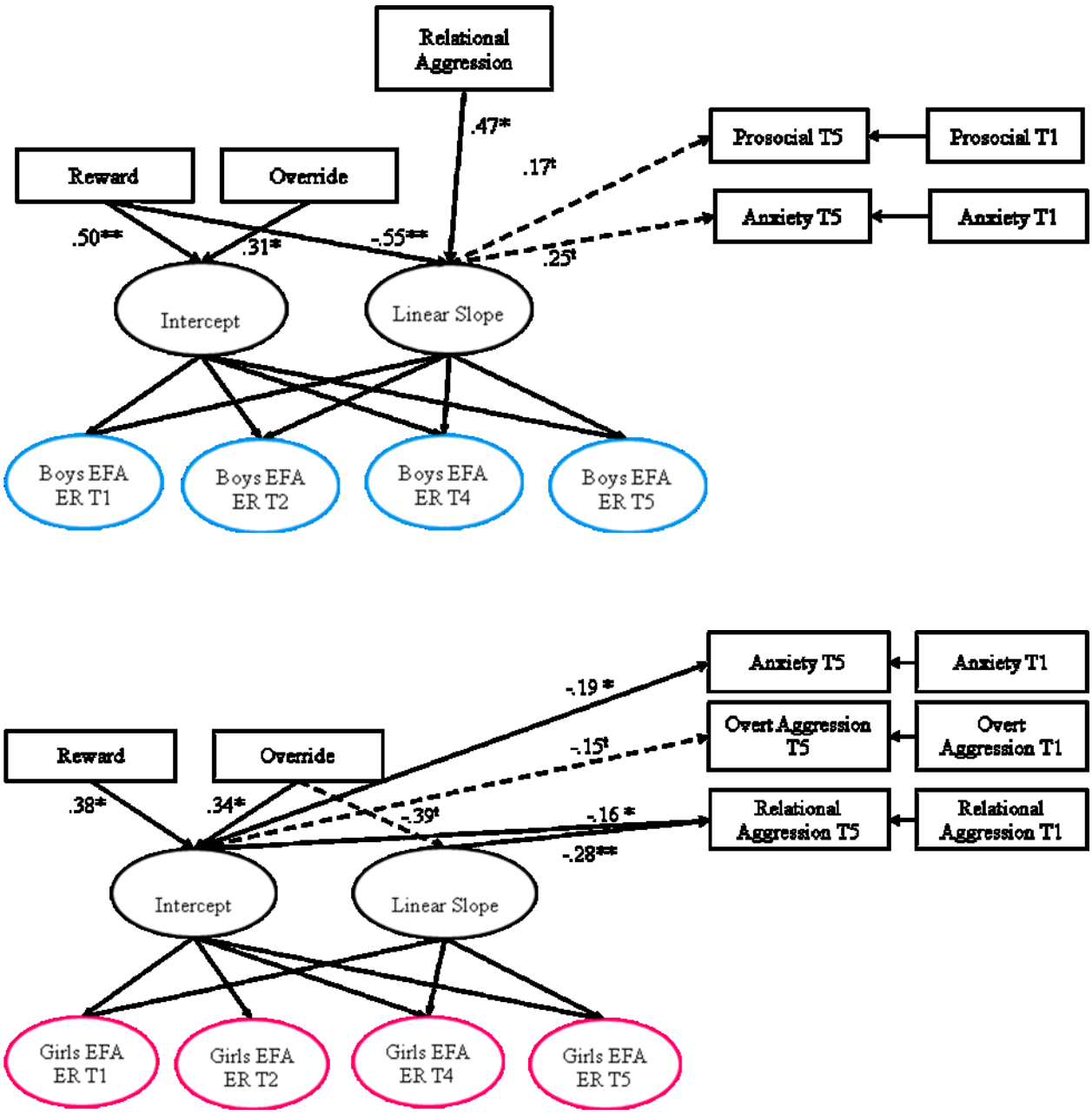

Figure 7. Final models depicting associations between best friend emotion socialization, externally directed functional ER responses to anger, and adjustment in boys and girls. EFA = external functional responses to anger. $^{**}p \leq .01$. $^{*}p < .05$. $t < .1$.

friends as responding to their anger with relational aggression reported high usage of externally directed dysfunctional ER skills at initial measurement. Youth who saw their close friends as ignoring their experience of anger showed less increases in dysfunctional externally directed ER skills over time. These paths can be seen in Figure 8. However, interpretations from these findings should largely be avoided given their non-significance.

Best friend emotion socialization predicting internal functional ER responses to anger (IFA). The model with emotion socialization constructs as predictors of initial and changes in IFA levels produced good model fit indices, $\chi^2_{(96,\, n = 253)} = 117.49$, $p = .07$; RMSEA = $.03_{(.00;\, .047)}$; SRMR = .064; TLI = .96; CFI = .97. Reward and override strategies were expected to positively predict IFA. Reward ($\beta = .33$, $p = .01$) and override ($\beta = .40$, $p = .00$) showed significant and moderate associations with initial levels of IFA. Override emotion socialization responses were shown to strongly and significantly predict changes in IFA over time ($\beta = -.61$, $p = .01$). Youth who perceived their close friends as using empathic and problem-solving response or responses that quickly acknowledged/validated but do not dwell on the emotional display reported using higher levels of internal functional responses manage their anger at the end of the study. Furthermore, the more best friends used responses that quickly acknowledged/validated but did not dwell on the emotional display the less quickly youth suffered decreases in internal functional responses to anger. A diagram of the final model can be seen in Figure 9.

Best friend emotion socialization predicting internal dysfunctional ER responses to anger (IDA). The model with emotion socialization constructs as

predictors of initial and changes in IDA levels produced acceptable fit following Weston and Gore's (2006) standards, $\chi^2_{(96,\, n = 253)} = 171.59$, $p = .00$; RMSEA = $.056_{(.042;\, .069)}$; SRMR = .077; TLI = .89; CFI = .92. Neglect, overt aggression, and relational aggression were expected to positively predict IDA. There were no significant paths between emotion socialization measures and latent IDA constructs; only overt aggression emotion socialization showed a trend initial levels of IDA ($\beta = .27$, $p = .06$) with a weak-moderate effect. While interpretations are limited, this suggests youth who reported perceiving their friends as responding to their displays of anger with overt verbal or physical aggression reported higher levels of internal dysfunctional regulatory responses to anger at the start of the study. A diagram of the final model can be seen in Figure 10.

Research Question 3: How do Relationships between Best Friend Emotion Socialization and ER Skills Predict Adjustment?

Adjustment outcomes were added to each of the models to address the third research question. The following outcome measures were regressed onto the latent intercept and growth factors in each of the seven retained ER models: overt aggression, relational aggression, prosocial behaviour, depressed affect, and anxiety. Time 1 mean scores of these outcome measures were simultaneously regressed onto their corresponding Time 5 mean scores in order to control for initial levels of behaviour. Model fit continued to be established by considering the CFI, TLI, RMSEA, and the RMSEA confidence intervals in concert.

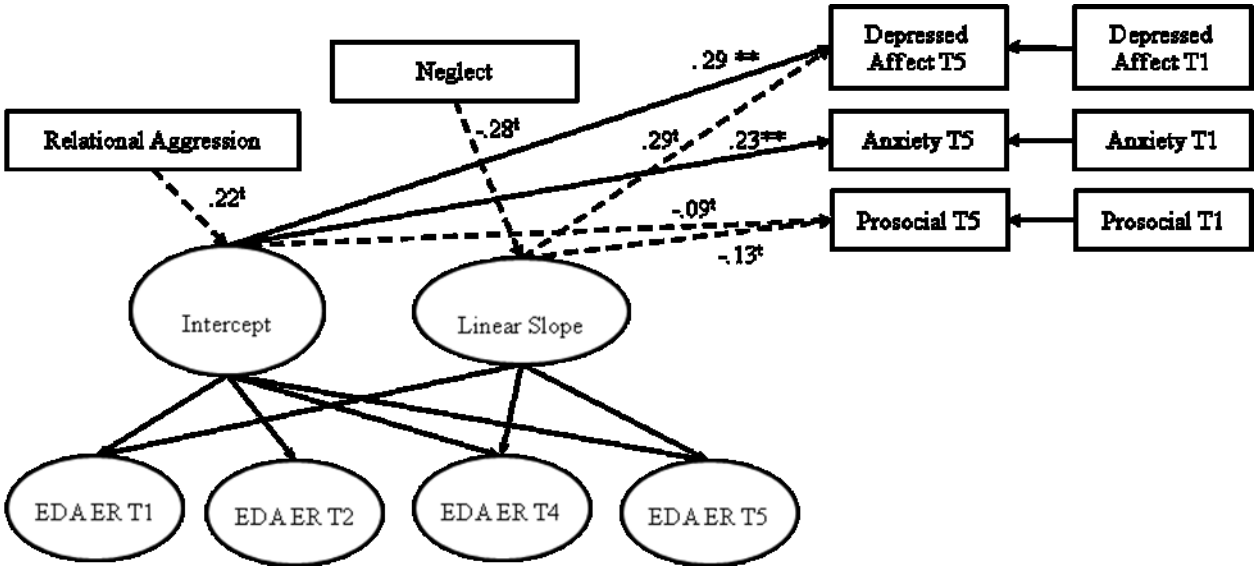

Figure 8. Final model depicting associations between best friend emotion socialization, externally directed dysfunctional ER responses to anger, and adjustment. EDA = external dysfunctional responses to anger. $^{**}p \leq .01. t < .1$.

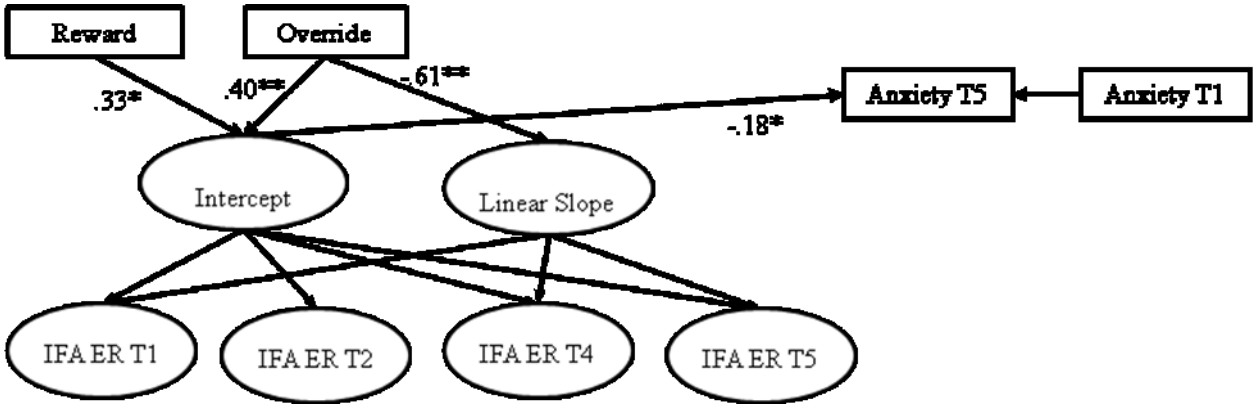

Figure 9. Final model depicting associations between best friend emotion socialization, internally directed functional ER responses to anger, and adjustment. IFA = internal functional responses to anger. $^{**}p \leq .01$. $^{*}p < .05$.

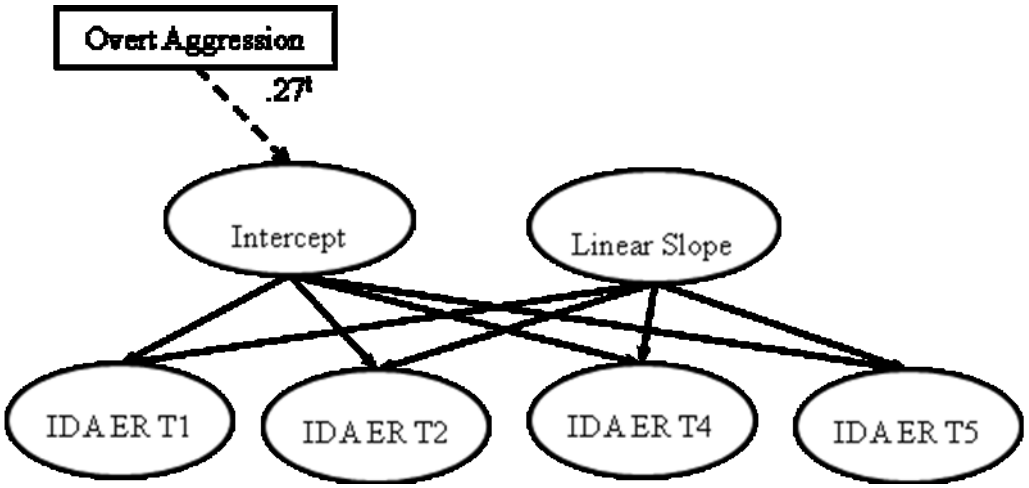

Figure 10. Final model depicting associations between best friend emotion socialization and internally directed dysfunctional ER responses to anger. IDA = internal dysfunctional responses to anger. $t < .1$.

External functional ER responses to sadness/anxiety (EFSA) as predictors of adjustment. Model fit indices for the model with emotion socialization as predictors of EFSA and latent measures of ER as predictors of outcome showed a good fit to the data$\chi^2_{(252,\, n = 253)} = 298.67$, $p = .02$; RMSEA = $.027_{(.011;\, .038)}$; SRMR = .063; TLI = .97; CFI = .98. EFSA was expected to positively predict prosociality and be inversely related to measure of poor adjustment. No associations were found between initial levels of EFSA and outcome measures. A trend between changes in EFSA and T5 self-reported anxiety/worry (β =.23, $p = .06$) was found. In addition, significant but weak associations with EFSA and peer reported overt aggression (β = -.22, $p = .04$), relational aggression (β = -.21, $p = .03$) and prosocial behaviour (β =.22, $p = .02$) were found. Thus, over time, the less youth used external functional skills in response to sadness/anxiety the less they were described as prosocial and the more they were described as using relational and overt aggression by their peers. Results from the initial growth curve remind us that it's those youth who initially used less EFSA skills that were most likely to decline in these same skills over time, and thus would also be most at risk of showing lower levels of prosociality and higher levels of aggression at Time 5. Contrary to expected results, the less youth reported using external functional responses to sadness/anxiety over time, the lower their self-reported anxiety/worry at the end of the study – albeit this result was only a trend. Figure 11 displays the effect of EFSA change on outcome measures. An image depicting the final model with all associations between ER, emotion socialization, and outcomes can be seen in Figure 3.

External dysfunctional ER responses to sadness/anxiety (EDSA) as predictors of adjustment. EDSA was expected to positively predict depressed affect,

anxiety, aggression (overt and relational) and be inversely related to prosociality. When considered in combination, model fit indices for the model with emotion socialization as predictors of EDSA and latent measures of ER as predictors of outcome showed a model with acceptable fit $\chi^2_{(252,\, n = 253)} = 347.31$, $p = .00$; RMSEA = $.039_{(.028;\, .048)}$; SRMR = .070; TLI = .94; CFI = .95. Several significant associations and trends were found among adjustment measure and initial and/or changes in EDSA over time. Initial levels of EDSA significantly but weakly predicted depressed affect (β = .25, p = .00) at Time 5. There was a trend between initial levels of EDSA and anxiety (β = .13, p = .06). Changes in EDSA significantly predicted Time 5 depressed affect (β = .24, p = .00) and anxiety (β = .24, p = .00) with weak associations. A trend was observed between EDSA changes and prosocial behaviour (β = -.10, p = .08). Thus, higher levels of external dysfunctional ER responses to sadness/anxiety at Time 1 predicted higher levels of depressed affect at Time 5. In terms of changes in ER, the more youth's use of external dysfunctional responses to sadness/anxiety decreased over the year, the lower their self-reported depressed affect and anxiety at year's end. In contrast, while only a trend, the faster youth's use of external dysfunctional ER responses to sadness/anxiety decreased over the year the more peers described them as prosocial. The results from the first question of this study remind us that youth who reported greater use of external dysfunctional skills at Time 1 showed the least amount of change in these skills over time, thus, it would be such youths at highest risk for maladaptive outcomes in terms of depression and anxiety. Illustration of the associations between changes in EDSA and outcomes can be seen in Figure 12. An image depicting the final model with all associations between ER, emotion socialization, and outcomes can be seen in Figure 4.

Internal functional ER responses to sadness/anxiety (IFSA) as predictors of adjustment. IFSA was expected to positively predict prosociality and be inversely related to measure of poor adjustment. Model fit indices for the model with emotion socialization as predictors of initial and IFSA as a predictor of adjustment outcomes produced a model with good fit $\chi^2_{(252,\, n = 253)} = 311.76$, $p = .01$; RMSEA = $.031_{(.017;\, .041)}$; SRMR = .069; TLI = .96; CFI = .96. Initial levels of internal functional ER skill use in response to sadness/anxiety significantly predicted depression ($\beta = -.21$, $p = .01$) and anxiety ($\beta = -.22$, $p = .01$) at end of the school year with weak associations. There were no significant associations with changes in IFSA and outcomes; again, understandable given the low variability in IFSA changes. Thus, youth who endorsed higher levels of functional internal responses to experiences of sadness/anxiety at the outset of the school year reported lower levels of anxiety and depression at the end of the study (accounting for initial levels of symptomology). A diagram of these results can be seen in Figure 5.

Internal dysfunctional ER responses to sadness/anxiety (IDSA) as predictors of adjustment. IDSA was expected to positively predict depressed affect, anxiety, aggression (overt and relational) and be inversely related to prosociality. Model fit indices for the multigroup (i.e., boys/girls) model with emotion socialization as predictors of IDSA and latent measures of ER as predictors of adjustment outcomes showed a model with acceptable fit by Weston and Gore's (2006) standards,$\chi^2_{(512,\, n = 253)} = 696.54$, $p = .00$; RMSEA = $.053_{(.043;\, .063)}$; SRMR = .010; TLI = .87; CFI = .90. Results for the boys indicated IDSA initial levels significantly and moderately predicted anxiety at Time 5 ($\beta = .34$, $p = .02$). A trend was found between initial levels of IDSA and depressed affect at Time 5 ($\beta = .25$, $p = .06$). Changes in IDSA moderately predicted anxiety ($\beta = .46$, $p =$

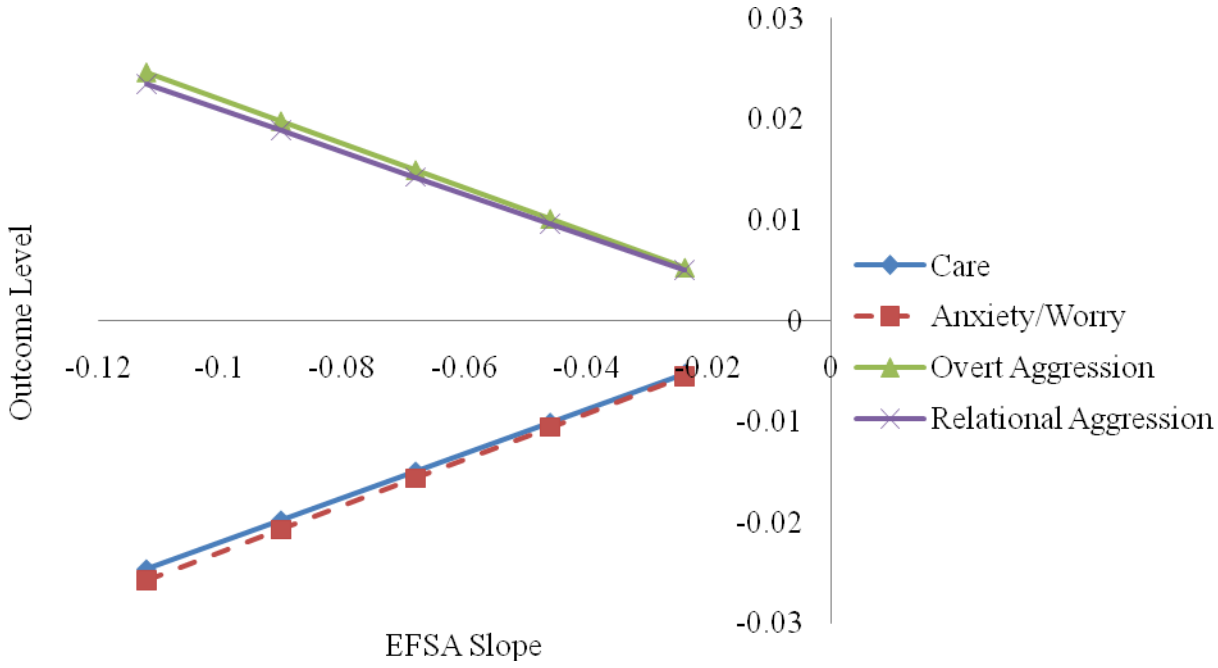

Figure 11. Changes in the use of external functional ER responses to sadness/anxiety as a predictor of outcome variables. The dashed line represents a non-significant association and solid lines represent significant associations. EFSA = external functional responses to sadness/anxiety.

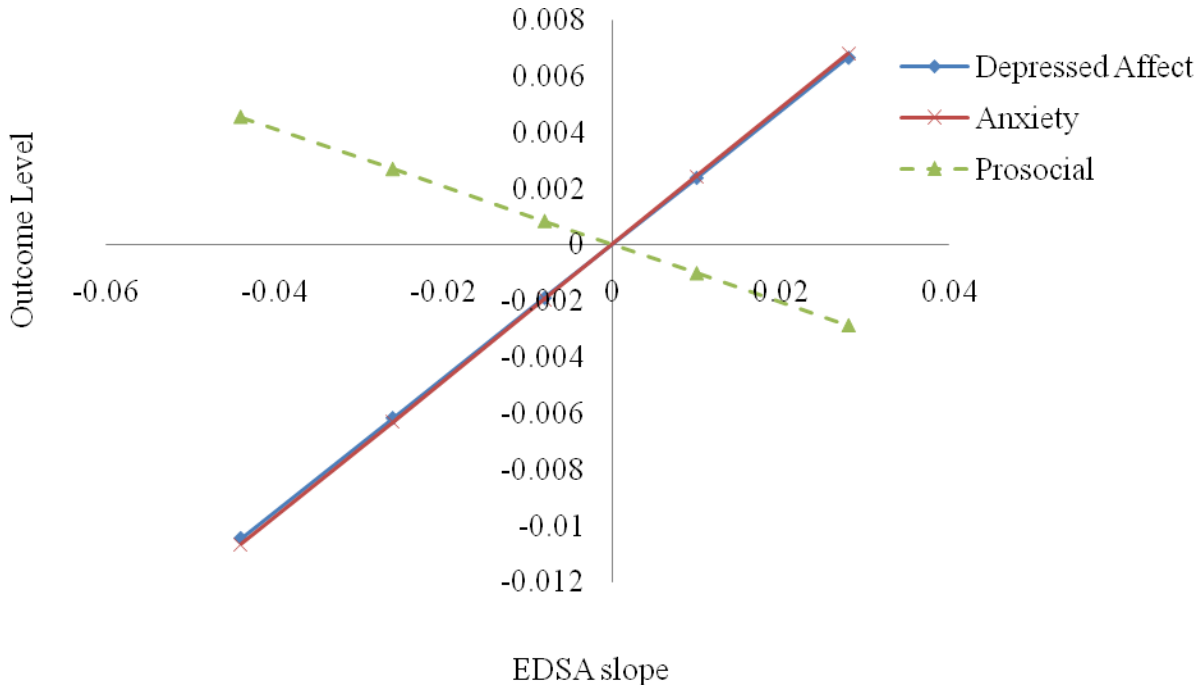

Figure 12. Changes in the use of external dysfunctional ER responses to sadness/anxiety as a predictor of outcome variables. The dashed line represents a non-significant association and solid lines represent significant associations. EDSA = external dysfunctional responses to sadness/anxiety.

.03) and depressed affect at Time 5 (β = .43, *p* = .03). Trends were found between changes in IDSA and overt (β = -.38, *p* = .06) and relational aggression (β = -.28, *p* = .09). In the girls' model, IDSA initial levels strongly predicted depressed affect (β = .51, *p* = .00) and moderately predicted anxiety (β = .44, *p* = .00) at Time 5. A trend was found between initial IDSA levels and prosociality (β = -.16, *p* = .06). Changes in girls' IDSA showed a significant and moderate association with anxiety (β = .33, *p* = .01). These results suggest that boys who respond to sadness/anxiety with dysfunctional internal ER responses at the study's outset also reported significantly higher levels of anxiety at Time 5. While not significant, there is also evidence suggesting that, for boys, higher use in dysfunctional internal ER skills in response to sadness/anxiety is associated with higher levels of depressed affect at Time 5. For girls, those who reported using higher levels of dysfunctional internal ER responses to sadness/anxiety at the study outset showed significantly higher levels of anxiety and depressed affect at Time 5 and tended to be seen as less prosocial by peers at Time 5. In terms of change, higher decreases in the use of dysfunctional internal ER responses to sadness/anxiety was significantly associated with lower levels of depressed affect and anxiety in boys, but only with lower levels of anxiety in girls at Time 5. In addition, it seems that the faster decreases are seen in the use of dysfunctional internally directed responses to sadness/anxiety in boys, the more they are rated as overtly and relationally aggressive by peers, albeit these are only trends. Illustrations of these results can be seen in Figures 13 and 6.

External functional ER responses to anger (EFA) as predictors of adjustment. EFA was expected to positively predict prosociality and be inversely related to measure of poor adjustment. Model fit indices for the multigroup (i.e.,

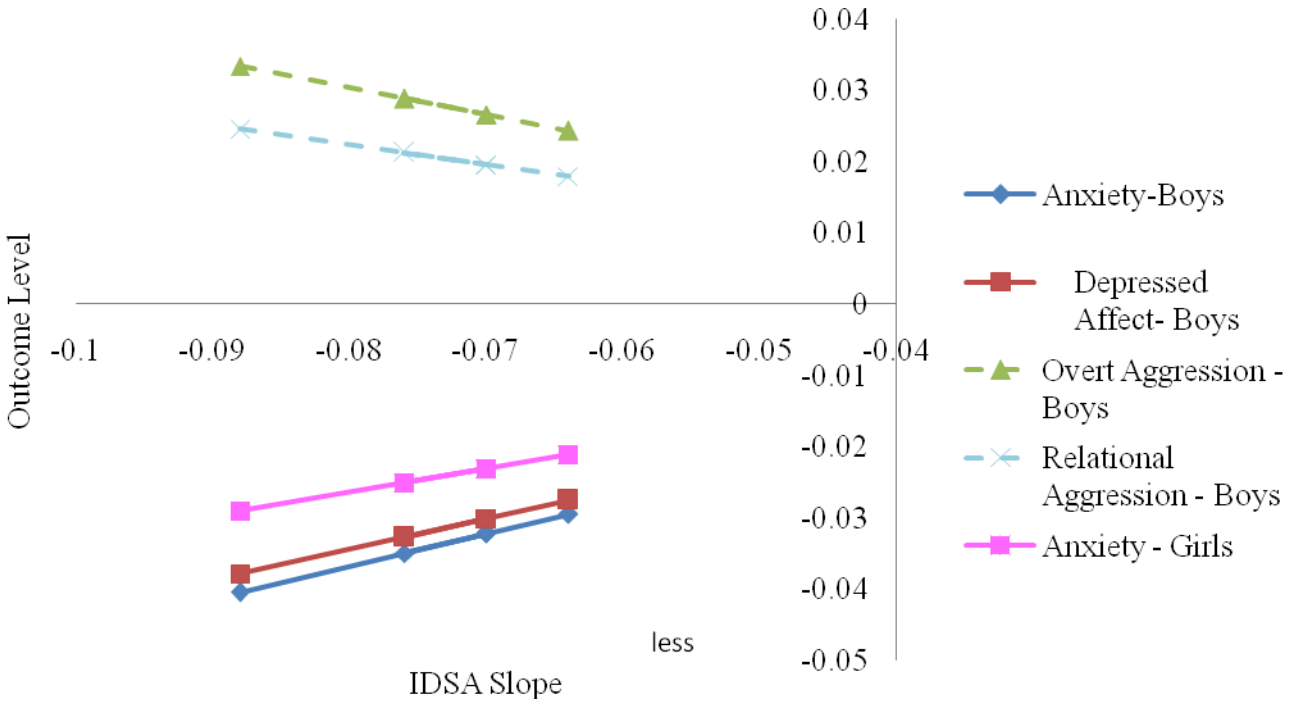

Figure 13. Changes in the use of internal dysfunctional ER responses to sadness/anxiety as a predictor of outcome variables. Dashed lines represent non-significant association and solid lines represent significant associations. IDSA = internal dysfunctional responses to sadness/anxiety.

boys/girls) model with emotion socialization aspects as predictors of EFA and latent measures of ER as predictors of adjustment outcomes at Time 5 showed a model with acceptable fit $\chi^2_{(512,\, n = 253)} = 630.22$, $p = .00$; RMSEA = $.043_{(.030;\, .054)}$; SRMR = .076; TLI = .92; CFI = .93. For boys, changes in EFA were associated with anxiety (β = .25, p = .06) and prosociality (β = .17, p = .07) at trend level. For girls, initial levels of EFA weakly predicted anxiety (β = -.19, p = .04) and relational aggression (β = -.16, p = .05). There was a trend between initial levels of EFA and overt aggression (β = -.15, p = .07). Changes in EFA showed a weak-moderate but significant association with relational aggression (β = -.28, p = .01). Thus, higher levels of external functional ER responses to anger at Time 1 was associated with less anxiety and relational aggression in girls at Time 5. Higher levels of external functional ER at Time 1 tended to be associated with less overt aggression at T5. Also, girls with the greatest decreases over time in the use of externally directed functional ER skills for managing anger were rated by their peers as showing more relational aggression at the end of the study. While not significant, boys who showed the greatest decreases in the use of externally directed functional ER skills in response to anger reported less anxiety at Time 5; however, their peers reported them lower on prosociality than boys with less decreases in external functional responses to anger. Illustrations of the results can be seen in Figures 14 and 7.

External dysfunctional ER responses to anger (EDA) as predictors of adjustment. EDA was expected to positively predict depressed affect, anxiety, aggression (overt and relational) and be inversely related to prosociality. Model fit indices for the model with emotion socialization as predictors of EDA and latent measures of ER as predictors of adjustment outcomes showed a model with acceptable fit

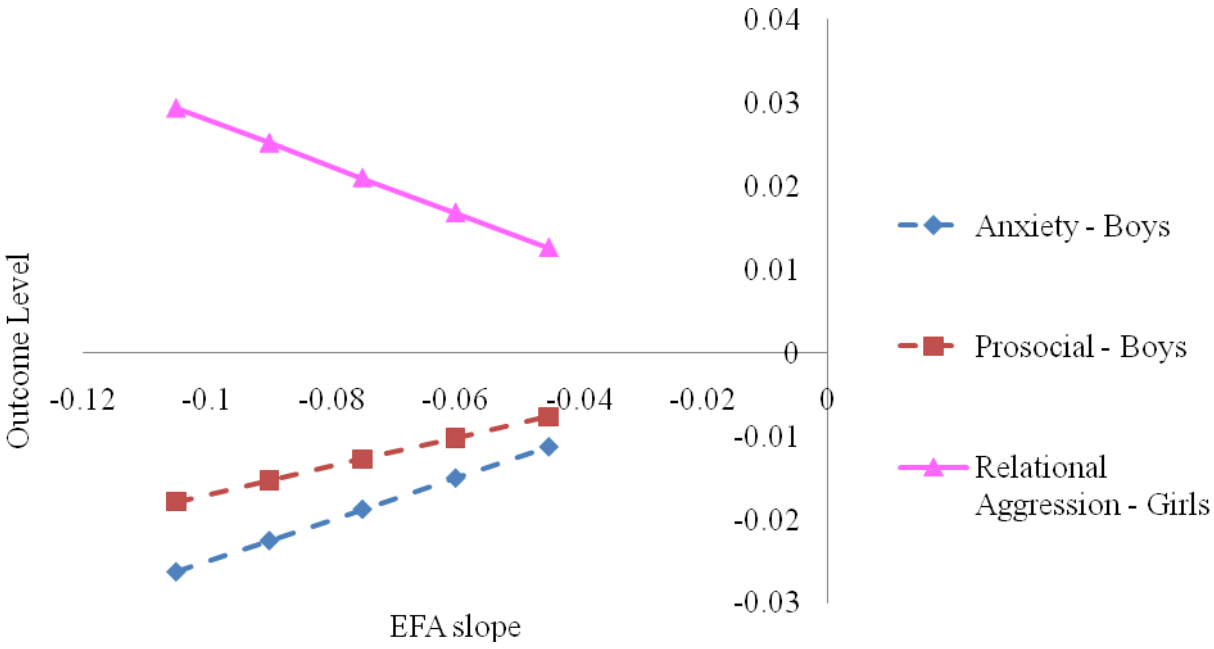

Figure 14. Changes in the use of external functional ER responses to anger as a predictor of outcome variables. Dashed lines represent non-significant association and the solid line represents a significant association. EFA = external functional responses to anger.

$\chi^2_{(252,\, n=253)} = 358.19$, $p = .00$; RMSEA = $.041_{(.031;\ .050)}$; SRMR = .079; TLI = .94; CFI = .95. In this model, initial levels of EDA showed significant but weak-moderate associations with depressed affect (β = .29, p = .00) and weak relationship with anxiety (β = .23, p = .00) as well as a trend with prosociality (β = -.09, p = .06). Changes in EDA over time showed trends with depressed affect (β = .29, p = .08) and prosociality (β = -.13, p = .08). Thus, at the outset of the study, youth who reported using higher levels of externally directed dysfunctional ER responses to anger reported significantly higher levels of depressed affect and anxiety, and tended to be described as less prosocial by peers at Time 5. Non-significant findings suggested that as externally directed dysfunctional ER strategies increased over time, youth reported higher levels of depression and were described as less prosocial by peers. A diagram of these results can be seen in Figures 15 and 8.

Internal functional ER responses to anger (IFA) as predictors of adjustment. IFA was expected to positively predict prosociality and be inversely related to measure of poor adjustment. Model fit indices for the model with emotion socialization as predictors of IFA and latent measures of ER as predictors of adjustment outcomes showed a model with acceptable fit $\chi^2_{(252,\, n=253)} = 357.01$, $p = .00$; RMSEA = $.041_{(.030;\ .050)}$; SRMR = .072; TLI = .92; CFI = .93. Only initial levels of IFA weakly predicted anxiety (β = -.18, p = .02) at Time 5, no other associations were found. Youth who initially reported using higher levels of internally directed functional ER strategies had lower levels of anxiety the end of the school year. A diagram of this result can be seen in Figure 9.

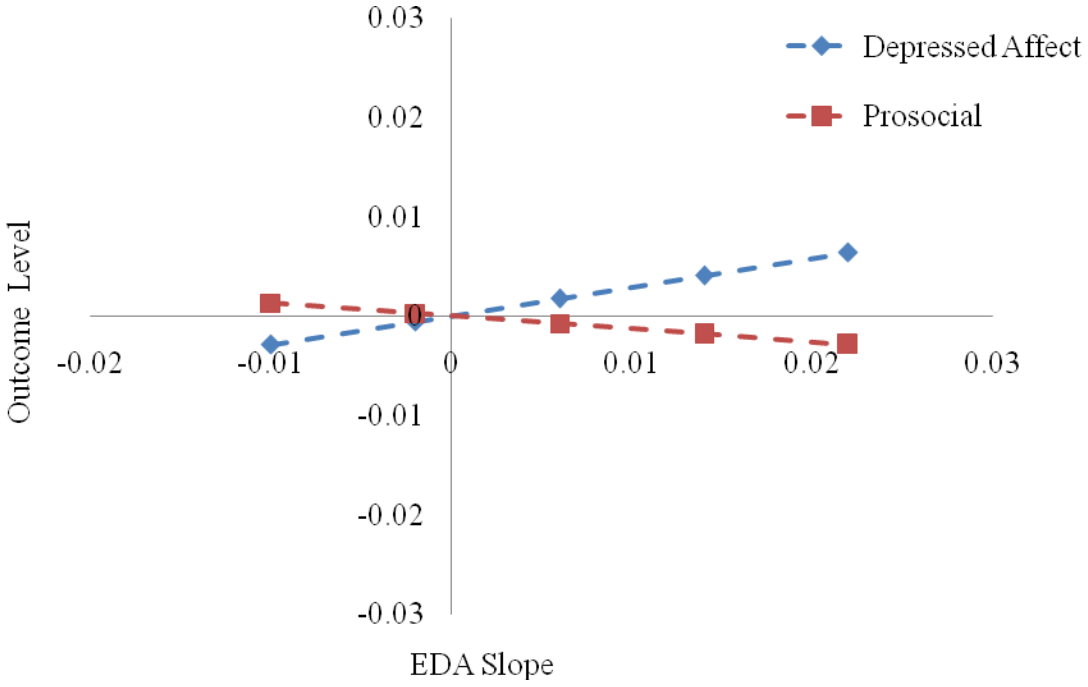

Figure 15. Changes in the use of external dysfunctional ER responses to anger as a predictor of outcome variables. Dashed lines represent non-significant association. EDA = external dysfunctional responses to anger.

Internal dysfunctional ER responses to anger (IDA) as predictors of adjustment. IDA was expected to positively predict depressed affect, anxiety, aggression (overt and relational) and be inversely related to prosociality. A model was run with emotion socialization as predictors of IDA, and IDA predicting of adjustment outcomes did not produce stable fit indices, $\chi^2_{(96,\, n = 253)} = 451.88$, $p = .00$; RMSEA = $.00_{(.147;\, .158)}$; SRMR = .084; TLI = 1.00; CFI = .80. Because there were no significant paths between measures of emotion socialization and IDA, the decision to remove these paths from the model was made in an effort to improve its stability. Again the model proved to be unstable, $\chi^2_{(96,\, n = 253)} = 277.30$, $p = .00$; RMSEA = $.00_{(.169;\, .183)}$; SRMR = .070; TLI = 1.00; CFI = .87, preventing any interpretations from being made.

Chapter 4: Discussion

Overview

Early adolescents experience a whirlwind of developments in physiology, cognition, and social expectations that they must manage while also experiencing destabilizing changes in their emotional functioning (e.g., increased lability, decreased positivity, increased negative emotions) (Rosenblum & Lewis, 2003; Larson & Lampman-Petraitis, 1989; Larson, Moneta, Richards, & Wilson, 2002; Ciarrochi, Heaven, & Supavadeeprasit, 2008). Despite the importance of ER to concurrent and long-term adjustment (e.g., Rydell, Thorell, & Bohlin, 2007, Eisenberg et al., 2001), there is presently little work examining the normative development of ER skills in adolescence. Furthermore, to this author's knowledge, there are no published works examining how

close friends, important socializing agents in the lives of early adolescents, influence the use and development of ER skills. As such, the goal of this short-term longitudinal study was to further our understanding of the ER skills early adolescents use to manage their anger and sadness/anxiety, how close friends responses to emotional displays impact the expression of these ER skills, and how ER predicts adjustment over time. Overall, early adolescents showed important changes in their use of ER skills in ways reflective of the emotional turmoil marking this developmental period. While youth showed some significant decreases in the use of maladaptive ER skills, more decreases in the use of functional skills were observed. The ways in which close friends directly socialize emotion and support ER's positive development in the current study were reminiscent of relationships observed in the parental emotion socialization literature. Furthermore, there appears to be few differences in the use and development of boys' and girls' ER skills, the impact of friend's socialization responses, and their combined implication for adjustment. Finally, many more stable predictions from ER to internalizing forms of adjustment were apparent relative to those with aggression. This not only outlines the special role of ER for internalizing disorders in adolescence, but that several other influential mechanisms are at play in the emergence or maintenance of aggressive behaviours during this developmental stage.

Use and Changes: A snapshot of Early Adolescent ER

In exploring the use of and changes in early adolescents ER strategies, it was proposed that the ER system in early adolescence could reflect either the increased maturation *or* emotional discord marking this period. While support for both hypotheses

regarding changes in ER was found, the majority of findings were in line with decreased ER functioning in early adolescence. Indeed, across both anger and sadness/anxiety ER skills, youth reported using higher levels of functional than dysfunctional strategies at the study's outset. However, across both emotion sets, there were statistically significant decreases in internally and externally directed functional ER strategies over the course of the school year. Over time, youth reported relying less on functional strategies such as problem-solving (e.g., planning what to do better next time, seeking advice) or cognitive restructuring. As for most aspects of ER, initial levels of functional strategies generally did not impact changes in the skill over time; yet there was one notable exception. With regards to externally directed functional strategies, such as seeking help or advice, decreases were most prominent for those who initially used less of these skills when sad/anxious. This outlines the potential importance of supporting the development of support seeking ER skills in youth who are less likely to use them, particularly if they are lacking other functional ER skills. Echoing the chaos observed in the functional ER system, a minimal and non-significant increase in the use of aggressive ER responses (e.g., taking emotion out on objects) to anger was observed.

Reviewing the results on adolescent's use of functional ER skills paints a relatively bleak picture of affect regulation in early adolescence, yet results demonstrating the reduction of certain dysfunctional ER strategies provide some insight. Encouragingly, for both anger and sadness/anxiety there were significant decreases in the use of internally directed dysfunctional strategies such as punitive self-talk (e.g., "I think badly of myself for feeling X") and rumination over the school year. A small but non-significant decrease was also seen in the use of externally directed dysfunctional ER

responses to sadness/anxiety (e.g., making others feel bad to manage one's own sadness/anxiety); interestingly, those who began the year with the highest use of these skills showed the least decreases in them. The considerable variability across changes in both dysfunctional and functional ER skills underscores the malleability in their developmental course. This may, in effect, be both a curse and a blessing in that depending on what factors youth's are exposed to, they may move closer towards or further away from adaptive ER.

Throughout infancy and childhood youngsters make considerable gains in the application and diversity of strategies used to manage affect. This positive linear change is believed to continue into early adolescence with the use of increasingly complex and multifaceted ER skill sets (e.g., Zeman et al., 2006). While the decreases in some maladaptive ER skills observed in the current study support such notions, the significant decreases across all functional ER skills starkly contrast the developmental expectations for increased ER differentiation, maturity, and proficiency in early adolescence. As youth enter early adolescence, they are confronted with significant changes (i.e., physiology, social expectations) that may overwhelm them and their ability to navigate these novel experiences. Because developments in ER are highly intertwined with cognitive advances, decreases observed in early adolescent functional ER may reflect the combined challenge of being only at the cusp of cognitive maturation and simultaneously flooded with novel expectations, emotions, and social situations. Cognitive developments are thought to help adolescents by allowing them to form a more sophisticated understanding of emotional experiences as well as their causes and consequence. Yet, this more developed understanding may also thwart well-being by

contributing to increased levels of negative emotions and confusion about the multitude of factors at play in emotions situations (Hauser & Safyer, 1994; Zeman et al., 2006). Confusion about emotionally evocative situations may be especially true for early adolescents who are just beginning to experience the important cognitive advances of this developmental period.

The overall pattern of emotion dysregulation observed in this study may also be a reflection of the changing social demands young adolescents face throughout the school year. The start of the school year represents a vibrant and challenging period of time that may require youth to draw upon ER skills more often. For instance, changes in the peer group composition (e.g., new classmates) occurring in the new school year may force the pre-existing social hierarchy into a period of unbalance, flux, and reorganization. One can imagine there being a higher likelihood for conflict situations to arise in such socially chaotic environments as youth attempt to re-establish their place in the classroom social structure. With the higher frequency of conflict and disagreement there is likely a greater need to draw upon ER skills as youth navigate these potentially aversive and negatively charged situations, such as managing the anger resulting from an insult or sadness secondary to rejection. Depending on the situation, how it's interpreted, or their goals, youth may draw upon adaptive or maladaptive ER skills in their efforts to navigate such evocative situations. As the group structure re-solidifies, the frequency of emotionally evocative situations is likely to decrease resulting in a reduced need to rely on ER skills. Such a pattern directly maps onto the ER changes observed in this study whereby all significant changes in ER skills, adaptive and maladaptive, were decreasing from the beginning to the end of the school year. Because such a notion embeds individual ER

functioning within the larger peer group, testing it would rely on the use of hierarchical modeling with a large sample of classrooms.

The posited explanations for the observed changes in early adolescent's ER could also be further addressed with a longer longitudinal design. A longer sampling period may mute the effects of social reorganization in beginning of school year on ER but capture the curvilinear pattern of change that is expected as youth transition from late childhood into adolescence. Decreases in ER skills may indeed occur as youth are confronted with the 'pile-up' of early adolescence (Silk et al., 2003), but increasing adaptations and experiences may allow for a more adequate and flexible ER repertoire in typically developing youth. For instance, the considerable growth in the prefrontal cortex experienced in adolescence, areas highly associated with executive functioning, likely facilitate the ability to attend to situational aspects, recognize controllable versus uncontrolled situations, appropriately match ER skills to the demands of the situation, and finally, apply them in socially adaptive ways (Eisenberg, 2006). Thus, future examinations of youth's ER processes should aim to follow participants for several years, allowing for a more detailed examination of which skills youth continue to rely on over time or those they abandon with development.

The Emotional Provisions of Best Friends

Given the increasing importance of peers in life of early adolescents, a second question within this study focused on how best friends socialize emotion in the early adolescent period. This question was particularly relevant given the significant variability most ER aspects showed both in their initial levels and change over time. In

line with expectations, socialization responses that facilitate emotional processing and provide youth with opportunities to develop methods of managing their affective experiences not only positively predicted initial use of functional ER skills at the study's outset, but in some cases also minimized the decreases seen in these strategies over time. Potentially the most robust finding of this kind was with Reward strategies (empathetic, sensitive, and problem solving responses), which saw moderate to strong associations with each aspect of functional ER (internally and externally directed skills) for both sadness/anxiety and anger. Also in line with expectations, but fewer in number, were associations between unsupportive emotion socialization strategies and dysfunctional ER. Emotion socialization strategies that either extended emotional arousal or invalidated the emotional experience being expressed positively predicted maladaptive ER skills. Most associations with punitive socialization responses were concurrent in nature and only one effect was observed on changes in ER over time. The overall greater number of associations between positive aspects of friend emotion socialization and functional ER and the larger strength of these effects compared with associations between negative socialization and dysfunctional ER underscores the overall positive provisions that friendship has for affect regulation (e.g., Gottman & Metteal, 1986). This study is the first to provide support for the direct effects friends have on emotional development, particularly ER, an idea long postulated in the theories of many influential peer relations and emotion researchers (e.g., Sullivan, 1953).

There were, however, some differences in which socialization responses supported the functional ER strategies youth reported using when either angry or sad/anxious. Initial levels in the use of all forms of functional ER responses to both

anger and sadness/anxiety, such as seeking advice or cognitive re-evaluation, were predicted by friends' empathetic and problem-solving responses. Yet, these supportive and validating responses from peers did not universally predict changes across functional ER skills. The use of empathetic and problem-solving strategies supported slower decreases in adolescents' externally directed functional ER responses (e.g., help seeking) to sadness/anxiety over time. Early adolescents' increased awareness of and preoccupation about social relationships is believed to make them more sensitive to the interpersonal consequences for displaying emotions (Zeman et al., 2006) and thus particularly sensitive to the positive or negative reinforcement they receive for such displays. Empathetic and sensitive responses to emotional displays communicate approval, reinforcing such occurrences and increasing the likelihood they will reoccur. While this may be true for both boys and girls when expressing sadness/anxiety, it seems the pattern differs across both boys and girls when expressing anger. Empathetic and problem solving responses only predicted slower decreases in boys', not girls', functional ER responses to anger over time. Perhaps the overall increased intimate and empathetic nature of girls' friendships blunts the beneficial effects of Reward responses, whereas when such responses are offered in the context of boys' relationships their rarity serves to increase their saliency. On the other hand, this difference may simply be a reflection of sex differences in which certain emotions are more socially acceptable for boys than for girls. Anger is generally a more acceptable emotion for boys to display (Brody & Hall, 1993), thus it may be more safely and sensitively responded to this context. Taken together, these results are similar to the parental emotion socialization literature in that friends' responses that validate and offer opportunities to actively explore emotional

experiences and/or problem solve them appear to support the development of functional ER abilities in early adolescent youth.

The value of validating emotional experiences was also reflected in results with overriding socialization responses. Overriding responses, where friends acknowledge the emotion displayed but do not dwell on it, also positively predicted initial levels of internal and external functional ER skills for managing anger such as positive self-talk, cognitive restructuring, or advice seeking. In addition, overriding responses predicted slower decreases in the use of internally directed functional ER skills (i.e., cognitive restructuring) when angry. Override responses likely function especially well to reduce the emotional intensity or escalation of a situation as they validate without dwelling on affect. This brief and targeted acknowledgement of the emotional experience likely leads youth away from ruminative or co-ruminative processes because it quickly re-focuses attention. Friends' use of override in concert with reward responses from friends creates an accepting and empathetic environment where the emotion is validated but a conversational switch can then be made to more active, problem-solving exchanges. It appears this combination is especially important in terms of anger experiences where both reward and override responses, in concert, predicted functional ER skills for anger at the study's outset, whereas in the context of sadness/anxiety reward alone initially predicted functional ER skills. Given the potentially explosive power of anger and its negative interpersonal impact relative to sadness/anxiety, overriding responses from friends are likely critical for the urgent reduction of anger intensity. Altering the intensity of the affective experience in this way likely creates an environment where

empathetic and problem-solving responses from friends can be attended to and integrated, potentially leading to developments in ER.

Again, differences were observed in the extent to which different forms of emotion socialization responses predicted initial use and changes in dysfunctional ER skills for anger and sadness/anxiety. When best friends were viewed as responding to sadness/anxiety displays with social aggression, youth reported using larger amounts of external dysfunctional responses when sad/anxious, such as taking the emotion out on others, at the study's outset. This effect was also noted for responses to anger, but only at trend level. The sense of emotional betrayal resulting from socially aggressive responses from a trusted and loyal friend may invite one to manage their negative emotions by lashing out, offering others what has been modeled to them. Two other effects regarding initial reported use of dysfunctional ER skills were found. Friend's verbally or physically overt aggressive responses to anger displays tended to be associated with higher rates of punitive self-talk or rumination strategies when angry. The same ER responses, punitive self-talk and rumination, were significantly more likely to be used in boys who viewed their friends as ignoring their sadness/anxiety. When exposed to an emotionally invalidating friendship context, youth may internalize the pattern of perceived responses from friends and follow suit in this social learning by invalidating their negative emotional experiences.

The harmful effects of punitive emotion socialization responses on maladaptive ER were again evident in the single effect on changes observed. Best friends' use of overt physical or verbal disapproval of sadness/anxiety was negatively associated with changes in the use of aggressive ER strategies (e.g., taking it out on others) overtime.

Given the proposed powerful influences of negative emotion socialization on ER from important socializing agents in previous developmental periods, it is surprising that only one effect on ER change was observed. The voluntary, egalitarian, and caring nature of friendships likely limits the potential for such insensitive responses as those encompassed in negative emotion socialization. Indeed, review of the descriptive information on youth's perceptions about their best friend's responses to their negative emotional displays corroborates this idea given the low frequency of neglectful or punitive (overt or relational) responses. The lack of findings with negative emotion socialization responses may also be due to the fact that friendship continuity was not controlled for in the current study. It is well known that more critical and unsupportive friendships are more likely to dissolve than higher quality relationships (Rubin et al., 2006). It could be that longitudinal associations were not present because the unnurturing friendships reported at Time 1 dissolved over the course of the study, and as such, youth were no longer exposed to the negative emotion socialization effects of these environments. This latter idea is a hopeful one, in that the negative effects close friends may have on emotional development are only as longstanding as the relationship in which they occur. Of course, this is likely dependent on the presence of additional protective or risk factors for developmental outcomes, such as previous emotion socialization experiences within the family or the ability to establish new friendships that are nurturing and caring.

While there was variability and significant change among most ER trajectories, not every pattern of change was predicted by perceived levels of best friend emotion socialization. Across all externally directed aspects of ER predicted by best friend emotion socialization, there remained significant amount of variability to be predicted.

This suggest there are additional important determinants of early adolescent ER strategies that have yet to be explored, particularly those that incorporate important others. For instance, while peers emerge as important socializing agents in adolescence, parents continue to play a vital role the lives of teenage youth. This remains an area ripe for investigation given there are no known published works of how parents socialize ER in early adolescence or how these effects might interact with those in the friendship socialization context.

Overall, the results regarding emotion socialization responses from close friends on adolescent ER are highly reminiscent of findings within the parental emotion socialization literature indicating that youngsters show poorer ER when exposed to poor emotional coaches (Gottman, Katz, & Hooven, 1996). They also reflect Klimes-Dougan et al's (2007) study showing that punitive parental emotion socialization responses are predictive of internalizing and externalizing difficulties in adolescents. It seems that neglectful or punitive emotion socialization environments contribute to dysfunctional management of various negative emotions whereas exposure to "good" emotional coaches supports adaptive ER.

Effects and Implications for Adjustment

Highlighting the centrality of ER to successful development has been one of the major accomplishments of the burgeoning research on affect regulation seen in the past two decades. Youngsters who use adaptive ER skills are rated higher in social competence by teachers and are more liked by peers (e.g., Raver, Blackburn, Bancroft, & Torp, 1999; Fabes, Martin, Hanish, Anders, & Madden-Derdich, 2003). In contrast,

childhood emotion dyregulation has been shown to predict low social competence in late childhood and adolescence as well as low social functioning in adulthood (Caspi, 2000; Caspi, Henry, McGee, Moffitt, & Silva, 1995). The few studies exploring ER in adolescence support the importance of adequate ER for adjustment (e.g., Silk et al., 2003, Laible et al., 2010). The current project overwhelmingly supports these studies and adds to the small literature on ER in early adolescence in important ways. It also extends upon this work by demonstrating how links between best friend emotion socialization and ER translate into adjustment outcomes over time. Overall, links between punitive emotion socialization, dysfunctional ER strategies, and higher maladjustment were found, while youth who had friends that provided good emotional coaching demonstrated more adequate ER and adjustment over time.

Both concurrent and longitudinal associations between all aspects of ER and adjustment were observed (except for the one aspect for which a stable model could not be produced). Initial levels of all dysfunctional ER skills for anger and sadness/anxiety predicted increased depressed affect and/or anxiety over the course of the study. While fewer in number, decreases in dysfunctional strategies over time predicted reduced depression and anxiety, with some differences across gender (see below). While some associations can be perceived as weak, most relationships between dysfunctional ER (initial and change) were moderate to strong in nature. While variations occurred across aspects of dysfunctional ER and emotion sets (anger or sadness/anxiety), ultimately dysfunctional ER translated to poorer functioning.

While several associations among functional ER skills and adjustment were observed, their strength fell in the small to moderate range. Initial levels of internally

directed functional strategies for anger predicted decreases in anxiety while the same use of strategies for sadness/anxiety predicted decreases in both anxiety and depressed affect over time. Higher initial reported use of externally directed ER strategies for anger, such as seeking advice, showed week associations with decreased anxiety and relational aggression in girls, but not boys, over time. Decreases in support seeking strategies for anger over time also predicted increased relational aggression in girls only. Across boys and girls, youth who relied less on these same support seeking strategies for sadness/anxiety were seen by peers as higher in relational and overt aggression as well as lower in prosociality. These results overwhelmingly corroborate what has been frequently identified in the child literature: adequate ER supports functioning while maladaptive ER strategies are related to greater socio-emotional difficulties.

There was little evidence for any specificity in the associations between ER skills (internal vs. external) and symptomology or regulation of specific emotions (i.e., anger or sadness/anxiety) mapping onto particular inter or externalizing difficulties. This reflects prior research showing little specificity in emotion dysregulation for particular emotions onto externalizing or internalizing disorders (e.g., McLaughlin et al., 2012). While this work overall suggests that difficulties decreasing negative emotions is common across early adolescent socio-emotional difficulties, one pattern of findings revealed the specificity of the association between ER and outcomes. Internally directed functional ER strategies for sadness/anxiety showed associations with internalizing difficulties (both based on self-reports) whereas self-reported externally directed functional ER for sadness/anxiety showed associations with peer reports of observable behaviour. At first glance it seems that how one thinks about sadness/anxiety may be particularly important

for largely internal experiences such as depressed affect and anxiety, whereas what one does in response to sadness/anxiety may be more important for behavioural difficulties. It is, of course, possible, that this pattern of findings may be due to shared method variance issues. Despite the use of latent constructs for ER, each ER aspect would have continued to contain variance due to the method of data collection since all its underlying indices were taken from self-reports. Future works should use multi-informant reports of ER strategies and adjustment to circumvent the issues of shared method variance and move towards clarifying this result.

Of all the associations with well-being, the most prominent and frequent were those with dysfunctional aspects of ER. This pattern is similar to work by Silk and colleagues (2003) showing that the most influential ER strategies on adjustment are those where adolescents disengaged (e.g., denial, avoidance) or reacted to their emotions with rumination or impulsive behaviour. Whereas interventions should continue to instil adaptive affect management strategies, it will be equally as important for them to target maladaptive coping mechanisms.

Differences across Boys and Girls

Assessments of sex differences in ER and emotion socialization provided some evidence for expected effects. As expected there were differences in initial levels of externally directed functional ER skills, e.g., seeking advice, but only for anger. Despite similar change over time in this skill, girls reported higher initial use of this externally directed functional ER strategy for anger. From a young age, girls are encouraged to discuss emotions more than boys and girls are also generally discouraged from displaying

anger and aggression (Zahn-Waxler, 2000). It is likely that girls display higher levels of support seeking strategies to manage their anger as socialization throughout childhood has taught them to manage emotion by relying on and sharing the experience with others and as such, girls may draw upon this strategy when social expectations dictate they need it most – when angry. However, given there were no sex differences in the use of externally directed dysfunctional ER skills for anger (or sadness/anxiety) it appears that even though girls may be more likely to make use of functional ER strategies to manage their anger it does not remove the likelihood of relying on more dysfunctional methods as well. Future work should consider the proportional use of adaptive versus maladaptive ER skills as it may be the combination of skills rather than the frequency of individual strategies that is likely most important for overall well-being.

Although sex differences in internally directed ER skills were not specifically expected, there was indeed one difference among the skills used for sadness/anxiety. At the study's outset, girls reported using internally directed dysfunctional ER skills (i.e., rumination, punitive self-talk) more often than boys did and continued to do so throughout the study. This sex difference may have important implications with regards to the substantially higher rates of depressed affect in girls compared with boys emerging in adolescence (e.g., Wichstrøm, 1999, Hankin et al., 1998). Many conceptualizations of depressed affect involve processes similar to the dysfunctional ER strategies of rumination and negative self-talk (e.g., Durbin & Shafir, 2008, Beck, 1967, Beck 1983). The idea that sex differences in depressed affect may be due to differences in regulatory style is especially interesting in that this difference was true only for sadness/anxiety and not for anger. Analysis of the relationship between internally directed dysfunctional

skills and outcome also provides support for this idea. Initial reported use of this skill strongly predicted depressed affect in girls, but not boys. Yet decreases in the use of these dysfunctional skills predicted lower depressed affect in boys over time, but no associations between changes in ER and outcome were present for girls. Perhaps, by early adolescence these internally directed dysfunctional ER styles are more ingrained in girls, but their continued malleability in males may reduce their risk of depressed affect explaining, at least in part, the unbalanced prevalence of this condition as of adolescence.

Research on the nature of boys and girls friendships has painted a portrait of girls' relationships being more open and accepting of emotional displays as well as higher in their level of intimate disclosure (Rose & Rudolph, 2006; Rose et al., 2012) potentially increasing opportunities for ER development in such contexts. In contrast, boys report that their friends are less accepting of negative emotional displays responding to them in punitive ways or simply ignoring them (Klimes-Dougan et al., in press), which in turn may preclude the learning of adaptive ER skills. The current results generally contrast with these previous findings. Most associations with emotion socialization responses from best friends were similar for boys and girls; overall, negative emotion socialization predicted maladaptive ER whereas positive emotion socialization predicted adaptive ER in early adolescents. One notable association is the observation that boys are less accepting of sadness/anxiety displays. Boys showed higher initial levels of negative self-talk and rumination the more they viewed their friends as ignoring sadness/anxiety emotional displays. This difference is in line with notions of the display of sadness being less socially acceptable and more frequently punished in boys than girls (e.g., Klimes-Dougan et. al., 2007; O'Neal & Magai, 2005) as well as work in the coping literature

showing that boys are more likely than girls to use inadequate responses when friends are stressed (Chow & Buhrmester, 2011). Yet, overall, this study showed that the impact close friends may have on ER's development – whether it be harmful or beneficial – is largely similar for boys and girls.

The Broader Context of ER

To my knowledge the current project was the first to explore the development of ER in adolescence, a time where it may be needed the most due to fluctuations in the emotional system. While this marks an important contribution to the literature, it must be acknowledged that this project examined an isolated portion of the larger ER system. ER is a broad construct encompassing a heterogeneous set of processes that modulate emotional experience and expression in unique and interactive ways (Gross & Thompson, 2007). Regulatory processes can have their effects at any one point in the emotion generative process: from the point of attending to psychologically relevant stimuli, appraisals or assessments made of the situation, or the responses generated secondary to this sequence (Gross & Thompson, 2007). Processes and responses of this sequence occur in ways that optimize one's goals, regardless of whether they are conscious and complicated (e.g., plans for how to avoid the classroom bully's attention) or unconscious and more simplistic (e.g., fidgeting while being yelled at; Gross & Thompson, 2007). The ER system is dynamic and fluid in that responses themselves typically alter the situation that first gave rise to them, thereby initiating another situation-attention-appraisal-response transaction. A youth who starts to cry in the middle of a disagreement can shift their peer's reactions from argumentative to apologetic and potentially alter the

probability of similar situations in the future. In this way emotions are "both products and processes of social interactions, relationships and contexts" (Parke, 1994, p. 158). Moreover, the emotional system does not operate in isolation from the many other temperamental (e.g., reactivity), attentional, cognitive, and personality (i.e., approach versus withdrawal orientations) qualities that interact to make socially appropriate and psychologically adequate responses to evocative stimuli possible. As such, ER is a system involving intra-domain (i.e., interactive processes within the same domain), inter-domain (i.e., processes from one domain cross over to impact another), and interpersonal (i.e., modulation of a person's responding as a results of another's actions) processes (Dodge & Garber, 1991; Tobin & Graziano, 2006). It is a multifaceted, dynamic, and whole body system that motivates situational responses to regulating affect in observable, covert, conscious, or unconscious ways. A conceptual and methodological challenge facing the ER field will be to integrate such factors in future research as ER strategies must be considered in this multifactorial system (Gross & Thompson, 2007; Rothbart & Sheese, 2007).

Within the current study ER was operationalized based on the conscious efforts individuals make to regulate. Yet even deliberate affect regulation encompasses many factors that operate automatically (Peterson & Park, 2007). While conscious efforts to regulate are a large part of the ER system, automatic responses occurring outside or awareness can have effects before conscious processes have the opportunity to respond. For instance, individuals differ largely in their threshold and the extent to which they respond to emotionally evocative stimuli, or rather, their reactivity threshold (Rothbart & Bates, 2006). Regulation processes are involved in the modulation of this reactivity. An

excessively low threshold would result in frequent and excessive emotional responses to stimuli. With frequent and intense negative emotional reactivity, an individuals' primary goal might be the immediate reduction of the aversive affective state, making them more likely to rely on ER skills that may effectively do so in the short-term to the sacrifice of long-term functioning. For instance, a youth may use drugs to avoid thinking about problems with friends, but the continued use of this strategy over time can place him/her at risk for substance dependence. Differences in the tendency to react impulsively to arousal may also complicate regulation efforts. Reactivity is not synonymous with impulsivity in that sensitivity to stimuli is not equivalent to the speed with which one reacts to it. For example, youth who are shy often look as though they are regulated and not impulsive, but may actually be highly reactive and prone to fear or anxiety (Eisenberg, Hofer, & Vaughan, 2007). Hence, automatic tendencies can have important implications for ER in that they may impact the ability to select or flexibly implement a range of ER strategies that balance short- and long-term adaptation. The ease at which persons can flexibly draw upon a range of response as well as spontaneously develop skills as needed would be especially important for optimal regulation (Eisenberg et al., 2007). Reactivity, impulsivity, and cognitive flexibility are therefore important factors to consider in future studies on adolescent ER.

Because instances of ER are almost always social in nature, it is somewhat difficult to understand emotions and associated action tendencies outside of the context in which they occur (Gross, Richards, John, & 2006; Gross & Thompson, 2007). While the current project made use of a functionalist emotion framework to conceptualize ER as adaptive or maladaptive, the true nature of ER skills can never be completely categorised

as such without considering the context in which they occur. For instance, a youth may regulate their frustration by verbally confronting a bully, yet verbally confronting a teacher in the same way would not likely be seen as an adaptive response. It is not necessarily the responses itself that is maladaptive or adaptive, but how it plays out in its immediate context (Gross & Thompson, 2007). Although the current study incorporated contextual factors by exploring ER within the friendship relationship, it did not consider the larger macro-level cultural system within which friendship falls under (Bronfenbrenner, 1977) or the mirco-goals within friendship interactions that may determine the use of ER strategies or friend's responses to emotional displays. The ER strategies used will likely depend on whether the micro-level goal(s) of a given situation is to improve personal well-being, maintain the relationship, increase intimacy, or ease emotional distress. The strategies youth use to regulate or respond to emotional displays will also vary greatly depending on the nature of situation, for instance disagreement over what movie to watch versus uncovering a friendship betrayal. In terms of macro-level cultural factors, it remains to be seen whether the meaning of emotional displays and friend's reactions to them are constant across cultures or whether such things impacts ER's develop in universal ways. The universality of ER development is rather unlikely considering sociocultural perspectives of development hold that the expression, experiences, interpretation, and naming of emotions are intricately linked to social environments and are culturally determined (Matsumoto, 1997; Rubin et al., 2006; Bugental & Grusec, 2006). For instance, Nepalese children have been found to differ significantly from American children in their beliefs about whether negative emotions of any kind should be expressed (Cole, Bruschi, &Tamang, 2002; Cole & Tamang, 1998).

Accordingly it is not unreasonable to expect cultural differences in what strategies youth use to regulate emotions or the ways in which friends influence ER's development. Yet no matter how it is shaped or manifests itself, ER's importance to functioning surpasses many cultural boundaries in that associations with adjustment have been found in children around the world (e.g., Eisenberg, Pidada, & Liew, 2001; Eisenberg, Liew, & Pidada; 2004; Zhou, Eisenberg, Wang, & Reiser, 2004). Future studies can build on the current study by exploring youth's perspectives regarding the need to regulate affect and actual ER strategy use across various situational demands and cultures.

Limitations

While this longitudinal study is an important step forward in our understanding of how early adolescents use different strategies to regulate their emotions, how they are promoted by the contingent reactions of their friends to emotional displays, and what this means for adjustment outcomes, it is not without limitations. Issues with the focus on negative emotionality, consideration of characteristics altering the friendship context, directionality, and measurement are worthy of comment.

With its strong focus on negative emotions, this project did little to add to our understanding of positive emotions in psychopathology. Given that low levels of and difficulties up-regulating positive emotions have been implicated in poor adjustment (e.g., depression) and adolescents suffer decreasing levels of such emotions, it would be particularly relevant to develop a better understanding of how positive emotions are regulated in adolescence. How this occurs within the friendship context would be especially important because positive emotions are frequently observed in adolescents'

interactions with friends (Newcomb & Bagwell, 1995; Larsen & Richards, 1991). It seems likely that friends play a vital role in fostering emotions such as happiness, joy and excitement, which may have preventative effects for psychopathology.

While joy is expressed in many different relationships, the intimate and loyal nature of adolescent friendships makes them a safe space for youth to express negative affect (Clark & Taraban, 1991). The sharing, cooperation, helping, positive affective exchanges, and focus on resolution when conflict occurs (Newcomb & Bagwell, 1995) typical of friendship make it an ideal venue for the reinforcement and scaffolding of ER skills. However, no two friendships are alike and there is substantial variability in the presence of certain relationship qualities across friendships (Hartup & Stevens, 1999). Differences in the quality of friendship may influence how friend's responses to emotional content are delivered or received (Azmitia, Lippman, & Ittel, 1999; Bukowski, Brendgen, & Vitaro, 2007). When particular responses to emotional displays are offered in a highly supportive, intimate, and reliable contexts they likely have stronger or differing effects than when offered in a friendship lower in such qualities or more prone to critical exchanges. Furthermore, if there is a mismatch between the quality of emotion socialization response and the friendship context emotional functioning may be compromised. If a friend ignores or punishes sadness in an otherwise secure relationship the invalidation here may be more salient than if it was delivered in a conflictual or critical relationship. Evidence for the moderating effects of relationship quality can be seen in the childhood literature with emotion and attachment. For instance, Nachmias, Gunnar, Mangelsdorf, Parritz, and Buss (1996) have shown that toddler coping in an emotional situation was aided not only by maternal responses but by the existence of a

secure attachment. The moderating effects of friendship quality on the relationships between emotion socialization and ER is a promising avenue of future research.

Similarly, the characteristics of one's friends are likely moderating factors on the effects of best friend emotion socialization on ER. Friends higher in adjustment likely provide more adept emotion coaching, whereas youth with greater emotional and behavioural symptomology likely reinforce the negative effects of poor emotion socialization on ER. Similar to cognitive advancement through discussion of problems with peers that have greater knowledge, emotional displays or discussion with friends that have better emotional understanding, language, and management skills would promote ER. In contrast, such conversations may take a very different tone with a depressed or anxious friend veering instead towards the side of co-rumination (Rose, 2002). Or in interactions with deviant peers, more "maladaptive" ER strategies would be reinforced (Dishion, Spracklen, Andrews, & Patterson, 1996; Dishion, McCord, & Poulin, 1999). Incorporating measures of friend's adjustment into analyses would allow future works to explore their moderating effects.

On the other hand, it may be that youth lower in ER select more invalidating friendship contexts or develop friendships with individuals alike in their level of maladjustment (Prinstein, 2007). Adolescents typically select friends who are initially similar to themselves in both behavioural and physical characteristics (Aseltine, 1995) and these adolescents' characteristics are likely to be maintained or exacerbated over time (Caspi, Elder, & Bem, 1987, 1988; Lerner, 1987). In terms of similarities in regulatory ability, the coping literature has shown that friends are similar in the ways they manage stress (Chow & Buhrmester, 2011). The correlational and "short-term" longitudinal

nature of the current design limits testing the directionality of effects, whereas a longer design following youth through the selection and evolution of friendships may add some clarity to these questions.

Any of the above suggested explorations of ER would be strengthened by addressing some of the methodological limitations in the current study. The literature on ER is ripe with different questionnaires each targeting slightly different aspects of ER, such as cognitive ER skills, or reactivity. Of these tools, few have been uniquely developed for assessing ER in adolescence (Phillips & Power, 2007) and most examine ER across emotions. The questionnaire utilized in the current project addressed many of these concerns as it was adapted from a measure designed for older adolescents and explored ER skills used for anger and sadness/anxiety separately. A limitation of this questionnaire, however, is its grouping of sadness/anxiety restricting the interpretations that can be made about the regulation of these emotions separately. Additionally, it is unclear whether youths responses on this questionnaire reflected overall global impressions or a specific memory of an emotional event. The same could be said regarding what perspective was used when youth reported on their best friend's emotion socialization responses. Also, sex difference in emotion socialization might be better captured by including items that are responsive to conceptualizations of sensitivity in boys' relationships being achieved through more instrumental means of support. The continued refinement of both questionnaires would improve their validity and reliability. Finally, the shared method variance issues encountered in the current study could be reduced by complimenting questionnaire assessments of ER with observational coding of participants in emotion inducing tasks (e.g., frustration tasks, Trier social stress test).

Another strategy to reduce issues of shared method variance as well as cognitive biases would be to make use of an actor-partner model examining how youths and friends' reports of ER and socialization behaviours correspond.

Practical Implications

While far from being ready to inform practical interventions, the current results do provide some points to ponder in this regard. The relative lack of relationships between initial and change levels across ER skill sets is both promising and overwhelming in its practical implications. Overall, one's initial level of ER skill use, whether functional or dysfunctional, did not rigidly determine how they would continue to use these skills over time. This offers both a potential avenue for improvement and degeneration in early adolescents' ER systems as they navigate through this developmental period. These results underscore the importance of universal prevention programs designed to support adequate ER development. Yet, support for more targeted treatments can also be found from this project's findings. Youth who are less likely to turn to others for assistance in regulating their sadness/anxiety or more likely to take their sadness/anxiety out on others relative to their peers appear to be at increased risk for suffering increases in or maintaining maladaptive ER over time. Because both functional and dysfunctional ER strategies were shown to effect aspects of adjustment, intervention efforts at both the universal and targeted levels should focus both on the reduction of dysfunctional and enhancement of adaptive ER responses.

Summary

This study highlighted how ER and its development in early adolescences reflects the flurry of changes and challenges marking this period. Decreases were found across all adaptive affect management skills explored for both anger and sadness/anxiety. Yet, more optimistically, there was no evidence for large increases in dysfunctional means of affect regulation and all significant changes in these skills were downward in nature. Best friends perceived contingent reactions to emotional displays of anger or sadness/anxiety predicted adaptive and maladaptive ER in a similar fashion as identified in the parental emotion socialization literature. Good emotional coaching – empathy and problem solving or brief validation – predicted functional ER overall. In contrast, unsupportive or punitive responses from close friends were associated with dysfunctional ER strategies. Unfortunately, even if friends act as "good emotional coaches" this did not appear to stifle the development of maladaptive ER. Moreover, dysfunctional skills showed more associations with outcomes relative to adaptive ER. As such, intervention efforts should not simply focus their efforts on increasing adaptive responses to emotion as "surviving" maladaptive ER skills may ultimately cancel out the effects of more functional responses. In all the above associations, there were more similarities than differences in the patterns for boys and girls. This was somewhat unexpected given the presupposed different "worlds" each gender lives in (e.g., Underwood et al., 2006). Altogether, this study was not only the first to explore the developmental course of ER in early adolescence, but to show how friends socialize ER. Friends can be an important resource for supporting functional ER skills, but their invalidating responses to emotion can also accentuate the use of maladaptive ER skills – having consequently important

implications for adjustment. Indeed, there are both benefits *and* costs associated with friendship.

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Appendix A: Recruitment Letter

September 2010

Dear Parents,

I am a professor at Concordia University, where I teach courses and do research on children and adolescents. One of the topics I study is how children's skills and behaviours are related to their healthy well-being and adjustment. I am also interested in how children think about certain behaviours and their associated outcomes. These topics are of interest to many parents, teachers, and health professionals. I am writing to tell you about a study my students and I are conducting with fifth- and sixth-graders in your school. This study will help us learn more about children and their development.

As part of the study I am conducting, I will meet with the participating children in their school, and ask them to complete a set of questionnaires about themselves and their friends. In these questionnaires, children will be asked to tell us (a) who they typically associate with in school, (b) whether or not the other participating children in the class have particular characteristics, (c) how much they engage in behaviours like helping or leading a group, and (d) how they feel about themselves. All the questionnaires will be completed at the child's desk in school and none of the other children will know how any other child has answered the questions. We ask the children to maintain the privacy of their answers and we make certain that their answers are confidential.

As a token of thanks, all participating children will receive a reward from the research team.

We would also like to ask you to complete a questionnaire for us. This questionnaire will ask you some questions about your family's financial resources, the family environment, and your child's behaviour. It will take you about 30 minutes to complete this questionnaire. All of the information in this questionnaire will be completely confidential. We will send the questionnaire home with your son or daughter and your child can return it in the envelop provided to his or her teacher. *As a token of our appreciation for completing this questionnaire, you will receive two movie tickets.* Although we hope that as many families as possible will participate in this part of the project, children may participate in the classroom part of the project even if their parents choose not to complete the family questionnaire.

People who do research with children or adults are required to describe the risks and benefits related to participating in their studies. This study poses no risks, other than the risks that are part of children's normal daily lives. It is not a treatment study, and it is not intended to provide direct benefits to the students who participate. Most children enjoy participating in studies like this one.

The information collected in this study will be <u>completely confidential</u>, and participation is entirely voluntary. Your child is not required to take part; even if you give your

permission for him/her to participate, you may change your mind at any time. If your child decides that he/she does not wish to participate, he or she does not have to.

This study has been approved by both the School Board and the Concordia University Human Research Ethics Committee. If at any time you have questions or concerns regarding your rights or your child's rights as research participants, please feel free to contact Adela Reid, Office of Research (Secretary to the Concordia University Human Research Ethics Committee) at (514) 848-2424 x4887.

If you have any other questions about the study, please call me at 848-2424 x2184 or send a letter to me at: Department of Psychology, Concordia University, 7141 Sherbrooke Ouest, Montreal QC H4B 1R6. You can also email me at William.bukowski@concordia.ca.

Please fill out the attached form and have your child return it to his/her teacher tomorrow.

As an incentive for the children to return the permission slip, any child who returns a slip, regardless of whether his/her parent has given permission for participation, will get a Concordia pen.

Thank you for your help. We very much appreciate it.

Sincerely,

William M. Bukowski
Professor

PARENTAL PERMISSION SLIP

Please read and sign the following:

I understand that I am being asked if my son/daughter can take part in a research study conducted by Dr. W. M. Bukowski. I know that the purpose of the study is to examine how children's friendships and skills relate to certain outcomes. I know that if my daughter/son participates she/he will be asked to answer some questionnaires at his/her desk in their classroom. I have been told that the questionnaires are about social relations of young people and how they think and feel about themselves and their friends. I know that my daughter/son does not have to participate in this study, and that even if he/she starts to take part in it, he/she can quit at any time. I also know that all answers will remain confidential and will NOT be shown to anyone. Only Dr. Bukowski and his assistants will know what was in the questionnaires.

Please check one of the following and include it attached envelop along with in the permission slip.

____ My son/daughter <u>has permission</u> to take part in Dr. Bukowski's study

____ My son/daughter <u>DOES NOT have permission</u> to take part in Dr. Bukowski's study.

Parent's Name: _____

Signature:_____

DATE:_____

Child's Name:

_____

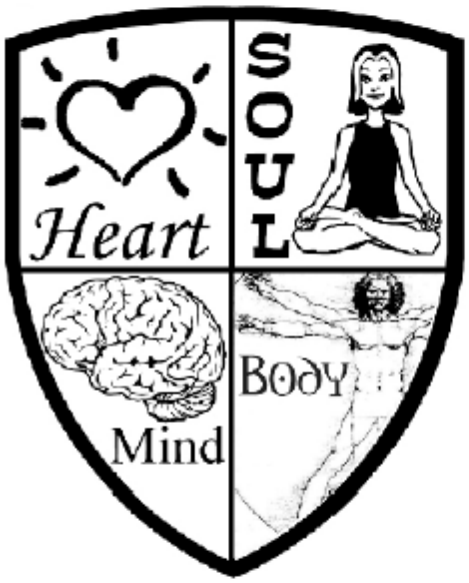
Appendix B: Consent Forms

58274

UNIVERSITÉ Concordia UNIVERSITY

OWWC 2010 Study

First Name: _____ Last Name: _____



The purpose of this form is to obtain your consent to participate in the program of research being conducted by Dr. William Bukowski of the Psychology Department of Concordia University. If you have any questions about the study, please contact him at 848-2424 ext. 2184 or by mail at: Department of Psychology, Concordia University, 7141 Sherbrooke Ouest, Montreal, QC, H4B 1R6. You can also email Dr. Bukowski at William.Bukowski@concordia.ca. If at any time you have questions about your rights as a research participant, please contact Adela Reid, Research Ethics and Compliance Officer, Concordia University, at (514) 848-2424 ext.7481 or by email at areid@alcor.concordia.ca.

Please read and sign the following if you wish to participate in the study:

"I understand that I have been asked to be in a research study that Dr. William Bukowski is doing about the the financial resources of my family, our family and the behaviours of my child.

I have been asked to fill out a questionnaire which should take no more than 30 minutes. All of my answers will remain confidential. I understand that, as an expression of gratitude, I will receive a gift **of two Guzzo movie passes** for my participation in the project".

Signature Here: _____ ☐☐ - ☐☐ - 10

(day - month - year)

Please fill in the boxes completely: ■

and not like this ☒ ☑ ☐?

If you make a mistake, cross out the incorrect box and fill in the correct one:

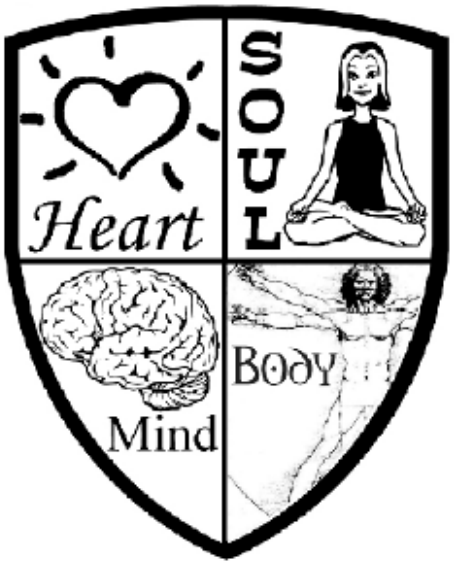
■1 ☐2 ☐3 ☒4 ☐5

39462

UNIVERSITÉ Concordia UNIVERSITY

OWWC 2010 Study

First Name: _____ Last Name: _____



Please read and sign the following if you wish to participate in the study:

We would like to invite you to take part in a research project. We are interested in learning more about how young people feel about themselves and how they get along with their friends and members of their family. Although your parents have given us permission to ask you about this, you are still free to make your own choice. If you agree to be part of our project, we will ask you to answer some questions in class. You would be answering questions at five different times over the school year.

All of your answers to the questions will be kept confidential. "Confidential" means that no one will know what you wrote. We will write a code number, not your name, on all forms. No one will see your answers to the questions except the people here today. That means we are not going to share your answers with your parents, teachers, or classmates.

You are free to say no to participating in this project or to stop answering questions at any time. If you want to stop, all you have to do is let us know. We will not be mad or sad if you decide to stop; nothing bad will happen to you and we will still give you a reward for your help. If you have any questions, please feel free to ask us at any time.

Signature Here: _____

__ - 1 0 - 1 0
(day - month - year)

Please fill in the boxes completely: ■

and not like this ☒ ☑ ◻2

If you make a mistake, cross out the incorrect box and fill in the correct one:

■1 ◻2 ◻3 ☒4 ◻5

Appendix C: Parent and Youth Demographic Questionnaires

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PARENT FORM

We would like to ask you some questions about your family, your household, your education and your work. This information will help us learn more about the children participating in our research project. Like all of the information in our study, the information on this questionnaire will be kept strictly confidential.

A. FAMILY COMPOSITION

01. Name of the child: _____

02. What is your relationship to the child?

- ☐ Biological mother
- ☐ Adoptive mother
- ☐ Biological father
- ☐ Adoptive father
- ☐ Other (Specify): _____
- ☐ Stepmother
- ☐ Stepfather
- ☐ Grandmother
- ☐ Grandfather

03. What is your marital status?

- ☐ Single
- ☐ Married
- ☐ Separated
- ☐ Divorced
- ☐ Common law
- ☐ Widow

B. FAMILY RESOURCES

We are now going to ask you some questions related to your household, your education and your work.

01. Your home is:

☐ Owned ☐ Rented ☐ The home of relatives ☐ Other (Specify):

02. Which category is closest to your taxable household income for last year?

- ☐ $15,000 or below
- ☐ Over $15,000 to $25,000
- ☐ Over $25,000 to $35,000
- ☐ Over $35,000 to $45,000
- ☐ Over $45,000 to $55,000
- ☐ Over $55,000 to $65,000
- ☐ Over $65,000 to $75,000
- ☐ Over $75,000 to $85,000
- ☐ Over $85,000 to $100,000
- ☐ Over $100,000

03. Are you currently working at a paid job? ☐ Yes ☐ No

04. What is the education level of the individuals living in your home? (Please leave blank the boxes for people who are not living with you.)

	Elementary school	High School diploma	Vocational/ Technical degree	CEGEP degree (DEC)	Bachelors degree	Masters degree	Doctorate or Professional degree	Postgraduate Degree	Other
Father	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9
Mother	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9

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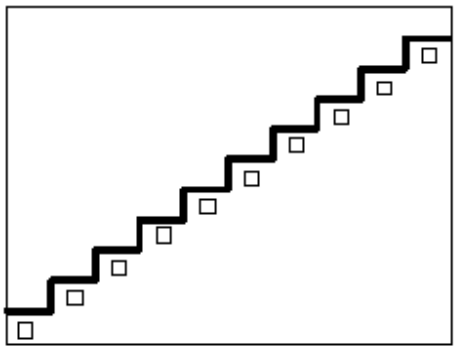
05. Think about the following staircase as a representation of the position that people have in society. In the superior section, one can find the people who are the most well off - that is, those who have the most money, have the most education and have the best jobs. In the inferior section, one can find the people who are the worst off - those who have the least money, little education and the worst jobs.



The higher you are on the staircase, the closest you are to the people who are at the top, while the lower you are, the closer you will be to the people who are at the bottom.

Where would you place yourself on this staircase? Please fill in the box beneath the step that corresponds to where you think you are currently.

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About me

01. When is your birthday? Day ☐☐ / Month ☐☐ / Year ☐☐☐☐

02. What is your gender? ☐ Boy ☐ Girl

03. How old are you?
☐ 8
☐ 9
☐ 10
☐ 11
☐ 12

04. What language do you speak most at home (e.g., English, French, Spanish, Mandarin, etc.) ?

_____

05. What ethnic group do you belong to (e.g., Hispanic, Afro-Caribbean, Chinese, etc.) ?

_____

Appendix D: Emotion Regulation Items

Items Assessing ER Strategies

Internal Dysfunctional Angry

- I think badly of myself for feeling angry
- I keep thinking about my negative feelings when I am angry
- I keep my feelings locked inside when I am angry

Internal Functional Angry

- I try to re-think my negative feelings when I am angry
- I try to concentrate on a pleasant activity when I am feeling angry
- I plan what I could do better next time when a situation makes me feel angry

External Dysfunctional Angry

- I take my feelings out on others by being mean to them when I am angry
- I try to make other people feel bad when I am angry
- I take my feelings out on things around me when I am angry

External Functional Angry

- I talk to someone about my feelings (so they get better) when I am angry
- So that I feel better, I would like/accept a hug or pat on the back when I am angry
- I ask others for advice about how to better handle upsetting situations when I am angry

Internal Dysfunctional Sad/Anxiety

- I think badly of myself for feeling sad/worried
- I keep thinking about my negative feelings when I am sad/worried
- I keep my feelings locked inside when I am sad/worried

Internal Functional Sad/Anxiety

- I try to re-think my negative feelings when I am sad/worried
- I try to concentrate on a pleasant activity when I am feeling sad/worried
- I plan what I could do better next time when a situation makes me feel sad/worried

External Dysfunctional Sad/Anxiety

- I take my feelings out on others by being mean to them when I am sad/worried
- I try to make other people feel bad when I am sad/worried

- I take my feelings out on things around me when I am sad/worried

External Functional Sad/Anxiety

- I talk to someone about my feelings (so they get better) when I am sad/worried
- So that I feel better, I would like/accept a hug or pat on the back when I am sad/worried
- I ask others for advice about how to better handle upsetting situations when I am sad/worried

Appendix E: Best Friend Emotion Socialization Questionnaire

You and your best friend

You just found out about something really unfair and annoying that was done to you, and that has made you **angry.** You are with you very best friend, and you feel really, really **angry.**

Think about what your best friend would do in this situation if he/she KNEW that you really felt **angry.**

Rate how true it would be for your friend to do each of the things in the list.

Do you think your best friend would:	Never true	Rarely true	Some-times true	Often true	Always true
01. Say something like "Cheer up!"	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
02. Say something like "You're being ridiculous," or "You're stupid."	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
03. Act like he/she doesn't notice that you feel **angry**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
04. Help you deal with what's made you feel **angry**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
05. Gets **angry** too	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
06. Say that he/she will stop liking you if you don't change your attitude	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
07. Not say or do anything about it	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
08. Push you away or hit you	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
09. Try to get you to do something else, to take you mind off feeling **angry**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
10. Ask you about what has made you **angry**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
11. Tell you that you have a good reason to feel really **angry**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
12. Tell you that things aren't so bad	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
13. Tell other people secrets or mean things about you	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
14. Ignore the fact that you feel **angry**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
15. Say something like "It's okay, we all feel **angry** sometimes."	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
16. Get upset at what's going on	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
17. Say that he/she don't like it when you act this way	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
18. Leave you out of the group or any activities for awhile	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	Never true	Rarely true	Some-times true	Often true	Always true

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You and your best friend

You got some very bad and upsetting news today that has made you **sad or worried**. You are with your very best friend, and you're thinking about this news, and you are feeling really, really **sad or worried**.

Think about what your best friend would do in this situation if he/she KNEW that you really felt **sad or worried**.

Rate how true it would be for your friend to do each of the things in the list.

Do you think your best friend would:	Never true	Rarely true	Some-times true	Often true	Always true
01. Try to get you to do something else, to take your mind off feeling **sad/worried**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
02. Push you away or hit you	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
03. Not say or do anything about it	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
04. Say that he/she will stop liking you if you don't change your attitude	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
05. Get **sad/ worried** too	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
06. Help you deal with what's made you feel **sad/worried**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
07. Act like he/she doesn't notice that you feel **sad/worried**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
08. Say something like "You're being ridiculous," or "You're stupid."	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
09. Say something like "Cheer up!"	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
10. Leave you out of the group or any activities for awhile	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
11. Say that he/she doesn't like it when you act this	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
12. Get upset at what's going on	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
13. Say something like "It's okay, we all feel **sad/worried** sometimes."	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
14. Ignore the fact that you feel **sad/worried**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
15. Tell other people secrets or mean things about you	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
16. Tell you that things aren't so bad	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
17. Tell you that you have a good reason to feel really **sad/worried**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
18. Ask you about what has made you **sad/worried**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	Never true	Rarely true	Some-times true	Often true	Always true

Appendix F: Tables

Table F1

Descriptive information

	Overall		Boys		Girls	
Measures	M	SD	M	SD	M	SD
Sadness/Anxiety						
Reward Emotion Socialization	3.58	.97	3.37	1.04	3.74	.89
Override Emotion Socialization	3.33	.93	3.05	1.00	3.55	.81
Neglect Emotion Socialization	1.50	.71	1.65	.80	1.40	.61
Overt Aggression Emotion Socialization	1.21	.46	1.21	.46	1.20	.47
Relational Aggression Emotion Socialization	1.24	.50	1.28	.53	1.21	.47
Anger						
Reward Emotion Socialization	3.54	.96	3.36	1.04	3.68	.89
Override Emotion Socialization	3.18	.91	2.94	.95	3.36	.84
Neglect Emotion Socialization	1.70	.83	1.88	.86	1.56	.79
Overt Aggression Emotion Socialization	1.30	.58	1.34	.60	1.28	.56
Relational Aggression Emotion Socialization	1.32	.60	1.34	.59	1.30	.62
Adjustment Outcomes						
Depressed Affect T1	2.09	.76	1.96	.73	2.19	.77
Anxiety T1	2.59	1.03	2.31	.96	2.80	1.04
Overt Aggression T1	.56	1.17	1.09	1.44	.17	.68
Relational Aggression T1	1.09	1.25	.86	1.11	1.26	1.33
Prosocial T1	3.73	2.30	2.82	1.89	4.43	2.35
Depressed Affect T5	1.99	.722	1.90	.73	2.06	.71
Anxiety T5	2.42	1.02	2.24	.98	2.56	1.04
Overt Aggression T5	.52	1.11	.96	1.34	.18	.74
Relational Aggression T5	.87	.99	.81	.88	.91	1.08
Prosocial T5	2.77	2.50	1.79	1.79	3.51	2.70

Note. Please see text for means and standard deviations of ER strategies

Table F2

Bivariate correlations among external functional and dysfunctional emotion regulation responses to sadness/anxiety, emotion socialization, and adjustment

Variable	1	2	3	4	5	6	7	8	9	10
1. EFSA Intercept	--	-.064**	--	--	.349**	.092	.052	.021	.002	-.050
2. EFSA Slope		--	--	--	-.053*	.007	-.009	-.011	.009	.002
3. EDSA Intercept			--	-.028**	-.012	.020	.004	.027	.061*	.122**
4. EDSA Slope				--	-.020	-.001	-.006	-.018*	.004	-.019
5. Reward Emotion Socialization					--	.745**	-.492**	-.324**	-.316**	-.181**
6. Override Emotion Socialization						--	-.343**	-.210**	-.176**	-.099
7. Neglect Emotion Socialization							--	.415**	.543**	.235**
8. Overt Aggression Emotion Socialization								--	.783**	.339**
9. Relational Aggression Emotion Socialization									--	.343**
10. Depressed Affect T1										--
11. Anxiety T1										
12. OvertAggression T1										
13. RelationalAggression T1										
14. Prosocial T1										
15. Depressed Affect T5										
16. Anxiety T5										
17. OvertAggression T5										
18. RelationalAggression T5										
19. Prosocial T5										

Note. Averaged values across imputed sets used to calculate correlations with mean score variables. **p<.01. *p<.05.

Table F2

Bivariate correlations among external functional and dysfunctional emotion regulation responses to sadness/anxiety, emotion socialization, and adjustment continued

Variable	11	12	13	14	15	16	17	18	19
1. EFSA Intercept	.168*	-.232*	.089	-.180	-.029	-.064	.031	-.061	.158
2. EFSA Slope	-.028	-.009	.041	.011	.006	.026	-.026	-.009	.095
3. EDSA Intercept	.048	.011	.028	-.078	.005	-.023	.066	-.024	.009
4. EDSA Slope	-.023	-.002	.000	.062	.023*	.025	-.008	.018	-.073
5. Reward Emotion Socialization	.059	-.104	.133*	.179*	-.173**	-.083	-.031	.124*	.078
6. Override Emotion Socialization	.111	-.082	.176**	.171**	-.078	.029	-.052	.115	.092
7. Neglect Emotion Socialization	.110	.106	-.103	-.158*	.157*	.104	.092	-.039	-.094
8. Overt Aggression Emotion Socialization	.139*	.016	-.024	-.061	.266**	.129*	-.022	-.035	-.047
9. Relational Aggression Emotion Socialization	.163**	.049	-.035	-.175**	.306	.141*	.084	-.006	-.162**
10. Depressed Affect T1	.434**	-.002	.132*	-.041	.473**	.331**	-.013	.066	-.014
11. Anxiety T1	--	-.089	.103	.208**	.320**	.508**	-.144*	.072	.106
12. OvertAggression T1		--	.505**	-.390**	.109	-.062	.717**	.430**	-.301**
13. RelationalAggression T1			--	-.154*	.166**	.077	.361**	.623**	-.098
14. Prosocial T1				--	-.003	.127*	-.369**	-.130*	.749**
15. Depressed Affect T5					--	.532**	-.002	.082	-.022
16. Anxiety T5						--	-.126*	.074	.047
17. OvertAggression T5							--	.473**	-.327**
18. RelationalAggression T5								--	-.115
19. Prosocial T5									--

Note. Averaged values across imputed sets used to calculate correlations with mean score variables. **p<.01. *p<.05.

Table F3

Bivariate correlations among internal functional emotion regulation responses to sadness/anxiety, emotion socialization, and adjustment

Variable	1	2	3	4	5	6	7	8	9	10
1. IFSA Intercept	--	-.152	.457**	.110	.028	.057	.066	-.152	.117	-.119
2. IFSA Slope		--	-.271	.160	.185	-.423*	.239	.074	-.097	-.253
3. Reward Emotion Socialization			--	.745**	-.492**	-.324**	-.316**	-.181**	.059	-.104
4. Override Emotion Socialization				--	-.343**	-.210**	-.176**	-.099	.111	-.082
5. Neglect Emotion Socialization					--	.415**	.543**	.235**	.110	.106
6. Overt Aggression Emotion Socialization						--	.783**	.339**	.139*	.016
7. Relational Aggression Emotion Socialization							--	.343**	.163**	.049
8. Depressed Affect T1								--	.434**	-.002
9. Anxiety T1									--	-.089
10. OvertAggression T1										--
11. RelationalAggression T1										
12. Prosocial T1										
13. Depressed Affect T5										
14. Anxiety T5										
15. OvertAggression T5										
16. RelationalAggression T5										
17. Prosocial T5										

Note. Averaged values across imputed sets used to calculate correlations with mean score variables. **p<.01. *p<.05.

Table F3

Bivariate correlations among internal functional emotion regulation responses to sadness/anxiety, emotion socialization, and adjustment continued

Variable	11	12	13	14	15	16	17
1. IFSA Intercept	-.049	.036	-.170	-.180	.131	-.039	-.055
2. IFSA Slope	.358	-.054	-.010	.200	-.166	-.204	.269
3. Reward Emotion Socialization	.133*	.179*	-.173**	-.083	-.031	.124*	.078
4. Override Emotion Socialization	.176**	.171**	-.078	.029	-.052	.115	.092
5. Neglect Emotion Socialization	-.103	-.158*	.157*	.104	.092	-.039	-.094
6. Overt Aggression Emotion Socialization	-.024	-.061	.266**	.129*	-.022	-.035	-.047
7. Relational Aggression Emotion Socialization	-.035	-.175**	.306	.141*	.084	-.006	-.162**
8. Depressed Affect T1	.132*	-.041	.473**	.331**	-.013	.066	-.014
9. Anxiety T1	.103	.208**	.320**	.508**	-.144*	.072	.106
10. OvertAggression T1	.505**	-.390**	.109	-.062	.717**	.430**	-.301**
11. RelationalAggression T1	--	-.154*	.166**	.077	.361**	.623**	-.098
12. Prosocial T1		--	-.003	.127*	-.369**	-.130*	.749**
13. Depressed Affect T5			--	.532**	-.002	.082	-.022
14. Anxiety T5				--	-.126*	.074	.047
15. OvertAggression T5					--	.473**	-.327**
16. RelationalAggression T5						--	-.115
17. Prosocial T5							--

Note. Averaged values across imputed sets used to calculate correlations with mean score variables.
**p<.01. *p<.05.

Table F4

Bivariate correlations among internal dysfunctional emotion regulation responses to sadness/anxiety, emotion socialization, and adjustment for boys and girls

Variable	1	2	3	4	5	6	7	8	9	10
1. IDSA Intercept BOYS	--	-.443*	--	--	-.02	.088	.152	-.154	.191	.484*
2. IDSA Slope BOYS		--	--	--	.227	-.236	.026	.161	-.036	-.313
3. IDSA Intercept GIRLS			--	.040	-.122	.195	.057	.108	.002	.489**
4. IDSA Slope GIRLS				--	-.257	.206	.028	.023	-.393	-.409**
5. Reward Emotion Socialization					--	.745**	-.492**	-.324**	-.316**	-.181**
6. Override Emotion Socialization						--	-.343**	-.210**	-.176**	-.099
7. Neglect Emotion Socialization							--	.415**	.543**	.235**
8. Overt Aggression Emotion Socialization								--	.783**	.339**
9. Relational Aggression Emotion Socialization									--	.343**
10. Depressed Affect T1										--
11. Anxiety T1										
12. OvertAggression T1										
13. RelationalAggression T1										
14. Prosocial T1										
15. Depressed Affect T5										
16. Anxiety T5										
17. OvertAggression T5										
18. RelationalAggression T5										
19. Prosocial T5										

Note. Averaged values across imputed sets used to calculate correlations with mean score variables. **p<.01. *p<.05.

Table F4

Bivariate correlations among internal dysfunctional emotion regulation responses to sadness/anxiety, emotion socialization, and adjustment continued for boys and girls

Variable	11	12	13	14	15	16	17	18	19
1. IDSA Intercept BOYS	.525**	.071	-.203	.121	.049	.188	-.026	.396	-.135
2. IDSA Slope BOYS	-.332	-.041	.070	-.080	.327	.239	-.068	-.292	.210
3. IDSA Intercept GIRLS	.416**	-.204	.088	-.202	.193	.229	-.093	.034	-.189
4. IDSA Slope GIRLS	-.184	.087	-.261	.249	.276	.298	.093	.139	-.198
5. Reward Emotion Socialization	.059	-.104	.133*	.179*	-.173**	-.083	-.031	.124*	.078
6. Override Emotion Socialization	.111	-.082	.176**	.171**	-.078	.029	-.052	.115	.092
7. Neglect Emotion Socialization	.110	.106	-.103	-.158*	.157*	.104	.092	-.039	-.094
8. Overt Aggression Emotion Socialization	.139*	.016	-.024	-.061	.266**	.129*	-.022	-.035	-.047
9. Relational Aggression Emotion Socialization	.163**	.049	-.035	-.175**	.306	.141*	.084	-.006	-.162**
10. Depressed Affect T1	.434**	-.002	.132*	-.041	.473**	.331**	-.013	.066	-.014
11. Anxiety T1	--	-.089	.103	.208**	.320**	.508**	-.144*	.072	.106
12. OvertAggression T1		--	.505**	-.390**	.109	-.062	.717**	.430**	-.301**
13. RelationalAggression T1			--	-.154*	.166**	.077	.361**	.623**	-.098
14. Prosocial T1				--	-.003	.127*	-.369**	-.130*	.749**
15. Depressed Affect T5					--	.532**	-.002	.082	-.022
16. Anxiety T5						--	-.126*	.074	.047
17. OvertAggression T5							--	.473**	-.327**
18. RelationalAggression T5								--	-.115
19. Prosocial T5									--

Note. Averaged values across imputed sets used to calculate correlations with mean score variables. **p<.01. *p<.05.

Table F5

Bivariate correlations among external functional emotion regulation responses to anger, emotion socialization, and adjustment for boys and girls

Variable	1	2	3	4	5	6	7	8	9	10
1. EFA Intercept BOYS	--	-.164	--	--	.497**	.243	-.083	-.027	.004	-.019
2. EFA Slope BOYS		--	--	--	-.297	.117	-.017	-.132	.473**	.151
3. EFA Intercept GIRLS			--	-.113	.424*	.302	.150	-.216	.209	-.134
4. EFA Slope GIRLS				--	-.090	-.356	.123	-.266	.255	-.134
5. Reward Emotion Socialization					--	.718**	-.486**	-.399**	-.353**	-.184**
6. Override Emotion Socialization						--	-.306**	-.276**	-.276**	-.117
7. Neglect Emotion Socialization							--	.598**	.613**	.364**
8. Overt Aggression Emotion Socialization								--	.776*	.393**
9. Relational Aggression Emotion Socialization									--	.394**
10. Depressed Affect T1										--
11. Anxiety T1										
12. OvertAggression T1										
13. RelationalAggression T1										
14. Prosocial T1										
15. Depressed Affect T5										
16. Anxiety T5										
17. OvertAggression T5										
18. RelationalAggression T5										
19. Prosocial T5										

Note. Averaged values across imputed sets used to calculate correlations with mean score variables. **p<.01. *p<.05.

Table F5

Bivariate correlations among external functional and dysfunctional emotion regulation responses to anger, emotion socialization, and adjustment for boys and girls continued

Variable	11	12	13	14	15	16	17	18	19
1. EFA Intercept BOYS	.151	-.274	.047	-.074	.164	-.071	-.188	.178	.062
2. EFA Slope BOYS	-.327*	-.056	-.150	-.054	-.271	.160	.205	-.032	.360*
3. EFA Intercept GIRLS	.390**	-.063	.145	-.083	-.057	-.154	-.110	-.164	-.020
4. EFA Slope GIRLS	-.207	.229	.010	.073	-.079	.128	-.075	-.276	.172
5. Reward Emotion Socialization	.050	-.026	.181**	.134*	-.218**	-.127*	.024	.108	.071
6. Override Emotion Socialization	.091	-.117	.133*	.196**	-.122	-.067	-.104	.108	.160
7. Neglect Emotion Socialization	.140*	.126*	-.069	-.156*	.252**	.188**	.076	.004	-.097
8. Overt Aggression Emotion Socialization	.163**	.034	-.050	-.073	.277**	.209**	.041	-.013	-.058
9. Relational Aggression Emotion Socialization	.187**	.068	-.014	-.088	.354**	.208**	.113	.017	-.075
10. Depressed Affect T1	.434**	-.002	.132*	-.041	.473	.331	-.013	.066	-.014
11. Anxiety T1	--	-.089	.103	.208**	.320**	.508**	-.144*	.072	.106
12. OvertAggression T1		--	.505**	-.390**	.109	-.062	.717**	.430**	-.301**
13. RelationalAggression T1			--	-.154*	.166**	.077	.361**	.623**	-.098
14. Prosocial T1				--	-.003	.127*	-.369**	-.130*	.749**
15. Depressed Affect T5					--	.532**	-.002	.082	-.022
16. Anxiety T5						--	-.126*	.074	.047
17. OvertAggression T5							--	.473**	-.327**
18. RelationalAggression T5								--	-.115
19. Prosocial T5									--

Note. Averaged values across imputed sets used to calculate correlations with mean score variables. **p<.01. *p<.05.

Table F6

Bivariate correlations among external dysfunctional emotion regulation responses to anger, emotion socialization, and adjustment

Variable	1	2	3	4	5	6	7	8	9	10
1. EDA Intercept	--	-.220	-.048	.045	.00	.159	.123	.365**	.132	.215
2. EDA Slope		--	-.014	-.091	-.184	-.167	-.030	-.259	-.243	-.063
3. Reward Emotion Socialization			--	.718**	-.486**	-.399**	-.353**	-.184**	.050	-.026
4. Override Emotion Socialization				--	-.306**	-.276**	-.276**	-.117	.091	-.117
5. Neglect Emotion Socialization					--	.598**	.613**	.364**	.140*	.126*
6. Overt Aggression Emotion Socialization						--	.776*	.393**	.163**	.034
7. Relational Aggression Emotion Socialization							--	.394**	.187**	.068
8. Depressed Affect T1								--	.434**	-.002
9. Anxiety T1									--	-.089
10. OvertAggression T1										--
11. RelationalAggression T1										
12. Prosocial T1										
13. Depressed Affect T5										
14. Anxiety T5										
15. OvertAggression T5										
16. RelationalAggression T5										
17. Prosocial T5										

Note. Averaged values across imputed sets used to calculate correlations with mean score variables. **p<.01. *p<.05.

Table F6

Bivariate correlations among external dysfunctional emotion regulation responses to anger, emotion socialization, and adjustment continued

Variable	11	12	13	14	15	16	17
1. EDA Intercept	.034	-.012	.041	.074	.125	-.069	-.139
2. EDA Slope	.019	.226	.424*	.121	.009	.013	-.218
3. Reward Emotion Socialization	.181**	.134*	-.218**	-.127*	.024	.108	.071
4. Override Emotion Socialization	.133*	.196**	-.122	-.067	-.104	.108	.160
5. Neglect Emotion Socialization	-.069	-.156*	.252**	.188**	.076	.004	-.097
6. Overt Aggression Emotion Socialization	-.050	-.073	.277**	.209**	.041	-.013	-.058
7. Relational Aggression Emotion Socialization	-.014	-.088	.354**	.208**	.113	.017	-.075
8. Depressed Affect T1	.132*	-.041	.473	.331	-.013	.066	-.014
9. Anxiety T1	.103	.208**	.320**	.508**	-.144*	.072	.106
10. OvertAggression T1	.505**	-.390**	.109	-.062	.717**	.430**	-.301**
11. RelationalAggression T1	--	-.154*	.166**	.077	.361**	.623**	-.098
12. Prosocial T1		--	-.003	.127*	-.369**	-.130*	.749**
13. Depressed Affect T5			--	.532**	-.002	.082	-.022
14. Anxiety T5				--	-.126*	.074	.047
15. OvertAggression T5					--	.473**	-.327**
16. RelationalAggression T5						--	-.115
17. Prosocial T5							--

Note. Averaged values across imputed sets used to calculate correlations with mean score variables. **p<.01. *p<.05.

Table F7

Bivariate correlations among internal functional and dysfunctional emotion regulation responses to anger, emotion socialization, and adjustment

Variable	1	2	3	4	5	6	7	8	9	10
1. IFA Intercept	--	-.254	--	--	.311*	.405**	.167	-.172	.262*	-.256**
2. IFA Slope		--	--	--	.318	-.586**	-.136	.070	.101	.244
3. IDA Intercept			--	-.383	.179	-.186	-.022	.175	-.116	.402**
4. IDA Slope				--	-.127	.125	-.213	.166	-.036	-.350
5. Reward Emotion Socialization					--	.718**	-.486**	-.399**	-.353**	-.184**
6. Override Emotion Socialization						--	-.306**	-.276**	-.276**	-.117
7. Neglect Emotion Socialization							--	.598**	.613**	.364**
8. Overt Aggression Emotion Socialization								--	.776*	.393**
9. Relational Aggression Emotion Socialization									--	.394**
10. Depressed Affect T1										--
11. Anxiety T1										
12. OvertAggression T1										
13. RelationalAggression T1										
14. Prosocial T1										
15. Depressed Affect T5										
16. Anxiety T5										
17. OvertAggression T5										
18. RelationalAggression T5										
19. Prosocial T5										

Note. Averaged values across imputed sets used to calculate correlations with mean score variables. **p<.01. *p<.05.

Table F7

Bivariate correlations among internal functional and dysfunctional emotion regulation responses to anger, emotion socialization, and adjustment continued

Variable	11	12	13	14	15	16	17	18	19
1. IFA Intercept	.079	-.092	-.078	.078	-.100	-.057	.001	.061	-.208
2. IFA Slope	-.043	-.207	.055	-.095	-.099	-.097	-.116	.021	.439*
3. IDA Intercept	.202*	-.077	-.122	.054	.038	.349**	.048	.053	-.191
4. IDA Slope	-.221	-.022	-.103	.141	.720*	-.091	-.077	.272	-.275
5. Reward Emotion Socialization	.050	-.026	.181**	.134*	-.218**	-.127*	.024	.108	.071
6. Override Emotion Socialization	.091	-.117	.133*	.196**	-.122	-.067	-.104	.108	.160
7. Neglect Emotion Socialization	.140*	.126*	-.069	-.156*	.252**	.188**	.076	.004	-.097
8. Overt Aggression Emotion Socialization	.163**	.034	-.050	-.073	.277**	.209**	.041	-.013	-.058
9. Relational Aggression Emotion Socialization	.187**	.068	-.014	-.088	.354**	.208**	.113	.017	-.075
10. Depressed Affect T1	.434**	-.002	.132*	-.041	.473	.331	-.013	.066	-.014
11. Anxiety T1	--	-.089	.103	.208**	.320**	.508**	-.144*	.072	.106
12. OvertAggression T1		--	.505**	-.390**	.109	-.062	.717**	.430**	-.301**
13. RelationalAggression T1			--	-.154*	.166**	.077	.361**	.623**	-.098
14. Prosocial T1				--	-.003	.127*	-.369**	-.130*	.749**
15. Depressed Affect T5					--	.532**	-.002	.082	-.022
16. Anxiety T5						--	-.126*	.074	.047
17. OvertAggression T5							--	.473**	-.327**
18. RelationalAggression T5								--	-.115
19. Prosocial T5									--

Note. Averaged values across imputed sets used to calculate correlations with mean score variables. **p<.01. *p<.05.