

**Optimism in child development: Conceptual issues
and methodological approaches.**

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ABSTRACT

Past research into optimism and pessimism has tended to view these constructs as polar opposites of a fixed personality trait that function in mutually exclusive ways. In the field of child development in particular, this has led to theory-driven work that not only accepts this dichotomy but also uses it to drive and explicate larger issues of resilience and vulnerability. The current thesis challenges the assumptions underpinning this conceptual framework, and, through the use of divergent methodologies, seeks to establish children's optimism as a dynamic and adaptive process with predictive value during the developmental period. In the first two studies, predictors and correlates of putative dispositional optimism and pessimism in children and adolescents were examined. A significant age-related decline in optimism was found, but importantly a degree of functional independence between optimism and pessimism was also observed. The third study elicited more specific optimistic expectancies using a vignette methodology. This was seen to share some congruence with the earlier measures of dispositional optimism, but the study also elucidated some of the parameters and realism constraining children's optimism. Again an age-related decline in optimism was demonstrated that was distinct from any associated changes in pessimism. The fourth and final study involved a pilot examination of the dimensionality of the optimism construct, confirming its functional independence from pessimism, and also demonstrating the fluidity and receptivity of children's optimistic processes from an intervention perspective. From these various studies, it is concluded that optimistic and

pessimistic processes in children and adolescents reflect functionally distinct pathways and drive different aspects of vulnerability and well-being. A reconfiguration of the extant theory in this area seems warranted. Based on this conceptual and methodological critique, a preliminary proposal is put forward towards a more substantive approach to the development of optimism and pessimism during childhood and adolescence.

DECLARATION

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

I give consent to this copy of my thesis, when deposited in the University Library, being made available in all forms of media, now or hereafter known.

Signed,

Edwina M. Farrall

Date:

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CHAPTER ONE

INTRODUCTION AND REVIEW OF THE LITERATURE

Optimism as a Dimension of Positive Psychology: Theories, Methodologies, and Implications for the Study of Child Development

In this new era of positive psychology, the age-old quest for sustained happiness and personal fulfillment has gained a new impetus. Notions of thriving and well-being have always been universal and enduring, yet have now moved beyond the realms of philosophy and faith to the domain of science and prediction. Under the aegis of positive psychology, we may attempt to capture, measure, predict and control the essence of what it means to thrive. We may facilitate the development of explanatory frameworks that rationalize and systematize the myriad ways in which emotions interact with thought to determine levels of adjustment or agency. Certainly, the positive psychology movement has seen the genesis of a desire to better understand the aspects of human nature and functioning that best facilitate a positive outlook, a perspective and sense of self-worth that is global and enduring, yet also realistic and sensitive to the demands of daily life. This perhaps represents the defining conundrum

facing the positive psychology zeitgeist: can a person be at once uniformly happy, and yet remain realistic? Does our society automatically imbue a sense of awareness or jadedness that precludes an optimistic outlook? Western society, in the main, values hope and religious faith, and puts a premium on productivity and a forward focus, yet there remains an apparent sense of jadedness, or wariness, when attempting to reconcile worldliness with happiness, or optimism with discernment and insight. These uncertainties and inconsistencies are embedded in our language, where “ignorance is bliss”, and in our culture, where children and the intellectually disabled are classed together as a group of people free from the burden of knowledge and responsibility, at once envied for their joie de vivre and dismissed for their lack of cerebral/cognitive sophistication.

The ideal of the hopeful, optimistic child provides the best example of this confused cynicism, where their optimism is seen as normal and advantageous, yet naïve, self-serving, and inherently biased and short-sighted. The crux of this perspective lies in seeing optimism as a fairly static attribute amongst children, as a trait evident in a stage of the lifespan where pronounced hope and persistence is needed. The primary thrust of this thesis, however, lies in demonstrating the fluid, dynamic nature of optimism, the ways in which it can, as a contextually-sensitive cognitive process, allow adult or child to be at once driven by positive expectancies yet aware of one’s limitations and the demands of reality. Central to this challenge to conservative views of optimism will be a systematic effort toward establishing optimism as a functionally distinct domain of children’s

cognitive development, and documenting the markers of its potential viability throughout the lifespan. In addressing some of the key assumptions and potential misconceptions surrounding the concept of optimism, uppermost being its degree of relatedness to pessimism and concomitant notions of psychopathology, this researcher hopes to demonstrate that the construct of optimism is very much in a state of flux, needing conceptual clarification, methodological refinement, and a repositioning within contemporary theories of child development. To achieve this goal, this work aims to extend the extant literature on child optimism, not so much by focusing on the applied aspects or issues for parents or teachers, but rather by taking a step back to a more fundamental level. This thesis will attempt to redefine the nature of optimism in an age-appropriate, reflexive way, endeavour to ascertain its adaptive value and attempt to resolve some of the debate surrounding the value of optimism to the developing child. By making an appeal to divergent methodologies, it is hoped that a significant portion of the theoretical and applied dissension surrounding optimism will be thrown into sharp relief, thus allowing for the potential reconciliation of these divergent views and the emergence of a new ontology in this complex area of child development.

The genesis of ‘positive psychology’

The importance of a positive or optimistic outlook has become increasingly clear as a result of research conducted over the past 5 years. In a

movement best attributed to the efforts of Seligman and Csikszentmihalyi (2000), psychology as a discipline embraced the idea that the human condition was as compellingly elucidated through an examination of the strengths, virtues and gifts that make life truly worth living, as by focusing on the disorders and deficits that can disrupt and disable one's negotiation through life. This shift towards a more 'positive' psychology therefore entailed a shift away from its previously exclusive focus on deficits, pathology and loss, toward a more rounded viewpoint, where the study of strengths, virtues and gains were deemed of equal merit or importance. The emphasis of this movement lies in closely examining and understanding the traits and experiences of the individual that truly make life worth living. What has become increasingly apparent over the last 5 years is the need to develop a valid and reliable scientific framework in which to interpret findings from 'positive psychology', and thereby apply this philosophy as to what constitutes a "good life". This framework needs to be built upon our burgeoning understanding of the traits in the individual that underpin resilience and strengths, since only once this profile of human strengths and virtues is well articulated can we begin to understand how we might be able to bolster the flagging strengths, or diminishing hopes, of an individual under stress or strain.

None would dispute that it is the particular talents and resources of an individual that enables them to be resilient in the face of adversity, and thrive along their own journey of personal growth. Positive psychology takes such a statement out of the realm of anecdotal, and into a new epistemology of

documentation and investigation. As it is now understood that one's strengths and resources (or lack thereof) have far-reaching effects beyond their immediate emotional and behavioural impact, positive psychology, as a discipline, encourages the explication of the particular traits and attributes that underpin those resources. Seligman and Csikszentmihalyi (2000), in their landmark paper that first presented positive psychology as a cogent science with a working framework, pointed to the traits of hope, wisdom, creativity, future mindedness, courage, spirituality, responsibility and perseverance, as aspects of human functioning that tend to be ignored by researchers or framed as mere transformations of more authentic negative impulses. Seligman and Csikszentmihalyi's (2000) paper was in fact a general introductory work to positive psychology, heading up an entire millennial issue devoted to the then nascent field. Other papers in the issue covered topics such as the factors that enable happiness, the effects of autonomy and self-regulation, how optimism and hope affect health, what constitutes wisdom, and how talent and creativity are best realized (Seligman & Csikszentmihalyi, 2000). That said, it is obvious that this is a complex field, encompassing many scientific, philosophical, and epistemological views and frameworks, and one that is likely to require sustained attention from diverse research communities for many years to come.

Researchers from behavioural and social fields are likely to form, perhaps, the single most important body of contributors to the field of positive psychology. The social and behavioural sciences are able to hypothesize a representation of

the “good life” in a way that satisfies both empirical rigour and philosophical speculation. Psychology, in particular, is able to link underlying traits with cognitions, cognitions with behaviours, behavioural actions with important psychosocial outcomes, and as such present a synthesized view of what it is that leads to flourishing, resilience, and thriving. Such a focus may range from the positive individual to the flourishing community, and through systematic and empirically sound investigation, psychology should be able to help elucidate the cornerstones of the good life. Embracing this charge or mission, psychologists should be able to, as Seligman and Csikszentmihalyi (2000) point out, “help document what kinds of families result in children who flourish, what work settings lead to the greatest satisfaction amongst workers, what policies result in the greatest level of civic engagement, and how people’s lives can be the most worth living” (pg5).

The benefits of a positive state of subjective well-being are manifold: a resilient and hopeful individual is not only significantly less likely to suffer from depression or anxiety, but is also much more likely to succeed in academic, occupational, political, and athletic fields (Seligman & Csikszentmihalyi, 2000). They are much more likely to be popular with their peers and have a strong social support network, and even enjoy greater physical health (Seligman & Csikszentmihalyi, 2000). While these advantages of resilience and well-being are clear and inarguable, there is perhaps no construct more elusive than that of “well-being” – its contributors are myriad, individual, and changeable. The

challenge for psychology therefore lies in identifying the precursor variables, traits, or processes that set this cycle of marked well-being in train. Such antecedents must be able to be identified, operationalized, and tracked throughout development. They must hold the potential of being present in all people, yet be demonstrably varied as an individual and experiential factor. They must, of greatest importance, hold out promise of being amenable to change, able to be fostered in the individual in a sustained, systematic way. The construct of optimism holds out great promise of meeting these somewhat convoluted criteria, as a cognitive process that, as this thesis will show, has such developmental sensitivity and marked impact across a number of domains.

Positive well-being and notions of resilience and thriving

Central to any discussion of positive psychology and subjective well-being are the notions of *resilience* and *thriving*. As constructs, they represent a plane of functioning extending from baseline normalcy and adjustment, to a greater level of vitality and joy. While the two terms are often used interchangeably, they are in fact two discrete (albeit related and intertwined) processes.

The science of resilience within the discipline of psychology is relatively recent, despite its roots lying deep within philosophical and ecclesiastical

teachings. Wherever there is risk and endangerment, courage and the ability to survive adversity must take effect lest the individual perish, and ancient philosophers have tried to define and explain such courage since time immemorial. Most importantly, courage cannot truly be achieved or realized except through the experiencing of adversity. It is in surmounting our difficulties and crises that risks and discouragement are overcome. It is in this realm that resilience comes into play. Emily Werner (1993), a leading researcher in the field, defined resilience as achieving positive life outcomes in spite of risk. Inherent in this is the ability to rebound from adversity with even greater strength to meet future challenges (Pianta & Walsh, 1998). Surmounting difficult life situations leads to new strengths and coping abilities, and in all allows for a greater experience of the virtues or strengths of *belonging*, *mastery*, *independence*, and *generosity*, four strengths put forward by Brendtro & Larson (2004) as constituting a “Circle of Courage model” (p. 194) that ensures positive growth.

Recent research has made the distinction between resilience and thriving, in the main by focusing on the latter part of resilience definitions, where the emphasis shifts from not only weathering adversity, but rebounding from adversity with even greater strengths and resources than before. It is this second component that is deemed to constitute “thriving” by many. When a physical or psychological downturn occurs in response to adversity, it has at least four potential consequences (O’Leary & Ickovics, 1995). The first possible outcome is a continued downward spiral, in which the initial detrimental effect is

compounded or exacerbated and the individual falls prey to its effects. Secondly, a weaker version of the first is possible – the person survives but is impaired or diminished to some extent. Thirdly, there might be a return to the pre-adversity level of functioning, a return that is either rapid or gradual. It is here that true definitions of “resilience” lie. The fourth and final possibility, is that the person not only survives and returns from an adversity-level of functioning, but also that they surpass their previous level of functioning in some way – they are *thriving* (O’Leary & Ickovics, 1995). This fourth possibility is used by O’Leary and Ickovics (1995) to define the term ‘thriving’, allowing the authors to argue for the greater utility of a model that propounds more than simple homeostatic health (psychological, physical) maintenance. O’Leary and Ickovics (1995) argue that theorists, researchers, and clinicians alike need to embrace this important distinction between resilience and thriving, and accordingly recognize that adversity can eventually bring about benefits. In essence, the authors postulate that the experience of adversity may promote the emergence of qualities (that lie dormant in everybody, there is no sense of exclusivity) that make the person better off than beforehand, endowing them with the strengths and virtues central to the positive psychology movement.

A landmark paper in the area of thriving is that of Charles Carver (1998), where he addressed the distinctions underlying notions of resilience and thriving and their conceptualization. Carver (1998) noted that thriving, be it psychological or physical, may reflect decreased reactivity to stressors following adversity,

faster recovery from subsequent stressors, or a consistently higher level of functioning. Psychological thriving resembles other instances of growth, and may reflect gains in skill, knowledge or confidence, or a greater sense of security in personal relationships (Carver, 1998). At the crux of any discussion of thriving is the issue of why some people thrive, and some are impaired, given the same event. Craver (1998) suggests that the answer may rest on the idea that differences in confidence and mastery are self-perpetuating and self-intensifying. That said, a number of variables whose role in thriving is not yet clear become apparent, calling for systematic investigation. Such variables include optimism, social support, and coping resources and styles (Carver, 1998). Any one, or combination of these variables, may help the individual to bounce back from adversity and come to view all subsequent challenges as opportunities for growth, gain and skill acquisition. If thriving, almost by definition, stems from challenge, then the forward-focus of cognitive constructs such as optimism and hope become all-important in any discussion of resilience and thriving, since it is one's *outlook* or set of expectations about the future that is going to ensure the capacity to look beyond immediate adversity and realize the potential for gain.

The development of an organizational framework of resilience in children

The role of resilience and thriving for flourishing personal growth gains added momentum in the context of child development. Since so much of

resilience and thriving pertains to future expectations of or beliefs in the potential for gain, then children, so impatient for life and the promise of the future, provide an ideal or exemplar of what it means to be truly resilient. Yet while children on the whole are typically viewed as a hopeful, positive population, of course not every child is as resilient as the next. Thriving is not a uniform event through childhood, both internal and external factors must impact upon children's ability to bounce back from adversity and meet the future with even greater resources. Not every child is able to thrive, let alone evince resilience, nor is every child equally likely to succumb to the effects of adversity.

Mandleco and Craig (2000) put forward an organizational framework for understanding and conceptualizing resilience in children, basing their framework on relevant literature that clarifies, differentiates, organizes, and elaborates on pertinent factors associated with resilience in children. The authors aimed, through reference to this framework, to elucidate the salient factors affecting childhood resilience that might originate internally or externally to the individual (Mandleco & Craig, 2000). According to this framework, internal factors include biological and psychological factors; external factors are reflected in the nature and quality of relationships established within or outside the family group (Mandleco & Craig, 2000). The authors emphasize, however, that the influence and importance of each factor may vary in individual situations – the object of their framework is to *guide* research and *facilitate* interventions for practice.

Mandleco and Craig (2000) embrace widespread and commonsensical definitions of resilience (“the tendency to spring back, rebound, or recoil”, p.99), and emphasize the concomitant capacity to respond and endure, or develop and master in spite of life stressors or adversity. Resilient individuals are therefore able to successfully adapt and rapidly adjust to major life events or chronic stressors (Mandleco & Craig, 2000). Mandleco and Craig (2000) note that recent research in the area has pursued an understanding of resilience by focusing on self-righting tendencies driving children to normal development under adverse circumstance. Such a statement clearly highlights the ‘homeostatic’ nature or function of resilience mechanisms. The authors also comment on the way this recent work has identified a common core of dispositions and situations that mark resilient children and seem integral in their ability to monitor their responses to risk, as well as maintain a sense of control and competence in their life even when confronted with physical handicaps, a pathological family environment, or the adverse effects of war, poverty, or dislocation (Mandleco & Craig, 2000). These commonalities have generally been organized into three categories: personal predispositions of the child, characteristics of the family environment, and the presence of extra-familial support sources (Cowen et al., 1991; Garmezy, 1991; Howard, 1996; Luthar & Zigler, 1991; Mandleco & Craig, 2000; Masten & Coatsworth, 1998; Rutter, 1990; Werner, 1990).

The fundamental problem in all theories of childhood resilience is that knowledge as to the various *weight* or importance of specific factors promoting

resilience remains disorganized and convoluted – we do not know which factor is most significant for any particular child. To compound this uncertainty, there is often marked variation in an individual's response to stressors, suggesting the mere presence of any specific factor does not guarantee a resilient outcome (Mandleco & Craig, 2000). At any given point in time, the individual may be particularly overwhelmed or vulnerable, or the adversity may be too great to overcome (Masten, Best & Garmezy, 1990). Across the body of extant literature, some researchers operate from a theoretical perspective (e.g., Polk, 1997), while others review the empirical literature (e.g., Cicchetti & Garmezy, 1993), a schism that is also contributing to lack of synthesis in the study of resilience. There is also a lack of consensus as to a) the age domain covered by the construct, b) the circumstances where it occurs, c) its definition, d) its boundaries, or e) the adaptive behaviours described or conferred (Mandleco & Craig, 2000).

Definitional inconsistencies, as highlighted above, pose a particularly covert and fundamental problem – the meaning of “resilience” too often varies, becoming whatever any author might say it is, thus derailing comprehensive and complementary research efforts from the outset. To illustrate, Block and Block (1980) describe resilience as a personality construct not related to stress, while Rutter (1987), Garmezy (1991) and Werner (1990) all refer to resilience as a characteristic of children from at-risk environments. Others still consider resilience to be the absence of psychopathology in a child whose parents are mentally ill (Cicchetti & Garmezy, 1993), or as success in meeting societal

expectations or developmental tasks (Luthar & Zigler, 1991), or as characteristics empowering children to succeed contrary to predictions (Baldwin et al., 1993). Some researchers also approach resilience from one of three perspectives: 1) a protective perspective, where stress and personality characteristics interact to determine adjustment; 2) a challenge perspective, where competence is enhanced by stress; or 3) a compensation perspective, where personal traits help adjustment when stress reduces competence (Mandleco & Craig, 2000). While resilience is sometimes construed as existing on a continuum (Block & Block, 1980), others perceive it as a discrete or unitary phenomenon that restores equilibrium and promotes adaptation to life challenges (Beardslee & Podorefsky, 1988). Polk (1997) was perhaps the first to put forward any sort of conceptual synthesis, outlining resilience as a mid-range theory with a four-dimensional construct, where dispositional, relational, situational, and philosophical factors intermingle with the environment to form resilience. Such a stance seems to connote some sort of resilience alchemy, however, leaving much to speculation and dissension. In light of such a *potion* of resilience determinants or outcomes, it is hardly surprising to learn that the bulk of empirical work in the area deems it too hard, or doesn't take the time at all, to consider the possibility that resilience may need to be defined or differentiated as a separate construct from the factors or variables that influence or promote resilience.

All of these marked debates, inconsistencies, and research shortcomings inspired Mandleco and Craig (2000) to posit a sophisticated, refined

organizational framework in which to investigate and interpret the examination of childhood resilience. The goal of their framework is to provide researchers with a logical and more specific approach to childhood resilience by identifying the most salient factors and unique influences that affect resilience levels in individuals. As stated, Mandleco and Craig (2000) divide these influences up into the *external* and the *internal* factors affecting resilience.

External factors affecting resilience

External factors are extrinsic, exterior, or generated from outside an individual, and are reflected in the nature and the quality of the relationships held by the individual, both within and outside of family groups (Mandleco & Craig, 2000). Within the family group, the influence of the home environment, parenting practices, and particular family members (grandparents, siblings, etc) take effect. Outside of the family unit, certain individuals (adults, peers), and community resources (such as school, church, youth organizations, health/social service agencies) all contribute to the individual's acquisition of resilience (Mandleco & Craig, 2000).

To elaborate on the external factors outlined above, an organized, structured home environment, without physical crowding, seems to be associated with resilience (Pianta, Egeland & Sroufe, 1990). Parenting practices are reflected not only in behavioural expectations for children, but also in relationships

established with children. Parental rules and enforced boundaries, as well as consistent expectations and behavioural standards, all seem to contribute to resilience in children (Mandleco & Craig, 2000). Resilient children also have parents who have provided consistent nurturing, engendered trust in others, modeled competent behaviours, provided opportunities for confidence-building, encouraged involvement in challenges and joint activities, were emotionally responsive and expressive and used open communication patterns (Baldwin et al., 1993; Mandleco & Craig, 2000). Most resilient children have had the opportunity to establish a close bond with a least one family member who provides them with stable care and necessary attention, receive supplementary support of the same kind from other family members such as siblings or grandparents, and form friendships and alliances with other adults and peers that provide them with further support and direction (Mandleco & Craig, 2000). Finally, external institutions, such as churches, schools and social clubs, provide venues and networks within which children can navigate and overcome new situations and challenges, both through utilizing the structure and frameworks of value to the organization, as well as by drawing on the further support and influence from individuals and groups within those settings (Mandleco & Craig, 2000).

Internal factors affecting resilience

Internal factors, arising from processes, traits, and cognitive systems arising from within the individual, are rather more complex. The input of four

biological factors is easily outlined – we must consider the influence of general health, genetic predisposition, temperament, and gender (Mandleco & Craig, 2000). To discuss these factors in order, firstly, sound general health correlated strongly with levels of resilience in children. Resilient children have fewer childhood illnesses, are robust and strong, are energetic and coordinated, and sleep and eat regularly (Mandleco & Craig, 2000). Secondly, family histories of resilient children note minimal occurrences of hereditary or chronic illness (Rutter, 1987; Werner, 1990). Thirdly, it has been suggested that a child's temperament may mediate adaptation to stress and change (Carey, 1990) and be important to resilience (Gordon & Sond, 1994; Rende & Plomin, 1993). Indeed, the ongoing national Australian Temperament Project emphasizes the capacity of temperament, as represented by varying dominance of the traits of *approach-sociability* (how comfortable the child is in new situations or with unfamiliar children or adults), *reactivism* (how intense or volatile the child is), and *persistence* (the child's capacity to see tasks through to completion), to significantly influence children's well-being across many domains, including healthy adjustment at home and at school (Prior, Sanson, Smart & Oberklaid, 2000). Finally, with regard to gender, males are seen to be more vulnerable to all risk factors, including prenatal and birth injuries, family discord, particular educational deficits (Wolff, 1995), and psychological stressors (Benard, 1991) than are females. Males are also at greater risk for disruptive behaviour problems if placed in out-of-home care (Belsky & Rovine, 1988), or if experiencing divorce (Hetherington, 1991) or natural disaster (Garmezy & Rutter, 1985). The effect of

gender on resilience, however, seems to vary as a function of children's age. For example, males are more vulnerable than females to the effects of caregiving deficits or biological injuries during infancy and childhood, however, females are seen to be more vulnerable during the adolescent period, especially if they bore children early in their lives (Fonagy, Steele, Steele & Higgett, 1994; Werner, 1990). Of course, such biological factors are all likely to be related and may interact. Causality is often markedly unclear; for example, does resilience confer health, or does a lack of acute or chronic illness-related stress allow for a resilient outlook? Future research in the area should attempt to address and explicate the potential relationships existing between biological variables such as those presented above.

Internal factors that *are psychological* in nature are perhaps the most interesting group of variables that influence or promote resilience and thriving. In this author's opinion, this is simply because they are the factors most likely to remain stable enough to be validly identified, assessed, and modified where necessary. Unlike more transient external influences, or the more rigid biological correlates, these variables hold out great promise in providing the necessary port-of-entry to catalyze change in levels of resilience at both an individual and population-based level. Three major psychological variables have been consistently identified in the literature as influencing resilience: cognitive capacity, coping ability, and personality characteristics.

‘Cognitive capacity’ may be usefully divided into the sub-headings of *intelligence* and *cognitive style*, thereby denoting both the particular *skills*, and the particular *approaches*, that an individual uses when attempting to solve problems (Mandleco & Craig, 2000). While there is little evidence to show high intelligence alone promotes resilience, a relationship between the two to that effect does seem to exist – often, resilient children score higher on educational achievement and academic aptitude tests and have better reading, communication, and reasoning skills than at-risk children who developed problems (Benard, 1991; Rende & Plomin, 1993). Dominant cognitive styles, the second component of broader cognitive capacity, when used by resilient children exposed to a variety of risk-producing situations demonstrates their greater reflectiveness and impulse control (Bland, Sowa & Callahan, 1994). That is, resilient children appear to carefully think about and phrase their answers before responding, instead of immediately responding.

An effective ‘coping ability’ is often used synonymously with resilience, yet the two are independent constructs, despite their potential for interplay. Coping can be action-oriented or more internally-oriented (i.e., governing *responses* to the situation, rather than taking action), and requires effort and reflexivity. It is often construed as a way to manage (master, reduce, minimize, or tolerate) environmental and inner demands (Lazarus & Lanier, 1978; Sorensen, 1993). While coping is usually viewed as a process rather than as a characteristic or an event, it can include behaviours used when faced with frustration,

challenges or stressors, and in that guise may be said to be the most valid external manifestation of resilience (Mandleco & Craig, 2000). Coping is only one factor affecting resilience, however, because when stress or adversity is particularly marked or overwhelming, children typically seen as resilient may not cope well, and thus, in that instance, not appear resilient. Nevertheless, the child may still be resilient, since there are other factors present that may compensate for the fluctuating coping ability (Mandleco & Craig, 2000). Overall, resilient children in stressful situations are seen to cope effectively with opportunities, threats, demands, and frustrations within the environment, while at the same time maintaining internal integrity (Mandleco & Craig, 2000). They appear independent, resourceful, and flexible, they manage frustrations well, they choose appropriate solutions to problems, and evince sound judgment (Cederblad, Dahlin, Hagnell & Hansson, 1994; Mandleco & Craig, 2000).

Finally, there are a set of personality characteristics that appear to be consistently associated with greater levels of resilience in children. These characteristics may be subdivided into the intrapersonal (positive descriptions of one's self) and interpersonal (positive descriptions of one's relationships with others) (Mandleco & Craig, 2000). Positive interpersonal characteristics include good self-esteem, self-awareness, an internal locus of control, optimism, motivation, and curiosity (Mandleco & Craig, 2000). Terms such as self-esteem and self-efficacy are frequently employed in the literature to explicate people's ability to deal with life's challenges. Children with a positive self-esteem often

are more aware of their own strengths and weaknesses, realize their capabilities when challenged, and are independent in decision-making. Resilient children know their abilities and seek help when necessary, but are able to remain autonomous and independent even when seeking that help (Bland et al., 1994). They realistically accept responsibility for their own actions and function independently (Beardslee & Podorefsky, 1988).

As stated, locus of control is also a personality characteristic related to resilience, with resilient children and adolescents having an internal locus of control, thus projecting a great deal of personal control over events (Cederblad et al., 1994). In believing that they can influence the environment, resilient children are protected against feeling engulfed by and helpless within adverse situations (Werner, 1990). Resilient children are positive, able to perceive even painful situations in a constructive manner, to use humour, and to maintain a conviction that things will work out in the end, despite all evidence to the contrary (Mandleco & Craig, 2000; Werner, 1990). Finally, resilient children are seen to be creative and inquisitive, assuming an active approach to solving life's problems in innovative ways, and tend to seek more information from the people and environment around them than do non-resilient children, in order to maximize their understanding of, and subsequent control within, any given situation (Mandleco & Craig, 2000).

The framework itself: Synthesizing and utilizing the knowledge base

Having outlined the many influences or variables that seem to promote resilience in children and adolescents, Mandleco and Craig (2000) then propounded their organizational framework by highlighting the interrelationships present amongst the factors influencing resilience. The authors proposed interactional or transactional relationships as existing both *within* and *between* the internal and external factors affecting resilience. That is, Mandleco and Craig (2000) posited that the relationships existing amongst the variables allow for the attainment of homeostatic resilience, since their interdependence ensures that one factor is able to compensate for an absence of, or deficiency in, another factor, thus allowing balance and resilience to occur. The framework is therefore seen as a fairly fluid pool of influences, where shifts within one domain may be corrected by an appropriate and corresponding shift in another. If the absence of one resilience-promoting variable is known, therefore, it becomes of paramount importance for researchers and clinicians to identify the other factors that are most amenable to augmentation. The absence of external resilience factors, such as a stable home environment, cannot always be easily rectified, thus the onus is on psychologists to gain a better understanding of the *internal* variables at play (be they cognitive, coping, or personality factors), so as to more fully realize the potential to restore balance and resilience to the individual.

This organizational framework is perhaps one of the most valuable contributions made to the positive psychology movement, and holds out great promise of enhancing our ability to examine and understand childhood resilience, and, more practically, foster the skills and tendencies that promote resilience and thriving in *all* children from *any* background. The fact that the framework articulates key *cognitive* influences on resilience, arguably the most fluid internal variables and those most amenable to targeted interventions, augurs well for the framework's ability to shed light on the mechanisms underlying resilience and, consequently, teach us how to best foster thriving in children throughout development.

Taking positive psychology forward

In all, a new science of strength and resilience is unfolding, one that will endeavour to make normal people stronger and happier, more productive, masterful and efficacious. Positive psychology and the emotions it entails impact strongly upon physical health, as numerous researchers are beginning to show (e.g., see Salovey, Rothman, Detweiler & Steward, 2000). It is also true that individual positive psychological experiences are embedded within a social context, which is why positive institutions need to receive systematic attention in any study. At this broad level, social contexts impact upon subjective positive experiences in terms of both the contributions of social relationships and roles to happiness (Myers, 2000), as well as the sometimes beneficial necessity of social

norms or mores relieving the individual of the burden of choice (Schwartz, 2000). Finally, the developmental phase of an individual is going to impact upon the subjective psychological experiences of that person, since strengths and virtues unfold and evolve over the entire lifespan. This last caveat to a positive epistemology, that of the fluid impact of *development* upon relevant strengths, traits, and virtues, will be at the fore of all discussions to follow in this thesis. Child development, to be specific, will be the focus or grounding of this discussion of positive psychology, since the cognitions and emotions of children dictate the sustainability of strengths and virtues throughout the rest of the lifespan. Children's cognitions are rapidly evolving and of paramount importance, yet their adaptive value during particular times of development have been subject to some significant contestation, as this thesis will show.

An interest in children, when extrapolating issues of 'positive psychology', is twofold. Firstly, childhood is the phase in which traits or dispositional characteristics are molded, where their environment and the people around them play a huge role in determining what type of person they are likely to be, and as such, what their chances are for living a fulfilling and happy life. Secondly, children may be taken as an exemplar, or ideal, for the type of person we, as adults, would hope to be: one that is hopeful, persistent, trusting, inquiring, and contented. Most adults would agree that there is that special *something*, or essence, to children, that seems to make them irrepressibly happy and hopeful.

What becomes important from a positive psychological perspective is the need to gain a better understanding of children's traits and attributes, so as to better identify whether such traits might be validly and adaptively *retained* throughout the lifespan. What is it about the temperament of children, or perhaps the cognitions stemming from their expectations, which makes them so particularly resilient? If human strengths, such as optimism, courage, faith, hope, and perseverance, are known to act as buffers against mental illness, then children are the best population in which to study their effects – major and debilitating episodes of clinically significant depression and anxiety are much less common in children than in adolescents and adults, thus children must have these protective human virtues in abundance. Examining the hallmarks of a flourishing individual, such as a disposition of hope and optimism, within a developmental context therefore seems entirely warranted.

Affect and cognition in the developing child: Optimism as a potential mechanism toward ensuring resilience

Children's affective or emotional development has garnered much research and clinical interest. To the extent that childhood disruptions, challenges, and outcomes can be linked to an emotional plane of functioning, such research foci or approaches are surely informative and useful. While the relationships between cognition and emotion are by no means unidirectional or simplistic, it is keeping with what is known about cognition and affect to discuss the latter as

reflecting the former, in the sense that certain thought processes must underlie an emotive state. That being said, this thesis shall focus on affective constructs and processes only as they pertain to the cognitive realm.

Theories describing children's 'cognitive development' put forward a framework to help us understand how best to conceptualize the manifold changes that occur in the child through development, including the fundamental question as to the contribution of nature versus that of nurture. Theories of cognitive development span the growth of such capabilities as perception, attention, language, problem-solving, reasoning, memory, and conceptual understanding, and tend to reside with one of four most influential theories of cognitive development: Piagetian, information-processing, core-knowledge and socio-cultural (Siegler, Deloache & Eisenberg, 2003). While all four camps convey important insights into the basic questions surrounding child development, they also all emphasize different issues. For example, while both Piagetian and core-knowledge theories focus on sources of continuity (assimilation, accommodation, equilibrium) and discontinuity (qualitative changes in the child, issues of broader applicability, transition periods and invariant sequences) information-processing and socio-cultural theories emphasize aspects of *change* and the mechanisms underpinning such change (Siegler et al., 2003).

Piaget's (1926) theory of child development has certainly withstood the test of time, and continues to be the benchmark against which all other theories

are evaluated. Of interest to this thesis are the Piagetian stages of development of *the preoperational stage* (2 to 7 years), *the concrete operational stage* (7 to 12 years), and, to a lesser extent, *the formal operational stage* (12 years and beyond). To summarize the stages briefly, Piaget theorized that children in the preoperational stage become able to represent their experiences in language, mental imagery, and symbolic thought (Piaget, 1926, 1928/1959). In the concrete operational stage, children become able to reason logically about concrete objects and events, while in the formal operational stage and beyond, people become able to think about abstractions and hypothetical situations (Piaget, 1926, 1928/1959). The many changes that occur within and between the preoperational and concrete operational stages are of primary interest to this thesis, since the cognitive changes occurring guide children's socio-emotional development in such significant and fascinating ways. One of the most well known instances of development here pertains to children as "egocentric" creatures, and explorations of the scope of children's egocentrism (highlighted by Piaget as a key 'limitation' of their cognitive integrity) has been well-pursued by psychologists. Egocentric thinking is markedly evident during the preoperational stage (particularly around age 4 years), and is seen to guide preschoolers' explanations of both events and behaviours.

Under the aegis of "egocentrism" sometimes falls 'optimism', again conceptualized as cognitive 'limitation' by Piagetian and information-processing (problem-solving) theories alike. In such instances, children are put forward as

having “excessive” amounts of optimism – they think they can remember more, communicate more effectively, solve problems, and imitate a model more effectively than they actually can (Bjorklund, 1997; Schneider, 1998). This “over-optimism” is viewed as incompatible with problem solving, under the assumption that it precludes effective planning since children believe they can succeed without making any effort (Schneider, 1998; Siegler et al., 2003). By the same token, this over-optimism is seen as precipitating rash and potentially endangering behaviours. For example, 6 year olds who overestimate their physical abilities have more accidents than less optimistic children (Plumert, 1995). Older children are seen as more realistic in assessing their capabilities, which contributes to their planning more often. Such a theoretical stance, therefore, equates optimism with a critical degree of egocentrism that fosters dangerous feelings of infallibility and omnipotence. Whether such a position on the nature of optimism is warranted is open for debate, and is a question that shall be systematically considered throughout this thesis.

On optimism: Assumptions, intuitions, and typologies

The aim of the following section is to provide the reader with an overview of optimism, to take a step back and consider the fundamentals of this construct (and its supposed complement, pessimism). It is timely to consider what optimism might be said to be in purely theoretical terms, what is known about its cognitive and socio-emotional applicability, and, finally, what is known,

assumed, and utilized when considering how best to measure or assess this complex factor.

Optimism has attracted a large measure of interest from psychological researchers, yet as a construct is still markedly subject to theoretical and applied debate. In developmental contexts in particular, optimism is surrounded by a great deal of dissension as to its adaptive value to the maturing child. As we have seen thus far, some researchers (e.g., Lockhart, Chang & Story, 2002) argue that optimism facilitates learning and promotes perseverance in the child, while others (e.g., Schneider, 1998) argue that it rather endows a degree of naivety that prevents the child from understanding the constraints of reality, and may consequently lead the child into physical danger. Such arguments as to the adaptive utility of optimism, however, may be premature, since more fundamental issues as to the definition of optimism, and the most accurate and appropriate mode of measurement of this construct, still remain outstanding.

Stepping back: What is “optimism”, and what is known or assumed about it?

Optimism, as a construct, strikes a chord of interest in many domains of psychology. Usually defined as a set of cognitive expectations or attributions about the future that are positive and hopeful (e.g., see Peterson, 2000), it yet spans arenas of psychology well-beyond the purely cognitive. As a stable and

reliable tendency to view the world in a particular way (and direct the personal contingencies interacting between individual and environment), optimism can be seen as an aspect of personality (Armor & Taylor, 1998; Peterson & Seligman, 1984; Scheier and Carver, 1985). As a predictor of behaviour, it is integral to studies of learning, motivation, and self-regulation (Bandura, 1977, 1986; Scheier & Carver, 1988). As the consequence of social inference processes, optimistic expectancies are thoroughly embedded in theories of social cognition (Armor & Taylor, 1998; Taylor & Brown, 1988; Weinstein, 1980). Last but not least, as a predictor or antecedent of physical and mental health outcomes, optimism is of great interest to health and clinical psychologists (Armor & Taylor, 1998; Peterson & Bossio, 1991; Weinstein, 1984, 1987). The following section of this thesis aims to at once represent the demonstrated complexity of the optimism construct while also reinforcing its primary interest as a cognitive “health” variable to this researcher.

Optimism, temperament, and self-regulation

Eysenck (1976) put forward an explanation for the development of antisocial behaviour rooted in biological factors, which he characterized as temperament. He posited that what psychologists call “personality” is the result of the interaction between temperament and social experience. Eysenck’s hypothesis was that ‘behavioural inhibition’ (a process that allow for the regulation of behaviours in a socially acceptable way), which Eysenck termed

“conscience”, is acquired through a conditioning paradigm. An individual’s response to social experiences that hold the potential for conditioning behavioural inhibitions varies as a function of temperament-based personality traits. That is, some people have a temperament that makes them either more or less sensitive to experiences that could potentially lead to a behavioural inhibition and therefore more or less easily socialized (Jackson & Center, 2002).

The notion of optimism becomes pertinent when one considers Eysenck’s (1976) statement that the Extraversion personality trait is comprised of several subtraits, including sociability, impulsivity, and optimism. Complementarily, the trait of Neuroticism is similarly deemed to subsume the subtrait of pessimism (Eysenck, 1976). Extraversion and Neuroticism, and the third temperament trait of Psychoticism, are the characteristics underpinning Eysenck’s (1976) theory of personality. He suggests that individuals who are low on both the Extraversion and the Neuroticism trait are most likely to acquire a coherent set of behavioural inhibitions (or a “conscience”) than those who are high on both traits. Thus, the self-regulatory functions of optimism and pessimism become apparent: to the extent that these specific subtraits are reliable indices of broader Extraverted and Neurotic tendencies, then they may be seen to guide the acquisition of socially-desirable behavioural inhibitions. Specifically, Eysenck’s (1976) position implies that individuals low on both optimism and pessimism more readily acquire “conscience” than those high on both traits. To this effect, we see optimism and

pessimism as temperament-based, or biological, factors that significantly impact upon the individual's navigation of the external world.

“Situating optimism”

This idea of optimism and pessimism as serving self-regulatory functions has been carried through to more contemporary research. Armor and Taylor (1998) refer to a “situated optimism”, one that arises out of the interplay between specific outcome expectancies, and the resulting self-regulation that occurs pending the realization of those expectancies (or otherwise). As indicated above, optimism as a construct is typically referred to as a set of expectations about the future, yet the particular role of specific outcome expectancies in self-regulation, and the concomitant *expression* of optimism, has been surrounded by conflicting messages in the extant literature.

The specific expectancies one holds are typically optimistic, yet the self-regulatory consequences of those optimistic expectancies are unclear and much debated (Armor & Taylor, 1998). There is evidence to suggest that there are benefits to being optimistic, with favourable expectations promoting the realization of favourable outcomes; on the other hand, there is also evidence that people's specific predictions tend to be unrealistically optimistic, which if acted upon unchecked would seem to render people vulnerable to a variety of negative consequences ranging from disappointment to endangerment (Armor & Taylor,

1998). Again, the crux of the contestation surrounding optimism is highlighted: is it possible to be at once optimistic *and* realistic? The extent to which the notion of “unrealistic” optimism holds true, especially in a developmental context, is of prime interest to this researcher.

Armor and Taylor (1998) contend that the seeming oxymoron surrounding the notion of *realistic* optimism can in fact be resolved in light of three key observations: 1. Unrealistically optimistic expectancies show a high degree of relative accuracy (that is, outcomes often turn out according to the optimistic wish, possibly through self-fulfilling prophecies); 2. They are often tied to concrete action plans for dealing with the threats or advancing personal projects (what the authors refer to as “active optimism”); and 3. Such expectancies are *situated*, that is, they tend to be expressed to greater or lesser degrees depending on the demands of the situation and the immediate needs of the individual. In general, optimistic expectancies tend to be expressed strategically, being somewhat more extreme in situations where they are less likely to be disconfirmed, but more restrained in situations in which the potential for disconfirmation is great (Armor & Taylor, 1998).

While this seemingly self-protective model is always exerting some effect upon one’s optimistic expectancies, at times optimism will not be duly reigned in and expectancies will be inevitably disconfirmed. Armor and Taylor (1998) proffer evidence to suggest that people cope with these disconfirmations by

utilizing any of a variety of mechanisms for maintaining optimistic beliefs even when confronted with their disconfirmation. Through the combination of relative and strategic optimism on the one hand, and strategies for minimizing the potentially harmful effects of disconfirmations of optimistic beliefs on the other hand, people appear to be able to simultaneously meet the self-regulatory need to extract meaningful information from their environment (even when this information is negative or self-threatening) and to maintain a positive sense of self (Armor & Taylor, 1998). Such observations have a critical bearing upon interventions designed to enhance a “realistic” optimism – they suggest that efforts to undermine unrealistic optimism may make people more pessimistic without necessarily enhancing accuracy, and might at the same time undermine motivation, enthusiasm, persistence, and mood (Armor & Taylor, 1998).

“Dispositional optimism”

Dispositional optimism, a measure of generalized outcome expectancies (Scheier & Carver, 1985, 1992), serves a useful point of comparison for the study of specific expectancies, and their subsequent self-regulatory effects. Dispositional optimism has been found to be strongly and consistently associated with positive outcomes, such as better physical health, and heightened active problem solving or coping skills (Scheier & Carver, 1992). Although the contention that over- or unrealistic optimism might lead the individual into trouble is, at times, warranted, published work on the effects of (or associations

with) dispositional optimism have been almost uniformly positive. Prospective studies have found dispositional optimism to affect psychological well-being (Armor & Taylor, 1998; Aspinwall & Taylor, 1992), physical well-being (Sheppard, Maroto & Pbert, 1996), health-protective behaviours (Armor & Taylor, 1998; Sheppard et al., 1996), and active and successful coping with stress (Aspinwall & Taylor, 1992; Strack, Carver & Blaney, 1987). While several researchers have posited that dispositional optimism may be confounded with negative affectivity (that is, ‘optimism’ is only the external indication of a lack of negative affect, and not a unique state or trait in its own right), and that its apparent benefits might in fact be primarily due to its negative relationship with this variable (e.g., Smith, Pope, Rhodewalt & Poulton, 1989), others have demonstrated its independent effects (e.g., Scheier, Carver & Bridges, 1994). Ascertaining the unique predictive power of the optimism construct, as distinct from any simple absence of negative complements or associates, is an ongoing issue in positive psychology, and as such shall be duly considered throughout this research Thesis.

The measurement of dispositional optimism: The Life Orientation Test

The positive influence of dispositional optimism has been largely understood under the auspices of Carver and Scheier’s (1981) cybernetic model of self-regulation. According to this model, goal-directed behaviours are strongly

influenced by people's expectations about what the outcomes of their behaviours might be (Armor & Taylor, 1998; see also Bandura, 1977, 1986; Rotter, 1954; Seligman, 1975). If expectancies for success are favourable, behaviour will be initiated and maintained; if expectancies are unfavourable for success, then behaviours will not be initiated, or the person would disengage from existing pursuits (Armor & Taylor, 1998). Actual outcomes from studies support this model: favourable expectancies are seen to increase motivation, effort and persistence, even in the face of obstacles that might usually impair performance (Armor & Taylor, 1998). Such observations clearly align with lay or commonsensical understandings of what it means to be "optimistic". Conversely, studies show less favourable expectancies for success have been associated with early, oftentimes premature, disengagement from tasks, greater anxiety, and more internal attributions for failure (Armor & Taylor, 1998; Seligman, Reivich, Jaycox & Gillham, 1995). The link between expectancy-based cognitions and affect is abundantly clear – where the expectation for success does not exist (pessimism, if you will), then disengagement, anxiety, and helplessness results, the key forerunners of a depressive episode.

Dispositional optimism, by nature a broad and multifaceted concept, seems to fit somewhat ill against a discussion of highly specific cognitive expectancies. While initial studies of Carver and Scheier's cybernetic model did focus on the particular effects of highly specific expectancies (e.g., see Scheier & Carver, 1988), such work has been replaced by the more general construct of

dispositional optimism (Scheier & Carver, 1985). It is posited that this construct serves as an index for one's typical or average expectancy that: firstly remains stable within a person over time, as well as across outcome domains and performance situations; secondly, differs between people as a meaningful aspect of personality; and thirdly, can be used in a similar way as outcome expectancies that are much more specific in focus (Armor & Taylor, 1998). In all, generalized expectancies – particularly as measured by Scheier & Carver's (1985) Life Orientation Test (LOT) – have been promulgated to serve as a cross-situational proxy for more specific expectations (Armor & Taylor, 1998).

While the predictive value of Scheier and Carver's (1985) generalized expectancy construct is well-established, the conceptual status of generalized optimism as a proxy for more specific expectations is much more uncertain. According to Scheier and Craver (1992), "generalized optimism may be more of an emergent phenomenon, arising out of domain-specific expectancies, but being somewhat separate from them" (p.216). To the extent that general optimism *is* an emergent property that develops out of specific predictions, the study of specific outcome expectancies will be useful because they may provide the experiential foundation for generalized optimism (Armor & Taylor, 1998). With regards to the second component of Scheier and Craver's statement above, to the extent that general optimism is somewhat *different* from the specific expectancies upon which it is based, the study of specific outcome expectancies is important because they may tell us something different about self-regulation than has been revealed

in studies of generalized optimism (Armor & Taylor, 1998). Although the development of generalized expectancies out of specific ones has yet to be investigated, the distinction between generalized and specific expectancies has been documented both in terms of statistical independence and in terms of their differing consequences (Armor & Taylor, 1998).

Studies comparing generalized outcome expectancies as measured by the LOT with measures of specific expectancies have generally revealed weak to almost nonexistent associations between the two measures (Armor & Taylor, 1998; Fitzgerald, Tennen, Affleck & Pransky, 1993; Fontaine, 1994). Therefore, knowledge of an individual's generalized expectancy will provide at best only a partial indication of how optimistic that person would be for specific outcomes in specific situations. Specific expectancies may be influenced by factors that are both internal and external to the individual, thus specific expectancies are highly likely to vary across situations, presenting a marked degree of flexibility and malleability over time and context (Armor & Taylor, 1998). It is anticipated that such issues will have significant bearing on the research to follow in this thesis: the very measurement of optimism as general reference-point for the individual, as with the retrospective YLOT, may yield vastly different findings than might be obtained if using a scale assessing specific expectations in response to clear situations or events. Further to that, some recent methods (e.g., Lockhart, Chang and Story's (2002) hypothetical vignette method) do not assess optimism with reference to the individual's personal expectations at all. Moreover, related

affective issues such as coping could be operationalized as very general responses for dealing with symptoms or emotions, or as specific behaviours and actions executed in response to stressful and concrete events. Recognizing the need to use and assess multiple measures of optimism and pessimism and consider their generalized or specific nature, as well as reconcile such findings with varying degrees of specificity in affective outcomes, is a primary concern of this researcher.

As well as being statistically independent, generalized and specific expectancies have also been found to exert different effects on a variety of outcome measures (Armor & Taylor, 1998). Studies that have investigated the effects of both specific and dispositional optimism have generally found that specific optimism is a better predictor of specific outcomes than is dispositional optimism (e.g., Fitzgerald et al., 1993; Taylor et al., 1992). While several studies have suggested that constructs such as outcome-specific efficacy beliefs may serve as proximal predictors that mediate the effects of generalized expectancies on eventual outcomes (e.g., Cozzarelli, 1993; Schiaffino & Revenson, 1992), studies examining specific expectancies have generally not supported such a mediation model and instead have found the two types of expectancies to have independent effects (e.g., Fitzgerald et al., 1993). At least one study, however, has found specific optimism to mediate the effects of dispositional optimism for some outcomes, although the two constructs were found to have independent effects for other outcomes in the same study (Segerstrom, Taylor, Kemeny & Fahey, 1998).

In all, the results of these studies suggest a conclusion similar to the one reached in a wide variety of studies linking the impact of cognitions on behaviour and affect to the specificity of the antecedent cognition (e.g., Bandura, 1982, 1986; Beck, 1976; Lazarus, 1991): the impact of optimistic expectations on eventual outcomes may be greatest when the specificity of the expectancy is consistent with the specificity of the desired outcome (Armor & Taylor, 1998).

Specific expectancies and “unrealistic optimism”

While dispositional optimism typically demonstrates uniformly positive effects or associations, the optimism in people’s specific expectancies is set out as responsible for both positive and negative outcomes (Armor & Taylor, 1998). In the main, this appears to be due to the fact that people’s specific expectancies about themselves tend to be markedly optimistic, often to an unrealistic degree (e.g., see Weinstein, 1980; Weinstein & Klein, 1996). While most empirical studies on the consequences of specific expectations suggest that favourable expectancies lead to favourable outcomes (e.g., Armor & Taylor, 1997), it cannot but make sense that the potential for negative consequences following an unrealistic degree of optimism is significant.

As stated, when expectations are no longer grounded in reality, the likelihood of a person experiencing disappointment is very high, and may even lead to dangerous or inappropriate decisions (Armor & Taylor, 1998). While an

individual may frequently score within the “normal” range on broad measures of dispositional optimism, their specific expectancies may be nonetheless overtly “unrealistic” (as measured by criteria such as the degree of passivity or fatalism inherent in the belief) (Armor & Taylor, 1998). Of greatest importance, perhaps, is the fact that their unrealistic optimism is often impervious to challenge or modification. Despite all evidence to the contrary, including evidence of their own past failures in that situation, individuals frequently fail to succumb to the disappointment and disengagement one would logically predict (Armor & Taylor, 1998). This notion of “unrealistic”, or perhaps “naïve”, optimism will be systematically addressed throughout this thesis. To the extent that an optimistic individual does not give up in the face of initial failure, and instead perseveres, then that positivity bias is undoubtedly of adaptive benefit. This is clearly of evolutionary value to the developing child, as they endeavour to learn about and navigate their environment. Should a child maintain self-relevant expectancies that are markedly inaccurate or inappropriate, however, then the potential for disillusion and endangerment becomes very real. Resolving this conundrum, of what it takes or involves to be discerningly optimistic – particularly as a child or adolescent – is of great interest to this researcher. It is hoped that this research will show that the best avenue for instilling an ability to challenge, and therefore modify, unrealistic expectancies occurs through the systematic training of optimism and resilience skills through middle childhood.

“Big” versus “little” optimism

So far, we have seen a number of different types or conceptualizations of optimism – dispositional, situated, and unrealistic optimism. Peterson (2000) discusses these different types of optimism within a broader discussion as to whether optimism is best conceptualized as an inherent part of human nature, an innate tendency serving some adaptive or evolutionary function, or as a key individual difference factor, where it is possessed to varying degrees across individuals. Of greater interest, Peterson (2000) adds further refinement to the field by highlighting the different levels of abstraction inherent in perhaps *any* subtype of optimism, dispositional, situated, or otherwise. Specifically, Peterson (2000) posits two types or levels of optimism: “big” and “little” optimism. Little optimism subsumes specific expectations about positive outcomes. This could encompass very transient, almost trivial situations; for example, “I will make a stunning cake for the party this evening”. Big optimism, however, refers to larger and less specific optimism; for example, “our prime minister is really going to get it right this year!”. Peterson (2000) emphasizes that optimism may function differently as a consequence of its level of abstraction. He posits that big optimism may be a biologically given tendency filled in by culture with a socially acceptable content – it leads to desirable outcomes because it fosters a general state of resilience and enthusiasm. On the other hand, little optimism may be the product of an idiosyncratic learning history – it leads to desirable outcomes

because it predisposes specific actions that are adaptive in concrete situations (Peterson, 2000).

In view of the above, an interesting conundrum comes to light: could the big-versus-little optimism distinction also be extended to, or perhaps even be defined as, a consideration of self-versus-other? Could small optimism be seen as reflective only of one's own future outcomes, while big optimism pertains to broader, more generous expectations regarding the outcomes or future of *other* people or hypothetical situations? When one considers the fact that children's optimism is usually put forward as quite egocentric, existing simply to be of benefit to the developing child (and for *this* reason, is often viewed as a sign of cognitive naivety that should duly dissipate), a distinction allowing the exploration of children's optimism for themselves, and optimism for others and the wider world, could serve to highlight some important nuances of children's cognitions, and perhaps debunk some common misconceptions in the process.

The relationship between big and little optimism is not well understood. Empirically, the two are almost certainly correlated, however it is also possible to imagine someone who is a little optimist but also a big pessimist, or vice versa (Peterson, 2000). Moreover, it is possible to imagine situations in which big optimism has desirable outcomes but little optimism does not, or vice versa. The determinants or antecedents of the two may be different, and ways of promoting them may therefore require different strategies (Peterson, 2000).

Peterson (2000) concludes his discussion of big and little optimism by emphasizing that researchers need to approach such a theoretical distinction with greater specificity and deliberation. He notes that, on the face of it, the dispositional optimism of Scheier and Carver (1985) and the hope measure of Snyder et al. (1996) tap big optimism because they ask people to respond to generalizations about the future. In contrast, measures of explanatory or attributional style – such as the Children’s Attributional Style Questionnaire (Thompson, Kaslow, Weiss & Nolen-Hoeksema, 1998) – seem to focus on smaller optimism, since the measures seek specific causal explanations for concrete events (Peterson, 2000). Research to date has rarely included more than one type of optimism measure, let alone incorporated a distinction between different subtypes of functional aspects of optimism, an omission that clearly warrants attention in future research efforts.

Optimism and pessimism: Roles and relatedness

The Oxford English Dictionary defines optimism as “hopefulness and confidence about the future or success of something”; it defines pessimism as a “lack of hope or confidence for the future” (AskOxford.com, 2006). What becomes abundantly clear is that optimism and pessimism are almost always regarded as opposite tendencies, that function in a mutually exclusive way. An optimistic expectation about the future does not allow for it to be also pessimistic

in some way. A pessimistic *version* or alternative might exist, but the two are seen as opposing tendencies that cannot coexist.

While all of this makes sound intuitive sense, new evidence is emerging to suggest that the two are not in fact mutually exclusive. While the two are usually seen as opposite poles of the same continuum (and indeed, they are usually seen to correlate in a negative manner), indications of their *functional* independence are coming to light. The optimism and pessimism items in Scheier and Carver's (1985) Life Orientation Test prove somewhat independent of each other, allowing for the consideration that perhaps some people expect both good things and bad things to happen plentifully in their future. Perhaps this aligns more closely the 'incremental' model of thinking about the world put forward by researchers such as Heyman and Dweck (1998), where outcomes are seen as fluid over time and rather unpredictable. On his part, Peterson (2000) describes individuals displaying marked optimism and marked pessimism as having 'hedonically rich' expectations (that is, they perceive the potential for great good, and perhaps great ill, to affect their lives, their personal schemata are 'rich' in possible outcomes for the self) rather than responding erroneously to a dichotomous scale. If the scales used are not at fault, and people can in fact be consistently optimistic *and* pessimistic, then the affective consequences must be considered. Are such people living their life fully, or are they confused or ambivalent? Peterson (2000) raises an important point of issue here, as to whether there might be effects of optimism above and beyond the effects of pessimism.

This is an intriguing point, and in light of emerging evidence of the functional independence of optimism and pessimism, one that must be pursued. If the unique effects or predictive value of either optimism or pessimism could be established, programs or interventions could be finessed to more accurately promote a given set of cognitions and affective outcomes. This theoretical point of the interdependence-versus-independence of optimism and pessimism holds significant implications for methodology, and like the big-versus-little debate, needs to be addressed more explicitly in future research endeavours.

The measurement of child optimism

All the many disputes and inconsistencies regarding the conceptualization of optimism, its level of abstraction, and its vaunted relationship with pessimism, have had profound and ongoing influence upon the measures available to assess optimistic expectancies. Not only has such debate retarded the development of a wide range of measures to choose from, but it has severely impacted on the value of those few scales in existence. The situation becomes all the more important in the field of child and youth optimism – with the notable exception of the Youth Life Orientation Test (to be described below), the absolute paucity of age-appropriate measures in the field have led to a common practice to simply deduce “optimism” from broader scales of attributional style, and from a lack of

depressive or “pessimistic” symptoms. Even the well-regarded Penn Resilience Program (Seligman et al., 1995) (also to be discussed below), promotes a “best-practice” approach of administering the Children’s Attributional Style Questionnaire (CASQ) and the Center for Epidemiological Studies – Child Depression (CES-DC) scale to infer an index of the child’s optimistic or pessimistic tendencies. The possibility that optimism might function entirely independently from pessimism, however, with unique predictive power, has not been duly considered. This issue warrants systematic research and consideration.

The new Youth Life Orientation Test

The Life Orientation Test (LOT) (Scheier, Carver & Bridges, 1994), a measure of dispositional optimism and pessimism, has been mentioned several times in this review so far. The LOT is a self-report measure with separate optimism and pessimism subscales, where scores are taken to represent the preponderance of optimistic as opposed to pessimistic expectations in the individual. This is a well-validated and frequently used measure, yet it is specific to adult populations. Ey, Hadley, Nuttbrock Allen, Palmer, Klosky, Deptula, Thomas and Cohen (2005) recognized the limited applicability of the LOT, and, given the paucity of work in developmental domains, engaged to develop a Youth version of the LOT – the Youth Life Orientation Test (YLOT). This was done to good validity and reliability outcomes, and thus the YLOT sits as one of the most

exciting developments in the field of child and youth expectations and attribution processes in many years. The scale is brief (16 items) and eminently suited for use with children. The language is simple yet appropriate for the elicitation of dispositional attributes, and may be easily assimilated by children. In view of its ease of administration, and the longstanding validity of the theory behind it, the YLOT will be a major focus of the research to follow in this thesis. Certainly, there is no other known psychometric scale in existence for assessing children's optimism and pessimism, and for this very reason the utility and validity of the YLOT must be challenged, lest it gain a default level of precedence in any avenue of research investigating optimism. This author hopes to demonstrate its best features, as well as elucidate previously overlooked nuances and potentially short-comings, through a variety of empirical studies.

The YLOT: Development, structure, and interpretation

After recognizing that the deficit in research on optimism in youth was largely attributable to the lack of a developmentally appropriate measure, Sydney Ey and colleagues at Pacific University and the University of Memphis constructed the Youth Life Orientation Test (YLOT; Ey et al., 2005) as a scale transportable across developmental populations and entirely comparable to the theory and outcomes of the LOT. This Test allows for the testing of positive and negative expectations in children as young as 7 years, and its presence and use

augurs well for the clearer articulation of children's general expectations or dispositional judgments within the extant literature.

The YLOT is a sixteen-item self-report measure of children's optimism and pessimism. Like the LOT, it consists of separate optimism and pessimism subscales, yielding a score for each (a 'pure' measure of optimistic or pessimistic expectations, where higher scores indicate greater levels), and is also designed to yield a total optimism score – which is the sum of all the optimism items plus reverse-scored pessimism items). Items from the YLOT include: “usually, I don't expect good things to happen to me (pessimism)”, and “I am a lucky person (optimism)”. Children respond using a 4 point rating scale, where items are judged as being: ‘True for me’ (score of 3), ‘Sort of true for me’ (score of 2), ‘Sort of not true for me’ (score of 1), or ‘Not true for me’ (score of 0). All items of the YLOT may be viewed in Appendix A.

As stated, the YLOT is designed to yield three scores: an optimism score, a pessimism score, and a total optimism score. This was done in order to appease, and perhaps help resolve, debate about whether optimism and pessimism represent separate constructs or opposite ends of the same continuum. The scales are scored such that a higher number indicates a higher score (e.g., high pessimism score means high on pessimism responses). The optimism scale is calculated by summing the scores of items 5, 8, 10, 12, 14, and 16; the pessimism score is calculated by summing the scores of items 4, 7, 9, 11, 13, and 15. The

total optimism score is the sum of the optimism and reverse-scored pessimism items. This Test takes approximately 15 minutes to complete.

The YLOT was examined by the authors using a sample of 204 4th-6th graders. Its validity and reliability was established through the systematic comparison to other existing measures in the field, and through assessing child- and parent-reported outcomes at a 3 month follow-up. To assess its validity, the Test was compared to: the Harter Self-Perception Profile for Children (Harter, 1985) (to obtain a measure of self-competence); the Children's Hope Scale (Snyder et al., 1997); the Children's Attributional Style Questionnaire (CASQ-R; Thompson, Kaslow, Weiss & Nolen-Hoeksema, 1998); the lie scale from the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Paget, 1983), as a check for social-desirability type responses; the parent-report Child Behavior Checklist (CBCL; Achenbach, 1991); the RCMAS again for a measure of anxiety and depression (Reynolds & Paget, 1983); and the Children's Depression Inventory (CDI; Kovacs, 1985).

In terms of assessing the convergent and discriminative validity of the YLOT, it was hypothesized that the optimism score from the YLOT would correlate with measures of other positive self-perceptions such as one's sense of competence and hope. Pessimism was expected to be negatively correlated to these measures of self-competence and hope, and positively related to a negative attributional style and psychological distress. In terms of the YLOT's reliability,

the authors hypothesized that children's expectations would be as similar in stability across several months' time as other measures of self-competence and hope.

To establish the convergent and discriminant validity of the new measure of optimism and pessimism, nonparametric analyses were conducted, and, as expected, returned a positive and moderate correlation between the YLOT scales of optimism and total optimism and the measures of hope and self-efficacy. By contrast, the pessimism subscale was negatively correlated with the measures. Optimism and pessimism on the YLOT were moderately and negatively correlated with each other. In terms of the scale's predictive validity, it was found that children's optimism early in the school year predicted 3 months later fewer child-reported depressive symptoms on the CDI and parent-report externalizing scale of the CBCL. By contrast, children's pessimism at Time 1 predicted later anxiety symptoms on the RCMAS and parents' ratings of their child as less academically and socially competent on the CBCL competency scale.

The reliability of the YLOT was subsequently evaluated through several means. By calculating cronbach alphas, the internal consistency of the factor-derived optimism, pessimism, and total optimism scales were all deemed acceptable. The stability of children's ratings across 7 months was found to be sound, with strong intra-class correlations obtained. Test-retest reliability at 7 months was strong,

with all scores significantly correlated at the two time points (initial, and 7 months).

Ey et al. (2005) determined that the YLOT did indeed provide a developmentally appropriate measure of children's optimism and pessimism. Specifically, the authors highlighted the utility of the YLOT as able to measure children's actual expectations about their future rather than their explanations of why hypothetical events might occur. Ey and colleagues found that the children were substantially more consistent in their YLOT responses than in their responses to the frequently used measure of optimistic and pessimistic explanatory style – the CASQ.

Several conclusions and avenues for future research were proffered by Ey and colleagues. In noting the fact that pessimistic attributional style becomes more of a risk factor for depression and suicide as children move into adolescence (e.g., see Nolen-Hoeksema, Girgus & Seligman, 1992), Ey et al (2005) highlighted the possibility that optimism in turn might become a source of resilience against the negative events facing adolescents. In terms of future work in the area, more work is needed to evaluate developmental differences in the stability and importance of optimism and pessimism in youth. Ey et al (2005) speculate that perhaps with age children's positive beliefs about themselves and their future become more internalized and serve as a source of resiliency against negative events and pessimistic expectations. Alternatively, older children may be

more stable in their responses due to an increased ability to engage in meta-cognition and abstract thinking and therefore be more consistent in being aware of and reporting internal experiences (Ey et al., 2005). Ey et al (2005) also highlighted the need for future research to carefully investigate potential gender or racial differences, which were not addressed in their analyses, and also encouraged future researchers to explore whether children and their parents are aware of each other's levels of optimism and pessimism. Finally, in terms of methodology, Ey et al (2005) emphasized that it would be important for future research, with more diverse samples of children and adolescents, to determine whether the current structure of the YLOT warrants separate optimism, pessimism, and total optimism subscales. Such methodological points and contentions shall be addressed in this thesis.

Alternate approaches to the measurement of optimism

Optimism and hope

Of all the measures compared by Ey et al (2005) against the YLOT, the Children's Hope Scale (Snyder et al., 1997) requires elaboration. Insofar as hope pertains to positive expectations about the future, it may be seen as almost synonymous with optimism. How then, do the two constructs differ?

The Children's Hope Scale (Snyder et al., 1997) does in fact tap a slightly different aspect of children's self-perceptions or expectations. Snyder (1997, 1994) defines hope as children's beliefs in their ability to accomplish goals (agency) through efforts and opportunities (pathways). The first part of the definition, agency, is deemed the "will" component of hope by Snyder. The second part, pertaining to the pathways by which those goals are realized, is deemed "way" by Snyder. This wills/ways distinction cogently illustrates the future-minded expectation component of hope, and the more immediate issue of the pursuit of pathways that needs to take place in order for the expectation to be realized.

Ey et al. (2005) note that this conceptualization of hope by Snyder and colleagues appears to be more closely linked to self-efficacy (e.g., Bandura, 1986) because of the emphasis on the child making good things happen through personal efforts and opportunities. Scheier and Carver's (1992) conceptualization of optimism is more all encompassing since within their theory, children's optimism is due to a set of positive expectancies that may or may not include personal agency and pathway. For example, a child may be optimistic that a parent, or teacher, or even luck, may protect them from misfortune (Ey et al., 2005). It is the opinion of this researcher, however, that aspects of agency and pathways in optimism are not well understood. Issues of resources and help-seeking must surely contribute to the pathways that unfold in optimistic contexts, and thus surely warrant further attention from research efforts.

Vignette-based methodologies and optimism

The pioneering work of Lockhart et al. (2002) in developing a reliable vignette-based methodology for the assessment of optimistic and pessimistic tendencies or attributions has been outlined already. To just highlight the importance of this work, however, it is important to note that no other body of developmental research has utilized such an approach before they did, or since. The vignette approach is clearly promising, and as a new and innovative approach to optimism and pessimism is an exciting development in the field. The approach is particularly praise worthy in its scope, or its power to explore many different facets to children's optimism. The YLOT clearly demonstrated a capacity to adequately measure self-relevant, retrospective, dispositional and "small" optimism and pessimism. The vignette approach, however, has the ability to assess more hypothetical, "big" (in the sense that they are other-related, presenting scenarios about a fictitious character), and all-encompassing optimistic expectancies. Moreover, it also seems also able to tap "little" forms of optimism, since the vignettes may elicit highly specific predictions based on concrete events, by virtue of being able to couch the vignettes within distinct and varying ontological domains (for example, optimistic expectancies as they relate to other people, versus other living kinds, versus objects or events).

In all, the vignette-based approach highlights useful and intriguing avenues for future research. Of particular interest to this researcher is the fact that

optimism and pessimism, as they are deduced from this method are still set up as purely complementary or opposite tendencies. To clarify this point, the vignette approach construes a negative trait changing, or a positive trait being retained over time, as an “optimistic” judgment. A “pessimistic” judgment is simply the reverse – a positive trait changing, or a negative trait being maintained, over time. Clearly optimism and pessimism are set up as mutually exclusive in this context, as polar opposites that compete for dominance in the individual. While this could be seen as a methodological limitation of the approach, presenting traits as either of a positive or negative valence or nature (e.g., ‘friendly’ is positive, ‘aggressive’ is negative), this approach might allow more of the nuances of optimism and pessimism to become apparent. Specifically, determining whether optimism is more consistently seen with *changing* that which is *negative*, or *retaining* that which is *positive*, would certainly be informative – particularly with reference to child development, since it might provide significant insight into whether children’s optimism is driven more by a need to change that which they dislike, or retain what they deem desirable.

Optimism as an explanatory framework: Using the optimism/pessimism dichotomy to explicate issues of health and psychopathology

Intuitively, optimism bespeaks hope, longevity, purpose, and vitality, so not surprisingly optimism has been discussed in the context of health, the very

essence of an individual's productivity and verve. Be it in terms of physical or mental health, the beneficial effects of optimism are compelling, though not always straight-forward or of unitary influence.

State-based optimism as a determinant of physical health outcomes

Optimism has been seen to have significant health-promoting effects in the realm of physical well-being. It has been associated with higher levels of adherence to medical regimens; with lower levels of anxiety both before and after major medical events (such as bypass surgery); and with a much better prognosis for recovery following acute or chronic medical events (Cohen, 2001; Llewellyn-Thomas, Thiel & McGreal, 1992; Zak-Place & Stern, 2004).

These effects are seen amongst paediatric populations too. Youth with chronic medical illness have been seen to be more compliant with medical treatment and medication if during an interview they describe themselves as optimistic about the future (Gudas, Koocher & Wypij, 1991). Children's optimism has even been related to them being less anxious during visits to the dentist (Neverlien & Backer, 1991). Only one study to date has found negative associations with optimism and healthy outcomes in child populations. In this study, girls at risk for HIV were less likely to be tested for HIV and to protect themselves if they were optimistic about the future (Goodman, Chesney & Tipton, 1995).

This raises an important point, relevant for both child and adult cohorts: how big a role might the notion of “unrealistic” optimism play in physical health? The HIV study above is an example of when optimism might blinker people’s understanding, leading them to underestimate a real and likely risk. In this case, perhaps compounding factors, or the utility of education or intervention efforts, requires further investigation. Aside from this aspect of imminent risk, perhaps “unrealistic” optimism is taking effect in acute and chronic illness, but in its most adaptive and useful form. It would be useful to consider the influence of optimism in creating “self-fulfilling prophecies” of sorts; indeed, Armor and Taylor (1998) highlight such a role as helping to resolve the dilemma of unrealistic optimism. The fact that optimistic expectations, including unrealistic ones, are associated or even partly associated with self-fulfilling prophecies may be one reason why those expectations do not necessarily set people up for disappointment or discourage appropriate preventive action (Armor & Taylor, 1998). Armor and Taylor (1998) cite a study demonstrating how completion times for handing in an assignment could be “anchored” as either optimistic or pessimistic for students. While no students were capable of finishing their work within the allotted time frame, those students who had been induced to set an unrealistically optimistic completion date did in fact finish their work significantly earlier than the group induced to predict a later completion time (Buehler, Griffin & MacDonald, 1997). Such a study highlights the power of self-fulfilling prophecies, and is applicable to physical health also. Perhaps the ability

to self-induce an unrealistic recovery time, or adherence completion, for example, through greater levels of optimism, in fact results in those very outcomes.

This gains greater relevance when considering children and health. Typically, children are seen as the cohort most prone to unrealistic expectations, either through wishful thinking, some sort of naïve belief, or trust in the ability of elders. The extent to which their health beliefs and behaviours might be guided by unrealistic optimism is an intriguing question, and the degree of naivety or sophistication of their domain-specific biological (illness-related) causal attributions could validly be studied under the auspices of a study into their optimism. Indeed, such a study would provide a useful profile of their “little” optimism (i.e., causal reasoning about concrete events) against a backdrop of “unrealistically” optimistic tendencies.

Trait-based optimism as the key to mental health

In “The Optimistic Child”, Seligman and colleagues (1995) speak of “immunizing a generation against depression”, a truly admirable and inspiring vision. As Ey and colleagues (2005) also emphasized, perhaps optimism holds the key to resilience and coping through adolescence. Just as pessimistic explanatory styles have such a debilitating effect upon a teenager’s cognitive and emotional well-being, so too might optimism exert a protective effect against negative risk

factors or situations. There may be, moreover, effects of optimism above and beyond the effects of not being pessimistic – once more, we are back to a consideration of the need to determine whether optimism might have unique, predictive effects on an entirely independent plane of functioning than pessimism. Such a finding would certainly be in accord with the increasing evidence to show that optimism and pessimism are related but distinct factors. Should optimism be shown to be uniquely powerful in protecting against anxious or depressive symptoms, not through merely negating the effects of pessimism, but by ensuring that the child utilizes strategies to promote resilience and thriving beyond ‘normal’ levels of functioning, then a new and exciting vista of intervention and health promotion will become possible, and perhaps we will indeed have a generation immunized against depression.

The importance of this issue is unequivocal. In Australia, approximately 2% of young children less than 12 years of age experience depression severe enough to warrant a clinical diagnosis (Roberts, 1999). The incidence of clinically significant depression during adolescence is much higher, cited anywhere from 25% to 40%, depending on the measure and cut-off point used (Roberts, 1999), an increase posited to be due to risk factors for depression that develop during childhood interacting with the biological and social challenges that abound in adolescence (Nolen-Hoeksema & Girgus, 1994). This highlights the importance of identifying the precursors of depression that may be present during childhood, including a negative or pessimistic attributional style (Heyman

et al., 1992). To complement any such research, examining the potential protective influence conferred by an optimistic explanatory style is equally justified.

For the most part, cognitive factors such as attributional style have been neglected in explanations of the aetiology of depression (Lockhart et al., 2002), with more biological and social risk factors (such as hormonal and physical changes, socio-cultural stressors, chronic illness, co-morbid disorders, and genetic vulnerability) receiving the majority of attention from researchers (Roberts, 1999; Lockhart et al., 2002). Risk factors such as these more biological or social factors certainly provide valuable scientific evidence, yet in terms of clinical utility, they can all be difficult to change (Roberts, 1999). Cognitive factors, however, demonstrated to influence or mediate the effects of life events and organic vulnerability (Roberts, 1999), provide a useful research and clinical focus by virtue of their putative accessibility and potential plasticity (Roberts, 1999). The marked differences in the incidence of depression with respect to age clearly indicate that research endeavours might usefully investigate the sources and conditions of optimistic or positive thinking as one such protective cognitive factor (Lockhart et al., 2002), including a consideration of how such parameters might hold up or vary through the developmental period.

Cognitive models of psychopathology: The Response Style Theory of Depression

Central to any such investigation of cognitive factors as risk or protective elements in developmental psychopathology is the need to have sound and developmentally appropriate theories and methodologies to draw upon. One theory of depressive symptomatology with a clear cognitive focus is Susan Nolen-Hoeksema's (1987, 1991) Response Style Theory. According to the theory, the way in which people *respond to* or think about their depressive symptoms determines both the severity and duration of such symptoms. The three main response styles posited by the theory are Rumination, Problem Solving (PS), and Distraction. Nolen-Hoeksema proposes that engaging in ruminative responses to depressed mood intensifies and prolongs depressive symptoms, and that women are more likely to engage in such a response, which is why as a population they are much more likely to suffer depression than are men. The term "rumination" is commonly utilized in everyday discourse, to describe the act of meditation and contemplation. Within the context of Nolen-Hoeksema's theory, however, 'rumination' is defined as focusing passively and repetitively on one's symptoms, as well as on the causes and implications of those symptoms, without taking effective action to relieve such symptoms or solve the problems that triggered their onset (Abela *et al.*, 2002). The emphasis here is on the *passive* nature of the response, and the complete lack of any attempt to ameliorate one's symptoms, in an escalating cycle of helpless feelings and hopeless beliefs.

Nolen-Hoeksema (1991) proposes three mechanisms by which rumination serves to increase both the severity and duration of depressive episodes.

1. Rumination enhances the negative effects of depressed mood on thinking, increasing the likelihood that individuals will recall more negative memories and make more negative inferences for events in their lives (i.e. induces a self-perpetuating negative processing bias).
2. Because rumination both amplifies pessimistic thinking and interferes with attention and concentration, it is likely to hinder effective problem solving. Thus, when in a depressed mood, ruminators generate fewer and poorer quality solutions to their problems than when not in a depressed mood.
3. Because rumination impairs attention and concentration, it is likely to inhibit people from engaging in instrumental behaviours that could serve to enhance their sense of control and lift their depressive mood. This, in turn, may lead to increased failures and a greater sense of helplessness in controlling one's environment, thus contributing to depression.

Thus rumination serves to increase both the severity and duration of depressive symptoms, whereas PS and distraction are hypothesized to alleviate such symptoms. PS responses involve actively attempting to change unfavourable life situations or to resolve problems. Such responses are hypothesized to be the optimal way of alleviating symptoms and consequently preventing the onset of a

depressive episode. Effective PS skills, however, are likely to be hindered by the negative biases associated with a depressed mood, thus distraction may be a superior preliminary strategy (Abela, Brozina & Haigh, 2002). While several longitudinal studies using adult samples have shown that individuals who ruminate have higher levels of depressive symptoms over time even controlling for baseline levels of depressive symptoms, relatively fewer studies have examined Nolen-Hoeksema's hypothesis that negative cognitions mediate this relationship. Also, while there is some relevant laboratory-based support, results from naturalistic studies examining the effects of distraction on the severity and duration of depressed mood have been mixed (Abela et al., 2002).

This theory has, along with its concomitant methodology, recently been adapted for use in younger populations. Abela and colleagues (2000) extended the measures used to create the Children's Response Style Questionnaire, in order to explicate the onset of depressive tendencies in younger children in an a priori way. While the Response Styles Theory propounds shifting cognitive coping styles (i.e., to a more ruminative style) in adolescence to account for the onset of depressive symptoms, the CRSQ allows one to follow and assess cognitive coping styles from age 8 onwards, thus relegating retrospective speculation and surmise to the past.

The children's version of the Response Style Questionnaire developed by Abela, Rochon, and Vanderbilt (2000) provides an ideal framework in which to

identify precursors to anxiety and depression, as well as to consider the interplay, or potential independence, of key resilience and vulnerability factors known to contribute to the onset and maintenance of psychopathology. Examining the potential influence or mediating role of optimism within such a system would be useful and applicable to any associated intervention effort.

The way forward: Aims of this program of research

In light of all that has been discussed, the aim of the research to follow in this thesis is to examine and clarify the nature and function of optimism within a developmental framework. This developmental approach stems from recent research clearly documenting the marked optimism of children, and its subsequent decline with increasing age (e.g., see Lockhart et al, 2002). Explicating this trend in terms of any mediating cognitive processes, and understanding the concomitant impact upon belief structures and coping behaviours, is of prime concern to this researcher. As noted above, this sort of investigation, of the applied effects of optimism and pessimism in childhood, also entails an onus to more closely examine the methodologies that are used to assess child and adolescent optimism and pessimism, as well as identify and scrutinize the conceptual foundations that are driving these methodologies. A double confound seems to exist to some degree in this area of child development research: commonsensical or lay conceptualizations of optimism and pessimism

are constraining emergent methodologies in the area, and the sustained and unquestioned usage of those methods is perpetuating the limitations of those underlying concepts. Further to this, the somewhat variable methodological tools seen in the literature as providing indices of optimism and pessimism continue to drive the theoretical aspects of these constructs in increasingly divergent ways. Specifically, while only a small group of optimism measures exist, they are quite distinct from one another, resulting from differing emphases or foci in a largely un-unified field. As has been highlighted in this literature review, several optimism typologies exist (for example, dispositional, situated, unrealistic, big, and small, optimisms), and methodological responses to these definitions tends to embrace their distinctness rather than attempt their reconciliation or unification. The resulting goal of this thesis is, therefore, to more closely critique various methodological approaches to the measurement of youth optimism and pessimism, compare and contrast them to one another, and seek to refine and potentially reconcile their theoretical foundations. Those theoretical underpinnings must also, necessarily, be subjected to a similar scrutiny as their methodological concomitants. Essentially, this aim of this research embraces an exploratory yet critical framework, so as to better align the applied aspects of youth optimism and pessimism with its conceptual foundations. By making an appeal to divergent methodologies, it is hoped that the true nature and function of optimism will become more apparent, enabling the development of a more precise definition of this construct as well as a more refined understanding of its functional scope through development. Ultimately, it is hoped that this will lead

to a much more thorough understanding of the sustainability and viability of optimism throughout the lifespan.

All in all, this body of research aims to explore three fundamental aspects to youth optimism: its theory, its methodology, and its application. Central to all three of these lines of investigation is a consideration of optimism's relatedness to pessimism, both conceptually and functionally. Each of these three points shall be, more or less, addressed concurrently. Specifically, while some empirical studies may hold greater significance for one of these areas of the others, all studies will endeavour to extrapolate these three aspects of optimism in concert. In this way, the concurrent research aims of ameliorating the dissension surrounding the construct of optimism, refining its methodological utility, and ascertaining its real-world functions and significance, stand a better chance of realization.

To elaborate these three lines of questioning in greater detail, the following theoretical contestations (with concomitant methodological and applied implications) surrounding the notion of optimism shall be addressed:

1. Whether optimism is best presented as a fundamental aspect of human nature, as an individual difference factor, or some combination of both;

2. Whether youth optimism serves a facilitative role for learning, or functions instead as a naive process that impedes experiential processes;
3. Whether youth optimism is best seen as ‘big’ or ‘little’, or both (where ‘little optimism’ pertains to self-relevant, daily cognitions, and ‘big optimism’ to broader, other-person relevant and more benevolent sets of expectations about the world);
4. Whether children only exhibit optimism for the ego-enhancing or self-serving function it serves, or whether a more free-floating (yet still potentially discerning and viable) optimism is possible; and
5. Whether optimism is a stable or transient process through development.

Central to these lines of debate are more fundamental issues of definition, which remain rife in the literature. Primarily, this concerns whether optimism and pessimism represent opposite poles of the same spectrum, or continuum, in an interdependent way (as understood in its commonsensical usage), or if in fact optimism and pessimism are discrete entities capable of independent functioning. This issue remains outstanding in both child and adult frameworks of optimism, and its resolution is likely to have a significant on popular theories of both optimism and resilience, and conversely, pessimism and depression.

In terms of the methodological issues that hinge on this conceptual debate, only a systematic investigation and evaluation of some of the divergent methods in the field can help elucidate their theoretical cogency and overall developmental utility. For this reason, established methods, inferential and exploratory methods, and more deductive methods for assessing youth optimism and pessimism will be highlighted in the course of this research. Some researchers present the utility of self-relevant questionnaires; others expound the complex cognitive process of optimism through more general, hypothetical or fictional vignettes. Since these divergent methods stem from discrete theoretical foundations, the potential for major inconsistencies or misconceptions is there. Understanding the similarities and differences between methodologies designed to tap child and youth optimism is of great argumentative import, and should help promote the resolution of some of the most pressing conceptual debates. Part of this thesis shall be devoted to the needed validation or scrutiny (through a large-scale factor analysis) of the most recent contribution to research in the area, namely, the Youth Life Orientation Test (Ey et al, 2005).

Since the *function* of optimism (and pessimism) is most accurately gauged through its interaction with other closely related cognitive and affective states and processes, this thesis necessarily entails the inclusion of variables such as children's cognitive coping style, and behavioural and emotional symptomatology. It is hoped that the patterns of influence and interplay seen between these applied aspects of children's cognitive and emotional integrity will

help to elucidate how more fundamental aspects of temperament or disposition play out against real-life facets of children's social and emotional development, how an underlying dispositional trait might influence beliefs and behaviours in an applied context of mental wellbeing or physical health. By examining optimism with regard to aspects of children's coping, their anxious or depressive tendencies, and their health beliefs and behaviours, it is hoped that the developmental benefit or adaptive value of optimism across the developmental trajectory will become clear.

In all, this author hopes that, by the end of this exploratory journey of research and reflection, the construct of optimism will no longer exist in such a nebulous state of speculation and surmise. It is hoped that the nature and value of optimism will be established, in a way that is consistent and robust, yet sensitive to the different demands of various developmental phases, as well as key individual difference factors. In this way, a significant augmentation of the positive psychology knowledge base is anticipated, allowing for both greater theoretical refinement and methodological rigour, as well as, and perhaps more importantly, a translation through to practice that will foster efforts to bolster strengths and boost resilience in individuals, families, and communities.

CHAPTER TWO

STUDY ONE

Contributing Factors to Youth Optimism and Pessimism: Part One

Do Cognitive Coping Styles mediate the Age-related decline in Optimism?

Optimism and pessimism are cognitive and affective variables spanning myriad domains and levels of applicability. As intuitively understood aspects of both thought and emotion, they appeal to the native psychologist in all people, and very few psychological variables have been so completely integrated into common parlance. For every “glass half empty”, there is a ‘Pollyanna’ ready to reiterate the potentialities in the world. For every ‘doomsayer’, there is someone ready to point out the “silver lining” in the situation. Such aphorisms and characters indicate our tendency to apply metaphor and personification to implicitly understood aspects of the human condition, to allow a greater recognition of the strengths and foibles of both others and oneself. Dichotomous relationships also allow for certainty and a certain measure of self-knowledge – one cannot be at once an optimist *and* a pessimist, a Pollyanna *and* a harbinger of doom and gloom... Or can one?

Contemporary research into optimism typically treats it as a cognitive characteristic. It may pertain to a goal, an expectation, or a causal attribution that is forward looking and hopeful (Peterson, 2000). Such a definition seems at first to be well set-up for systematic investigation, yet dissension as to the exact status and utility of optimism clouds its clear delineation and significantly impacts upon any attempt at its measurement or implementation.

With regard to the supposed nature or status of optimism, the majority of research tends to approach it as more of a dispositional trait than as a cognitive process. While the former denotes a fairly stable or static level of optimism within an individual, the latter allows for much more fluidity and flexibility over time, allowing optimism to be seen as a variable that might wax or wane, or be promoted or decimated by time or context. In viewing optimism as a dispositional trait, the work of Eysenck (1976) becomes pertinent. Eysenck's (1976) theory of personality propounds three key, biologically-based, temperament factors – extraversion, neuroticism, and psychoticism – that interact with experience to form personality (Jackson & Center, 2002). Within this theory, optimism is a lower-order sub-trait of extraversion, as is pessimism of neuroticism. Eysenck's (1976) theory therefore provides a useful comparison point for more contemporary conceptualisations and measures of optimism and pessimism. Determining the extent to which optimism is predicted by a higher order personality trait should help elucidate its status as either a cognitive process that is amenable to change, or a static state in the individual.

The utility of optimism, particularly for the developing child, has also been the subject of much debate. While some proponents emphasize its capacity to promote perseverance and facilitate learning (e.g., Lockhart et al., 2002), others (e.g., Schneider, 1998; Plumert, 1995) stress its potential to lead to disengagement, wishful thinking, and likelihood of even leading a child into physical danger through a poor appraisal of the demands of a situation and one's own abilities. These latter camps of researchers confer a rather egocentric and naïve status to optimism, seeing it as a cognitively inferior process that might provide limited benefits to the child, but more importantly as a trait that must decline with age as a sign of increasing cognitive sophistication. Central to such a view is a tendency to perceive optimism as disadvantageous in the long term, in that it would eventually lead to disappointment and disillusionment when outcomes do not turn out as expected, potentiating feelings of pessimism, helplessness, and symptoms of depression.

This theoretical leap from notions of positive affect and optimism, to extreme negative affect, is a common one, both in terms of the dangers of “unrealistic” optimism (Armor & Taylor, 1998), as well as with regard to the known link between a pessimistic or negative attributional style and depression (Lockhart et al., 2002). The links between fundamental cognitive factors such as optimism and pessimism and clinical symptomatology is perhaps best addressed by considering an intermediate process or theory. This study determined that the Response Styles (RS) theory of Nolen-Hoeksema (1987, 1991) would provide a useful framework against which to examine

such links, since the RS theory propounds distinctive and measurable coping responses that cause, reflect, and maintain internal affective states. The Theory promulgates three main cognitive coping styles – rumination, distraction, and problem-solving (PS) styles – that determine how an individual responds to symptoms of depression. Specifically, those individuals who engage in a ruminative coping style do not address the root cause of their symptoms, instead only focusing or ruminating over the symptoms themselves. Such a style is held to be directly attributable for the onset and maintenance of depression, where such rumination causes the symptoms to escalate and intensify over time. Distracting coping style, on the other hand, is where the individual ignores the depressive symptoms, instead engaging in enjoyable activities that distracts their attention away from the symptoms. While adaptive in the short term, neglecting the underlying cause of the symptoms also ensures their ongoing presence. The third and final coping style, PS, is the most adaptive type of cognitive coping style, demonstrating the individual's ability to recognise their negative symptoms, and take steps to address their cause and ameliorate their effects, through self-directed efforts that utilise both internal and external resources (Abela et al., 2002). This approach ensures depressive symptoms are assuaged before they can escalate in any way. Nolen-Hoeksema (1991) attributes the rapid rise in depression from childhood to adolescence as due to a disproportionate trend to engage in a ruminative coping style at this point of development. The links between, and contributions of, such cognitive coping styles to both levels of optimism and pessimism, and affective outcomes, was of prime importance to this study.

The theoretical dissension that surrounds optimism necessarily impacts upon its measurement. In common conceptualisations of optimism, its measurement appears to be co-dependent on the presence of its supposed opposite, pessimism. This seems to be largely due to the assumption that optimism also involves a lack of pessimism; that is, the two are seen as mutually exclusive, so that while they are seen as related, they cannot coexist (Peterson, 2000). More recent research in the area seems to be suggesting that this is not in fact the case, that it is possible to display optimistic and pessimistic tendencies concurrently (Peterson, 2000). Howsoever this may be the most common approach to measuring optimism and pessimism is the Life Orientation Test (LOT; Scheier & Carver, 1985; Scheier, Carver & Bridges, 1994), which approaches optimism and pessimism as dispositional traits that are largely interdependent. The recent Youth Life Orientation Test (YLOT; Ey et al., 2005) is an important addition to the field, allowing for the well-validated measurement of optimism and pessimism in children and adolescents. Like the LOT, the YLOT entails two subscale measures of optimism and pessimism, and then an additional composite score, total optimism, which is calculated by adding the subscale optimism score to the reverse-scored pessimism items. Whether this composite score is warranted needs to be clarified, and it was hoped that this exploratory study would go some way toward addressing such contention.

In sum, this study aimed to explore the relative contributions of a number of variables to scores obtained on the YLOT, with a view to establishing any one or set of factors as saliently predictive of optimism and

pessimism levels. Of primary importance was the aim to establish whether age predicted levels of optimism and pessimism in children and adolescents. Given the established link between extraversion/optimism and neuroticism/pessimism, this study also examined these constructs, to provide a conceptual and methodological (i.e., 2 factor) check for the YLOT. Cognitive coping style (distraction, rumination, and problem-solving styles), as well as indices of internalising and externalising symptoms, were examined to allow for the exploration of any sort of mediation models that might be uniquely predictive of optimism and/or pessimism, as measured by the YLOT.

Specifically, it was hypothesized that:

1. There would be an effect of age on scores obtained on the YLOT, where increasing age would be associated with a reduction in optimism, and increase in pessimism;
2. There would be a clear and dichotomous relationship between optimism (O) and pessimism (P), and extraversion (E) and neuroticism (N), such that:
 - a. Each pair (O-P & E-N) would be significantly and negatively correlated, and
 - b. The two former (O, E) and the two latter (P, N) in each pairing would be significantly and positively correlated;
3. Higher internalizing and externalizing symptoms would be significantly correlated with lower optimism scores, and with higher pessimism scores and a rumination coping style;

4. Distracting and PS coping styles would decrease with increasing age, while ruminative coping tendencies would increase;
5. Distracting and PS coping styles would be positively associated with optimism scores, and Ruminative coping negatively related, with the reverse being true for pessimism; and
6. Either a Ruminative or PS coping style would exercise enough predictive power over optimism and pessimism scores to allow for the testing of a mediation model to account for the reduction of optimism scores observed with increasing age.

METHOD

Participants

Participants were 93 children and adolescents aged 7-17 years (Mean age 11.53 years, *SD* 2.79). There were 49 females and 44 males in the sample. For the purposes of sound recruitment and adequate age representation, equal numbers of children were sought from two age cohorts: younger children aged 7-10 years (mean age 8.51 years, *SD* 1.10), and older children aged 11-17 years (mean age 13.34, *SD* 1.71). Participants were recruited through contacts of undergraduate Developmental Psychology III students in the School of Psychology at The University of Adelaide. Children with a clinically diagnosed internalizing or externalizing behaviour disorder were excluded from the sample.

Measures

Initially, basic demographic information was obtained from participants following due process of gaining informed consent from the child's parent or guardian. Each participating child's age and gender was recorded, but omitted from subsequent analyses and discussions of the data.

The following scales were administered to the children and adolescents to obtain scores for the main variables of the study:

The Children's Response Style Questionnaire (CRSQ; Abela, Rochon & Vanderbilt, 2000 – unpublished test, used with the permission of the author):

The CRSQ provides a measure of Coping Style for children. This Questionnaire is modelled after Nolen-Hoeksema's Response Styles Questionnaire for adults (Nolen-Hoeksema & Morrow, 1991). The CRSQ consists of 25 items, each of which describes a particular response to symptoms of depression. The items are grouped into 3 scales: 1) Ruminative Response Subscale (13 items, describing self-focused responses), 2) Distracting Response Subscale (7 items, describing responses to divert attention away from mood), and 3) Problem-Solving Subscale (5 items, describing strategies to overcome mood). For each item, children are asked to indicate how often they respond in this way when they are feeling sad (almost

never = 0, sometimes = 1, often = 2, or almost always = 3). Scores range from 0 to 39 on the Ruminative Response Subscale, from 0 to 21 on the Distraction Subscale, and from 0 to 15 on the PS Subscale. Higher scores on each subscale indicate a greater tendency to engage in that particular response style. This Questionnaire has been used effectively and appropriately with children as young as 8 years of age (Abela, Brozina & Haigh, 2002). Past research using the CRSQ has reported moderate levels of internal consistency for all three subscales. In the current research, reliability analyses (Cronbach's alpha) of the items of the CRSQ returned alpha's of .66 for the distraction subscale, .74 for the problem-solving subscale, and .80 for the rumination subscale. Regarding its validity, CRSQ Rumination scores have been shown to positively correlate with depressive symptoms in older and younger children, and Distraction and PS scores have been shown to negatively correlate with depressive symptoms in older children. The full list of the 25 items of the CRSQ may be viewed in Appendix B. The Questionnaire has no time restrictions on its completion, typically taking 15 minutes to finish.

The Youth Life Orientation Test (YLOT; Ey, Hadley, Nuttbrock Allen, Palmer, Klosky, Deptula, Thomas & Cohen, 2005):

This scale was developed in response to the fact that research on the importance of optimism and pessimism in children has been limited by the lack of a developmentally appropriate measure of children's expectations. Based upon the Life Orientation Test-Revised (Scheier, Carver & Bridges,

1994), the Youth Life Optimism Test (YLOT) is a sixteen-item self-report measure of children's optimism and pessimism. The authors found good reliability and validity of the YLOT with 204 3rd to 6th graders (8-12 year old children).

Based on a year-long piloting of the questionnaire, a final version of the YLOT was developed to include two filler items similar to the LOT-R, seven optimism and seven pessimism items, and a four-point answer format (all 16 items may be perused in Appendix A). Specifically, children were asked to rate "how true or not true each statement is for you" by colouring in the circle that "seems to describe you the best". Children endorsed whether items were "true for me (3)", "sort of true for me (2)", "sort of not true for me (1)", and "not true for me (0)".

Due to debate about whether optimism and pessimism represent separate constructs or opposite ends of the same continuum, the YLOT is designed to yield three scores: an optimism score, a pessimism score, and a total optimism score. The scales are scored such that a higher number indicates a higher score (e.g., high pessimism score means high on pessimism responses). The optimism scale is calculated by summing the scores of items 5, 8, 10, 12, 14, and 16; the pessimism score is calculated by summing the scores of items 4, 7, 9, 11, 13, and 15. The total optimism score is the sum of the optimism and reverse-scored pessimism items. This test takes approximately 15 minutes to complete.

The Junior Eysenck Personality Inventory (JEPI; Eysenck, 1965):

The JEPI is a child version of the adult Eysenck Personality Questionnaire, measuring the major personality dimensions of children aged 7 to 16 years. It is comprised of 81 items standardized on a sample of 3,387 children, where the ages of the participants sampled ranged from 7 through 15 years. The questionnaire assesses the three personality traits (Psychoticism [P], Extraversion [E], and Neuroticism [N]) used in Eysenck's theory of personality and includes a Lie [L] scale score assessing a person's inclination to give socially expected responses. The test demonstrates reliability and validity. The questionnaire is scored using scoring sheets or keys provided with the test itself. The Junior version of the JEPI has four scoring keys (one for each of the dimensions to be measured, P, E, N and L, yielding a final score for each). This test takes approximately 15 minutes to complete.

The Internalizing and Externalizing Scales of the Child Behavior Checklist (CBCL; Achenbach, 1991):

The Child Behavior Checklist (CBCL/6-18) allows one to quickly obtain data on a broad spectrum of competencies, adaptive functioning, and problems. This measure can typically be completed in 15-20 minutes. The CBCL/6-18 is a revision of the CBCL/4-18 (Achenbach, 1991b; Achenbach & Edelbrock, 1983). It is used to assess social, emotional and behavioural

competencies in children aged 6 to 18 years. The scale is completed by parents, parent-surrogates, and others who see children in family-like contexts. It assesses behavioural, social, and emotional problems, as well as conduct problems, attention problems, and depression. Parents and guardians completed pages 3 and 4 of the CBCL/6-18, giving ratings of their child's behavioural, emotional, and social problems. The respondent rates each problem item as 0 = not true, 1 = somewhat or sometimes true, 2 = very true or often true, based on the preceding 6 months.

Procedure

A community sample of children and adolescents of aged between 7 and 17 years were identified, and parents and guardians of the children were approached with a letter explaining the purposes of the study, and asked to indicate their willingness to consent to their child's participation in the research. No child was involved in the study in any way until this formal written and informed consent was obtained.

Children were then interviewed at a time and place of their (or their parents choosing), for the most part in the child's home. After obtaining relevant demographic information, the four scales were administered to the children in no particular order. This was done through a 1-on-1 interview, with the researcher reading out the questions with the child, and the child indicating their response on the Scale itself. The researcher remained with the child throughout the interview. Interviews were of approximately 45 minutes

duration, although there were no specific time constraints and breaks could be taken at will. During the same session, a parent/guardian completed the CBCL.

Planned Data Analyses

Once data were collected for each of the 93 children, responses were scored and collated into a de-identified data file using SPSS 12.0.1 for Windows. The data were then analysed using basic descriptive statistics to ascertain sample characteristics, Pearson's correlation analyses to investigate bivariate relationships, and regression analyses to explore more complex mediation relationships.

Exploratory mediation analyses were anticipated from the outset. For these purposes, the rules of mediation as set out by Baron and Kenny (1986) were utilised.

Baron and Kenny (1986) set out a basic causal chain involved in mediation (see Figure 2.1):

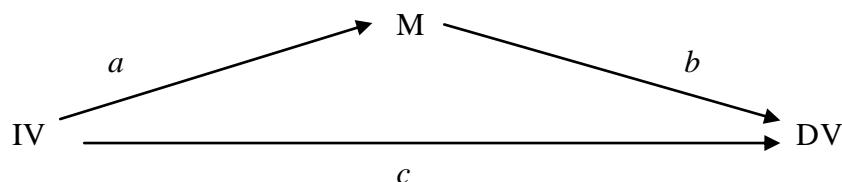


Figure 2.1

The causal mediation mechanism

According to Baron and Kenny (1986), the following conditions must be met in order for a variable to be considered to function as a mediator:

1. Each Independent Variable (IV) of interest must significantly predict the supposed mediator variable (Path *a*);
2. The proposed mediator must significantly predict the Dependent Variable (DV) (Path *b*);
3. Each IV of interest must significantly predict the DV (Path *c*); and
4. Final condition for mediation: the effects of each IV on the DV must be substantially reduced once the effect of the mediator variable is controlled for.

Specifically, the previously significant model with the IV alone as a predictor should no longer be significant when the mediator is controlled for in the analysis.

Statistical analysis and interpretation: A note on statistical emphases in this, and future, studies

This thesis planned to adhere to a broader, more exploratory perspective when interpreting research findings from the outset. Since the scope of this thesis therefore relates as strongly to conceptual trends as actual applied outcomes, the focus of statistical interpretation in this study, and later studies, is upon elucidating the significance of these applied outcomes without

detracting from or obscuring the conceptual trends emergent in the data. In light of this dual focus upon both applied and conceptual outcomes, the inclusion of any statistical weighting procedures that could potentially simplify the data and emergent trends were flagged as concerning. This body of research certainly planned to undertake multiple statistical comparisons, where correction procedures such as the Bonferroni adjustment are typically applied, and certainly the more statistical tests performed, the greater the likelihood that Type I errors are committed (i.e., rejecting the null hypothesis when it is true) (Rice, 1989).

Problems raised about procedures like the Bonferroni correction, however, have become increasingly apparent in the literature, as shall be seen: The Bonferroni correction lowers the critical P values for each particular test based on the number of tests to be performed, and is therefore frequently used to reduce problems associated with multiple comparisons (Cabin & Mitchell, 2000). This procedure, however, dramatically increases the risk of committing Type II errors as it results in a high risk of not rejecting a null hypothesis when it is false (Garamszegi, 2006). To reach 80% statistical power, it is necessary to have enormously large samples to detect medium ($r = 0.3$ or $d = 0.5$; Cohen, 1988) or small ($r = 0.1$ or $d = 0.2$; Cohen, 1988) strength effects (e.g., say $N = 128$ or $N = 788$, respectively) (Garamszegi, 2006). Since sample size is often limited in the behavioural sciences (as, indeed, they are in this thesis, where each individual sample is under $N = 100$), there is a need to adopt other approaches to ascertaining the 'true' magnitude of statistical results obtained (Garamszegi, 2006). Nakagawa (2004) states that instead of

the selective presentation of results after Bonferroni correction, effects sizes (and corresponding CIs) from multiple tests should be fully presented to avoid publication bias and false interpretations in behavioural ecology. Garamszegi (2006) goes on to suggest that simple analyses of standardized effect sizes may further help us to understand general patterns. Since the broader understanding of conceptual patterns is integral to this thesis, this issue of clarity in statistical interpretation is extremely apposite.

For this reason, Bonferroni correction procedures shall not be carried out with the statistical analyses of this thesis. For planned multiple comparisons, the strength of association (as set out by Cohen, 1988) shall be noted in addition to traditional p values. Appropriate effect sizes and confidence intervals (CIs) shall be reported when relevant. In this way, it is hoped that both a clear indication of all-or-none significance (whether a finding exceeds a critical p value or not), as well as an understanding of the magnitude of effects on a continuous scale (effect sizes and CIs), will be gained.

RESULTS

Descriptive statistics were first obtained to ascertain sample characteristics, primarily to ensure that an even distribution of ages, and gender balance, was achieved. A grand sample mean of 11.53 years (*SD* 2.79), spanning the full age range of interest of 7-17 years, and a gender split of 49 females versus 44 males, indicated a reasonable degree of age and sex in the sample. This was further supported by desirable mean ages in the planned

comparison groups of ‘older’ versus ‘younger’ children; namely children aged 7-10 years returned a mean of 8.51 years (*SD* 1.10), and those aged 11-17 years returned a mean age of 13.34 (*SD* 1.71). Any subsequent discussion that was to arise from this work comparing ‘younger’ versus ‘older’ children was therefore deemed valid and meaningful, in that the sample was taken to represent an adequate snapshot of “middle childhood” versus “early adolescence”. All subsequent analyses treated age as a continuous variable.

Pearson correlation analyses were then undertaken to ascertain preliminary indications of the contribution each of the independent variables of interest (age, extraversion score, neuroticism score, standardised t-score of internalizing symptoms, standardised t-score of externalizing symptoms, distracting coping style, ruminative coping style, problem-solving coping style) were having on the optimism and pessimism scores of interest to the study (YLOT optimism subscale score, pessimism subscale score, and total optimism score). Table 2.2 below shows the correlations obtained (for means tested, see Table 2.1):

Table 2.1

Means (*SDs*) of all variables included in bivariate correlation analyses

Study Variable	Sample Mean (<i>SD</i>)
Age	11.53 (2.79)
JEPI Extraversion	9.96 (2.40)
JEPI Neuroticism	5.77 (2.89)
YLOT subscale optimism	13.62 (3.15)
YLOT subscale pessimism	5.39 (3.99)
YLOT total optimism	27.69 (6.76)
CRSQ Distraction coping style	8.11 (3.66)
CRSQ Problem-solving coping style	6.57 (3.40)
CRSQ Rumination coping style	11.97 (6.23)
CBCL Internalizing T-Score	50.44 (9.38)
CBCL Externalizing T-Score	50.52 (9.32)

Table 2.2

Showing correlations of Age, extraversion (E), neuroticism (N), rumination coping (Rum), distraction coping (Dist), PS coping (PS), internalizing behaviour symptoms T-score (Int.B) and externalizing behaviour symptoms T-score (Ext.B), with the YLOT scores of subscale optimism (Opt), subscale pessimism (Pess), and total optimism (T.Opt)

	Age	Rum	Dist	PS	Int.B	Ext.B	E	N
Opt	-.461*	-.003	.256*	.577**	-.204*	-.052	.466**	-.257*
Pess	.070	.297**	.012	-.250*	.239*	.094	-.275**	.478**
T.Opt	-.249*	-.190	.116	.415**	-.285**	-.101	.419**	-.459**
Dist	-.345**	.106	-	.434**	.022	-.036	.098	.032
PS	-.228**	.119	.434**	-	-.069	.051	.290**	-.123
Rum	-.022	-	.106	.119	.206*	.202	-.241*	.414**

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

* Correlation is significant at the 0.05 level (2-tailed)

Since age correlated significantly and negatively with optimism subscale and total optimism scores, a clear reduction in optimism with increasing age was observed. With regard to the 'pure' optimism subscale score, this association between increasing age and decreasing optimism was of medium or moderate strength (Cohen, 1988). A significant complementary relationship regarding pessimism and age was *not* seen however, thus only partial support was obtained for the study's first hypothesis that increasing age would be associated with decreasing optimism and increasing pessimism.

Correlations relating to optimism, pessimism, extraversion, and neuroticism are presented in Table 2.3. Optimism and pessimism, and extraversion and neuroticism, were seen to correlate in a negative and significant manner, thereby indicating the dichotomous relatedness present in each pairing. The strength of association was, however, stronger for optimism and pessimism than extraversion and neuroticism. Table 2.3 indicates that higher extraversion was (moderately) significantly associated with increased optimism and (weakly) with decreased pessimism, while higher neuroticism held a converse relationship, significantly related (weakly) to lower levels of optimism and (moderately) to higher levels of pessimism. A clear inverse pattern of results was therefore seen between extraversion and neuroticism. While all correlations reported were only weak to moderate in strength, the pattern of these indications of strength of association (Cohen, 1988) also demonstrates the especial relatedness between optimism and extraversion, and neuroticism and pessimism. The second hypothesis of the study (of dichotomous relationships amongst these variables) was entirely supported.

Table 2.3

Showing correlations between YLOT subscale optimism (Opt) and pessimism (Pess) scores, extraversion (E) and neuroticism (N) scores, and T-scores of internalising behaviour symptoms (Int.B) and externalising behaviour symptoms (Ext.B)

	Opt	Pess	E	N	Int.B	Ext.B
Opt	-	-.451**	.466**	-.257*	-.204*	-.052
Pess	-.451**	-	-.275**	.478**	.239*	.094
E	.466**	-.275**	-	-.289**	-.167	-.040
N	-.257*	.478**	-.289**	-	.274**	.351**

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

* Correlation is significant at the 0.05 level (2-tailed)

Table 2.2 demonstrates the lack of any significant relatedness between externalising symptom scale scores and all YLOT scores. Table 2.3, however, demonstrates a positive and significant relationship of moderate strength between externalising scores and neuroticism scores, suggesting a tendency for high neuroticism to be associated with greater levels of externalising behavioural symptoms. Internalising symptom scores were seen to correlate significantly and positively (although weakly) with neuroticism and pessimism, and significantly and negatively with both subscale optimism (see Table 2.3) and total optimism scores (see Table 2.2). These correlations, while only small in strength (Cohen, 1988), therefore indicated that greater levels of internalising symptoms were associated with greater levels of pessimism and neuroticism, and lower levels of optimism (though, notably, bore no significant relationship to extraversion scores). With regard to potential

relationships between internalizing or externalizing scores and the cognitive coping style variables, Table 2.2 demonstrates that only internalising symptoms were significantly and positively correlated with a ruminative coping style, demonstrating a weak association between increasing rumination and increasing depression and anxiety. The association between rumination and externalising symptoms, while non-significant, was of comparable magnitude or strength. Neither distraction nor problem-solving coping styles showed any significant association with the internalizing or externalizing behavioural symptom scores, thereby demonstrating a certain degree of unique predictive power for rumination coping in this context. The third hypothesis of the study was therefore only partially supported, with the preponderance of results indicating a greater degree of relevance of internalising symptoms than externalising symptoms in the current context.

Further to relationships surrounding the cognitive coping styles, increasing age was significantly (moderately) associated with a decreasing likelihood of engaging in either distraction or problem-solving coping strategies. Rumination coping was not significantly correlated with age, however, therefore only providing limited support for the study's fourth hypothesis. In terms of the bearing of cognitive coping styles on scores of extraversion and neuroticism: levels of distraction coping shared no significant association, problem-solving coping style correlated significantly and positively with the extraversion only (a weak to moderate association), and rumination coping style correlated significantly and positively (and moderately) with neuroticism, and negatively (though weakly) with

extraversion (for all associations, see Table 2.2). This suggests a link between personality traits and cognitive-affective functioning, such that individuals high in extraversion are significantly more likely to engage in problem-solving coping tendencies, while those high in neuroticism are more likely to evince rumination coping strategies. Coupled with the earlier observation regarding optimism and pessimism, a picture emerges from this result such that levels of optimism, extraversion, and problem-solving, and levels of pessimism, neuroticism, and rumination, appear to group together in quite distinct or predictive ways.

The impact of distracting and ruminative cognitive coping styles on indices of optimism and pessimism were also ascertained. As may be seen from Table 2.2, levels of distraction coping only correlated significantly and positively (though weakly) with optimism subscale scores, thereby indicating increasing optimism as associated with increasing efforts at distraction coping. With regard to rumination coping, it was seen to be significantly and positively associated with pessimism only (an association of moderate strength), but returned no complementary inverse relationship with optimism. Both set of findings, for both distraction and rumination coping, were against the hypothesis that an association with one of optimism or pessimism, would result in an inverse and significant association with the other.

Problem-solving coping style returned the strongest (in terms of magnitude of association) set of correlations with the YLOT scores. It was seen to correlate significantly and positively with optimism subscale scores (a

large or high strength of association), less strongly (moderately) but still significantly and positively with total optimism scores, and significantly and negatively (but only weakly) with pessimism scores. It is of course to be expected that scores of total optimism would perform less robustly, given their inherent reverse-scored pessimism component. These results indicated that a greater tendency to engage in adaptive PS coping strategies was significantly associated with greater levels of optimism, and lower levels of pessimism, thus proving support for the directional investigation proposed in the sixth and final hypothesis of this study.

Extending the findings: Predictive and mediating models

Correlation analyses to this point provided a clear snapshot of relevance of each variable of interest to indices of optimism and pessimism. Analyses then progressed to hierarchical linear regression, so as to ascertain the relative contribution, or predictive value, of each independent variable to the YLOT variables. Since the initial spur to investigation of YLOT-assessed optimism was its posited association with age (namely, increasing age resulting in a decrease in optimism levels), hierarchical multiple regressions were carried out, with age being entered into the first step of the regression model, and the other independent variables (IVs) of interest (extraversion, neuroticism, distracting, problem-solving and ruminative coping style, and standardized scores of internalising and externalising symptoms) being subsequently, added as a block, into the equation the second step. Each of the

scores of the YLOT (subscale optimism, subscale pessimism, and total optimism) shall therefore be presented separately below as the dependent variables of interest to the study.

To reiterate: the influence of personality traits (extraversion and neuroticism), cognitive coping style (distraction, problem-solving and rumination), and behavioural symptomatology (internalising and externalising) variables upon the YLOT scores, after controlling for age, shall be analysed below in a series of hierarchical multiple regressions. In all cases, preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity.

YLOT subscale optimism score as DV:

Age was entered in Step 1, explaining 21.3% of the variance in subscale optimism scores. The predictive model for Step 1 was significant, $F(1, 91) = 24.62, p < .001$. After entry of the personality, coping style, and behavioural symptomatology variables at Step 2 the total variance explained by the model as a whole was 57.5%, $F(8, 84) = 14.22, p < .001$. The personality, coping, and behavioural measures therefore explained an additional 36.2% of the variance in subscale optimism scores, after controlling for the influence of age, $R^2 \text{ change} = .362, F \text{ change}(7, 84) = 10.24, p < .001$. In the final model, examination of the beta values highlighted the significant contribution of age and extraversion score ($\beta = -.380$, and $.307$

respectively; both $p < .001$) in the second step of the model, as well as the significant contribution of problem-solving coping style (Beta = .423, $p < .001$). This demonstrated that increasing age was predictive of lower optimism, and higher extraversion and problem-solving coping as predictive of higher optimism. All other IVs were non-significant (relevant statistical output is presented in Table E.1 of Appendix E).

YLOT subscale pessimism score as DV:

At Step 1, with age alone in the regression equation could only account for .5% of the variance in subscale pessimism scores. The predictive model for Step 1 was non-significant, $F(1, 91) = .451, p > .05$. After entry of the other IVs at Step 2 the total variance explained by the model as a whole was 31.6%, $F(8, 84) = 4.85, p < .001$. The personality, coping and behavioural measures therefore explained an additional 31.1% of the variance in subscale pessimism scores, after controlling for the influence of age, $R^2 \text{ change} = .311, F \text{ change}(7, 84) = 5.46, p < .001$. In the final model, the beta values indicated that only neuroticism ($\beta = .378, p < .001$) and problem-solving coping style ($\beta = -.222, p < .05$) had any sort of significant impact upon pessimism scores. This suggested that increased pessimism was strongly predicted by higher neuroticism, and weakly predicted by lower levels of problem-solving coping. Once more, all other IVs were non-significant (relevant statistical output is presented in Table E.2 in Appendix E).

YLOT total optimism score as DV:

When age was entered in Step 1 of the regression equation, it could only account for 6.2% of the variance in total optimism scores. The predictive model for Step 1 was significant however, $F(1, 91) = 5.99, p < .05$. After entry of the other IVs at Step 2 the total variance explained by the model as a whole was 43.1%, $F(8, 84) = 7.97, p < .001$. The personality, coping, and behavioural measures therefore explained an additional 37% of the variance in total optimism scores, $R^2 \text{ change} = .370, F \text{ change}(7, 84) = 7.80, p < .001$. In the final model, examination of the beta values indicated that extraversion and problem-solving coping style were significantly predictive of total optimism scores ($\beta = .206, p < .05$; $\beta = .299, p < .01$; respectively), thereby indicating that higher levels of extraversion and problem-solving coping were predictive of greater total optimism. Neuroticism was also significantly, though negatively, predictive of total optimism scores ($\beta = -.322, p < .01$), indicating a converse influence from that of extraversion. Interestingly, age became a non-significant predictor of the variance in total optimism scores once the other IVs were entered into the equation at Step 2 ($\beta = -.156, p = .092$) (relevant statistical output is presented in Table E.3 of Appendix E).

All in all, it was seen that age, extraversion, neuroticism, and PS coping style demonstrated the most significant and consistent contributions to indices of optimism and pessimism obtained from the YLOT. Of those four,

PS coping alone was the only IV variable significant across all three points of investigation (i.e., each of the three YLOT scores as DVs). For this reason, and in light of the fact that age (a previously well-documented predictor of optimism) became a *non-significant* predictor in the presence of PS coping style, it was determined that an exploratory analysis of the potential for a mediating relationship amongst these 3 variables (age, optimism, and PS coping) was feasible and warranted. Indeed, the potential for some sort of mediation was anticipated from the outset, hence the inclusion of the study's sixth exploratory hypothesis or aim with regard to rumination and PS coping. Thus, while the effects of rumination were negligible in analyses so far undertaken, it was hypothesized that PS coping might fully mediate the documented decline in optimism with increasing age.

This posited mediation model is depicted below in Figure 1.2, in line with the theory of testing mediation models set out by Baron and Kenny (1986):

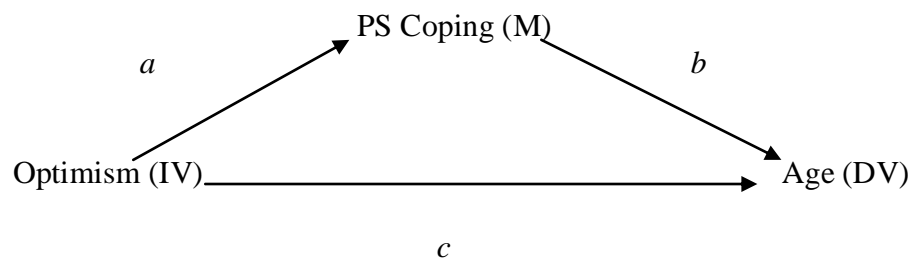


Figure 2.2

Showing PS coping as mediating the relationship between age and optimism (i.e., reduction in optimism with increasing age)

Rationale and testing of the proposed mediation model

Since age became a non-significant predictor of the variance within the *total optimism* regression model, it was determined that this optimism score (as combining the two ‘pure’ optimism and pessimism subscale scores) would be used for the purposes of this mediation paradigm analysis. This was further justified as conforming to common methodological practice, and conceptual belief, that “optimism”, as a construct, constitutes both a hopeful outlook, *and* a lack of pessimism or negativity. While the absolute truth of such a statement or belief shall be analysed and questioned during the course of the research thesis, the likelihood of at least *some* degree of overlap between optimism and pessimism seems inarguable. The total optimism score of the YLOT therefore allows for some consideration of optimism and pessimism as dichotomous variables, indices that might function as polar opposites or might just intersect in some way.

That being said, it was anticipated that results stemming from a mediation involving the YLOT *total* optimism score would better promote the capacity to compare and contrast the study’s findings to other existing models of affective change in development (which often employ dichotomous or complementary frameworks). Moreover, the findings obtained should also prove theoretically fruitful in discussions of conceptualization of the YLOT itself. The potential for mediation between age, total optimism, and problem-solving coping style was therefore tested:

Step 1: Age (IV) as a predictor of problem-solving coping style (M):

A bivariate linear regression was conducted to evaluate the prediction of problem-solving coping style from age. It was seen that age was indeed a significant predictor of problem-solving coping style, $F(1, 91) = 5.01$, $\beta = -.228$, $p = .028$. Approximately 5.2% of the variance in problem-solving coping style was accounted for by age ($R^2 = .05$). The first condition for the mediation model was therefore considered to be met.

Step 2: Problem-solving coping (M) as a predictor of total optimism (DV):

A second bivariate linear regression demonstrated that problem-solving coping was in turn a significant predictor of total optimism scores, $F(1, 91) = 18.97$, $\beta = .415$, $p < .001$. Approximately 7.2% of the variance in total optimism scores was explained by problem-solving coping style ($R^2 = .17$). The second condition for the mediation model was therefore considered to be satisfied.

Step 3: Age (IV) as a predictor of total optimism (DV):

The third bivariate linear regression undertaken indicated that age was a significant predictor of total optimism scores, $F(1, 91) = 5.99$, $\beta = -.249$, $p =$

.016. Approximately 6.2% of the variance in total optimism scores could be accounted for by age ($R^2 = .062$). The third condition of the mediation paradigm was therefore considered to be met.

Step 4: Testing the mediation model: Does age remain a significant predictor of total optimism after controlling for problem-solving coping?

As documented above, all three conditions for this mediation model were met. A hierarchical multiple regression was then conducted to determine whether age predicted total optimism after controlling for problem-solving coping style. Results demonstrated that after controlling for problem-solving coping style, the beta between age and total optimism was substantially reduced, from $\beta = -.249$ ($p = .016$) to $\beta = -.162$ ($p = .098$). This indicated that age was no longer a significant predictor of total optimism when the effects of problem-solving coping style were accounted for. The amount of variance accounted for in total optimism decreased by approximately 14% ($R^2 = .197$ to $R^2 = .062$) when problem-solving coping style was controlled. The findings indicate that problem-solving coping style fully mediated the effects of age on total optimism scores in children and youth. Since the correlations indicate a negative relationship between problem-solving coping and age, and a positive relationship between problem-solving coping and total optimism, the mediation model appears to denote a reduction in optimism with age being due to, or wholly mediated by, a reduction in problem-solving coping tendencies with age. Perhaps this is a useful juncture to reiterate that we are concerned with coping tendencies in response to *symptoms*, not actual

behaviours or intellectual efforts. Thus the results are not suggesting children become poorer problem-solvers with age (of course increasing skills and education heightens children's ability to solve tasks requiring their intelligence and perseverance), rather children appear less likely to address symptoms of sadness through seeking and solving the root cause of the problem with increasing age. Full statistical results for this series of multiple regression procedures are presented in Tables E.4-7 in Appendix E.

It should be noted that other exploratory mediations were undertaken. In particular, an additional "check" was made as to whether the same mediating effects of problem-solving coping could be seen with the optimism *subscale* score. While the initial regressions ran in the same significant direction as those relevant to the total optimism equations, the mediation model itself (i.e., as tested at Step 4; see Table E.10 in Appendix E) was not found to be significant. No other significant mediation models between optimism and pessimism scores, and the IVs of the study (including testing whether ruminative or distracting coping could similarly mediate the age-related decline in optimism; also, testing whether pessimism or ruminative coping could mediate the increase in internalising symptoms with age, for either the entire sample or female participants only) were found to be significant.

DISCUSSION

A number of cognitive, temperament-based, and behavioural variables were examined in order to determine their relative contributions to optimistic and pessimistic tendencies in children and adolescents. In addition to such factors, the impact of chronological age on optimism and pessimism was assessed so as to clarify the magnitude of the age-optimism association. The previously documented (e.g., see Lockhart et al., 2002) decline in optimism with increasing age was apparent in this study, however the predictive power or utility of age alone was seen to be moderated by the contribution of other individual differences to optimism levels.

As has been stated, one of the prime aims of this study was to ascertain the importance of chronological age on levels of optimism and pessimism through development. It was found that age was indeed negatively associated with levels of optimism, as measured by the YLOT. This was true for both the 'pure' optimism subscale score, as well as the total optimism score; the latter, however, returned a weaker association. This weaker association was due to the inherent pessimism component of total optimism, since the pessimism subscale returned no significant relationship with age (although the negligible correlation was in the expected positive direction). These differential results were of great interest, raising a number of implications for the conceptualization and functioning of optimism and pessimism, which shall be highlighted henceforward.

The first hypothesis of the study was supported, in that age was found to significantly and negatively correlate with optimism scores, indicating a clear tendency for optimism levels to decline with increasing age. The converse, and second hypothesis, was not supported, however. The decline in optimism with age was not associated with a concomitant increase in pessimistic tendencies. A number of explanations have been put forward to account for the apparent reduction in optimism with age. These include notions of increasing cognitive sophistication with age, leading individuals to reassess their expectancies and adjust them to a more 'realistic', attainable set of goals or outcomes (Plumert, 1995; Schneider, 1998). Such explanations pertain to the construct of "depressive realism", a term taken to represent the 'depressing' of expectations to a more realistic level. This term is most frequently employed within clinical literature (e.g., see Alloy & Abramson, 1979, 1982; Stone, Dodrill & Johnson, 2001) used to denote the tendency for depressed individuals to perceive reality (be it a task, or their own abilities) more accurately than their non-depressed counterparts. In developmental discussions, the term has been utilised to represent older children's more accurate appraisal of reality than younger children. Given that younger children are significantly more likely to demonstrate an optimistic bias in judgments made, the onset of a more 'pessimistic' or 'depressive' realism has been put forward previously as the straightforward cognitive shift underpinning the reduction in optimism with age.

The rising incidence of depressive disorders from early adolescence onwards has also been put forward as responsible for decreasing levels of optimism with increasing age; the causality, however, is markedly unclear. It could be that depressive symptoms, brought about by more organic or biochemical processes, preclude any sort of optimistic belief or feeling; equally, a steadily decreasing tendency to think optimistically about the future could lead to sustained feelings of helplessness, the cognitive forerunner to depressive symptomatology. In any case, the results of this study suggest that the latter statement may not necessarily hold up. While optimism might decrease with age, pessimism seems to be functionally distinct. That is, a simple reduction in optimistic tendencies could not alone precipitate the onset of negative attributions, helplessness, and depression. This clearly highlights the unique functioning and predictive power of optimism, which alone was seen to correlate significantly with age in this study. This all suggests that different processes must therefore be at work in order to account for the increase in depressive disorders in adolescence. Some factor or factors must exist that are *related* to the optimism-age association, but which also exert an independent effect upon clinical phenomena such as a negative or pessimistic attributional style, a hallmark of depression or anxiety.

In anticipation of the limited predictive ability of age, other key individual factors were also examined in relation to optimism and pessimism, so as to extend our understanding of cognitive pathways and processes in child development. In the main, these concerned measures of cognitive coping style, and levels of internalising symptoms, so as to extrapolate the antecedent

factors involved in the shift from marked optimism in childhood, to disproportionate levels of depression by early adolescence. Measures of extraversion and neuroticism were included for more theoretical and methodological reasons, which shall be addressed in due course.

The concept of cognitive coping style was developed by Nolen-Hoeksema (1987, 1991) as a way of accounting for the development and perpetuation of internalising symptoms. The three main cognitive coping styles posited by the theory were all included in analyses undertaken. Developmentally appropriate measures of rumination, distraction, and problem-solving coping tendencies were obtained using the CRSQ developed by Abela and colleagues (2000), and seemed to hold up well against other behavioural measures included in this study. Ruminative coping tendencies were positively associated with pessimism and internalising symptoms, which clearly aligns with response style theory, where ruminative tendencies sustain and exacerbate symptoms of depression or anxiety. Such tendencies were not seen to negatively correlate with optimism, however, once more highlighting the functional independence of optimism and pessimism. Distraction and problem-solving coping tendencies were negatively associated with age, and positively associated with optimism, clearly delineating a functional pattern whereby younger children demonstrated greater optimism and more adaptive coping styles, which then declines with increasing age, resulting in less optimism (though not necessarily more pessimism), and a greater tendency to engage in ruminative coping responses.

The predictive power of a problem-solving coping style was robust and consistent. It was seen to be positively associated with optimism, and negatively associated in pessimism. In regression analyses, it remained a powerful predictor of optimism levels even when age became non-significant. For this reason, a mediation paradigm was investigated, and it was seen that problem-solving coping style fully mediated the reduction in optimism with increasing age. Numerous implications of this finding become apparent, both in terms of positive psychology theories of the unique importance of optimism, as well as with regard to notions of depressive realism and the onset of psychopathology.

The idea of a “protective optimism” becomes increasingly clear: optimism is clearly associated with the most adaptive form of cognitive coping style (problem-solving), and through its functional independence from pessimism, may well promote the problem-solving type of resilience or thriving that is integral to tenets of positive psychology. Interestingly, this mediation paradigm calls the notion of “depressive realism” into question, casting some doubt upon its validity in explicating cognitive changes through development. The items of the CRSQ that pertain to the problem-solving cognitive coping style suggest a willingness to seek help from external sources, to acknowledge the demands of any given situation, and to make realistic and tenable plans to suit that situation. One might argue, therefore, that a decided ability to recognise one’s own limitations and make plans to suit the real demands of a situation is being evinced by such individuals. These flexible and sophisticated cognitions, moreover, were found by this

study to be strongly associated with high levels of optimism. Perhaps then, high levels of optimism are in fact most effective in fostering an ability to take stock of a situation, recognise the demands of that situation, and instigate actions to best solve that problem, seeking external help or utilising external resources if necessary. This finding also provides evidence against the idea of optimism as a highly egocentric, solely self-relevant, or at times mistakenly self-sufficient, sort of process.

The study of contributors to optimism and pessimism in children in this research had a secondary goal to that of elucidating adaptive and maladaptive affective pathways through development. While such issues of resilience and vulnerability are of great importance and deserving of rigorous research, it is also critical to examine the theoretical and methodological assumptions and practices underpinning such investigations, lest the impact of such pre-existing factors upon research results be underestimated.

Central to any investigation of optimism and pessimism is the widespread assumption that the two represent opposite poles of the same continuum, and that functionally they are mutually exclusive. The results from this study demonstrated that the two subscale measures of optimism and pessimism were negatively and moderately correlated with each other, and that they correlated positively with extraversion and neuroticism, respectively. In regression analyses, optimism was strongly and consistently predicted by extraversion, and pessimism by neuroticism, in all providing clear support for

the second hypothesis of the study. This supports the two factor approach of the YLOT, and clearly aligns with the higher-order personality constructs of Eysenck's (1976) personality theory. A theoretical and methodological issue, however, arises from this pattern of findings.

Findings of this study were somewhat confirmatory regarding extraversion as higher-order trait, or highly predictive, of optimism, and the similar association between neuroticism and pessimism augurs well for the construct validity of the YLOT. It does not, however, allow one to conclude that optimism is the simple opposite of pessimism, nor extraversion the polar opposite of neuroticism. Not only does the conceptualization of the YLOT, and phrasing of its items, basically determine that the optimism-pessimism correlation would proceed in a negative manner, but Eysenck's (1976) theory itself does not even purport to present extraversion and neuroticism as opposing tendencies. While *functionally* their relative outcomes might demonstrate an inverse relationship, conceptually they are not dichotomous. That said, it seems foolish to view optimism and pessimism as opposite tendencies, yet they so ubiquitously are viewed that way. The higher-order personality theory (viz., Eysenck's) that supersedes the grounding of optimism and pessimism in temperament in no way promotes such a view. The perception that optimism and pessimism are opposites should therefore exist only in lay, or commonsensical, notions of affect, not in rigorously developed psychometric tools such as the YLOT.

The current study contained some methodological limitations. The sample was obtained through contacts of university undergraduates. As such, the sample was likely to be attenuated in terms of factors such as socioeconomic class and level of parental education, at the very least. The generalizability of the sample to the wider population was therefore questionable. In terms of the scales used, the potential for response biases in the YLOT has been documented by previous research (Ey et al., 2005). Specifically, there was a real threat of children giving socially desirable responses, and/or succumbing to recall errors when attempting to answer items pertaining to their past and current expectancies. In addition, utilising the Parent-Report version of the CBCL in isolation, without any crosscheck against self- or teacher-report, may have engendered inaccuracies in those scores obtained. It is likely that parents do not have a complete and unbiased version of their child's internalising or externalising symptoms. Finally, the items of the CRSQ seemed to contain some weakness, since a number of participants scored quite low on all three subscales. This seemed to perhaps indicate either a lack of understanding on the part of the participants as to the nature of the items, or the possibility that the CRSQ is a slightly incomplete picture of cognitive coping styles. This seeming disengagement from the items may have been the cause of the finding of a negative association between age and all three types of cognitive coping style. An alternative explanation for that finding was that the sample was non-clinical and of a high socioeconomic status, and that levels of ruminative coping might have been disproportionately low compared to the wider population. In all, a closer examination of the CRSQ in future research, perhaps paying particular

attention to the functionally distinct natures of the coping styles denoting resilience versus vulnerability, seems warranted.

Future work is needed to fully establish the key contributors to children's optimism. While informative, the current findings could not account for more than around half of the variance in optimism scores. Clearly more factors are influencing the state and flux of children's optimism; issues of cognitive coping style in particular certainly warrant further attention. The role and dynamics of a problem-solving cognitive coping style require further clarification, so as to more fully understand its contribution to both the maintenance of optimism, and broader measures of resilience and well-being. A greater understanding of the utility and predictive value of such factors in the realm of healthy development should also provide some important insight into the most fruitful avenues to pursue in studies of negative affect and psychopathology, as *related* but functionally distinct processes. This issue of recognising the ontological distinction between discrete domains of resilience and positive affect, against those denoting vulnerability and ill-affect, also needs to be more consistently incorporated into future research in the area.

In all, the findings of this study have important implications for healthy development, and also pose some significant challenges for existing conceptualisations of the theory and measurement of optimism and pessimism. The input of chronological age on optimism levels was seen, with a negative relationship seen to exist, yet the relative contribution of age was

superseded by the importance of a problem-solving cognitive coping style. The mediation paradigm found in particular seemed to provide compelling evidence against the notion of depressive realism, and in doing so, suggested that optimism may be more sustainable and viable throughout the lifespan than previously acknowledged. The fact that the decline in optimism with increasing age appeared to be due to a *decreasing* tendency to engage in a problem-solving coping style, with decreased perspective-taking and help-seeking, clearly demonstrates the utility and adaptive value of an optimistic outlook, and highlights the importance of systematic research, and intervention efforts in the area. While pessimism did not seem to demonstrate any particular domain-specific functions or predictive power in the current study, perhaps its effects might be better understood when couched within a relevant framework, with appropriate risk factors and vulnerabilities, such as rumination coping or the pressures of adolescence, identified and considered from the outset. The clear applicability of the RS theory and the subscales of the YLOT remain to be clearly established in child development research.

CHAPTER THREE

STUDY TWO

Contributing Factors to Youth Optimism and Pessimism: Part Two

Assessing the Interplay of Dispositional and Cognitive Coping Factors upon Affective Outcomes in Late Childhood

The value of dispositional or intrinsic characteristics in determining personal well-being forms a cornerstone of research within fields of positive psychology. The extent to which such factors might directly influence mental and physical health outcomes across the lifespan has garnered much attention, yet the exact aetiological role of such traits remains unresolved. The capacity for dispositional traits to interact and correlate with other cognitive factors such as attributional style or coping style precludes their establishment as purely antecedent or fixed temperament characteristics, yet their robust predictive qualities across a variety of psychosocial domains ensures that their utility and research uptake remains constant.

One such important dispositional aspect of health research pertains to the study of optimism and pessimism. While the potentially debilitating effects of dispositional pessimism upon physical health rarely receive explicit attention, dispositional optimism, usually as measured by the well-regarded LOT, has received much attention in health psychology for its health-promoting effects (Ey et al., 2005; Kee, 1996). It has been seen to share a clear association with better health outcomes such as faster recovery from coronary artery bypass surgery (Scheier & Carver, 1987) and improved chemotherapy efficacy (Llewellyn-Thomas et al., 1992), for example. On the flipside, studies have documented such cognitive illusions as “unrealistic optimism” in situations that involve personal predictions and evaluation, such as personal risk for breast cancer (Cohen, 2002) or of contracting a sexually transmitted disease such as HIV (Zak-Place & Stern, 2004). In such situations, optimism is not seen as exclusively beneficial trait to possess, instead promulgated as a more naïve and potentially harmful tendency.

In light of such mixed results from research in the field, it becomes clear that the precise adaptive utility of optimism is far from established. This issue gains even greater force in the context of child development. The bulk of studies on dispositional optimism have utilized adult samples, yet it is often discussed as an evolutionary process of either benefit or potential endangerment to the developing child. Given the supposed “dispositional” status of this construct, systematic investigation of optimism from early childhood onwards is needed, in

order to more fully understand the impact of these emergent temperamental traits. Perhaps the most important contribution to developmental studies of optimism is the work of Lockhart, Chang and Story (2002), who documented a reliable decline in optimistic tendencies with increasing age. While optimism and pessimism are often regarded as mutually exclusive, increasing evidence suggests this is not necessarily the case (Peterson, 2000). It appears that people are capable of being at once highly optimistic in some situations, and markedly pessimistic in others. For this reason, the utility of examining optimism and pessimism separately, as well as in some composite form, has been encouraged in all research in the area.

Optimism is usually described as a cognitive set of expectations about the future that is markedly positive and hopeful (Seligman and Csikszentmihalyi, 2000). Pessimism is typically regarded as the complement to such a definition, reflecting a set of future expectations that are extremely negative in nature. Whether such a dichotomous approach to this aspect of disposition or temperament is warranted remains to be seen, and is perhaps best addressed by examining their functional interplay, be it inter- or independent. That being said, determining an appropriate secondary set of factors against which to juxtapose the functioning of optimism and pessimism requires a degree of parallel aspects that allows for adequate comparison. Given the cognitive nature of optimism and pessimism, this other construct should also be largely cognitive; in light of the key developmental shifts documented in studies of optimism and pessimism, the

comparison measure must also reflect a degree of sensitivity to the effects of chronological age. Finally, since optimism and pessimism are known to influence affective outcomes such as one's resilience, or susceptibility to internalizing symptoms, any appropriate factor for comparison should ideally demonstrate a relationship with emotional outcomes also. For all of these reasons, and the fact that cognitive coping style returned significant and interesting findings in the preceding chapter/paper, the study determined that another direct comparison of optimism and pessimism with the construct of cognitive coping style would provide an appropriate and fruitful avenue of investigation, allowing for a more sophisticated understanding of the causative roles of both dispositional and cognitive factors upon affective adjustment at the point of early adolescence.

The notion of 'cognitive coping style' was developed by Susan Nolen-Hoeksema (1987, 1991) as part of her Response Style (RS) theory of depression. Specifically, she emphasized that the *types* of coping behaviours elicited in response to the depressive symptoms directly determined the duration, frequency, and intensity of those symptoms. There are three cognitive coping styles posited by the theory: distraction, rumination, and problem-solving (PS). Those individuals that engage in a distracting coping response simply try to avert their attention away from their feelings of depression or sadness by engaging in an activity that they enjoy. Such an approach results in initial relief from the symptoms, but does not ensure their longer-term resolution. A ruminative coping response occurs when an individual focuses on their feelings of depression,

mulling over the negative impact of those symptoms to the point that the symptoms continue and intensify because of the ruminative process. This neglect of addressing the root-cause of the symptoms means the feelings continue in an escalating cycle of negativity, increasing the likelihood of experiencing a clinically significant episode of depression or anxiety, and ensuring the maintenance of the symptoms within any such episode. A ruminative coping style therefore heightens one's risk of experiencing depression, and severely affects the prognosis of a depressive episode. A PS coping style is the most adaptive approach to dealing with negative symptoms. Here, the individual is aware of their negative feelings, but rather than ignoring or dwelling on them, the person instead seeks to address the underlying cause of the problem, either through their own efforts or by seeking advice or help from external resources. In this way, the problem is dealt with and the symptoms should eventually resolve.

Nolen-Hoeksema (1987, 1991) developed the RS theory to account for the onset and maintenance of depressive disorders in adults. A second branch of the theory pertains to its explanatory power in accounting for disproportionate levels of depression in females. Nolen-Hoeksema (1991) attributes this increased risk directly to an increased tendency for females to engage in rumination coping responses, thus severely heightening their risk of experiencing a clinically significant depressive episode. Since the marked gender difference in rates of depression is evident from early adolescence (Nolen-Hoeksema, 1991), an integral part of the theory therefore involves a retrospective consideration of the

antecedent coping responses of teenage girls that precipitate higher levels of depression amongst adult women. While this critical aspect of the theory is grounded in child development, the scale Nolen-Hoeksema proposed to measure individual's cognitive coping styles (the Response Styles Questionnaire, RSQ) still explicitly targeted and catered for an adult set of respondents. A marked gap was therefore apparent in this field of research, and was not rectified until the first child versions of the RSQ were adapted and trialed by Broderick (1998) in the first instance, and then Abela et al (2000) in the second instance.

Broderick's (1998) work offered preliminary support for the applicability of the RS theory to younger populations, documenting a positive correlation between rumination and loneliness, but not between rumination and sadness. Broderick (1998) also found the expected gender difference of girls demonstrating a greater tendency to ruminate. While this study was groundbreaking in many ways, Abela and colleagues (2002) cautioned the acceptance of the study's findings due to the following important methodological flaws: first, Broderick (1998) documented depression using single-item measures of loneliness and sadness, where a more broad and robust measure of depression should have been administered. Secondly, the children in the sample were all in late childhood (mean age 10.95 years), so the findings may not extend to younger children. Lastly, response styles were assessed using a measure examining coping techniques used in response to stressful *events* rather than in response to

depressive *symptoms*. Abela et al (2002) therefore stated that rumination, as conceptualized by the RS theory, was not adequately measured.

These criticisms made by Abela et al (2002) seem, in the main, fair and warranted. Consequently, this second study used the child version of the RSQ developed by Abela and colleagues (2000), the Children's Response Style Questionnaire (CRSQ). As to the validity of Broderick's (1998) sample, the current study aimed to examine that same point of development, late childhood to early adolescence, thus the utilization of Abela's (2000) CRSQ, coupled with Broderick's (1998) participant focus, might perhaps yield new insights into the nature of cognitive coping styles, and overall relevance of the RS theory, at the threshold of adolescence.

The developmental relevance of the RS theory was clearly demonstrated in the previous chapter/paper, where the importance of the adaptive PS style came to the fore as central to explanations of shifts in optimism with age. Specifically, it was seen that PS coping directly mediated the reduction in optimism with age, where children's decreasing likelihood of engaging in PS coping with increasing age resulted in an overall reduction in optimism levels with age. This mediation was only found using the total optimism (a composite score of both optimistic and pessimistic tendencies) construct of the Youth Life Orientation Test (YLOT, Ey et al., 2005), with results from both pure subscale measures proving non-significant. This suggested that the pessimism component of total optimism might

be more pertinent than previously assumed, however the lack of significant levels of pessimism in that cross-sectional sample precluded any further investigation of its effects upon, and interaction with, the cognitive coping styles. For this reason, the current study decided to examine optimism and pessimism *within* an age-group, so as to more fully understand the potential for aetiological pathways between optimism and PS, and pessimism and rumination. Since both optimism and rumination have been seen to alter (decrease, and increase, respectively) at pre- to early-adolescence, it was determined that a study of such dispositional and cognitive factors at this transition period should prove fruitful and informative. Furthermore, since studies of the Response Style theory to date have all involved the investigations of depression (with items all commencing with “when I am *sad*”), the study decided to extend the utility of the CRSQ to internalizing symptoms more broadly, changing items to “when I am *worried*” to allow for the assessment of symptoms of anxiety. The Spence Children’s Anxiety Scale (SCAS) was therefore also administered, to serve a dual purpose of ascertaining the relationships between optimism, pessimism, and anxiety, as well as allowing for a check of the validity of this new “anxiety” version of the CRSQ (to be called “CRSQ-A” hereafter).

In sum, the study aimed to ascertain the influence, or potentially mediating effects, of optimism, pessimism, and cognitive coping style upon levels of anxiety in a sample of pre- to early-adolescents. A secondary methodological aim, that of determining the predictive validity of the new CRSQ-A, was also

incorporated into the study's design. Specifically, the study examined the ability of this revised scale to tap antecedent or contemporaneous symptoms of anxiety through its comparison with the well-established SCAS.

Specifically, it was hypothesized that:

1. Levels of optimism and pessimism (as measured by the YLOT) would not significantly vary as a function of age or gender;
2. Levels of anxiety in both groups of children would be significantly and negatively correlated with optimism levels, and significantly and positively related to pessimism levels;
3. Greater optimism levels would be significantly and positively associated with a PS coping style, and significantly and negatively associated with a Ruminative coping style. The inverse pattern would consequently be seen for pessimism levels;
4. Higher scores on the Ruminative subscale of the CRSQ-A would be significantly and positively correlated with scores obtained on the SCAS. Subsequent regression analyses would further demonstrate a predictive relationship existing between these two scales; and
5. A mediation model would exist between rumination coping, pessimism and anxiety levels, such that either rumination coping style or dispositional pessimism would supersede the other's predictive power when accounting for symptoms of anxiety.

METHOD

Participants

A community sample of 72 9-13 year olds comprised the participant pool for the study. The mean age of the sample was 10.97 (*SD* .92), with a gender distribution of 38 females and 34 males. Children with a clinically diagnosed internalizing or externalizing disorder were excluded from the sample.

Measures

Children self-administered the YLOT to obtain measures of dispositional optimism and pessimism, the CRSQ-A to obtain measures of cognitive coping style, and the Spence Children's Anxiety Scale (SCAS) to obtain a measure of symptoms of anxiety. All scales were typed into Microsoft Word documents, with items and response choices clearly presented using a child-friendly format and font. Scales were completed by children simply circling or ticking their response to any given item. Total testing time approximated 30 minutes.

The Youth Life Orientation Test (YLOT; Ey et al., 2005):

The YLOT was developed to provide a developmentally appropriate measure of children's expectations, specifically to yield a valid measure of children's dispositional optimism and pessimism. The YLOT is based upon Scheier, Carver and Bridges (1994) Life Orientation Test (LOT), and is a 16 item self-report measure of optimism and pessimism. The authors found good reliability and validity of the YLOT with 204 3rd to 6th graders.

Based on a year-long piloting of the YLOT, a final version was developed to include two filler items similar to the revised version of the LOT (LOT-R), seven optimism items, and seven pessimism items. The scale utilizes a four-point rating scale, where children judge the accuracy of a statement, depending on whether it is "true for me (3)", "sort of true for me (2)", "sort of not true for me (1)" or "not true for me (0)".

Due to debate regarding whether optimism and pessimism represent separate constructs or opposite ends of the same spectrum, the YLOT is designed to yield three scores: an optimism subscale score, a pessimism subscale score, and a total optimism score. Higher scores on each indicate greater endorsement of the items, and higher levels of the dispositional trait. The optimism score is calculated by summing the scores of items 5, 8, 10, 12, 14, and 16; the pessimism

score is calculated by summing the scores of items 4, 7, 9, 11, 13, and 15. The total optimism score is the sum of the optimism and reverse-scored pessimism items. The YLOT takes approximately 15 minutes to complete.

**The Children's Response Style Questionnaire-Anxiety version
(as modeled on the CRSQ; Abela, Rochon & Vanderbilt, 2000):**

As stated above, the CRSQ-A is closely modeled on the CRSQ (Abela et al., 2000), simply substituting the word "worried" for "sad" for all items contained in the Questionnaire's subscales. All these revised items may be seen in Appendix C. The CRSQ is an unpublished questionnaire, used by this researcher with the permission of the author, and typically takes 15 minutes to complete.

The CRSQ is designed to yield a measure of cognitive coping style for children, consisting of 25 items in total that divide to form three subscales: rumination coping subscale (13 items), distraction coping subscale (7 items), and PS coping subscale (5 items). For each item, children are asked to indicate how often they respond in this way when they are feeling sad (or, in the case of the CRSQ-A, worried). A four-point rating scale is used (almost never = 0, sometimes = 1, often = 2, almost always = 3), yielding scores ranging from 0-39 for rumination coping, 0-21 for distraction coping, and 0-15 for PS coping. Higher scores always indicate a greater tendency to engage in that particular

coping response. Past research using the CRSQ has reported moderate levels of internal consistency for all three subscales. In the current research, reliability analyses (Cronbach's alpha) of the items of the CRSQ-A returned alpha's of .52 for the distraction subscale, .66 for the problem-solving subscale, and .78 for the rumination subscale. Regarding its validity, CRSQ rumination scores have been shown to positively correlate with depressive symptoms in older and younger children, and distraction and PS scores have been shown to negatively correlate with depressive symptoms in older children.

The Spence Children's Anxiety Scale (SCAS; Spence, 1998):

The Spence Children's Anxiety Scale (SCAS) (Spence, 1998) taps symptoms of generalized anxiety disorder, separation anxiety disorder, social phobia, panic disorder and agoraphobia, obsessive-compulsive disorder, and physical injury fears representing specific phobias. The scale therefore closely follows the DSM-IV taxonomy of anxiety disorders. Research from various Western countries has indicated that the psychometric properties of the SCAS are satisfactory, and that this is true for children as young as 8 years and adolescents up to 17 years (Muris, Schmidt, Engelbrecht, & Perold, 2002). The questionnaire possesses adequate reliability, and its factor structure is largely in keeping with the hypothesized categories of anxiety symptoms (Chorpita et al., 2000; Spence, 1997, 1998). Furthermore, support has been obtained for the validity of this scale. That is, scores of the SCAS correlate strongly with scores on traditional

childhood anxiety measures and are able to differentiate between children with and without specific anxiety disorders (Muris et al., 2002; Spence, 1998).

Symptoms of anxiety disorders are assessed using 38 items that are rated on 4-point scales (0 = never, 1 = sometimes, 2 = often, and 3 = always). SCAS scores are computed by summing all items. The scale takes approximately 15 minutes to complete. The items and choice of responses were presented in a child-friendly format, using a pencil-and-paper format.

Procedure

Children were recruited through a public primary school in semi-metropolitan SA. Initially, the school was approached and the teachers of four classes of the appropriate age level (Grades 5, 6 and 7) agreed to support the study protocol. Letters were then sent home to the parents/guardians of all children in those classes explaining the nature and purpose of the research, seeking the consent of these caregivers for their child's participation. No child participated in the study until formal written consent was obtained.

Children self-administered the 3 scales during class time at school under the supervision of the primary researcher as well as their classroom teacher. The intent of each scale was explained before children attempted its completion, and

all questions were addressed during the testing session. Children were assured that they could take a break, or cease participating altogether, at any point without reprisal.

Once all three scales were completed by the 72 children, responses were scored and collated into an anonymous data file using SPSS 12.0 for Windows. Planned data analyses were undertaken using correlation and regression procedures.

Planned data analyses

The first hypothesis of the study will be tested using bivariate correlation and one-way analysis of variance procedures. The second and third hypotheses will be tested using bivariate correlation, and the fourth hypothesis will be examined using correlation and linear regression procedures. As stated in the previous chapter, all statistical results will be flagged in terms of strength of association and effect size in addition to standard tests of a critical p value. The fifth and final hypothesis of this study, pertaining to the testing of mediation models, will be investigated using a series of hierarchical multiple regressions, as conforming to the rules of mediation (Baron & Kenny, 1986) that were detailed in the preceding chapter.

RESULTS

As stated above, the bulk of the study's hypotheses were investigated using bivariate correlation procedures in the first instance. Table 3.2 below shows the matrix obtained to address the hypotheses, highlighting those correlations of significance (for means tested, see Table 3.1). With regard to the study's first hypothesis, none of the three YLOT scores (subscale optimism, subscale pessimism, or total optimism) was significantly related to chronological age (see Table 3.2). A series of one-way ANOVAs was then undertaken, to verify this finding in addition to testing the influence of gender upon YLOT scores. It was found that none of the YLOT scores varied significantly as a function of either age or gender (all $p > .05$). The first hypothesis was therefore fully supported by the findings.

Table 3.1

Means (*SDs*) of all variables included in bivariate correlation analyses

Study Variable	Sample Mean (<i>SD</i>)
Age	10.97 (0.919)
YLOT subscale optimism	12.63 (3.35)
YLOT subscale pessimism	7.93 (3.73)
YLOT total optimism	23.71 (6.51)
CRSQ-A Distraction coping style	7.74 (3.50)
CRSQ-A Problem-solving coping style	5.49 (2.99)
CRSQ-A Rumination coping style	12.56 (6.30)
SCAS anxiety score	37.10 (12.73)

The second hypothesis of the study posited a positive association between anxiety levels (as measured by the SCAS) and pessimism, and a complementary inverse relationship between anxiety and optimism. Table 3.2 demonstrates that levels of anxiety were in fact significantly and positively associated with pessimism levels. This moderately strong association therefore supported the directional prediction made in the study's second hypothesis, yet the complementary inverse for optimism was not seen. Table 3.2 shows a lack of any significant relationship between anxiety and either optimism score. The study's second hypothesis was therefore only partially supported, and seemed to highlight a degree of functional independence between optimism and pessimism.

Table 3.2

Correlations between the YLOT measures (subscale optimism (Opt), pessimism (Pess), and total optimism (Total Opt.)), and age, rumination coping (Rum), distraction coping (Dist), problem-solving coping (PS), and SCAS scores

	Age	Rum	Dist	PS	SCAS scores	Opt	Pess
Opt	.015	-.319**	.211	.366**	-.120	-	-.510**
Pess	-.025	.491**	.099	-.231	.337**	-.510**	-
Total Opt	.015	-.461**	.060	.361**	-.237	.840**	-.877**
SCAS scores	-.300*	.516**	.168	.131	-	-.120	.337**

* Correlation is significant at the 0.05 level (2-tailed)

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

In further demonstration of functional independence between optimism and pessimism subscale scores, it was found that while greater optimism

(subscale and total) levels were significantly and positively associated with a PS coping style (where such associations were moderate in strength), pessimism did not consequently correlate with PS coping in a significantly negative manner. With regard to a ruminative coping style, however, the prediction of a significant and positive relationship with pessimism, and subsequent inverse and significant and negative relationship with optimism (subscale and total), was supported by the findings. The association between rumination and pessimism was particularly strong. Mixed results were therefore obtained in response to the study's third hypothesis.

The fourth hypothesis made pertained to the degree of congruence, or predictive validity, between the rumination subscale of the proposed CRSQ-A, and the well-established SCAS. Table 3.3 below shows that, in support of the prediction made, the rumination subscale of the CRSQ-A and levels of SCAS-measured anxiety did correlate in a significant and positive manner. The strength of this association was also fairly sizeable. This finding was then extended to a consideration of predictive utility, and the linear regression undertaken demonstrated that CRSQ-A subscale rumination was a significant predictor of SCAS scores. Specifically, levels of rumination could account for 27% of the variance in SCAS scores of anxiety. The study's fourth hypothesis was therefore supported, providing a preliminary indication of the validity of the new CRSQ-A as a tool to tap symptoms or antecedents of anxiety.

Table 3.3

Correlation and regression statistics obtained with regard to ascertaining the power of CRSQ-A (Rumination subscale) for predicting scores on the SCAS

Model	Pearson's <i>r</i> (R)	R Square	F Change	(df1, df2)	Beta	Sig.
1	.516	.266	22.155	(1, 61)	.516	$p < .001$

The study's fifth and final hypothesis was more exploratory, and led to the proposal of three mediation models to account for relationships between dispositional factors (optimism and pessimism) and an affective outcome (level of anxiety). The three models put forward may be viewed below in Figures 3.1, 3.2, and 3.3.

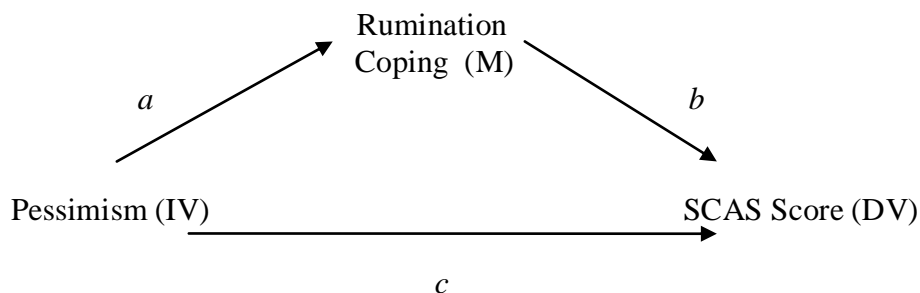


Figure 3.1

Rumination coping as mediating the relationship between Pessimism and SCAS scores

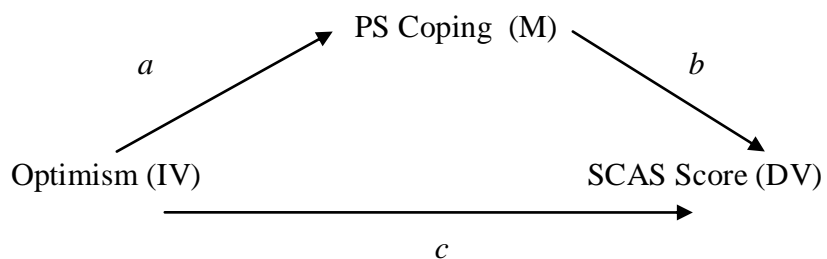


Figure 3.2

PS coping as mediating the relationship between optimism and anxiety (SCAS score)

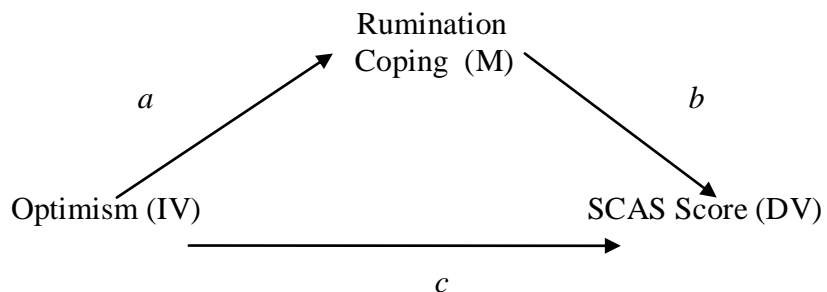


Figure 3.3

Rumination coping as mediating the relationship between optimism and anxiety (SCAS score)

These three proposed mediation models were then systematically investigated and tested using Baron and Kenny's (1986) rules of mediation.

Testing Mediation Model 3.1: Rumination coping style (M) as mediating the predictive relationship between pessimism (IV) and SCAS scores (DV):

Step 1: Pessimism (IV) as predictor of Rumination coping (M) (Path *a*):

It was found that pessimism was a significant predictor of rumination scores, $F(1, 70) = 22.23, p = .000$. Pessimism was able to account for approximately 24% of the variance in rumination coping scores ($R^2 = .241$). The first condition for mediation was therefore satisfied.

Step 2: Rumination coping (M) as a predictor of SCAS scores (DV) (Path *b*):

It was found that rumination coping was indeed a significant predictor of SCAS scores, $F(1, 61) = 22.16, p = .000$. Approximately 27% of the variance in SCAS scores could be accounted for by ruminative coping tendencies ($R^2 = .266$). The second condition for mediation was therefore met.

Step 3: Pessimism (IV) as a predictor of SCAS scores (DV) (Path *c*):

It was found that pessimism was a significant predictor of SCAS scores, $F(1, 61) = 7.841, p = .007$. Approximately 11% of the variance in SCAS scores could be accounted for by pessimism levels ($R^2 = .114$). The third condition for mediation was therefore met, thus allowing for the testing of the mediation model itself.

Step 4: Testing the mediation model:

A hierarchical multiple regression was conducted to determine whether pessimism predicted SCAS scores, after controlling for ruminative coping tendencies. Results showed that after controlling for ruminative coping, the beta between pessimism and SCAS scores was substantially reduced, from $\beta = .337 (p = .007)$ to $\beta = .087 (p = .506)$. Pessimism was therefore no longer a significant

predictor of SCAS scores once the effects of ruminative coping tendencies were controlled for. The amount of variance in SCAS scores decreased by approximately 16% ($R^2 = .272$ to $R^2 = .114$) when rumination coping was controlled for. Findings therefore indicated that the effects of dispositional pessimism on anxiety were fully mediated by rumination coping tendencies. The first mediation model proposed was therefore supported by the findings. Full statistical output to this effect is presented in Appendix F, Tables F.1-4.

Testing Mediation Models 3.2 and 3.3:

Mediation models 3.2 and 3.3 were also analyzed, however neither proved to be a significant mediation paradigm. In brief, the first (3.2) became non-significant and redundant at Path *b* (i.e., PS coping was not a significant predictor of anxiety levels), while the second (3.3) became non-significant at Path *c* (i.e., optimism was not a significant predictor of SCAS scores). All relevant statistical output is presented in Appendix F, Tables F.5-9.

DISCUSSION

The majority of directional hypotheses put forward by this study were supported by the results. Optimism and pessimism scores, however, were seen to behave in a more functionally distinct manner than was anticipated at the outset. The final exploratory hypothesis of the study allowed for the testing and verification of a mediation model whereby the association between dispositional pessimism and anxiety levels was found to be fully mediated by ruminative coping tendencies. These results were obtained in pursuit of the study's broad aim of examining the relevance of dispositional optimism and pessimism to shifts and changes in cognitive coping style at the point of late childhood to early adolescence. Ascertaining any sort of mediating paradigm (such as the one verified above) was central to this goal of ascertaining whether the shifts in cognition and affect during this developmental period might be explicated or predicted in meaningful ways. Specifically, it was hoped that any resulting mediation would shed greater light on the aetiology of internalizing symptoms, especially when viewed in terms of the explanatory framework of the Response Style (RS) theory of depression (Nolen-Hoeksema, 1987, 1991). This study deliberately grounded the RS theory in childhood, and against a backdrop of supposedly predisposing dispositional antecedents, in order to more accurately appraise the predictive power of the theory in explicating trends in internalizing symptoms in their most nascent state – at the threshold of adolescence.

The study found no significant differences in levels of dispositional optimism or pessimism as a function of age or gender. Since a within-age group design was adopted, age-related differences were not anticipated, since previous research (most notably, that of Lockhart et al., 2002) has indicated developmental trends in optimism whereby older children differ from younger children and adults (as having less, and more, optimism, respectively), but not in greatly meaningful ways from each other. As regards gender, despite the fact that teenage girls go onto demonstrate much greater vulnerability to internalizing symptoms, no apparent reflection in optimism or pessimism levels was seen at this stage of late childhood. Perhaps this may be taken to highlight the extremely rapid cognitive and emotional shifts that must occur amongst teenage girls as a group between the ages of 11 (our sample mean) and 14 years (where marked gender differences in rates of depressive disorders are readily apparent (MacPhee & Andrews, 2006; Wade, Cairney & Pevalin, 2002)). Further research is clearly required in this regard.

The second and third hypotheses of the study returned findings germane to both the RS theory and broader conceptual discussion of optimism and pessimism, and, even more broadly, threw some differences between conventional and new 'positive' psychology into sharp relief. These larger epistemological issues aside, the findings relating to optimism, pessimism, and

the cognitive coping styles are perhaps best discussed together, since it was the findings pertaining to optimism and pessimism that shed the most light upon the functioning of the CRSQ-A subscales.

The predictions made by the study with regard to the functional interactions of YLOT measures of optimism and pessimism were seen to be only partially accurate, with the two factors demonstrating much greater independence than was anticipated. In line with predictions made, we found that levels of anxiety (as measured by the SCAS) were significantly and positively correlated with YLOT subscale pessimism scores, and that those pessimism scores were in turn significantly and positively associated with scores on the rumination subscale of the CRSQ-A. Levels of SCAS anxiety were *not* seen to correlate with optimism scores in the expected complementary (negative) manner, however, despite the fact that both subscale and total optimism *did* correlate in a significant and negative way with rumination. In further demonstration of the functional independence of optimism and pessimism, while both optimism scores correlated significantly and positively with PS coping scores on the CRSQ-A, pessimism was not seen to correlate in the reverse positive manner to any significant degree. In all, a certain degree of domain-relevance or specificity between optimism, pessimism, and the coping styles was suggested by the data, where the adaptive and maladaptive processes were independently aligned.

Of primary importance, the systematic lack of clear, bivariate functional relationships between optimism and pessimism provided further evidence to confute their conceptualization as mere fixed aspects of disposition or temperament. Rather, their reflexivity and fluidity of expression seemed to betoken a clear status as cognitive *processes* that operate within defined domains of positive or negative affect. When viewing the constructs of optimism and pessimism, placing them upon a spectrum of affect, as mutually exclusive or complementary factors, necessarily delimits the impact they might have on other cognitive and behavioural aspects of functioning. Increasing evidence suggests that it is possible for an individual to be at once highly optimistic in one situation, and markedly pessimistic in another (Peterson, 2000). The imperative thus arises to see the two as discrete, though *related*, constructs. The qualifier just made is an important one: their functional independence does not negate their fundamental relatedness. Just as they are discrete entities of unique predictive power, they also necessarily intersect or overlap, thus allowing for the valid consideration of variables such as YLOT 'total optimism'. While it is important to view optimism and pessimism separately, their simultaneous evaluation may also result in additive or unique insights into this aspect of human cognition.

Interactions between coping styles and dispositional optimism were tested using Baron and Kenny's (1986) approach to testing mediation models, and one significant mediation paradigm was found. Specifically, rumination coping appeared to fully mediate the effects of dispositional pessimism on levels of

anxiety, whereby the mediating influence of rumination coping entirely subsumed the amount of variance accounted for by pessimism when explaining levels of anxiety. Alternative models assessing plausibly ‘complementary’ (in a conceptual sense) versions of the above mediation were also examined, specifically targeting optimism in lieu of pessimism, and PS coping in lieu of rumination coping. Neither of these other two models proved to exhibit any sort of mediation effects, and this lack of significance of either optimism or PS coping (both from the ‘positive’ or adaptive domain) with factors pertaining to the ‘negative’ domain or context (pessimism and anxiety) seems to provide further evidence in favour of viewing dispositional antecedents and concomitant affective planes as functionally distinct or independent.

Unlike optimism and pessimism, the functional independence of the cognitive coping styles examined is implicit in the theory that spawned them; that is the types of coping responses one engages in are seen to directly affect the likelihood of experiencing or perpetuating negative symptoms over time. Their uptake appears mutually exclusive – one is either engaging in ruminative responses and therefore at risk of depressive moods, or one is choosing an alternate coping response. The theory does not seem to allow for the fact that individuals, especially children in their formative years, might exhibit more than one coping style during a period of time. Perhaps the coping styles themselves, like optimism and pessimism, are more fluid and context-bound than was previously assumed.

Abela et al (2002) were the first to note this important developmental aspect of coping styles. Abela and colleagues, in a study of 8-12 year olds, observed that children did not appear to develop consistent coping styles until the end of middle childhood. That said, the children in the current sample should have demonstrated one predominating coping style, however in the majority of instances participating children's overall coping style was decided on the balance of one or two single items. Abela et al (2002) attributed the shift away from trying many coping responses to relying more heavily upon one to a learned or conditioned process. They speculated that younger children might attempt many types of coping responses, but that systematic failure in reaching a successful outcome with a PS or distracting response over time leads them to disengage and rely on more passive, ruminative responses only. A further issue to confuse our understanding of the uptake and adaptive value of the three coping styles also came to light in Abela et al's (2002) sample of 8-12 year olds. Abela et al (2002) found that while both older and younger children with rumination coping tendencies did evince greater levels of depressive symptoms than those children without such tendencies, the protective effects of PS and distraction coping were not so clear. While these two coping styles did confer a protective effect against depressive symptoms in older 12 year old children, they were not seen to be related to depressive symptoms in the younger 8-9 year old children.

Abela et al (2002) consequently highlighted possible methodological limitations that might be contributing to this situation, such as the PS and distraction coping subscales of the CRSQ perhaps having less internal consistency than the rumination subscale, or that perhaps the effects of PS and distraction coping might be attributable more to the *types*, or perceived *efficacy*, of responses made, rather than simple frequency of responses. These speculations are entirely laudable, and warrant closer examination, however what does not seem to be considered in the extant literature is the notion that perhaps more fundamental differences exist between various coping styles (and their mode of functioning) than previously understood. The burgeoning field of positive psychology tells us not to assume that deficits in one domain translate to deficits (or indeed gains) in another, that virtues do not automatically exist on the opposite end of the spectrum to vices. Rather, positive traits, structures, and institutions are seen to have unique and powerful predictive effects of their own, and have nothing to do with the concomitant lack of ill-affect.

In light of such tenets, positive psychology (in contrast to more traditional realms of psychology) therefore encourages researchers to see the potential for indices of resiliency and vulnerability to be functionally distinct, taking effect or being expressed on certain planes of affect independently. Such premises might easily also apply to an ontological understanding of cognitive coping styles. In light of the mediation seen in this study (where rumination coping subsumes the importance of pessimism in explaining anxiety), as well as the mediation seen in

the previous chapter/paper (where reductions in PS coping could fully account for the reduction in optimism seen with increasing age), it seems that coping styles do in fact demonstrate greater domain-specificity than has been previously discussed. Rumination coping may align with pessimism and anxiety, but adaptive PS coping may not. Similarly, PS coping explicates trends in optimism, but cannot extend to pessimism. Perhaps these interactions between cognitive coping factors and antecedent dispositional factors (optimism and pessimism) determine *eventual* affective outcomes (such as anxiety), where the consequent relatedness between 'depression' and 'well-being' is incidental rather than fundamental. When determining the aetiology of depression or anxiety, one cannot just work backwards from either the presence or absence of symptoms, since the two pathways quickly diverge into very different realms of cognition and temperament. Simply seeking bivariate and complementary relationships not only confuses causation, it also retards intervention efforts. Like Abela et al (2002), this researcher believes the best approaches to tackle depression are those that adopt CBT-like frameworks to challenge cognitive distortions and negative self-talk, and foster perspective-seeking and problem-solving. In this way, such approaches are explicitly recognizing and linking distinct areas of positive and negative affect, tackling rumination coping by challenging pessimistic attributions, and bolstering resilience by setting up chains of problem-solving efforts that allow for future hope and optimism.

A final goal of this study pertained to the generalizability and viability of the RS theory as accounting for the intensity and duration of internalizing symptoms broadly, not just depressive symptoms. This was done by utilizing a version of the CRSQ designed to assess symptoms of anxiety in the sample. Specifically, the word “sad” in the original CRSQ was substituted with “worried”, to see if anxious symptoms might be reliably tapped. In line with the Response Style theory, high scores on the rumination subscale of the CRSQ-A would be correlated with and predictive of high scores on an outright measure of anxiety – in this case, the SCAS. This was indeed found to be the case, with CRQ-A rumination and SCAS scores demonstrating a strong and significant predictive relationship. We believe this may be taken as preliminary support for the utility and validity of this new measure, and theoretically, as evidence in favour of a broader conceptualization of Response Style theory as explicating all types of internalizing symptoms.

In all, the functional and conceptual independence of both optimism and pessimism and related notions of cognitive coping style became increasingly apparent over the course of this study. As such, this researcher believes that future research must embrace a more nuanced approach to these temperamental and behavioural factors, and adopt an approach where domain-relevance is well articulated from the outset. In this age of positive psychology, there is increasing awareness that exploratory meanderings that search for answers to resilience through the study of vulnerability are only telling half the story. There is a need

for robust and systematic research into key aspects of cognition that promote long-term resilience, and we believe the antecedent and real-time effects of optimism cause this construct to be ideally suited to such work. An important caveat to this study remains: the most important developmental paper pertaining to optimism to date is that of Lockhart et al (2002), which utilized an entirely different methodology to this study. Lockhart's hypothetical trait-based vignette approach allows for a more complementary view of optimism and pessimism, and its other-relevant approach to future attributions differs strongly from the self-relevant statements of the more retrospective YLOT. Due comparisons between the vignette approach and the YLOT are clearly warranted before claims may be made as to this study reflecting those same developmentally-bound optimistic tendencies as Lockhart and colleagues documented. Indeed, greater methodological scrutiny is needed across the board so as to clarify the particular subtypes of optimism and pessimism that are being construed within the field of developmental cognition.

CHAPTER FOUR

STUDY THREE

Comparing Optimism Methodologies

The Utility of the YLOT and a Series of Hypothetical Trait-Based Vignettes as Measures of Youth Optimism and Pessimism

As has been emphasized in this thesis several times thus far, the robustness and applicability of any theory is heavily influenced by the methodologies developed to accompany and test that theory. This is especially true of the optimism/pessimism dichotomy: the divergent theoretical standpoints surrounding these constructs have led to various methods to measure them, and the feedback gleaned from such methods has in turn influenced theoretical refinement. Of course, methods should be accountable to theory (in the sense that a clear conceptual framework should be apparent in the methodology), and theories must remain relevant to new and evolving applications of key constructs in the field. In the field of optimism and pessimism, however, it would seem that theory and method are almost playing a game of cat-and-mouse, the one adjusting to account for the other, without

allowing for the chance that certain misconceptions or erroneous assumptions might be having a greater impact than anticipated.

Unchallenged theories may lead to the development of rather rigid methodologies expressly designed to confirm theoretical assumptions; the Life Orientation Test (LOT; Scheier, Carver & Bridges, 1994), for example, was designed to test for dispositional or 'self-relevant' optimism and pessimism only, seeking judgements of past beliefs and behaviours that are likely to be affected by recall- and self-enhancement biases. It assumes that a composite score of optimism and pessimism is justifiable if the presence of one involves the relative absence of the other (through reverse scoring procedures). In this sense, the LOT seems to be overtly seeking a dichotomous, mutually-exclusive relationship between optimism and pessimism. While this may be an entirely warranted practice, as an instance of a method aligning with one particular theory of optimism only (i.e., dispositional optimism), the fact that methods such as the LOT have been used in the past as 'blanket' measures of a 'global' optimism means that a certain level of methodological scrutiny is not occurring. If key theorists in the field agree that several subtypes of optimism exist, then this should be acknowledged outright and popular methods such as the LOT should be used in conjunction with other methods if one wishes to make broad generalizations about what it means to be 'optimistic'. For this reason, the similarities and differences between divergent optimism methodologies need to be more thoroughly examined. If such methods turn out to be quite distinct or functionally unique, then the schisms and subtypes in the extant theory

would be warranted. If, however, divergent methods had more in common than anticipated, then the need for a more holistic, refined and integrated theory of optimism would gain increasing imperative.

This current chapter will compare the Youth Life Orientation Test (YLOT; Ey et al., 2005) against another explicit or purposive measure of optimism: the use of trait-based reasoning and judgments. This approach was pioneered by Lockhart and colleagues (2002), operationalized by presenting a series of human trait-based hypothetical scenarios or vignettes. In this methodology, evidence of either optimism or pessimism is inferred on the basis of whether a child returns positive judgements about the malleability of human traits over time, or negative judgments, respectively. This method may be seen, therefore, as a purposive measure of optimism and pessimism: while indices of optimism and pessimism are gained through processes of children's trait-based reasoning, the method is not attempting to measure anything further than that – such as attributional style or locus of control. Indeed, comparing measures like the YLOT to completely deductive or inferential 'measures' of optimism/pessimism, such as attributional style (e.g., Thompson et al's (1998) Children's Attributional Style Questionnaire), locus of control (e.g., Rotter's (1966) Locus of Control Scale), or symptoms of depression (e.g., Kovacs' (1992) Child Depression Inventory), is beyond the scope of this thesis. The vignette approach of Lockhart et al (2002), however, will be systematically compared and contrasted to the YLOT, with their respective outcome measures appraised for both utility and specificity. While the Vignette approach is still a quite deductive method of assessing optimism

and pessimism (where the presence of one indicates the absence of the other, thereby setting up the two as mutually exclusive constructs), it does allow for the separation of scores of optimism versus those of pessimism, and should therefore provide an appropriate and potentially fruitful comparison for the two subscale measures ('pure' optimism and 'pure' pessimism) of the YLOT. It is hoped that this comparison and appraisal will go some way toward elucidating the true conceptual status of children's optimism. The vignette methodology also provides an ideal platform for the exploration of the *scope* of children's optimism, since the design of the scenarios themselves are easily manipulated as a function of trait type and ontological domain. Questions pertaining to children's domain-specific thinking, and the potential parameters of their trait-based reasoning, shall therefore be incorporated into this study. This aspect of the current research shall be elaborated below, for the original (i.e., as set out by Lockhart et al., 2002) usage of the vignette is best clarified prior to any discussion of its manipulation.

The vignette methodology: Premises and practices

Lockhart and colleagues' (2002) hypothetical vignette approach was discussed in some detail in the literature review of this thesis. To reiterate the key points, however, this method presents the individual with a series of stories or vignettes about a fictional character who exhibits a trait of either positive or negative valence. These traits could be either biological, psychological, or a hybrid of the two. A biological trait with a positive valence, for example, could be being tall or a fast runner. An example of a

psychological trait with a negative valence was being messy. A hybrid trait pertained to attributes such as being fat. In the fictional story told to the participant, the character exhibited a particular trait at age 5, and then at age 10, and then the individual is asked to make a judgment as to the state of that trait when the character is 21 years old (an adult). The respondent is therefore making a judgment of the malleability of that trait over time. Responses are made using a fixed choice set up of three alternative outcomes: 1. the trait does not change over time, 2. the trait changes moderately over time, or 3. the trait changes in an extreme manner over time. Consequently, higher scores always indicate greater trait malleability, regardless of trait valence. Scores are interpreted such that judgements of a negative trait *changing* over time, or a positive trait being *retained* over time, are both taken as indicative of optimism. The inverse holds as an indication of pessimism. Lockhart and colleagues (2002) posited that when both the change of negative traits *and* the retention of positive traits over time are both endorsed, optimism is being demonstrated by the individual. When the opposite occurs, then pessimism is being evinced.

Some discussion of the empirical foundations underpinning Lockhart et al's (2002) vignette approach seems warranted. Largely, this newer methodology stems from previous work in the field of children's cognitive development looking at both children's domain-specific and trait-based thinking.

Children's trait-based thinking

An important aspect of children's cognitive development is their burgeoning ability to reason about traits. Research on children's trait belief systems has, in the past, largely focused on individual differences inherent in attributional processing, often invoking the dichotomy of "incremental" versus "entity" theorizing as a means of explicating the way individuals construe and react to negative events (Heyman & Dweck, 1998; Levy & Dweck, 1999). An entity view asserts that traits are essentially fixed and cannot be developed, and such a belief is associated with vulnerability to a helpless motivational response that includes a tendency to make negative ability attributions in response to difficulty (Heyman & Dweck, 1998; Peterson & Seligman, 1984). In essence, such a belief in fixed traits serves to direct individuals towards judging those traits in themselves and in others, and to promote helpless responses in the face of failure (Heyman & Dweck, 1998; Peterson & Seligman, 1984). In contrast, an incremental view holds that traits can be changed, and individuals with this more dynamic view of characteristics are less likely to make global negative judgments about people and tend to be more resilient when confronted with difficulty (Heyman & Dweck, 1998). Thus it may be seen that such a distinction has a bearing on children's expectations and motivations, and can be used to predict which children are most likely to succumb to feelings of helplessness.

Attributions and domain applicability: The domains of biology and psychology

The issue of domain conceptualization is a key concern when investigating the specificity of, and reasoning behind, children's cognitions and trait-based reasoning (Heyman & Gelman, 2000; Inagaki & Hatano, 1993). Children's thinking about ontologically distinct conceptual domains, such as biology and psychology, has excited much interest, pertaining to age-old questions surrounding nature versus nurture, as well as modern conceptualizations of the mind-body distinction (Heyman & Gelman, 2000; Inagaki & Hatano, 1993). Earlier research has shown that children's biological concepts are thoroughly enmeshed with their notions of naïve psychology, and that they are strikingly human-centered (Atran, Medin, Lynch, Vapnarsky, Ucan Ek` & Sousa, 2001). This anthropocentric bias appears to be due to a lack of cultural familiarity with non-human biological kinds, not to an initial causal understanding based on folkbiology (Atran et al., 2001).

It has been clearly shown that when reasoning about the origins of human characteristics, even preschool aged children can distinguish between psychological traits and physical characteristics (Heyman & Gelman, 2000; Miller & Bartsch, 1997). These young children also recognize not only the differential malleability of fixed versus fluid human properties and bodily versus mental properties, but also the independence of activities of bodily organs from a person's intention (Inagaki & Hatano, 1993). Children are no more likely than adults to make such vitalistic attributions (attributions of

intention or agency to biological organs) (Miller & Bartsch, 1997), and when accounting for the causal mechanisms underlying trait change, are able to be specific about the processes underlying biological change (Miller & Bartsch, 1997). Preschoolers also consider abnormal bodily features with functional (biological, not social or psychological) consequences as being inherited (Springer & Keil, 1989), and while older children are more aware of the inheritance of inborn traits, younger children do have principled, specifically biological notions of inheritance (Springer & Keil, 1989).

Beliefs regarding the origins of psychological traits may be related to beliefs about their stability, for the nature-nurture dichotomy is often equated with the stability-malleability of such traits, invoked to account for change or lack thereof over time (Heyman & Gelman, 2000). Although preschool aged children have systematic beliefs that nature is more important than nurture in determining physical characteristics, they do not appear to have systematic beliefs about psychological trait origins – evidence suggests that these develop through the primary school years, to the effect that nurture plays a more important role than nature in determining psychological traits (Heyman & Gelman, 2000). This developmental trajectory is important, given that beliefs in nature and fixed traits would portend the likelihood of quick judgments being made about the self and others based on little evidence, as well as signal poor performance in the face of failure (Heyman & Gelman, 2000).

Indices of such reasoning appeared amenable to operationalization, specifically allowing a more innovative way of measuring or eliciting bigger cognitive-affective constructs, such as optimism and pessimism. Lockhart et al (2002) recognized this amenability and used this notion of domain-specific trait-based thinking to develop their vignette approach. Findings returned from their investigations of the utility of the vignette approach pointed to the “protective optimism” of young children. Essentially, this optimism is seen as being evident through the perceived changeability of a negative trait, and perceived stability of a positive trait, over time.

Central to the work of Lockhart and colleagues (2002) was a wish to delineate optimism from more conventional positions of individual differences in children’s trait-based reasoning, where judgments are seen to reflect either an incremental (where *all* outcomes are seen to be fluid) or entity (where all is seen as fixed) form of theorizing. The authors therefore examined young children’s beliefs about the malleability of human biological and psychological traits over time, and found that younger children were more likely to believe that negative traits would change in an *extreme* positive direction over time, and that they could *control* the expression of a trait. This was true not only for psychological traits, such as being messy or mean, but also for biological traits such as a missing finger or having poor eyesight. Young children also optimistically believed that extreme positive traits would be retained over development, and that overall a majority of people can have above average future outcomes. All age groups made clear distinctions between the malleability of biological and psychological traits, believing

negative biological traits to be less malleable than negative psychological traits and less subject to a person's control. Hybrid traits, such as intelligence and body weight, fell between these two with regard to their malleability. This provided clear evidence in support of the notion of qualitative differences existing between lines of thinking attached to different ontological domains. This current study therefore determined that some considerations of domain-specific thinking should be incorporated into any vignette-based investigation of children's optimism and pessimism.

The aim of the current research was twofold: first, to compare the utility of the vignettes as a tool to assess youth optimism and pessimism through its comparison with the YLOT, and secondly, to extend our knowledge of the scope of children's optimism by presenting trait scenarios designed to elicit domain-specific thinking or causal attributions. Specifically, the scenarios were divided into three specific sections: one to assess whether younger children's greater optimism was evident when presenting 'neutral' scenarios where trait change could logically go either way (Part A), one to assess whether children's optimism would allow for supernatural or magical trait change over time (Part B), and one to assess the impact of optimism and pessimism when making health-related, biological causal attributions (Part C). A key advantage of the vignette approach is its facility for investigating specific domains of children's thinking, since it is particularly amenable to the variation and substitution of factors to answer specific research questions.

This study was once more placed in a developmental context, assessing optimism and pessimism levels in children aged 7-17 years. While Lockhart and colleagues (2002) successfully used the vignette approach with children as young as five, the authors of the YLOT (Ey et al, 2005) recommended the YLOT not be used with children younger than 7 years of age, thus delimiting the age range of the current study. This child development setting was once more used in an attempt to resolve some of the existing gaps or inconsistencies in the extant literature that have been highlighted throughout this thesis so far.

Questions pertinent to the current study include:

1. When and how significant patterns of optimism and pessimism emerge in childhood and adolescence;
2. Whether children's optimism is egocentric or 'small', or in fact a more free-floating and other-person relevant "big" optimism;
3. Whether children's optimism is tempered by the demands of logic and the rules governing the physical world; and
4. How children's optimism might impact upon their intuitive theories and acquired knowledge within specific domains.

The first question above may be answered using both the YLOT and the series of vignettes. It was anticipated that the latter questions will be adequately addressed through the manipulation of the vignette methodology. Specifically,

the trait-based scenarios were designed to be divided into discrete Subsections A, B, and C, designed to assess unconstrained optimism, optimism potentially constrained by the demands of logic and physical reasoning, and optimism potentially affected by acquired knowledge in the biological/health domain, respectively. The specific content and rationales of these three subsections were devised are detailed below in the Measures section.

Specifically, it was hypothesized that:

1. The two measures would each individually demonstrate an effect of age on scores obtained, such that increasing age would be associated with decreased levels of optimism and increased pessimism;
2. Patterns of responses within Parts B and C of the vignette series would vary as a function of the age of the child;
3. Optimism scores on the YLOT would correlate significantly with the number of positive outcomes selected for the vignettes in Parts A, B, C, and overall; and
4. Pessimism scores on the YLOT would be inversely related to the number of positive outcomes selected in the vignettes.

METHOD

Participants

Participants were a community sample of 93 children and adolescents aged 7-15 years (mean age 11.16 years, SD 2.67 years). The sample was divided into two sub-samples to form the age groups of interest to the study: younger children aged 7-10 years (mean age 8.51 years, SD 1.10), and older children aged 11-15 years (mean age 13.25 years, SD 1.34). Fifty participants were female and 43 were male. Participants were recruited through the contacts of undergraduate psychology students. Children with a clinically diagnosed internalizing or externalizing behaviour problem were excluded from the sample.

Measures

The Youth Life Optimism Test (YLOT; Ey et al., 2005):

This recent scale was used to obtain measures of optimism and pessimism. Its subscales and scoring, as well as indices of its validity, reliability, and consistency, were discussed in detail in the preceding chapter. To reiterate the key points, however, optimistic and pessimistic items are presented, where the respondent indicates their degree of endorsement of that particular item. A 4-point likert scale is used: True for me (scored as 3), sort

of true for me (2), sort of not true for me (1), not true for me (0). Higher scores therefore indicate a greater degree of endorsement. This scale yields an optimism subscale score (comprising the sum of all optimism items), a pessimism subscale score (comprising the sum of all pessimism items), and a total optimism score (optimism subscale score, plus reverse-scored pessimism items).

The Series of Hypothetical Vignettes:

The fictitious scenarios that comprise the vignette methodology for this study were developed by this researcher. The scenarios were modelled upon those used by Lockhart et al (2002).

Vignette composition

The scenarios present a series of fictional characters with human traits of either a positive or negative valence (i.e., desirable vs. undesirable human attributes). These traits are presented as stable in the short-term (i.e., the character possesses it for at least 5 years), and respondents are asked to make a judgment as to the traits' ultimate malleability over time.

To elaborate, scenarios always follow the format of: A 5-year old child possessing the trait, that child still possessing the trait at age 10, with the point of judgment pertaining to whether that child will still possess that trait (be it positive or negative) as a young adult, age 21.

In addition to the distinction between positive versus negative traits, this study extended its examination of the scope of children's optimism to include the three subsections outlined above. These three subsections or parts, A, B, and C, each contain 4 scenarios pertaining to the malleability of a positive trait over time, and 4 pertaining to a negative trait. The specific content of each subsection is detailed below. The presentation of trait scenarios was randomized within each block of the series.

The total series of vignettes therefore comprised 24 trait-based scenarios.

Subsection focus and content: Parts A, B, and C

As stated above, Part A was designed to allow for the evocation of unconstrained optimism or pessimism. Notions of 'constraint' in this subsection, and the later two subsections, pertains to any domain-specific rules or imperatives that might conceivably temper natural optimistic or pessimistic tendencies.

By presenting scenarios in the most 'neutral' way possible, in the sense that either outcome (trait change or retention) was realistic or plausible, the hypothetical scenarios in Part A theoretically allow for a more free-floating optimism to be evinced.

The scenarios contained in Part B of the vignette series were designed to assess the scope or robustness of children's optimism by presenting trait-

based scenarios that were necessarily subject to, or constrained by, the rules or demands of logic and physical reality. By investigating whether children's optimistic inclinations would allow for unrealistic or supernatural trait change over time, this subsection of the vignette series could allow for the evocation of a potentially all-encompassing, or more naïve type of optimism, on the part of the children. Alternatively, a lack of such naivety would be suggestive of a certain level of discernment and context-specificity in children's optimism.

Finally, the scenarios presented in Part C of the vignette series were again designed to assess the scope or parameters of children's optimistic tendencies, by presenting human traits related to health. Of interest was whether children would draw on notions of naïve biology and their formal knowledge of health when forming trait-based judgments, or whether they would allow their optimistic proclivities precedence. This was done in order to examine whether optimism might entail a certain degree of naivety within domain-specific (i.e., biological) causal attributions. Once more, a lack of such naivety could be taken to indicate a certain hierarchical precedence in children's cognitions, where domain-specific rules constrain all other thinking.

A few examples of these hypothetical trait-based scenarios, from each Section of the vignette series, may be viewed in Appendix D.

Scoring the vignettes

As stated above, each scenario receives a judgment as to the malleability of that trait over time. This is done using a fixed-choice format: No change (scored as '1'), moderate change (scored as '2'), and significant or extreme change (scored as '3'). The directionality of the scoring therefore sets out that higher scores indicate a greater belief in trait change over time, regardless of trait valence.

To distinguish between scores of optimism and pessimism, positive outcomes (no change in a positive trait, and/or moderate to extreme change in a negative trait) are construed as 'optimism', and negative outcomes or judgments (no change in a negative trait, and/or moderate to extreme change in a positive trait) constitute 'pessimism'. In other words, optimism subsumes positive trait stability and negative trait change, with pessimism holding an inverse relationship to trait-based judgments. Optimism and pessimism are therefore set out in this approach as opposing, mutually exclusive tendencies. The presence of one is seen to indicate the absence of the other.

Summed scores for each component section of the vignettes are obtainable. Two composite scores across each of the three sections were calculated as a function of trait valence (positive vs. negative). As a reminder, each subsection contained 4 scenarios with traits of a positive valence, and 4 of a negative valence, where responses are scored as 1, 2, or 3.

This means that every subsection receives two separate scores, one for positive traits and one for negative traits. Each score ranges from 4 to 12 (summing scores of 1-3 across 4 scenarios).

In terms of the ‘positive vs. negative outcomes’ articulated in the hypotheses of this study: ‘Positive outcomes’ subsume low scores for positive traits (low change), and high scores for negative traits (high change). Conversely, ‘Negative outcomes’ subsume high scores for positive traits (high change), and low scores for negative traits (low change).

As a final reiteration, positive traits judged as stable, and negative traits judged as transient, over time are indicative of optimistic outcomes. The reverse is true for pessimistic outcomes.

All scores obtained from the vignette series are detailed below in Table 4.1, and show the translation of scores to levels of high vs. low optimism and pessimism.

Table 4.1

Showing all scores obtained for Sections A, B, C, and overall, from the Vignette Method

Variable Name	Derivation: Summed score for subsection: (<i>trait valence</i>)	Explanation	Directionality*: Higher scores denote:
A-Neg	A (<i>negative</i>)	Sum of scores for all scenarios in Section A, B, C (respectively) of a negative valence	High optimism, Low pessimism
B-Neg	B (<i>negative</i>)		
C-Neg	C (<i>negative</i>)		
A-Pos	A (<i>positive</i>)	Sum of scores for all scenarios in Section A, B, C (respectively) of a positive valence	Low optimism, High pessimism
B-Pos	B (<i>positive</i>)		
C-Pos	C (<i>positive</i>)		
Total Neg Trait Score	Grand Sum Score for all Negative Traits	Indicating the sum of scores of all traits with a negative valence across all sections A, B, and C	High optimism, Low pessimism
Total Pos Trait Score	Grand Sum Score for all Positive Traits	Indicating the sum of all scores of all traits with a positive valence across all sections A, B, and C.	Low optimism, High pessimism

* Higher scores are always indicative of greater trait change over time.

Procedure

Participants were recruited through the contacts of undergraduate psychology students, subject to parental consent. Children were then individually interviewed, completing the YLOT and series of hypothetical vignettes at a time and place of their choosing. The interviews took

approximately 45 minutes to complete. All responses were recorded using pencil-and-paper forms of the questionnaires. Completed data was collated into an anonymous database in SPSS 13.0.

Planned Data Analyses

All the hypotheses of this study were to be addressed using bivariate correlation procedures in the first instance. Further analyses were to follow any significant basic trends emergent in the data.

Specifically, the first and second hypotheses, regarding the relationship between the age of the child and patterns of YLOT/vignette optimism, were further investigated through:

1. A one-way Analysis of Variance of the influence of age group (younger vs. older children) on the dependent variables of YLOT subscale optimism and subscale pessimism, and vignette total positive trait score and total negative trait score; and
2. A 2 (younger vs. older children) x 6 (vignettes parts A/B/C, pos/neg) univariate ANOVA.

The third and fourth hypotheses, pertaining to patterns of mutual prediction or (dis)concordance between the two optimism measures, were examined more closely using multiple regression and hierarchical multiple regression procedures.

RESULTS

Sample characteristics were first ascertained, so as to ensure that a balanced sample of children and adolescents had been recruited. The gender balance found in the sample, as well as the age means of each age group, were deemed appropriate for the study's purposes. Having established a sound representation of age in the sample through age group-based recruitment and comparisons, age was able to be treated as both a continuous and discrete (younger [7-10 years] vs. older children [11-15 years of age]) variable in all subsequent analyses.

Research hypotheses of the study were addressed using correlation procedures in the first instance, and are presented below in Table 4.3 (for means tested, see Table 4.2).

Table 4.2

Means (*SDs*) of age and YLOT and vignette scores obtained

Variable	Mean (<i>SD</i>)
Age	11.16 (2.67)
Age Group: Younger children	8.51 (1.10)
Older children	13.25 (1.34)
YLOT optimism subscale score	13.70 (2.93)
YLOT pessimism subscale score	5.66 (3.34)
YLOT total optimism score	27.62 (5.77)
Vignette Total Neg trait score	20.09 (3.81)
Vignette Total Pos trait score	22.40 (3.06)
Component Parts:	
A-Neg	7.48 (1.80)
A-Pos	6.69 (1.52)
B-Neg	4.71 (1.29)
B-Pos	10.23 (1.53)
C-Neg	7.89 (2.01)
C-Pos	5.48 (1.30)

Table 4.3

Correlations amongst the variables of interest: Age, YLOT scores (optimism and pessimism subscales, and total optimism), and vignette scores (total scores for all positive and all negative valence traits, as well as component subsections A, B and C)

	Age	Optimism subscale	Pessimism subscale
Optimism subscale	-.348**	1	-.463**
Pessimism subscale	.040	-.463**	1
Total optimism	-.196	.820**	-.868**
Total neg trait score	-.216*	.278**	-.094
Total pos trait score	.224*	-.182	.165
A-Pos	.128	-.107	.182
A-Neg	-.236*	.272**	-.128
B-Pos	.154	-.067	.098
B-Neg	-.176	.123	-.028
C-Pos	.198	-.226*	.062
C-Neg	-.086	.205*	-.046

* Correlation is significant at the 0.05 level (2-tailed)

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

Hypotheses 1 and 2: Age and patterns of optimism and pessimism

Regarding the first hypothesis of the study, Table 4.3 shows that both scales did exhibit an effect of age, although such effects were not uniform across all scores obtained. Specifically, while age and YLOT subscale optimism correlated significantly and negatively to a moderate degree, this result did not extend to total optimism scores, nor was the inverse relationship between pessimism subscale scores and age seen. This suggests that while children's optimism might decrease with age, their pessimism does not simultaneously increase. This null finding for pessimism and age was responsible for the non-significant outcome obtained for total optimism, due

to this composite score's pessimism component. That being said, all reports of 'optimism levels' shall henceforward only be made with reference to the pure optimism subscale score of the YLOT.

In terms of the relationship between increasing age and the scores obtained from the vignettes, it may be seen from Table 4.3 that age correlated in a significant (albeit weak) manner with both composite scores. Judgements of the changeability of negative traits over time (across all sections of the vignettes) correlated in a negative manner with age, suggesting a decreasing likelihood of seeing negative traits as malleable with increasing age. In line with the interpretation set out by Lockhart et al (2002), this may be construed as indicating a decrease in optimism (or increase in pessimism) with increasing age. The reverse was also true for the judgments of the changeability of positive traits over time, with the positive correlation with age indicating a tendency to see positive traits as increasingly malleable with increasing age. This, too, may be taken to indicate decreasing optimism (or increasing pessimism) with increasing age.

To break the effects of age on the vignette scores down to component sections, only the sum score for the negative traits in Section A returned a significant correlation with age (see Table 4.3). This negative correlation indicated that increasing age was associated with a decreasing likelihood of seeing (Section A) negative traits as changeable. Once more, this may be taken to represent a reduction in optimism, or increase in pessimism, with increasing age. In all, the first hypothesis of the study seemed to be supported.

While the effects of age on the scores of the vignettes were almost non-existent, ANOVAs were still carried out so as to more clearly determine the nature of those non-significant findings with regard to age.

The one-way ANOVA undertaken to show the effects of age group on the dependent variables of YLOT optimism and pessimism subscale scores, and total scores for judgments of positive and negative valence traits from the vignettes, demonstrated significant between group effects (younger vs. older children) for YLOT optimism subscale scores, $F(1, 91) = 8.51, p < 0.01$, and for total *positive* valence trait judgments, $F(1, 91) = 6.13, p < 0.05$. The effects of age group on YLOT pessimism scores, and total judgments for negative traits on the vignettes, were both non-significant ($p > 0.05$). These findings therefore indicated that while optimism and beliefs regarding the malleability of positive traits are influenced by increasing age, pessimism and beliefs about the malleability of negative traits are not.

The 2 (age group) x 6 (A/B/C, pos/neg) multivariate ANOVA undertaken to better explicate the effects of age on the component parts of the vignettes returned no significant differences between the age groups when comparing mean scores (all $p > 0.05$). This suggested that even the weak correlation between age and Part A negative traits (see Table 4.3) becomes redundant when placed in the context of older versus younger children.

All in all, while there was some small support that age influenced vignette scores, with total composite scores across all negative, and all positive, trait judgments returning a weak correlation with age, these effects were not robust, and sections B and C of the vignettes were seen to be entirely unaffected by the influence of age. Hence, while some limited support was seen for the first hypothesis of the study (in that YLOT optimism was affected by age), age was seen to have no bearing on levels of pessimism, and the second hypothesis of the study was entirely unsupported by the findings.

Hypotheses 3 and 4: Measure concordance and prediction

The third and fourth hypotheses of this study pertained to the possibility of overlap, and hence predictive utility, between the scores of the vignettes and the scores of the YLOT. Specifically, it was hypothesized that YLOT optimism (subscale score) would correlate significantly with the number of positive outcomes selected for the vignettes in parts A, B, C, and overall, and that YLOT pessimism would be inversely related.

Table 4.3 shows that optimism subscale scores did appear to be positively associated with the number of ‘positive outcomes’ selected on the vignettes. To elaborate, higher scores for negative traits in the vignettes were associated with higher levels of YLOT optimism. Since high scores for the malleability of negative traits constitute ‘positive’ or optimistic judgments, it may be inferred that there is a weak association, or some small degree of overlap, between YLOT optimism and vignette total negative trait judgments.

Interestingly, the total sum score for all *positive* traits did not demonstrate a significant inverse relationship with optimism.

In terms of the composite parts of the vignette method, correlations with YLOT optimism were seen to be significant with reference to the ‘neutral’ negative traits of Section A, and the health-related positive and negative traits of Section C. The directionalities of these correlations (see Table 4.3) were in line with the conceptualisation of changing negative traits, and stable positive traits, as indicative of optimism. None of the other subsection scores correlated with YLOT optimism, however. Overall, some limited but specific results were found in support of the study’s third hypothesis.

With regard to the fourth hypothesis of this study, where the prediction of reverse or complementary effects for pessimism was made, it was in fact found that YLOT pessimism did not significantly correlate with any of the vignette scores, total or subsection (see Table 4.3). While these non-significant correlations did run in the expected (i.e., opposite) direction to the optimism correlations, indicating at least some conceptual relatedness between optimism and pessimism subscales (as is also evidenced by their own moderately significant correlation of -0.463 , see Table 4.3), the general lack of support for the fourth hypothesis of the study seemed to again point to a degree of functional independence between optimism and pessimism, a trend that has been noted in the two previous studies of this thesis.

While only a limited amount of evidence was seen for the overlap or concordance between the two optimism measures, two multiple regressions were still undertaken in order to ascertain what degree of variance in YLOT optimism scores might be accounted for by any of the vignette scores.

Regression 1: Vignette total positive trait judgements and total negative trait judgments as predictive of YLOT optimism

Multiple regression was used to assess the ability of the two composite vignette scores (total scores for negative and positive valence trait scenarios, across all three subsections) to predict YLOT optimism. Preliminary analyses conducted indicated that there was no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. The two composite vignette scores were entered simultaneously into the model. The total variance explained by the model was 13%, $F(2, 90) = 6.73, p < 0.01$. Examination of the independent variables indicated the significant, opposing influence of these variables upon optimism subscale scores (total positive trait score $\beta = -.233, p < 0.05$; total negative trait score $\beta = .316, p < 0.01$).

Regression 2: component subsection scores of the vignettes as predictive of YLOT optimism

This second regression was undertaken as a final clarification of where the 13% similarity between the vignette method and the YLOT was likely to be stemming from. The prediction of YLOT optimism was analysed in a

hierarchical way, with the two scores (positive and negative traits) for Part A entered at Step 1, Part B scores entered at Step 2, and Part C scores entered at Step 3.

At Step 1, with the two Part A scores entered, the model as a whole could account for 10.4% of the variance in optimism scores, $F(2, 90) = 5.21$, $p < 0.01$. In this first model, only the negative trait judgments score (A-Neg) was a significant predictor of YLOT optimism, $\beta = .312$, $p < 0.01$. After entry of the Part B scores, the total variance explained by the model increased to 11.2%, $F(4, 88) = 2.77$, $p < 0.05$. The Part B scores explained an additional .8% of variance in optimism scores only after controlling for Part A scores, R^2 change = .008, F change (2, 88) = .403, $p < 0.05$. In this second model, A-Neg was once more the only uniquely significant predictor of optimism scores, $\beta = .299$, $p < 0.01$. All other standardised coefficients were non-significant (all $p > 0.05$). In the final Step 3 of the model, adding in the two Part C scores, the model as whole could account for 15% of the variance in optimism scores, $F(6, 86) = 2.52$, $p < 0.05$. After controlling for Parts A and B, Part C scores could only account for an additional 3.8% of the variance in optimism scores, R^2 change = .038, F change (2, 86) = 1.91, $p < 0.05$. In this final model, none of the composite scores were uniquely predictive of the variance in YLOT optimism scores.

Taken together, these results indicate that only Part A negative trait judgement scores (A-Neg) were uniquely and significantly predictive of the variance in YLOT optimism scores. This suggests that the type of optimism

measured by the YLOT is most similar to unconstrained judgements about human traits, and the changeability of negative traits in particular, a conceptual implication that shall be elaborated upon in the Discussion section to follow.

DISCUSSION

In its investigation of the utility of two different optimism methodologies, the study found that optimism did appear to decrease with age; pessimism, however, did not automatically increase. While the two methodologies demonstrated some degree of relatedness, with the optimism subscale score on the YLOT correlating positively with an increased tendency to see negative traits as changeable over time (a vignette index of 'optimism'), the degree of similarity between dispositional optimism and the perceived *retention of positive* traits over time was not so clear. This same pattern of results, where judgements of negative trait change were correlated with optimism, but judgments of positive trait stability were not, was also seen within Section A of the vignettes. There was no significant effect of age upon judgements of the malleability of positive or negative traits in both Sections B and C of the vignettes, suggesting that increasing age or acquired knowledge has no bearing upon judgments that are particularly subject to considerations of lawfulness and logical or permissible change. Finally, pessimism subscale scores of the YLOT were found to be consistently non-significant in relation to all research questions. This appeared to indicate a marked degree of

functional independence from optimism, as well as a clear divergence from the cognitive attributional processes being measured in the vignettes. These findings shall be discussed in terms of some key cognitive theories of child development (such as incremental vs. entity theorizing, and notions of permissible change and domain-specific thinking) as well as in terms of the conceptual implications this work holds for our understanding of the optimism and pessimism constructs and their measurement.

The main thrust of this research was to present and compare two different methodologies for assessing optimism and pessimism in children and youth. In doing so, important theoretical, methodological, and applied aspects pertaining to children's optimism and pessimism have come to light. Markedly divergent patterns between optimistic and pessimistic processes were seen, and some new dimensions and parameters of children's optimism emerge. These findings shall be discussed in terms of some key cognitive theories of child development (such as incremental vs. entity theorizing, and notions of permissible change and domain-specific thinking) as well as in terms of the conceptual implications this work holds for our understanding of the optimism and pessimism constructs and their measurement.

Age and optimism: Implications for the scope of children's optimism and its independence from pessimism

The primary applied focus of this research pertained to the effects of increasing age on children's optimism and pessimism. Previous research (e.g.,

Lockhart et al, 2002) has demonstrated a clear inverse relationship between optimism and age, and the first study of this thesis also documented this reduction in optimism with increasing age using the YLOT. It was therefore hypothesized that both measures in the current study would demonstrate this developmental trend, a hypothesis that was supported to some extent by the findings obtained. This is not especially surprising, since Lockhart et al (2003) had already shown this with a vignette method, and, as stated, this body of research has also shown the effects of age with the YLOT. In further confirmation of the patterns seen in the first study of this thesis, in the current study, once more we saw that the reduction in optimism with age was not associated with any significant increase in pessimism. This degree of functional independence between optimism and pessimism has so far been a clear and consistent trend in the research of this Thesis so far.

The fact that an effect of age was also seen on the vignette method raises two interesting points for consideration. Firstly, it provides support for the utility of this approach for assessing child and youth optimism – previously, it had only been used once before in the study carried out by Lockhart and colleagues (2002). Its usefulness as a methodological framework in which to consider developmental changes in optimism thus seems plausible and innovative. The *nature* or type of optimism or pessimism it is tapping, however, will be discussed below. At this point in time, suffice it to say that as this method appears sound and highly amenable to testing specific domains of cognition.

The second interesting point stemming from the effects of age on the vignettes stems from the second hypothesis of this study, and essentially pertains to the elucidation of the *scope* of children's optimism, and the implications this holds for measures like the YLOT. The second hypothesis of this study hypothesized that patterns of judgements in Sections B and C of the vignettes would vary as a function of age, premised on the notion that increasing age is a direct reflection of increasing formal and informal knowledge acquisition over time. No significant effects were seen, however, indicating that the vignettes are perhaps better able to ascertain the parameters of children's optimism than more rigid psychometric tools such as the YLOT. It was found that younger children made similar judgments to older children in Sections B and C, suggesting that both groups of youngsters were drawing on, or incorporating, other domain-specific thinking and ontological 'rules' into their predictions of trait malleability, to the extent that these processes took precedence over the apparent proclivity to favour optimistic outcomes usually present amongst younger children. This seems to support a new definition of children's optimism as discerning and sensitive to logic and context, rather than providing any evidence towards the idea that children's optimism is naïve, rigid, or solely self-serving.

It was seen, in fact, that the only significant effect of age in the component sections of the Vignettes was in Section A, where younger children were much more likely to see negative traits as more changeable over time than were older children. This particular aspect of the vignettes was seen to relate most closely to the type of optimism measured by the YLOT. This

suggests that the YLOT may be limiting its conceptualisation of optimism to *unconstrained* optimism only, the type of optimism that is evinced when everything else is equal, when there are no other cognitive demands or imperatives to satisfy. While this could be seen as intentional, and indeed the YLOT only purports to measure a supposedly stable ‘dispositional’ optimism and not examine its parameters or sensitivity, the fact that it is missing these nuances of children’s optimism is troubling, mainly because implications of naivety and egocentrism are frequently drawn from one dimensional measures like the YLOT. If nothing else, it is hoped that this demonstration of the scope and sensitivity of children’s optimism will encourage other researchers to question their methodologies more closely.

Discerning optimism: Drawing on notions of domain-specific thinking and permissible change

To account for the lack of any significant influence of age in Sections B and C of the vignettes, it is useful to consider theories pertaining to children’s conceptual development. By age 5 or thereabouts, children have fairly well-integrated theories of naïve psychology and naïve biology (Springer & Keil, 1991; Wellman & Gelman, 1992), and the domain-specific thinking that stems from this conceptual development must have some impact upon any judgment made in relation to that domain. The current findings relate primarily to children’s naïve biology, since by the time children attain the age of 8-9 years (the lower end of the age range in the current study), children have a coherent and fairly sophisticated understanding of issues of

growth and illness (Backscheider, Shatz & Gelman, 1993; Kalish, 1996, 1997). In Section B of the Vignette method of this study, children were asked to make judgments of trait malleability in a context where either trait change or stability would go against natural laws of growth (i.e., would violate the rule that growth has a set directionality of smaller-to-bigger, and not vice versa). There were no differences in the judgments made between younger and older children, with mean scores indicating a tendency for both groups to endorse the option of logical or permissible change.

This finding is supported by Rosengren, Gelman, Kalish and McCormick's (1991) study of 'permissible change', in which children aged 3-6 years performed in a similar way to the children in the current study. In Rosengren and colleague's (1991) study, the young children made judgements of changes in size and appearance over time in animals, plants, and artefacts. Notions of permissible change became apparent, with the children able to recognise the rules of growth governing these entities over time (especially as regards the directionality of growth). Their findings led Rosengren et al (1991) to conclude that even young pre-school children have two conceptual insights about natural transformations: that they are lawful and non-random, and that they are domain and mechanism specific. The current study was able to support these conclusions, demonstrating that, regardless of more fundamental or dispositional levels of optimism, younger and older children alike tailor their judgments to the demands of domain-specific rules or imperatives when applicable, rather than blindly choose an optimistic (or pessimistic) outcome.

Outcomes in Section C were rather less clear: age was once more non-significant, but the mean scores obtained suggest that this was not attributable to both older and younger children making similar judgments. There was much more variance in the scores obtained, and analysis of correlations with the YLOT was able to help tease apart the patterns of results in this section. Specifically, optimism level (as measured by the YLOT) rather than age seemed to direct trait-based judgements in this health-related domain. More optimistic individuals were more likely to see negative health-related behaviours as changeable over time, and positive behaviours as maintainable. There were no significant results for YLOT pessimism scores, however, for either trait type. This finding of the significance of optimism in predicting health beliefs and judgements aligns well with previous research documenting the health-promoting effects or influence of optimism, such as engendering better treatment adherence or a faster recovery from major surgery (Cohen, 2002; Zak-Place & Stern, 2004). As such, the psychometric or conceptual status of Section C of the Vignettes as a tool to assess health-related beliefs and optimism appears sound and valid.

Concordance between the YLOT and the vignettes: Implications for the future conceptualisation of optimism and pessimism

An important aspect of all the research in this thesis so far was further supported through the comparison of the YLOT and the vignettes. This aspect relates to the functional relatedness of optimism and pessimism. As has been

emphasised in this thesis several times so far, the assumption that optimism and pessimism represent mutually exclusive and opposing poles of one continuum is ubiquitous and enduring. What this research has once more indicated, however, is that the two appear to be more unique and functionally distinct than previously thought. As noted above, the lack of any influence of age on pessimism, despite its relationship to optimism, points to a degree of functional independence between the two. This discrepancy between the predictive utility of optimism and pessimism was also seen when none of the vignette scores, total or composite, correlated with YLOT pessimism. This is possibly due to low levels of pessimism in the sample and associated power of these scores, yet these findings certainly contribute to the body of evidence mounting towards the independence of optimistic and pessimistic processes.

Varying patterns of responses were seen across the subsections of the vignettes, and have been discussed in terms of their domain-relevance so far. What is also very interesting, however, is the consistent influence of trait *valence* (i.e., positive and desirable vs. negative and undesirable) across all subsections of the vignettes. Specifically, YLOT optimism scores have been much more strongly related to judgments of the *changeability of negative traits* over time, rather than to the *stability of positive traits* over time. This trend also offers insight into the types of optimism each of the two methods in this study are tapping, as well as into the degree of relatedness between the two methods and their theoretical foundations. The pattern just articulated, that optimism aligns more with a belief in the malleability of negative states or traits, than with the retention of positive states or traits, seems to suggest

that the Vignette method may be assessing children's degree of 'incremental theorizing' rather than their optimistic tendencies.

Heyman and Dweck (1998; see also Levy & Dweck, 1999) put forward the notion of incremental vs. entity theorising to account for individual differences in children's attributional or explanatory style. Within this framework, individuals with an entity view of the world are more likely to see things as fixed or static, and attribute internal or external states to static and fundamental causes. The degree of rigidity in such thinking does tend to make the person more susceptible to disengagement and feelings of helplessness. Individuals who hold a more fluid or incremental view of the world, however, are more likely to see the potential for change over time in a state, trait, or situation. As such, they are less prone to suffer feelings of helplessness or hopelessness, but it does mean they also see the capacity for good things to deteriorate as well as negative things improve.

The children and adolescents in the current study appeared to demonstrate the hallmarks of incremental thinking, in that they did not endorse the retention of positive traits to the same extent that they endorsed the malleability of negative traits. This result runs contrary to the results of Lockhart et al (2002), who demonstrated a similar endorsement of each, and thus concluded that they were seeing "protective optimism" rather than incremental thinking. The exploratory and multi-faceted nature of all the vignettes used in the current study may have been masking such a result, or, alternatively, this finding could indicate that dispositional optimism exerts a

greater influence upon one's desire to change that which is negative, rather than maintain that which is positive. The two methods did vary somewhat in the type of optimism they were assessing: the YLOT measures a self-relevant, retrospective form of dispositional optimism and pessimism, whereas the Vignettes really tap a more hypothetical, future-oriented and other-relevant type of optimism. It is therefore also possible that the differential results between the two methods are due to the fact that the YLOT assesses 'little optimism', and the Vignettes assess 'big optimism'. Peterson (2000) discussed these two forms, or levels of abstraction, of optimism, where little optimism pertains to specific expectations about positive events, encompassing very transient or sometimes trivial situations, and big optimism to larger and less specific expectations, often more abstract or non-personal. That being said, the results of the current study could be taken to suggest that the point of intersection between big and little optimism is seen when individuals make causal attributions of the fate of others experiencing a negative situation. Perhaps optimism is more generous than previously thought – the fact that younger, more optimistic children were the most likely group of youngsters to make positive judgements about the changeability of a negative state in another person certainly seems to belie conventional illustrations of the young child as an egocentric, self-serving and naïve soul.

The current study contained several limitations that might be easily addressed in future work. Most importantly, children's *explanations* for their vignette responses were not detailed, resulting in a paucity of information to actually explain or clarify their apparent domain-specific thinking. Until this

study is replicated with these explanations, as well as some indication of *control* over the *expression* of human traits, included, the work contained here is speculative only. Further to this, the collection of data pertaining to attributional style (most usefully through the use of the Children's Attributional Style Questionnaire; CASQ, Thompson, Kaslow, Weiss & Nolen-Hoeksema, 1998) would greatly increase the rigour of this work. Future work should also incorporate a greater distinction between *types* of traits, systematically presenting traits that are either biological, psychological, or hybrid (as per Lockhart et al., 2002), so as to more accurately judge the basis of children's causal attributions and their domain-specific thinking. While the current study focused on "constrained vs. unconstrained" (in the sense of 'constrained' judgments being affected by non-optimistic imperatives such as the laws of growth) traits, rather than biological vs. psychological, future work could viably incorporate both aspects of investigation. Further to this, future research might also develop an entire series of human trait-based scenarios that are 'unconstrained' or 'neutral', so as to replicate the trends that were observed here across only the 8 scenarios presented in Part A of the vignette series. In this way, the "generosity" or free-floating nature of children's optimism might be more accurately gauged. .

The results of this study, taken together, have indicated a profile of an optimistic child who is outward-focused, sensitive to the rules and constraints of reality and domain-congruity, and able to evince consistent predictions about change over time that are free of any pessimistic influence. As such,

contemporary conceptualizations of child optimism should, perhaps, better consider these nuanced parameters of optimism as a cognitive process when undertaking its conceptualization and measurement. The possibility of a dynamic, sensitive, and discerning optimism in children must be considered, and any future application, intervention, or methodological examination in the field should satisfy this imperative. A more exploratory approach in the area is clearly warranted, so that real-world assessments and interventions can question existing assumptions, consider latent cognitive parameters, and thereby help break the cycle of specific theories informing broader methodology.

CHAPTER FIVE

STUDY FOUR

The Functionality and Dimensionality of the YLOT: A Pilot- and Factor Analytic Study drawing on the Outcomes of the ‘Optimistic Kids’ Intervention.

In the studies of this thesis so far, two things have become increasingly apparent: one, that the relatedness or dimensionality of optimism and pessimism is by no means clear cut; and two, that their association with actual emotional or behavioural outcomes is often independent and somewhat selective. The first study of this research program, for example, demonstrated the impact of increasing age upon optimism levels, but not upon pessimism. The second study showed that only pessimism could account for relationships between coping and levels of anxiety in late childhood. The third indicated that perhaps more nuanced aspects of ‘stability’ and ‘change’ might have more of a bearing upon notions of childhood optimism than previously believed. This last study also threw the notion of a more generous, other-person relevant and ‘big’ optimism into the limelight, in strong contrast with existing measures of self-assessed optimism, such as the YLOT.

It may be said that these studies have raised more questions than they have answered. Certainly, they have reinforced the belief of this researcher that a great deal more work is needed to fully understand the concept of optimism, particularly its latent structure and its relatedness to pessimism. The results obtained so far also question the amenability of the optimism construct to applied research settings, particularly interventionist efforts. At the crux of the matter is the fact that we *do not know* which aspect, or aspects, of the optimism/pessimism paradigm are likely to effect change, or be affected, in any intervention targeting optimism. We do not know what underlying factors might help or hinder such efforts, and the lack of conceptual nous in the area is clearly impeding the systematic application of treatments to bolster optimism.

These issues clearly warrant sustained attention from researchers, and what is to follow in this chapter constitutes an initial step in such a process. The work to be presented is a pilot study, addressing some of the questions raised above with regard to the conceptual *nature*, and potential *application*, of optimism methodologies or models like the YLOT. Through the use of the YLOT, two key research questions will be considered in this pilot study: firstly, whether optimism and pessimism emerge as a dyadic or dichotomous foundation to the Test, or whether more than two latent variables become apparent; and secondly, whether the YLOT has sufficient power to, or is appropriate to, detect changes in either optimism or pessimism in an intervention purporting/ designed to promote positive thinking in children.

‘Optimistic Kids’: An intervention program

The positive thinking intervention to be considered in this study is run commercially by a group of trained psychologists in metropolitan South Australia, under the title ‘Optimistic Kids’ (OK). The OK course typically runs over 12 weeks, comprising 12 90 minute sessions, held after school hours in some central metropolitan location (such as school auditoriums or Council town halls). Participating groups of children usually comprise a heterogeneous set, from multiple schools and backgrounds, boys and girls together, varying in age from 6 to approximately 15 years. Children are enrolled by their parents through school and community advertising efforts. As a commercial enterprise, attendance is accompanied by fees, and children are not screened in advance to see if they are suitable candidates for the course. However, as the course aims to teach adaptive thinking strategies to children operating under ‘usual’ or typical levels of daily stressors, children who display marked emotional or behavioural problems, particularly aggression, are removed from the OK program and parents are offered a referral to an individual counselling service.

The OK course itself is based upon the Penn Resilience Program, also known as the Penn Prevention Program, pioneered by Martin Seligman and colleagues at Penn State University. The Penn Resilience Program (PRP) was developed in response to the alarmingly high numbers of children and adolescents suffering from depressive symptoms as well as clinically

significant depressive disorders. These numbers are still on the rise, and have resulted in an increasing emphasis on intervention efforts, from the PRP in the US, to the OK course in metropolitan Adelaide.

Intervention Programs: Penn Resilience Program (PRP) and Optimistic Kids (OK)

The PRP was first introduced to the field of depression prevention research in 1994, in an invited essay in the journal *Behavior Research and Therapy*. The authors, Jaycox, Reivich, Gillham and Seligman (1994), described the development and preliminary efficacy of the PRP, designed to prevent depressive symptoms in ‘at-risk’ 10-13 year olds. Based on the existing evidence pointing to the role of cognitive distortions and deficiencies in the onset and maintenance of childhood depression, Jaycox et al (1994) aimed to use the Program to target these cognitive variables in children at risk of future depression, and consequently prevent that depression from occurring. The PRP, as it was then articulated and as it is still defined today, aims to use cognitive-behavioural techniques proactively so as to teach children coping strategies to use in the face of negative life events. By instilling this sense of agency and self-efficacy in children, the PRP aims to enhance children’s sense of mastery and competence across a variety of situations (Jaycox et al., 1994).

In addition to preventing depressive symptoms, the PRP was designed to ameliorate the deficits associated with childhood depression, such as

decreased academic achievement, poorer peer relations, lower self-esteem, and, most importantly, behavioural problems (Jaycox et al., 1994). Behaviour problems were identified as particularly relevant in the face of evidence indicating that one third of children with depression also have comorbid conduct disorder (Kovacs, Paulauskas, Gatsonis & Richards, 1988), and coupled with the fact that a mixture of depressive symptoms, low self esteem and conduct problems are usually associated with stressors (e.g., marital conflict, low family cohesion) in childhood (Emery, 1982; Jaycox & Repetti, 1993), the authors of the PRP determined that the Program would be most efficacious if targeting children identifiable as 'at risk' of depression. The authors determined this heightened vulnerability to depression using two indices in a normal school population: first, depressive symptoms were measured in order to select children who were beginning to show some signs of dysphoria; and second, selected children who had been exposed to some degree of marital or family conflict, in line with evidence showing its association with increased depressive symptoms (Fendrich, Warner & Weissman, 1990; Stark, Humphrey, Crook & Lewis, 1990). The sample ultimately gained for the pilot testing of the PRP therefore represented a group of children only mildly at risk of future depression.

As stated above, the PRP utilizes primarily cognitive-behavioural techniques in the pursuit of its goals. This focus stems from several lines of research identifying cognitive deficiencies and distortions in children diagnosed with depressive or behavioural problems. Such children tend to have a more pessimistic explanatory style; that is, they tend to attribute

internal, global, and stable causes to negative events (Cole & Turner, 1993; Nolen-Hoeksema, Girgus & Seligman, 1992). In the domain of social cognition, these children tend to attribute hostile intentions to others, and are less likely to generate assertive solutions to interpersonal problems (Quiggle, Garber, Panak & Dodge, 1992). When undertaking cognitive tasks, these children have lower expectations about their own performance and more stringent criteria for failure (Kaslow, Rehm & Siegal, 1984). These expectations may lead to self-fulfilling prophecies about poor performance and failure which may serve to reinforce their depressogenic thoughts and maintain the depression. This cycle of depressogenic cognitions, causing escalation and intensification of symptoms over time, has been of issue throughout this Thesis, couched so far in terms of Nolen-Hoeksema's (1991) Response Style Theory.

All this evidence taken together, it was apparent to the authors of the PRP that not only is there some overlap in the expression of depressive symptoms and behavioural problems in children, but there are also some similarities in the proposed cognitive underpinnings of these two problems (Jaycox et al., 1994). The PRP was therefore premised on the known efficacy of cognitive-behavioural techniques in treating adult depression (Dobson, 1989; Jaycox et al., 1994). By targeting children aged 10-13 years, the authors of the PRP believed the cognitive capacity and maturity to deal with such techniques was present, on the basis of the probability that the children would have attained the formal operations phase of cognitive development (Piaget, 1977).

The primary aim of the PRP is to *prevent* significant future depressive episodes in children at risk of such symptoms. The authors state that, ideally, prevention should be proactive and occur before the onset of any symptoms, however when considering the onset or manifestation of depressive symptoms, the line between primary prevention and early intervention becomes rather blurred (Jaycox et al., 1994). Mild depressive symptoms, for instance, are also a risk factor for a later depressive disorder. Depressive symptoms are therefore at once a risk factor and a precursor, part of an unclear onset of depression (Jaycox et al., 1994). Jaycox and colleagues (1994) consequently determined to discuss both the ‘relief’ of depressive symptoms, pertaining to a reduction in symptoms at the immediate end of treatment, and the ‘prevention’ of symptoms, as indicated by a reduction in depressive symptoms long after the treatment is over. Their definitions overlap with notions of ‘intervention’ and ‘maintenance of gains’, and their findings were duly discussed in terms of such concepts.

Having determined the appropriate inclusion criteria and fine-tuned the content of the Program, the PRP was pilot tested using as sample of 69 at risk children (compared with 73 children in control groups). By comparing the outcomes of the intervention children against those of the children in the control groups in all instances, and keeping the distinction between ‘relief’ and ‘prevention’ in mind (see previous paragraph), Jaycox et al (1994) hypothesized that the Program would result in:

1. Relief of depressive symptoms;
2. Prevention of depressive symptoms;
3. Relief of conduct problems at home;
4. Prevention of conduct problems at home;
5. Relief of classroom behavioural problems; and
6. Prevention of classroom behavioural problems.

It is to be noted that 'relief' pertained to the short-term outcomes, those assessed immediately after completing the PRP, and 'prevention' referred to the maintenance of those gains at the 6 month point post-treatment. Jaycox et al (1994) found that depressive symptoms were significantly reduced and classroom behaviour was significantly improved in the treatment group compared with the control group at post-test. The six month follow-up indicated a continued reduction in depressive symptoms, as well as significantly fewer externalising conduct problems, as compared to controls. The reduction in symptoms was most pronounced in the children who were most at risk (Jaycox et al., 1994).

All these findings provided considerable support for the appropriateness and efficacy of the PRP. The authors concluded that, by targeting the presumed cognitive underpinnings of depression and its behavioural concomitants, they were able to relieve and prevent depressive symptoms and behaviour problems in school children (Jaycox et al., 1994). Jaycox and colleagues (1994) proffered their hope that the prevention of depressive symptoms and conduct problems in school children could thereafter be carried

out on a broad scale, with parents and teachers alike using their techniques to help combat this serious aspect of public health.

In light of the promising findings obtained at its inception, the PRP has been systematically refined and researched in the ensuing years. To date, several articles have emerged assessing its utility within schools (Gillham et al., 2007), with low-income minority children (Cardemil, Reivich, Beevers, Seligman & James, 2007), and within primary care settings (Gillham, Hamilton, Freres, Patton & Gallop, 2006), to name a few. Some mixed outcomes regarding its efficacy have stemmed from this research, however since many of these apparently contradictory findings have been implicated as reflecting problems in service delivery, these issues shall be addressed in the Discussion section of this chapter, where they might be best explored in light of this applied study. Howsoever this may be, the popularity of the PRP has certainly grown, with the original researchers behind it also developing handbook for parents, 'The Optimistic Child' (Seligman, Reivich, Jaycox & Gillham, 1995). Within this book, Seligman and colleagues (1995) discuss at length the developmental importance of optimism, and the ways it may be encouraged and promoted through informed parenting. The emphasis of the book lies in preventing depression in one's child through the recognition of their potential vulnerabilities, namely the nature of their attributional style, and their tendency to experience depressive symptoms. The authors encourage parents to administer the CASQ (Children's Attributional Style Questionnaire) and the CES-DC (Center for Epidemiological Studies –

Depression Child) to their child, and identify whether the child evinces a depressive attributional style or is prone to experiencing a number of depressive symptoms. Regardless of whether one's child seems to be 'at risk' or not, Seligman et al (1995) encourage all parents to implement varying amounts or types of cognitive-behavioural techniques contained in the book. A major insight of 'The Optimistic Child' (Seligman et al., 1995) is teaching parents to see the 'reality' of their child's world, the fact that simplistic and blind encouragement can do more harm than good, with children needing deliberate and grounded advice and skills that they can actually use to guide future efforts. The authors teach parents to see that children need to receive accurate and useful feedback from their parents, and also need to develop their own skills to assess situations, evaluate their thoughts, and reflect upon their feelings in proactive ways. The book shows parents how they may best instil skills and bolster their child's resources, so as to help them better cope with an increasingly complicated and competitive world.

The growing global profile of the PRP led to the systematic training of mental health practitioners and researchers in its delivery, so as to increase its worldwide dissemination. The founder of the OK program in Adelaide was one such trainee, and used this training to guide the design and implementation of the OK course. The OK course, like the PRP, aims to promote more optimistic thinking in children and adolescents by teaching them key techniques drawn from clinical Cognitive Behavioural Therapy (CBT). Such techniques include perspective taking, social problem solving, and evaluating the accuracy and stability of negative thoughts. While the

content of the OK course used in this study is outlined below, broadly, the focus of the OK course “is on the individual being able to overcome problems, achieve the best they can in all situations and enjoy their achievements as much as possible. By training and rehearsing [children] in strategies to positively navigate their way through experiences that they are likely to encounter, it can lead to more positive experiences, optimism, confidence, and resilience” (see *The Course*, www.optimistickids.com.au).

The OK program specifically aims to target the key areas, or skill sets, of: “bouncing back from setbacks, decision making, generating alternative thoughts using evidence, problem solving, negotiation and compromise, decatastrophising, and optimistic thinking styles” (see *The Course*, www.optimistickids.com.au). In essence, the OK course was developed to mirror the objectives and philosophy of the PRP, and has been offered as a program of international repute for the past 5 years in South Australia.

While the OK course has been running for a number of years in Adelaide, it has not so far been subjected to any sort of systematic evaluation. The current study therefore aimed to begin this process of evaluation by seeing if the course could, as a cognitive intervention, result in any appreciable differences in optimism and pessimism in the children after participating in the course. Since the course purports to heighten levels of optimism, the application of the YLOT to this test of efficacy seemed warranted. Of course, this is only a very small component of any sort of empirical evaluation. In the absence of a control group, or comparison measures, results may only be

taken as indicative rather than conclusive in any way. Results stemming from this pilot study, however, should provide some sort of insight into the potential workings or efficacy of the course, and offer up some suggestions for future evaluations of the course and other interventions like it. This basic assessment of course efficacy also throws some light on the appropriateness and power of the YLOT in applied settings.

This pilot study therefore aims to address two main questions pertaining to the dimensionality and utility of the YLOT, undertaken through the assessment of the optimism and pessimism levels of a sizeable group of children participating in the OK program:

1. Is the YLOT able to detect a significant main effect of the intervention, as evidenced by a significant difference in either optimism and/or pessimism levels when comparing pre- and post-test scores?
2. Do the YLOT questionnaires obtained in pursuit of the first goal of the study indicate a clear dichotomous relationship between optimism and pessimism, as evidenced by a 2 factor outcome in an Exploratory Factor Analysis?

METHOD

Design and intervention procedures

This pilot study involved children participating in a trial of the OK program using a new approach to sampling and a compressed delivery format. Specifically, this researcher was approached by the OK team to help teach the course, and, in a deviation from the usual after-school model, was asked to help them develop a protocol that was amenable to teaching an actual classroom of children within school hours. This new approach was to target an entire grade or year-level of children, teaching the OK course to 4 classrooms of approximately 25 children each, with a little help from the classroom teacher.

The school

The OK executives were approached by the Primary School concerned, after the school was awarded funding to trial a new positive thinking initiative amenable to the demands of a classroom. This school is located in the southern suburbs of Adelaide, approximately 20km south of the city. This school is classified by the Department of Education and Children's Services (DECS) as a Category 7 School, meaning that this school is one of the state's least disadvantaged schools (the category rating system places schools from Category 1, 'most disadvantaged', to Category 7, 'least disadvantaged'). Category placement is determined by factors such as number

of School Card (low-fee paying) enrolments, number of students from non-English speaking backgrounds, and number of Aboriginal students. A Category 2 school, for example, would have 75% School Card students. As the School involved in this study is a Category 7, it may be seen as servicing a relatively affluent zoned district (see www.decs.sa.gov.au).

The participating children

The children involved were 95 students enrolled in Grades 6 and 7 combined classes. The ages of these children therefore ranged from 11-13 years. The children participating in the course comprised 44 males and 51 females, with a mean age of 11.97 years (*SD* .676).

While the OK course is generally considered unsuitable for a child with significant behaviour problems, the object of the intervention in this particular context was to make the course available to an entire year level of children, thus no child was excluded from participating on the basis of any sort of behaviour problem. To the knowledge of this researcher, one child in the year level was indicated as having Asperger's Syndrome, but in the absence of medical data this cannot be verified. Since de-identified questionnaires were returned to this researcher, this child could not be excluded from the current sample or statistical analyses.

The intervention

In this instance, the School involved was able to fund the entirety of the cost of the Program. No financial or material costs were incurred by the parents of children involved in the study.

The usual 12 weeks of the OK course were condensed into 3 sessions, where sessions ran on a fortnightly basis over 6 weeks. Each session ran for 90 minutes, including a 10 minute break. This time frame was implemented by request of the school involved.

Since the allotted time for the OK course only amounted to a total of 4.5 hours under these provisions, instead of the usual 18 hours possible over 12 weeks, significant restructuring and modification of the course had to occur. After several consultations amongst the OK team, the following session protocols were decided upon:

SESSION ONE

- Introduction to the concept of “self talk” and the fact that different people experiences different thoughts and feelings in the same situation.
 - Central to this is an emphasis on the fact that feelings *follow* a thought, rather than emotions preceding the cognition. Children

are shown, through examples and discussion, that our thoughts cause us to feel and act the way we do.

- Children work at substituting a new thought in a recurring situation so as to improve their emotional reaction (for a workbook example, see Figure G.1 in Appendix G).
- The concept of ‘thinking styles’ is introduced in the second half of the session, where modes of thinking are defined as representing *temporary* versus *permanent* thoughts
 - Permanent or “always” thoughts are explained, through examples, as persistent and rigid thoughts that lead to negative feelings and more apathetic behaviour.
 - Children learn to identify this kind of thinking based on words like “always” and “never”, as well as personal, global attributions such as “I’m just a loser”, “I’m no good at anything”, and “nobody wants someone like me on their team”.
 - Examples of permanent thinking are presented in the workbook, and children learn to substitute in a new temporary thought, drawing on notions of specific and transient attributions, such as “it’s ok, I just need to practise more, then I’ll make the team”, or “I’ll ask for some help with my homework next time, then I’ll do better on the test”.
 - ‘Thinking styles’ is summarised, emphasizing that: “permanent thoughts about a problem make us feel bad and can make it hard to keep going; permanent thoughts about ourselves can

make us feel bad and make it hard to keep going; often, permanent thoughts are not true about us!”

SESSION TWO

- Session two began with a fictional story to illustrate the importance of ‘Looking for evidence’ before deciding on a line of action, or before accepting a thought or feeling as accurate or appropriate. This was done through a ‘Sherlock Holmes vs. Merlock Worms’ story, where the children could readily discern the importance of acting like the former and evaluating all possible sources of evidence when challenging initially negative thoughts.
- Children undertook role play activities to show that they understood the notion of ‘evidence’ (including previous experience, the behaviour of others, etc), and could substitute in new, positive thoughts after identifying ‘evidence’ that refuted their negative thinking.
- The second half of the session was concerned with the skill of ‘Putting things in Perspective’, where children learnt to articulate the ‘best possible’, ‘worst possible’, and ‘most likely’ outcomes for a given situation or scenario. Having identified these contingencies, children thought of ways to increase the likelihood of reaching the ‘best case’, decreasing the likelihood of a ‘worst case’, and learning how to cope with the ‘most likely’.

- Overall, this session focused on challenging initially negative thoughts by looking for evidence as to their accuracy, and putting them in perspective.

SESSION THREE

- The third session began with a “hot seat” activity, where children volunteer to come forward and have any example situation or thought presented that requires them to draw on the skills they have learnt so far in the course.
 - Children specifically used the skills of: generating an alternative, seeking evidence, putting it in perspective, to immediately challenge a hypothetical negative thought presented to them.
 - This refresher task serves to cement the skills learnt so far.
- The second half of the session was concerned with teaching ‘5 Step Problem Solving’:
 - The 5 steps involved in this method of adaptive social problem solving draw on other skill sets taught to that point in the course, thereby giving children a working framework with which to tackle problems in the real world.
 - The first step in this framework is ‘Looking for Clues/Standing in Another Person’s Shoes’. Here, children are taught to look for evidence about people and a situation, and try and consider the matter from another person’s perspective.

- The second step is to ‘Choose your Goal’, where the child decides what sort of outcome or solution they are seeking in a particular situation. Goals would often pertain to good conflict resolution or effective negotiation.
- The third step is to ‘Make a List, and Speak Up’. This pertains firstly to making a list of things that will help them get closer to, or realise, their goal(s). For example, children might be writing down a list of things to do to help show others that they don’t want anyone to push them around. The ‘speak up’ component relates to children making their goals known, to explaining to others how they’re thinking and feeling. Both these components help expedite the problem solving effort.
- The fourth problem solving step is ‘Deciding what to Do’, where the child chooses what to say, how to act. This decision is guided by the evidence gathered and goals generated in the previous steps. The children decide which course of action is most likely to achieve their goal(s) based on all the evidence they have (including their own thoughts and feelings).
- The fifth and final step is set out as ‘Going for the Goal’, where the child takes decisive action. The most important aspect of this final step is learning to evaluate whether that course of action was successful, or whether a new approach might be needed. Children are encouraged to keep trying and persist until they reach their goal. The overall 5 step problem

solving framework was illustrated as a workbook example (see Figure G.2, Appendix G).

In all sessions, and for all concepts and activities, the children are encouraged to share examples from their experience, role play, and discuss the relevant issues. The workbooks provided to each participating child include cartoon worksheets, illustrated examples, and character-rich stories to help convey the skills and concepts being taught by the course. Extra worksheets are provided as ‘homework’, so the children can keep thinking about the concepts in between sessions. Sessions 2 and 3 always began with a recap of the concepts covered in previous sessions, and a group discussion of the homework activities. As noted above, some task examples from the participating children’s workbook are presented in Appendix G of this thesis (see Figures G.1 and G.2).

Planned analyses and participant pool characteristics

As stated, the two aims of this pilot study were to assess the capacity of the YLOT to gauge any difference in optimism or pessimism levels following a ‘positive thinking’ intervention, and to examine the underlying factor structure of the YLOTs gathered in pursuit of this primary goal.

The YLOT was self administered by each child participating in the intervention, where initial pre-test scales were completed in the week preceding the commencement of the OK course. This pre-test data collection

was carried out at the School under the supervision of classroom teachers. These completed scales were handed to OK team at the time of the first session. Complete pre-test YLOT scales numbered 95, and these scales were used to compile the YLOT item response database to be used for Factor Analysis.

The OK course then ran over the 6 week period. Due to time constraints, children were not able to complete their post-test YLOT questionnaires at the end of their final session. Indeed, it was thought that this would be too soon to really assess any sort of intervention effect. As the intervention ran at the end of the school year, and holidays began soon after, post-test YLOT scales had to be posted home to all participating students. Due to a significant number of non-returned scales, and a large number of incomplete or inadequately identified scales, only 20 complete post-test YLOTs could be matched to pre-test scores. These de-identified pairings were then passed on to this researcher for statistical analyses. Basic sample characteristics were known, however: this small group of 20 children was made of 14 females and 6 males again ranging in age from 11-13 years, with a mean age of 12.05 years ($SD .686$).

With regard to the planned Factor Analysis (FA) of the YLOT, the 95 complete questionnaires obtained after the round of pre-intervention testing were already of a sufficient number to undertake FA, it was decided to also include *all* YLOTs obtained in the preceding studies of this Thesis. Since every empirical study undertaken so far as part of this research program has

involved the administration of the YLOT, this resulted in an additional 237 YLOTs to augment the database. The grand total of YLOTs subjected to Exploratory FA, using Principal Components Analysis (PCA) therefore numbered 332. This larger database resulted in a final participant pool comprised of 173 females and 151 males, ranging in age from 7 to 17 years (mean age 11.40 years, *SD* 2.00 years).

RESULTS

Research Question 1: Indications of intervention efficacy based on YLOT scores obtained

As stated above, only 20 complete pre- and post-test YLOT pairings could be used to carry out any analyses of the intervention's effects. These 20 pairings were scored, and scores of 'pure' optimism (optimism subscale), 'pure' pessimism (pessimism subscale), and 'total' optimism (optimism subscale plus reverse-scored pessimism subscale) were obtained at both points in time.

Mean scores for each of these three scores were then compared, in order to assess whether there was any significance in mean scores at pre-versus post-test. Paired Samples T Tests were carried out using Windows SPSS 13.0 to investigate whether any intervention effects were discernible.

Pre-test (Time1) and post-test (Time2) scores on all subscales of the YLOT were found to significantly correlate. Specifically, there were moderate correlations between Time1 and Time2 scores for each of subscale optimism ($r = .522$, $p < 0.05$), subscale pessimism ($r = .585$, $p < 0.01$), and total optimism ($r = .545$, $p < 0.05$).

Statistically significant differences in mean scores obtained at Time1 and Time2 pointed to some evidence of intervention efficacy. The Paired Samples T Tests undertaken showed that there was a significant differences in subscale optimism means [$t(19) = -2.83$, $p < 0.05$], subscale pessimism means [$t(19) = 4.54$, $p < 0.01$], and total optimism means [$t(19) = -4.67$, $p < 0.01$] between Time1 and Time2. The direction of this shift in mean scores over Time1 and Time2 (see Table 5.1) indicate that there were greater levels of subscale and total optimism, and lower levels of subscale pessimism at the time of the post-test (post-intervention). Taken together, these findings suggest some degree of efficacy for the OK intervention program, at least in the immediate short-term.

Table 5.1

Mean Scores (*SDs*) of subscale Optimism, subscale Pessimism, and Total Optimism at Time1 (pre-test) and Time2 (post-test)

	Optimism	Pessimism	Total Optimism
Time1	13.25 (2.27)	6.80 (2.86)	25.70 (4.36)
Time2	14.55 (1.88)	4.30 (2.50)	29.95 (4.15)

Research Question 2: Indications of the underlying dimensionality of the YLOT through exploratory Factor Analysis

As stated above, the 95 complete pre-test YLOTs obtained from the school-based OK intervention were supplemented by the 237 YLOTs already obtained during the course of this Thesis' research program. With a resulting total of 332, these YLOTs were then subjected to Exploratory FA, using Principal Components Analysis (PCA).

Data Analysis: Rationale

The decision to conduct an exploratory, rather than confirmatory, FA was deliberate, made on the grounds of this being a *pilot* study, and thus not purporting to present anything conclusive, as well as in light of the considerable conceptual dissension surrounding the notion of optimism. A PCA approach was utilised, using an oblique rotation to obtain the factor solution. The decision to pursue an oblique, rather than orthogonal, rotated solution was determined on the grounds of the apparent level of relatedness between YLOT optimism and pessimism scores throughout the course of this Thesis. While the two subscale scores have consistently demonstrated a certain degree of functional independence in the studies undertaken, they have also shown a moderately significant negative relationship. Hence, in light of their significant correlation, an oblique rotation that considers this relatedness

seemed the best course to pursue. Tabachnick and Fidell (2001) point to the conceptual advantages of a solution where factors may be correlated, arguing that the practical advantages of reporting *orthogonal* solutions, where interpretation and description is easier, “strain reality” (p614), and therefore should be limited to instances where the researcher holds no conceptual or theoretical suppositions about the factors involved (which is certainly not the case in the current study).

Since the authors of the YLOT, Ey and colleagues (2005), demonstrated the “filler” status of Items 1-3 of the YLOT, these first three items were not included in the PCA undertaken.

Data Reduction

Principal Factors extraction with Oblimin rotation was performed using SPSS Windows 13.0 on Items 4-16 of the YLOT, drawing on the full sample of 332 complete questionnaires, although only 326 cases were included in the resulting statistical output. Comrey and Lee (1992) set out a sample size of 300-500 in the ‘good’ to ‘very good’ bracket (ranging from $N < 200$ as ‘poor’, to $N > 1000$ as excellent). The sample of the current study was therefore deemed adequate to the purposes of FA.

Univariate descriptive statistics were examined so as to ascertain the degree of normality to the variables (YLOT items). Detrended normal probability plots were produced using SPSS EXPLORE, and showed items 6,

7, 9 and 11 of the YLOT (pessimism subscale items) as being very normally distributed. Items 4, 13 and 15 (the remaining items of the pessimism subscale) showed some degree of positive skewing. Items 5, 8, 10, 12, 14 and 16 (all items comprising the optimism subscale) showed some negative skewing. When considering the normality of item distribution in the context of the directionality of the scoring of the YLOT, the positive skewing of the pessimism items translates to a very low level of item endorsement, and the negative skewing of the optimism items translates to a much higher level of item endorsement. Overall, the response distributions for all items were sound enough to view the items as valid psychometric questions, and not just filler items.

No outlier cases were detected in the sample, and issues of singularity or multicollinearity were not relevant to the PCA procedure (since there is no need to invert matrices) (Tabachnick & Fidell, 2001). In terms of the factorability of the correlation matrix (factorability of R), the matrix showed several correlations of reasonable size ($r > .40$). This indicated the likelihood of factors becoming emergent in subsequent analyses.

The PCA with Oblimin rotation was then performed on the 4-point response rating scales for items 4-16 of the YLOT. Three factors were extracted that accounted for 30.6%, 12.5%, and 7.7% of the variance, respectively. For each factor, factor scores were derived by averaging the standardized responses to the item that had loadings above 0.45 for that factor.

This is a cut-off suggested by Tabachnick and Fidell (2001) regarding the derivation of meaningful factor scores. Items 4-14 loaded in this manner on one of the factors. Items 15 and 16, however, fell below this cut-off point. These loadings are seen in Table 5.2, with the poor loadings of items 15 and 16 indicated in bold (see communalities, h^2).

Loadings of variables on factors, communalities, and percents of variance are shown in Table 5.2. Variables are ordered and grouped by size of loading to facilitate interpretation. Item content for each factor is presented in Table 5.3.

Table 5.2

PCA factor loadings, factor % variances, and communalities of the items of the YLOT

	Component			Communalities
	1	2	3	h^2
YLOT7	.727			.551
YLOT11	.694			.489
YLOT13	.685			.519
YLOT9	.664			.483
YLOT4	.651			.475
YLOT6	.611			.458
YLOT12		.771		.601
YLOT10		.764		.584
YLOT16		.615		.385
YLOT5		.566		.446
YLOT8			-.809	.657
YLOT14			-.694	.589
YLOT15			.521	.368
% Variance	30.60%	12.50%	7.72%	

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Table 5.3

YLOT item content for each of the three Factors

Factor	Item	Item content
1	4	Things always go wrong for me.
	6	Usually, I don't expect things to go my way.
	7	Usually, I don't expect good things to happen to me.
	9	If something nice happens, chances are it won't be to me.
	11	When things are good, I expect something to go wrong.
	13	No matter what I try, I do not believe anything is going to work.
2	5	When I am not sure what will happen next, I usually expect it to be something good.
	10	Each day I look forward to having a lot of fun.
	12	I usually expect to have a good day.
	16	When things are bad, I expect them to get better.
3	8	I am a lucky person (negative loading).
	14	Overall, I expect more good things to happen to me than bad things (negative loading).
	15	Each day I expect bad things to happen (positive loading).

Data Reduction: Interpretation

At this point, interpretive labels are typically proffered by the researcher to guide one's understanding of the latent factors unearthed by the analysis. A degree of caution seems timely here, however. As is obvious from the item content set out in Table 5.3, the first factor, in the main, constitutes a pessimism dimension. All items comprising the pessimism subscale, with the exception of item 15, and no optimism items, load under this first factor. The second factor, in the main, constitutes an optimism dimension. The items loading under this second factor all lend themselves well to the idea of an everyday optimistic outlook, an expectation of 'good things' on a consistent

basis. The presence of the third factor, however, is where the optimism/pessimism dichotomy seems to become a bit murky. It seems, at first glance, to upset the neatness of the dispositional model of optimistic versus pessimistic tendencies. Items 8 and 14 are from the optimism subscale of the YLOT, but load negatively on Factor 3. Item 15, the final pessimism item to be accounted for, loads here, positively. Thus Factor 3 appears to be a strong lack of endorsement for more ‘global’ optimistic statements, pertaining to “luck” (item 8) and “overall” expectations (item 14), perhaps due to the tempering realisation that “bad things” are, realistically, likely to happen too (item 15). This seems to be almost a kind of ‘secondary pessimism’, one that seems to counter more fully-fledged or ‘irrational’ aspects of optimism such as a belief in infallible luck or a ‘karmic balance’ disproportionately in your favour.

This secondary pessimism factor that seems to be evident did contain item 15, one of the two items (the other being item 16) that did not show an acceptably meaningful communality. This indicates that items 15 and 16 were not well-defined by the factor solution. This finding could suggest a certain degree of heterogeneity or error variance in the YLOT that is unaccounted for, perhaps highlighting that the two items are better seen as ‘filler’ items, like the first three items of the YLOT. Alternatively, perhaps their wording has greater ambiguity than realised; or, perhaps navigating the sequence of “expecting bad things” (item 15), followed by “bad things getting better” (item 16), is too equivocal or contradictory for children to easily endorse one way or the other. If a similar pattern were to be seen in future work examining the

dimensionality of the YLOT, then perhaps altering or refining items 15 and 16 would be advisable. More work in the area is clearly warranted.

Regardless of this level of ambiguity, this researcher decided to assign an interpretive label to all three factors unearthed in the PCA, so as to better promote their discussion. Factors 1, 2, and 3 were therefore labelled ‘dispositional Pessimism’, ‘dispositional Optimism’, and ‘Situating Discernment’, respectively. This last label was designed to evoke some sense of evaluating one’s expectations, and being discerning enough not to endorse illogical or unlikely facets to optimism. The degree to which that discernment is ‘situated’ pertains to its active role in tempering unbounded optimism when making retrospective judgments of self.

The oblique (Oblimin) rotation of the components showed that the Pessimism factor correlated modestly and negatively with the Optimism factor, and positively with Discernment factor. Dispositional Optimism and Discernment factors correlated in a modest negative way. A subsequent check with orthogonal rotation revealed the exact same pattern of item loadings on the same three factor extraction.

DISCUSSION

The current study took a closer look at the YLOT, assessing its ability to discern potential changes in optimism or pessimism levels following a positive thinking intervention, as well as examining its underlying dimensionality. The results obtained in pursuit of these aims were intriguing and fruitful: the YLOT did seem to document evidence in support of the intervention program, and also seemed to evince a predominantly dichotomous factor structure. Some ‘noise’ was apparent amongst the latent factors of the YLOT, however, and a lack of control groups or comparison measures made the findings of the intervention study somewhat equivocal. Thus, while the outcomes of this pilot study cannot be seen as conclusive or inarguable, the pattern of results seen are worthy of considered reflection and future extension and application.

Optimism and resilience interventions constitute an area of strong research initiative, spearheaded by the discipline-wide shift toward embracing a more ‘positive’ psychology and by the efforts of researchers such as Martin Seligman. Seligman and colleagues developed the Penn Resilience Program, which in turn has led to daughter programs, such as the OK course in South Australia. As stated in the results section of this chapter, some evidence of the efficacy of the OK course emerged in the current study. While the study was certainly limited by a lack of control groups or comparison measures, the YLOT seemed able to detect a real-world outcome. This point forms the crux

of this pilot study – ascertaining whether the YLOT was sensitive to, or appropriate for, the measurement of changes in optimism and pessimism following a targeted intervention. The results obtained by this study certainly point towards the utility of the YLOT in this regard. Specifically, significant differences in YLOT scores obtained at pre-test and post-test (that is, before, and after, OK participation) were seen. For all three scores yielded by the YLOT, the two optimism scores increased over time, and pessimism levels decreased. It is to be noted that the reduction in pessimism was the most significant effect observed, much greater than the apparent increase in optimism subscale scores over time. Necessarily, this higher impact of pessimism led to the Total Optimism score of the YLOT to show a significant improvement over time (since Total Optimism is the sum of the optimism items plus reverse-scored pessimism items of the YLOT).

The question as to whether these optimistic and pessimistic outcomes should be discussed in terms of pure subscale measures, or by considering the composite Total Optimism measure, is an interesting one, particularly when framed within an intervention study. Certainly the Total Optimism measure aligns well with more commonsensical or lay views of optimism, where it is seen as both the presence of positivity *and* absence of negativity. This aggregate score, however, must to some degree obscure the ‘truth’ of the outcomes obtained, and in doing so potentially hides the mechanisms or foci of the intervention program itself. Certainly it sounds promising and appealing to the general public if such a program can purport to improve a more fundamental, dispositional “total” optimism, and such as statement would not

be inaccurate on the basis of this study. To this researcher, however, the subscale scores are of much greater interest, since the more pronounced improvement in pessimism seems to really point to the status of this program as a “depression prevention” program. If it was a purely ‘optimism building’ program, one would expect the improvement in levels of optimism to far exceed any discernable changes in pessimism.

That being said, “Optimistic” kids could almost be seen as a misnomer, since the OK program is based upon a depression prevention program and seems to effectively reduce pessimism (rather than bolster optimism) in the main. Certainly, the content of the OK course – decatastrophizing, challenging negative thoughts, and dealing with social problems – seems to align more with ameliorating the effects of depressive symptoms than with the teaching of techniques to maximise happiness or resilience. The argument here is, of course, rather circular: some would argue that a reduction of pessimism as necessarily signalling an improvement in optimism. I might argue that the improvement in optimism is incidental and independent, with the pessimistic reduction being the most important focus of the OK/PRP course. The essence of these divergent views seems trivial at first, but *is* significant, stemming from the difference between viewing optimism and pessimism as interdependent and mutually exclusive (a continuum), or ontologically distinct and functionally independent. While these theoretical and conceptual issues should be kept in mind when considering an applied study such as this one, any further discussion will be postponed until the next, and final, chapter of this Thesis.

The OK program did appear to promote real changes in levels of dispositional optimism and pessimism, and a real advantage of the OK program, as implemented within the current study, was its classroom-based focus, its amenability to teaching across an entire grade level by enlisting the help of classroom teachers. This seems to be a much more accessible, and therefore equitable, approach to the program's dissemination than its previous individual fee-paying enrolment system, and one that is likely to teach real strategies in a very real context. After-school, private tutelage is of course better than none at all, but it seems decidedly inferior to the own-school context, where real stressors, resources, and peers are present. The fact that this within-classroom approach to the teaching of OK seemed to be efficacious (as indicated by the statistically significant changes observed) is a new and exciting development, and one that warrants ongoing refining and promotion. At the crux of any intervention effort is its viable dissemination, so if the OK/PRP can be effectively taught without major screening procedures or group dislocation, and in a way that minimizes the practical and financial burden on the parents involved, then the future of such programs is looking increasingly bright.

Gillham et al (2007) have highlighted this issue of program dissemination as one of the major challenges to such interventions in their recent evaluation of the PRP's efficacy. In this very recent study, Gillham and colleagues (2007) assessed the effectiveness and specificity of the PRP at a 3 year follow up point. When examining the depressive symptoms of 697

students randomly assigned to either a PRP group, or a control group, or a Penn Enhancement Program (PEP, an intervention that specifically focuses on the stressors associated with adolescent depression; Gillham et al., 2007), it was found that there was no intervention effect on average levels of depression in the full sample (Gillham et al., 2007). Findings did vary by school, with the PRP significantly reducing depressive symptoms over three years compared to the control or PEP groups in 2 of the schools, it was not found to prevent depressive symptoms at all in the third school (Gillham et al., 2007).

These mixed results were not particularly heartening for proponents of the PRP. Indications of its effectiveness were mixed, and its specificity seemed confounded by the PEP showing the greatest effect (reduction in depressive symptoms) in one of the three schools (Gillham et al., 2007). Gillham et al (2007) were unable to identify the sources of the differential effects observed in their study, as all group leaders received similar training and supervision, and adherence to the PRP protocol did not vary by school. Children's baseline depression scores, demographic characteristics, and school attendance were all unable to account for the inconsistencies seen (Gillham et al., 2007). The authors point out that their findings mirror the inconsistent effects of the PRP seen in other studies, for while the PRP has been seen to reduce and prevent depressive symptoms relative to controls in several studies (e.g., Gillham, Reivich, Jaycox & Seligman, 1995; Yu & Seligman, 2002), other studies have failed to replicate these findings (e.g., Pattison & Lynd-Stevenson, 2001; Roberts, Kane, Bishop & Matthews, 2004).

Gillham and colleagues (2007) suggest that the effects of the PRP are strongest when group leaders are the intervention developers/researchers, members of their research team, and extensively trained and supervised graduate students. When the group leaders are school teachers, clinicians, or researchers unaffiliated with the PRP research team, the effectiveness of the Program is often smaller or nonsignificant (Gillham et al., 2007). Interestingly, the combination of classroom teachers, specifically trained clinicians, and one supervised graduate student, as group leaders in the current study did not appear to obviously impede the delivery of the OK course. In the absence of any comparison approach, however, such observations can only be considered anecdotal. Certainly the potential for non-specific treatment effects is very real, with outcomes likely to be influenced to some degree by factors such as the commitment and enthusiasm of the course presenter.

As a result of these inconsistencies and potential shortcuts in PRP implementation, Gillham et al (2007) state that a critical priority for prevention research is the development of effective dissemination strategies. Identifying the most appropriate and effective group leaders is certainly important, yet other barriers to Program uptake must also be considered. One of the most significant barriers to its uptake is the ease of implementation, in terms of maximising resources and equity whilst keeping overheads low and attainable. This is one major advantage of the OK course, as it was implemented in the current study: it was made available to an entire year level of children, at no expense to their parents, and with little disruption to the classroom routine. Of course, this modality depends on adequate school

funding, and should future (perhaps more stringent) evaluations of the PRP/OK indicate its broad efficacy, then Government policies regarding funding and resource allocation need to be addressed.

There were several shortcomings and limitations to the current study examining the efficacy of the OK program. As has been mentioned a number of times so far, there were no control or comparison groups in the current study. Students were all given access to the intervention program as part of a school-funded initiative, and, for this reason, children were not screened for their suitability for the program (i.e., behaviour problems were not assessed). There was also no controlling for factors such as socio-economic status or family cohesion amongst the children participating in the OK intervention. Such factors would be likely to impact upon children's general well-being at baseline (pre-intervention) as well as affect their navigation of the OK course. There was also no pre-test assessment of children's depressive symptoms, and only a single-outcome measure (the YLOT) was involved. This divergence from traditional PRP research, where actual indices on validated psychometric scales for child depression (and conduct problems) are used when determining outcomes, necessarily limits any comparisons or conclusions that could be made on the basis of this study. Any future work evaluating the efficacy of the OK program must better control for and document both external factors pertaining to family and school environment, as well as child-specific factors such as levels of depressive symptoms or behavioural problems pre-intervention.

The Study was also potentially limited by mixed configuration of group leaders, particularly the inclusion of an untrained graduate student. While this student (the author of this Thesis) was experienced in the teaching of the OK program, no formal training or supervision had taken place. There was also significantly substantial attrition in the sample, with only 20 of the original 95 students returning complete post-test data. It could be that this small group were more motivated to return their questionnaires because they felt more strongly about the usefulness of the course, or their parents did, or they were just more responsible children. All of these possibilities could have led to the final post-test sample being made up of more active, engaged, responsible, and potentially positive, children, which would lead to a false indication of the program's effectiveness. The optimism and pessimism levels of the students included in the post-test sample may also have been influenced by factors other than the intervention program. Over the treatment period, students could have been exposed to myriad sources of 'life coaching', to any number of advertising campaigns, endorsements, services, or discussions. Certainly, the general climate in public schools at the moment, as a result of the national Beyond Blue depression prevention initiative (see www.beyondblue.org.au), is markedly driven by notions of 'core values' and coping competencies. These initiatives have been incorporated into school curricula across Australia, with teachers now encouraged promote issues of resilience, problem-solving, help-seeking, respect and optimism on an everyday basis. Words such as "optimism" and "respect" were on display in the classrooms and offices at the School involved in this study, hence it may

have been that the OK program served only to cement and reinforce a philosophy that was already in existence across the student body.

In many ways, the “evaluation” of the OK program in this Study was rudimentary and suggestive only, and this basic pilot-study status was articulated at the outset. While the concomitant shortcomings of such an approach must be considered, it must also be remembered that this Study was undertaken, in the main, to examine the functionality and dimensionality of the YLOT. The findings stemming from the intervention study are certainly interesting, and of social and clinical relevance, yet in a sense they are incidental to the ‘testing’ of the YLOT that was carried out. Essentially, this researcher wanted to see if the YLOT was capable of detecting shifts in dispositional optimism and pessimism following a ‘positive thinking’ intervention, and it appeared that, in fact, it *could*. These outcomes are shaky, and massively limited by issues such as sample attrition, yet they *do* indicate that scores on the YLOT are by no means static. The findings show that retrospective judgments of one’s own optimistic and pessimistic tendencies obtained on the YLOT may shift and change over time, which is a point in favour of its ability to measure a complex and fluid cognitive process such as optimism.

The second aspect of this study was using the YLOTs obtained from the intervention group, in combination with those obtained by the preceding studies of this Thesis, to examine the potential *dimensionality* of the YLOT. This aim was executed by running an exploratory FA using an oblique

rotation, and, in the main, notions of a dual factor structure to the YLOT seemed supported. While three underlying factors emerged from the FA, the first two being a pessimism and optimism factor, the third (labelled “situated discernment”) seemed to relate more closely to the second, as a kind of ‘reality check’ component to the optimism factor. This researcher consequently set out “dispositional pessimism”, “dispositional optimism”, and “situated discernment” as representing the latent structure of the YLOT. The two first factors were more salient than the third, and seem to support the notion of an optimism/pessimism dichotomy. The fact that a single factor solution did *not* emerge, with inversely related optimism and pessimism items, *could* be taken as evidence in favour of the position that optimism and pessimism share a *degree* of relatedness, but are more ontologically distinct than is often assumed. Such a surmise is speculative only, yet it adds intriguingly to the body of evidence gained by this thesis towards explicating the conceptual nature of optimism and pessimism. Certainly, the patterns seen in this pilot study augur well for ongoing research within the field of child optimism, both in terms of methodological usage and refinement, as well as with regard to ongoing efforts to effectively bolster resilience in real-world contexts.

CHAPTER SIX

GENERAL DISCUSSION

Constructions and Functions of Children's Optimism and Pessimism: A Grounding Framework for the study of Discrete Domains of Resilience and Vulnerability.

While a number of domains pertaining to children's cognitive and affective development have been investigated throughout this research program, including aspects of personality, cognition, and behaviour, the central thrust to these explorations has been a consideration of the potentially unifying role of children's *optimism*. Indeed, the defining focus of this Thesis has rested unequivocally upon the construct of optimism, in order to more fully understand the ways in which children's optimistic cognitive processes might direct and temper more observable emotional and behavioural phenomena. Yet in evaluating the role of optimism in children's cognitive development, a more fundamental imperative became apparent: the need to more fully understand the conceptual nature and explanatory power of the construct of optimism, to more closely examine its position and importance within domains of thought and affect. In attempting to pursue this path, the actual applied findings that emerged from the

studies of this Thesis had to be juxtaposed against the articulated theories of optimism and well-being present in the literature. In order to test the viability or usefulness of the assumptions present in such theories, there was a need to consider the status of optimism as an explanatory framework or mechanism. Essentially, the findings obtained from this program of research lent themselves well to an emerging notion of optimism as a distinct, fluid, reflexive, and contextually-sensitive cognitive process. What must therefore necessarily follow in this final chapter is a culminating challenge to existing approaches, where optimism is typically seen as trait-like and static, and a subsequent delineation of what functions optimism may serve across conceptual, methodological, and applied domains of child development.

The work so far: Implications for positive psychology and the systematic study of resilience

The discipline of positive psychology is predicated on the notion that virtues, resources, and talents are as integral to the human condition as potential deficits and disorders through the lifespan. As such, these strengths and virtues are as informative and as explicatory of individual functioning and adjustment as potential disruptions to holistic well-being. This thesis has provided support for this premise, with one small caveat. Processes of optimism and adaptive coping have certainly proved as significant to children's emotional and behavioural outcomes in the studies of this thesis as aspects of pessimism and rumination, yet

overall there has emerged a theme pertaining to the functional relatedness of these domains of well-being. This constitutes the only point of difference with contemporary positive psychological perspectives: that such proponents neglect the potential independence between aspects of resilience and those of vulnerability. While exponents of positive psychology actively voice a distaste for the traditional deductive methodology where the absence of a deficit is taken as evidence of the presence of a strength, or vice versa (e.g., see Seligman and Csikszentmihalyi, 2000), there still persists, at a deeper theoretical and methodological level, a tendency to employ interrelated dichotomies such as optimism/pessimism that lend themselves precisely toward this undesirable outcome. In a sense, the conceptual and methodological underpinnings of psychology are yet to catch up with the new philosophies of positive psychology. This problem underpins the essence of this thesis: while optimism is receiving increasing attention from positive psychologists as a potential precursor or catalyst for resilience and well-being, its theory, and the few attempts at its operationalization and measurement, remains embedded in the old-school philosophy of deduction and inference. This issue requires some sort of resolution, and it is hoped that the work of this thesis has taken an important first step towards this end.

As shall be seen in this discussion, the key trends observed throughout this thesis raise the possibility of a new basis to the study of resilience and

positive psychology, as an investigatory platform that *must* consider discrete aspects of both risk *and* protection.

Optimism as an explanatory framework of resilience: Evidence of relevance or specificity?

The distinction made between ‘resilience’ and ‘thriving’ is central to a number of studies carried out under the auspices of the positive psychology movement. Carver (1998), for example, made a cogent argument in favour of the importance of preserving this distinction in order to truly and accurately understand precursors and processes of resilience and well-being. Specifically, while ‘resilience’ denotes the ability to recover from an adverse experience or event (internal or external), and reclaim the previous level of functioning without further complication, ‘thriving’ refers to the ability to not only bounce back to the previous level of functioning, but to extend beyond that and achieve an even *greater* level of functioning and adjustment as a direct result of the adverse experience itself. The premise of thriving is that even adverse experiences can constitute useful learning experiences, where the thoughts and feelings stemming from that event teach the individual something new and useful for the future. Carver (1998) provides a convincing argument that seems to resonate with some developmental theories of optimism. Within such theories, optimism is often construed as a trait that ensures persistence and effort over time. When failure or disappointment is encountered, optimistic proclivities encourage the child to learn

from it, to move beyond it, and to succeed more surely in the future as a result of that experience.

With this in mind, an argument could certainly be made in favour of the lifelong importance of optimism, as a precursor of cognitions and behaviours that promote thriving. If thriving is widely accepted as a desirable process throughout the lifespan, then, ipso facto, optimism might also be granted such a status. Yet many developmental theories of optimism seem constrained by notions of naivety and egocentrism, where the optimistic persistence and outlook of the child is seen as more of a transient feature of immature cognitions, a tendency that comes to the fore during specific stages of development yet duly dissipates in time as the older child gains a better understanding of reality and their own limitations. As such, optimism is seen as fleetingly useful for the process of learning and skill acquisition, but not beyond that, and certainly not as a complex process that precipitates patterns of thriving throughout the lifespan. This dismissal of the adaptive value of optimism as integral to resilience and thriving seems unsupported by the findings of the first study of this thesis, where levels of optimism were seen to be closely related to levels of adaptive problem-solving coping tendencies throughout development. Specifically, the age-related decline in optimism that was observed in this, and other published studies (e.g., see Lockhart et al, 2002), was fully mediated by these levels of problem solving coping, where lower levels of adaptive coping accounted for lower levels of optimism with increasing age. As such, it appears that greater optimism,

maintained into later adolescence, would be accompanied by more robust and enduring adaptive coping behaviours, all of which seems to suggest a model of thriving that is based on optimism and the instigation of good problem-solving efforts.

Mandlco and Craig (2000) were perhaps the first to put forward such a model of resilience, as a framework that might explicate the most salient factors determining resilience. Mandlco and Craig (2000) divided these potential predictive variables into those of internal origin and those of external origin. The latter involved a number of environmental and familial factors that are certainly worthy of significant consideration in any commentary on the study of resilience. In this thesis, however, it is the internal issues that are most apposite, by virtue of their potentially temperamental or cognitive underpinnings, two domains which have also been ascribed to the origins of optimism or pessimism.

Within this category of internal factors predicting resilience, Mandlco and Craig (1998) distinguish between those of biological and those of psychological origins. With regard to the former, four factors are proposed: general health, gender, genetic predisposition, and temperament. Issues pertaining to general physical health and genetic predispositions were certainly beyond the scope of this program of research; gender and temperament, however, were certainly relevant.

Nolen-Hoeksema (1991), in her work on cognitive underpinnings of depressive disorders, consistently highlights the major risk factor of being female, yet none of the studies contained in this thesis found any effect of gender. It may have been that there were not sufficient levels of depressive symptoms in any of the non-clinical samples to detect the disproportionate vulnerability of females, or perhaps more detailed findings may have emerged from longitudinal research. Certainly more research is needed to clarify the cognitive vulnerabilities of girls.

With regard to temperament, the conceptual relevance is unclear. While persistence is frequently proposed as a component of temperament (e.g., see The Child Temperament Project; AIFS, 2007), and optimism in turn is likened to a dispositionally-driven form of persistence, its position as a factor of personality or temperament is not really clear. Certainly, the YLOT sees optimism as an aspect of disposition, or individual temperament, a premise that will be duly questioned in a later section of this discussion. The first study of this thesis was able to show that optimism significantly and positively correlates with extraversion, and pessimism with neuroticism, which provides support for Eysenck's theory of behavioural regulation (Eysenck, 1976; Jackson & Center, 2002). These issues of temperament and personality can only be speculative and conceptual at this point in time, as this work did not include any comparative measures of personality or disposition. This too is an area requiring more systematic investigation, in order to truly establish optimism as a cognitive, rather than dispositional, feature in the individual. Considerations of the potential state-

like, or trait-like, status of optimism in the developing child shall be discussed in the following section, which must necessarily include a concomitant consideration of the adaptive value of this construct through development.

Children's cognitive and emotional development: Potential roles and benefits of optimistic and pessimistic processes through childhood and adolescence

A number of questions regarding children's optimism have arisen out of recent research in the area, and have been of paramount concern throughout this program of research. Extending beyond the conventional dilemmas of nature vs. nurture or state vs. trait, these key areas of debate include whether optimism is a universal characteristic of all children, or whether it is only a dispositional trait emergent in some. Also, whether optimism serves an adaptive purpose for the developing child, or whether it is merely a sign of naivety and cognitive immaturity that is likely to lead them to disappointment, disillusionment, and potential physical harm. Further, whether optimism is an enduring aspect of cognitive functioning across the lifespan, or whether it is only a transient process arising in certain contexts, including processes of learning and skill acquisition.

Necessarily following are a number of divergent ideas about the role of pessimism. As it is typically seen as the opposite of optimism, some

conceptualize pessimism as simply an opposing force to optimism, a mutually exclusive, equal and opposite reaction that may gain the upper hand over optimistic processes. This idea of pessimism ‘competing’ with optimism for precedence underpins some cognitive models of depressive symptomatology, wherein persistent pessimistic attributions undermine more accurate thinking, leading to helplessness and hopelessness (Alloy & Abramson, 1982; Heyman, Dweck & Cain, 1992). In a setting where optimism is seen as unbounded, naïve, and at times irrational, the complementary pull of growing pessimism in the child is seen as laudable and necessary, in order to ground children’s judgments and appraisals in reality. This process of grounding, often termed ‘depressive realism’, is seen as a normative, universal transition for every child. To sum up, it is abundantly clear that, whether pessimism is seen as instigating depressive realism or seen as a menacing marker of early depressive thinking, it is almost always seen as the interdependent polar opposite of optimism. What is also clear is that the vast majority of optimism theories hold serious misgivings about its viability and utility beyond the setting of a ‘naïve’ and learning child.

Challenging this conservatism within child development research has been a major focus of this thesis, and the studies contained in it have been designed to help elucidate whether it is warranted or not. Of particular concern was the ubiquitous assumption that optimism is a somehow naïve and unsophisticated aspect of children’s functioning, and thus one that should always dissipate naturally over time. The findings of the studies in this thesis so not

support such a position. In the first study of this thesis, it was seen that greater optimism was associated with highly beneficial problem-solving tendencies across development, where the reduction in optimism with increasing age was associated with less efforts at such problem-solving coping. So in this case, increasing age was associated with *less* considered thought and action about one's problems, and *less* appropriate resource-seeking and planning. This can in no way be construed as an adaptive turn of events or a demonstration of increasing cognitive sophistication; rather, it seems to show a disengagement from sophisticated thoughts and planning, and a consequent shift towards apathetic and vulnerable, ruminative forms of coping. All in all, these findings point towards the protective effects of optimism through development, and the role it has in maintaining proactive and useful coping behaviours.

The other major challenge to common assumptions about optimism, in addition to the one of *transience* outlined above, pertained to the supposed *naivety* of optimism. Obviously, the above argument holds: that adaptive coping concomitants are difficult to construe as an indication of naivety. The forms of coping that are endorsed in this problem-solving cognitive coping style pertain to relevant support seeking, planning and potential conflict resolution, and active reflection on the problem so as to learn as much as possible from it. These behaviours speak more of individual persistence, insight, and social awareness, than any sort of naivety or socio-cognitive close-mindedness. In the second study of this thesis, in which levels of optimism and pessimism, coping styles, and

levels of anxiety were assessed within an age cohort of 10-12 year olds, it was seen that pessimism in turn seemed uniquely related to a rumination coping style. Ruminative coping pertains to a tendency to focus on actual symptoms of negative affect, rather than on their potential root cause or foundation, which results in an intensifying and escalation of those symptoms over time. This form of coping has been linked to the onset of depression (Nolen-Hoeksema, 1991), and as such cannot be seen as adaptive or desirable in any way. The apparent association between this form of coping and levels of dispositional pessimism suggests that pessimistic tendencies may not just function to ‘balance out’ optimistic thoughts, rather they might have a unique and powerful bearing upon aspects of burgeoning vulnerability in the developing child. Such a notion seems to undermine any construction of pessimism as a useful and “realistic” counterpoint to children’s optimism, and further seems to point to the uniquely adaptive functions served by children’s optimistic processes.

The results of the third study also support the notion of optimism as adaptive and nuanced, and extend the findings of the first two studies by providing some indication of the discerning nature, or contextual sensitivity, of children’s optimism. In this third study, YLOT levels of dispositional optimism and pessimism were compared to the indices of optimism and pessimism obtained using Lockhart et al’s (2002) hypothetical trait-based approach. In this approach, children make judgments about the stability, or malleability of traits over time,

where positive trait stability, and negative trait change, over time are seen as optimistic judgments. Conversely, the stability of negative traits over time, and the transience of positive traits, are both construed as pessimistic outcomes of judgments. This approach necessarily sets out optimism and pessimism as mutually exclusive, sharing a purely inverse relationship. The third study of this thesis was able to show that younger children's optimism (as evidenced by both higher YLOT levels and positive judgments of 'neutral' traits) is tempered by considerations of domain-specific rules or demands, causing these naturally optimistic children to provide more 'pessimistic' judgments about trait change if the demands of reality dictate it. Specifically, if optimistic outcomes violated natural biological laws about growth or human ability, then younger and older children alike would not endorse such an outcome. This author believes that this provides compelling evidence in favour of the idea of optimism as a discerning, sensitive and fluid process, which in no way impedes the cognitive development of the child. This third study was also able to show that optimistic children seem more concerned about negative traits being able to change over time, than positive traits remaining stable. It was as if their optimism actively focused on a need for change, rather than a default situation of 'no change'. This apparent activity and directedness to children's optimism was an intriguing, but not conclusive, finding of the current work, and certainly warrants further investigation in order to more truly resolve the debate regarding the apathy vs. agency of children's optimism.

The fourth and final study of this program of research was a pilot effort toward continuing research on the fluidity and usefulness of children's optimism over time. The intervention study undertaken was rudimentary, hindered by a lack of comparative measures or control groups, yet was all that was possible at that point in time. The effects of the intervention, as measured by pre- and post-treatment levels of YLOT-derived dispositional optimism and pessimism, indicated a significant increase in optimism, and a significant reduction in pessimism, from pre- to post-test. While the veracity of these outcomes was also undermined by the substantial attrition in the sample, this study did go some way toward indicating the fluidity and receptivity of children's optimism as an individual trait. As such, it seems to provide some support for the idea of optimism being a good candidate for systematic studies of resilience. As was highlighted in the literature review of this thesis (see Chapter 1), a trait or process that instigates well-being must be identifiable and measurable both within and across time; must be potentially present in all people, yet vary as a function of experience or individual difference; and must appear amenable to change. The fact that the optimistic and pessimistic tendencies of the children participating in the intervention *was* measurable, *was* variable in magnitude between children yet present to some degree in *all* the children, and *did* appear amenable to change, holds out the great promise of this area as a research focus for continuing efforts in positive psychology to understand the catalysts and moderators of lifelong well-being.

Optimism theories as frameworks of well-being: Reduction and deduction in the epistemological pursuit of ‘resilience’

In the course of these explorations of the utility and validity of optimism and pessimism through childhood and adolescence, a whole new dimension to this program of research unfolded. While the initial goal of this research, at its very beginnings, was to map out the advantages and disadvantages of optimistic tendencies for children and adolescents, it became increasingly obvious to this researcher that what was really needed was a more systematic investigation of the construct of optimism itself, its theoretical position in the literature and the accuracy of that grounding. Of course, the two paths of theory and application were by no means mutually exclusive, and a great deal of real-world evidence pertaining to optimism, pessimism, coping behaviour, and well-being was obtained, as discussed above. In the background, however, hovers a constant train of conjecture and surmise about the theory driving such applied work, as it was very obvious that the ‘type’ of optimism one may research entirely depends upon the tool used. It is clear that the area of optimism research is theory-driven, since different perspectives proffer different tools, none of which may be easily reconciled with each other or extended in any way. And these somewhat isolated approaches have proved self-perpetuating, where the prominent tools secure theory-congruent outcomes and conclusions, the upshot being that the field of

optimism research is increasingly dependent on the ontological frameworks propounded by these theories.

Since the extant theory in the field essentially dictates that any examination of optimism must also include a 'complementary' look at pessimism, the two have, in many ways, been consistently invoked as some unassailable explanatory framework. The ontology of optimism and pessimism is such that their existence is mandated at some unseen level in the individual, lest their cognitive and emotional vacillations and preferences become inexplicable. When viewed as a dichotomy akin to 'black and white' or 'good and evil', 'optimism and pessimism' allow the observer to make sense of motivations, predilections, and manifestations of success or failure throughout the lifespan. As some sort of static outlook, some individuals are condemned to the gutter, while others look up at the stars (Oscar Wilde, 1854-1900).

The field of child psychology is both burdened and motivated by the growing incidence of childhood depressive illnesses and anxiety disorders. As Seligman et al (1995) noted in 'The Optimistic Child', what is needed is an 'immunization of an entire generation' against depression, and to do this, some sort of cognitive or emotional process needs to be amenable to systematic intervention. Optimism seems to hold out great promise as a process that can be targeted through intervention efforts, but it is not the only one. Notions of hope, of mastery, of self-knowledge and efficacy have also emerged, resulting in an

overall tendency to harness dichotomous frameworks such as optimism and pessimism, where one confers protection and the other vulnerability – a tendency that is becoming more and more pronounced in the literature.

As the field of child psychology continues to grapple with the huge task of predicting and managing aspects of resilience and vulnerability through childhood and adolescence, the desire to reduce lifelong ‘risks’ and ‘gains’ down to a fundamental level of personality is understandable and appealingly parsimonious, and has the added ‘advantage’ of holding society excused. If the suffering of some, and the resilience of others, can be attributed to a fairly static set of dispositional tendencies, then the responsibility of intervention and change becomes obsolete. In too many ways, research on children’s optimism and pessimism has been limited by this sort of philosophy, and the constraints imposed by this reductionist approach undermine research efforts at the fundamental, methodological level.

The most prominent tool for measuring optimism and pessimism, the YLOT, construes the two as dispositional and fundamental, and in doing so may preclude evidence of their potentially fluid and dynamic state from emerging. This Thesis therefore set out to challenge the assumptions of the different theoretical perspectives and methodological tools surrounding the construct of optimism, in order to facilitate a shift toward an epistemology that promotes a more contextual and fluid nature to optimistic processes, rather than relegating

this complex and dynamic cognitive process to the pool of surmise and deduction. This constitutes the crux of this dissertation: the theory on children's optimism and pessimism is driving, and potentially constraining, aspects of its operationalization and application. The tendency to view optimism and pessimism as mutually exclusive, interdependent forces is potentially simplistic and even misleading, and there needs to be a more rigorous and critical approach to employing the methodologies that have stemmed from this potential short-sightedness.

The measurement of optimism and pessimism: Alternate approaches and common conceptual premises

There is a paucity of methodologies that specifically assess optimism and/or pessimism. In the field of child development in particular, our understanding of this important aspect of children's cognitive and emotional functioning has been severely hindered by the lack of age-appropriate measures. It was in recognition of this need that Ey et al (2005) developed the YLOT from the already 20-year old adult LOT (Scheier & Carver, 1985). As outlined in the first chapter of this thesis, the YLOT demonstrates good reliability and validity, and appears completely comparable to the indices of dispositional optimism and pessimism obtained using the LOT. The LOT and YLOT stem from Carver and Scheier's (1981) cybernetic model of self-regulation, within which goal-directed behaviours are seen as strongly influenced by people's expectations about the

outcomes of that behaviour. If expectancies for success are present, then behaviour is initiated and maintained; conversely, expectancies of eventual failure cause disengagement from and abandonment of behaviours. Essentially, the cybernetic model is one of *persistence*, whether the individual holds optimistic expectancies conducive to repeated effort and activity, or whether their pessimistic expectations hinder and undermine their efforts. This reasoning not only aligns well with lay or commonsensical notions about optimism and hope, but also resonates with developmental theories about the usefulness of optimism for facilitating the persistence of children as they are immersed in a steep-learning curve of formal and informal knowledge acquisition. Of course, a simple linear relationship between optimism and rate of learning in children cannot be easily documented, as too many other factors (such as child IQ, parental level of education, or SES) might be compounding or confounding this effect. Future work controlling for these other internal and external factors might be better able to deduce a functional relationship between optimism-based persistence and real learning outcomes.

Having highlighted the especial relevance of notions of optimism and persistence for children's development, it is somewhat surprising that a validated youth-version of the LOT was not developed sooner. Perhaps this (now-obviated) oversight was due to a lack of consideration, for many years, that optimism might be more of a process than an innate, static characteristic in children. The cybernetic model of self-regulation is notable for its more dynamic approach to

the study of goal-relevant expectancies, yet there remains an enduring assumption of mutual exclusivity amongst those expectancies and the subsequent behaviours. Central to both the LOT and the YLOT is the premise that the absence of pessimism is somehow indicative of the presence of optimism. The two are seen as polar opposites that function in mutually exclusive ways. Methodologically, this is best illustrated by the inclusion of the 'total optimism' score in the LOT/YLOT, which is calculated by adding the optimism items (the subscale optimism score) and the reverse-scored pessimism items into one aggregate score. This 'total' index of optimism is taken to represent both the presence of optimism, and absence of pessimism, in that individual. While Ey and colleagues (2005) certainly flag the potential irrelevance of this score in applied studies of optimism and pessimism, the notion of a defining dispositional 'type', where one is either an optimist or a pessimist, persists throughout both lay and academic arenas of study. Samples are frequently categorized to form groups of those who are 'optimistic' and those that are 'pessimistic', formed on the basis of whether those individuals score more heavily on the optimism or pessimism subscale of a scale, without any due consideration of whether a person may be at once subject to optimistic tendencies *and* pessimistic tendencies, either of which may take precedence in a given situation. The studies of this thesis certainly support the notion of people having both optimistic *and* pessimistic proclivities, for while all the samples were more optimistic than pessimistic (on the basis of the pure optimism and pessimism subscale scores of the YLOT), the two sets of expectancies seemed to be functionally distinct rather than interdependent and

mutually exclusive. This was particularly compelling in Studies 1 and 3, which examined optimism and pessimism throughout development, and were able to show that while optimism might decrease with increasing age, levels of pessimism did not vary. This provides clear evidence against the notion of optimism and pessimism as mutually exclusive, interdependent entities. Rather, they might be better conceptualized as related, but functionally distinct processes. The conceptual implications of such a statement merits further expansion, and shall be addressed in a later theoretical section in this discussion; for the moment, however, this observation certainly provides evidence against the utility of the ‘total optimism’ score in the YLOT.

The dimensionality of the YLOT: Evidence in support of the discernment and uniqueness of children’s optimism

The exploratory FA undertaken upon the items of the YLOT also brought these issues of the validity of its subscales to the fore. It was hypothesized that some evidence of an underlying two-factor structure would be observed, denoting dual aspects of optimism and pessimism, rather than one single, latent factor. As such, it was expected that the optimism and pessimism dimensions underpinning the YLOT would fall out, or load, in discrete ways, rather than grouping together under one main factor where optimism and pessimism items would be inversely correlated. This prediction was supported by the findings obtained, where, in fact,

three important latent dimensions to the YLOT were seen. Once again, this provided evidence against the idea of grouping optimism and pessimism items into one aggregate score, as their underlying dimensionality hinted at greater uniqueness or dynamism than one would want in an aggregate score. The three factor solution obtained demonstrated a clear pessimism dimension, an optimism dimension, and then a final cluster of optimism items that, by nature, seemed to connote some sort of ‘check’ to the optimism items. This last group of items, the third factor, included item wording such as “lucky” and the “overall” likelihood of good or bad outcomes. Specifically, this third factor seems to indicate a tendency to not endorse global, more irrational, optimistic statements such as “I am lucky” (YLOT item 8) and “overall, I expect more good things to happen to me than bad things” (item 14), by still allowing that “bad things might happen” (item 15). In light of this item configuration, this third factor was seen as a secondary form of pessimism that essentially places a ‘check’ upon more global or decontextualized optimistic statements. Taken together, these items seem suggestive of a tempering influence upon levels of optimistic endorsement, even in predominantly optimistic children, such as those in the samples of our studies. In view of the apparent moderating effects of this third factor, this author determined that the dimensionality of the YLOT would be best seen as two-factored, denoting both an underlying optimism and pessimism factor, with an added sub-dimension to the optimism item that represented one’s tendency to check or temper their initial optimistic responses. This observation certainly has significant theoretical implications, which shall be discussed in due course, and

also provides a prompt for further methodological research in the area. If this third factor could be reliably reproduced in continuing analyses of the YLOT, then it might prove to be an informative and important aspect of children's optimism and pessimism in its own right. If this could be established, then perhaps this third area of optimistic functioning warrants its own subscale score from the YLOT, the use of which could possibly lead to new and unexpected avenues of research in the area.

The vignette approach: Methodological benefits and theoretical implications

A new and somewhat unexpected approach to the study of children's optimism and pessimism was proffered by Lockhart and colleagues in 2002. This approach moved away from traditional views of optimism and pessimism as more static features of personality to a new perspective of these entities as processes serving important developmental roles or purposes. Specifically, Lockhart et al (2002) described children's tendency to view future outcomes in optimistic ways as "protective", facilitating their persistence, encouraging their efforts and protecting them from feeling disappointed or helpless in the face of immediate failure. In this way, this optimism is seen as 'protecting' against feelings of helplessness or hopelessness, the emotional and cognitive forerunners to potential depressive episodes. This approach to the measurement of optimism and

pessimism, like the YLOT, also entailed a consideration of the two as opposing and complementary forces. Indeed, the vignette approach's method of scoring responses depends to some degree on whether the judgment lies at the pessimistic end of the options given, or the optimistic end, which therefore makes it quite unlikely that a user of this method would consider pure indices of optimism or pessimism. Specifically, Lockhart et al (2002) provided children with a forced choice range of possible outcomes when presented with a scenario about the malleability of a given human trait over time, where the choices denoted either no change in the trait, moderate change, or extreme change in the trait. If the child made a judgment of no change for a positive or desirable trait, this was scored as an optimistic outcome. A judgment of extreme change of a negative trait was also seen as optimistic. The converse was also held as true, and demonstrates the theoretical underpinning of viewing optimism and pessimism as opposite, mutually exclusive tendencies: stability of a negative trait over time was scored as a pessimistic judgment, as was a prediction of extreme change in a positive trait. Essentially, this vignette approach allows optimistic and pessimistic tendencies to be seen as both categorical judgments (as outlined above by the scoring method), and as continuous data or scores, where no change is scored as 1, moderate change as 2, and extreme change as 3. This means that higher scores are always indicative of greater trait change. The responses given in the third study of this thesis were scored in this way, with higher scores indicating a prediction of greater trait change over time. The categorical assignments of Lockhart et al (2002) still hold, however, such that lower scores for positive traits, and higher

scores for negative traits, are seen as connoting optimistic judgments. The opposite direction to the continuous scores holds true for evidence of pessimistic judgments.

This vignette approach has brought some major advantages or features to the field of child development, but also demonstrates some of the theoretical shortcomings evident in other extant methods, such as the YLOT. With regard to the advantages of this approach, the vignette approach developed by Lockhart et al (2002) was the first optimism measure to consider the possibility of it being more procedural, more other-person relevant, and more ubiquitous amongst children as a whole. By investigating optimism as more of a normative, adaptive aspect of all children's development, rather than limiting it to a more static aspect of individual temperament, the authors were able to proffer the potential measurement of a more 'generous' or 'big' optimism, one relating to more hypothetical future predictions that must inform future paths of self-regulation than the retrospective, static, self-relevant recollections elicited by the YLOT. The vignette approach was therefore the first method to proactively search for less conservative dimensions to children's optimism, and it is the belief of this author that this methodology holds out great promise as a tool for child developmental research. Perhaps its only major limitation or shortcoming is its theory-driven approach: it is inherently defined by and limited to a conceptualization of optimism and pessimism that sees the two as polar opposites, as counterbalanced tendencies. If the vignettes could be refined to

somehow tap more pure predictions of optimism and pessimism, where they are seen as discrete and unique processes with a significant degree of functional independence, then a fascinating and unprecedented area of research might follow. This is a major point of interest for future research in the area, which perhaps requires the postulation of an alternate theoretical base to drive the methodology, so as to allow the comparison of its results and trends against existing ‘commonsensical’ bases. Perhaps once this more thorough exploration of alternate methodologies is completed, some reconciliation of the divergent theoretical underpinnings might be resolved.

Reconciling the measurement of optimism and pessimism with that of cognitive coping style: Adaptive sets of expectancies or independent indices of self-regulation?

One of the most interesting findings to come out of this body of research pertained to the interrelations observed between the cognitive coping style factors, as detailed by the Response Style theory of depression (Nolen-Hoeksema, 1991), and the measures of dispositional optimism and pessimism. In the first two studies of this thesis, both of these two groups of factors were assessed: dispositional optimism and pessimism from the YLOT, and measures of cognitive coping style tendencies from the CRSQ (Abela et al, 2000). Both of these studies returned some intriguing trends that again question what we know, or appear to

assume, about the interrelatedness of various factors of resilience and vulnerability in childhood. As shall be seen in the following section, both studies seemed to suggest a level of independence between trajectories of *either* self-regulation or -dysregulation, where antecedent paths of either adaptive *or* maladaptive expectancies seemed to best predict the likelihood of *either* well-being or negative affect.

To better illustrate what is meant by the preceding statements, this author asks the reader to keep the following schematic representation in mind:

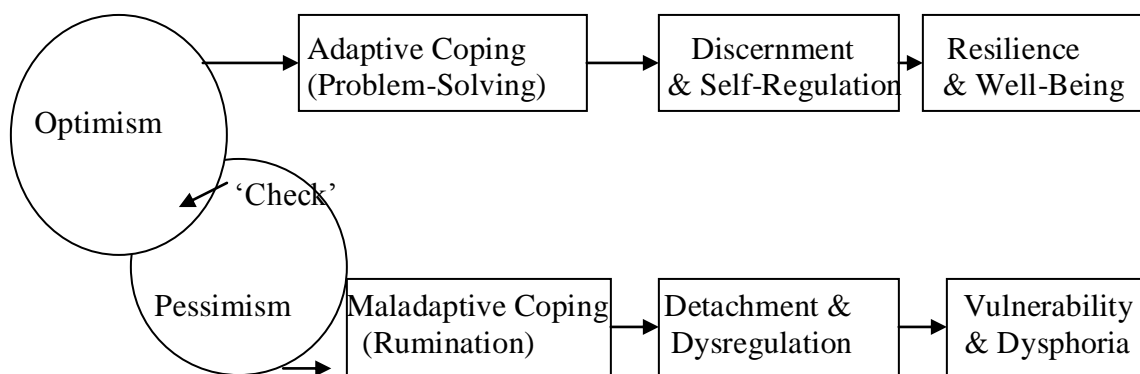


Figure 6.1

A proposed model of functionally distinct pathways of resilience or vulnerability in children and youth

The primary focus of this new approach to pathways of well-being or vulnerability lies in the apparent level of *functional independence* between those two pathways. While there is certainly a degree of relatedness between the constructs above (relatedness driven by the current methodologies, if nothing else), this author asks that the reader bear this consideration of independence in mind. This issue of independence is the point of departure from more conventional theories or perspectives of resilience: specifically, while previous work in the field will often infer a lack of vulnerability (Path *b*) from the presence of resilience factors (Path *a*), as would be denoted by strong vertical relatedness in the diagram above, this author argues for a greater consideration of the uniqueness of these horizontal planes (Path *a* vs. Path *b*), at least when using these factors to drive conceptual and methodological endeavours in future research efforts.

In discussing the first two studies of this thesis, it shall be seen that there seemed to be a consistent and significant degree of evidence to support the articulated paths of either cognitive-affective regulation or dysregulation proposed above in Figure 6.1. The trends seen to some extent in the third study of this thesis also seem to go some way in support of this new conceptualization of resilience and vulnerability. The fourth study of this thesis was also responsible for the inclusion of the optimistic check included in the diagram above, as shall be explained in due course.

In the first study, a cross-sectional sampling process was undertaken, assessing levels of optimism and pessimism (derived from the YLOT) and cognitive coping styles (as assessed by the CRSQ), as well as evidence of personality-based extraversion and neuroticism (using the JEPI) and symptoms of internalizing and externalizing behaviour problems (using the CBCL), in a sample of children and youth aged 7 to 17 years of age. In the second study, a particular cohort of children, aged approximately 10-12 years was targeted. Again, YLOT-based optimism and pessimism was assessed, and these levels were compared to cognitive coping styles stemming from anxious rather than sad thoughts (involving the use of a slightly modified version of the CRSQ), as well as to symptoms of anxiety in the group (using the SCAS). What is relevant here for both studies are the relationships observed amongst the dispositional (optimism and pessimism) and the coping style (particularly ‘rumination’ and ‘problem-solving’) factors tapped in both studies.

The first cross-sectional study, which was used to make some significant longitudinal inferences about trends in optimism and pessimism, indicated that levels of optimism declined with age. This was of great interest to the applied component of this thesis, which laid a strong emphasis upon accurately extrapolating age-related trends in optimism. Indeed, this study was able to show that this age-related decline in optimism seemed to be directly mediated by decreasing levels of problem-solving coping, which was also of major interest to the developmental focus of this thesis, as it seemed to point to the adaptive value

of having a high degree of both optimism and problem-solving coping tendencies. This study was also able to show that levels of pessimism did not *increase* with age in any significant way, which was again a major point of interest for both the applied focus on functions of pessimism through development (especially any potential role of ‘depressive realism’, which was discussed earlier in this chapter), and for the theoretical and conceptual side of this thesis, concerning the degree of relatedness or independence between optimism and pessimism in the individual. Insofar as these findings have any bearing on the diagram presented above, they support the notion of seeing pathways of optimism versus those of pessimism as quite independent or functionally distinct.

Taking a more applied stance, this first study then compared these levels of dispositional optimism and pessimism to the likelihood of engaging in either adaptive (Problem-Solving) or maladaptive (Rumination and/or Distraction) coping styles, as articulated by Nolen-Hoeksema’s Response Style theory. The fact that optimism correlated strongly with an adaptive problem-solving style was also discussed previously, in the section addressing the developmental benefits or potential disadvantages of optimism. Of greater significance to the schematic model outlined above, these levels of optimism were not related in any significant way to levels of either rumination coping or distraction coping. That is, levels of optimism did not inversely predict levels of maladaptive coping, nor did levels of pessimism inversely predict levels of adaptive problem-solving coping. Indeed, levels of pessimism did not seem to exert any significant bearing upon coping

tendencies in this cross-sectional sample. Moreover, the coping styles themselves did not seem to correlate significantly with each other (with the exception of distraction and problem-solving styles, which displayed a moderately significant degree of similarity). Certainly the two more prominent styles in the Response Styles theory, problem-solving coping and rumination coping, did not correlate in any significant way. Hence, despite the frequent discussion of these two cognitive coping styles as ‘adaptive’ vs. ‘maladaptive’ (problem-solving and rumination, respectively), almost *opposing*, tendencies in the literature, these findings suggest a greater independence to these coping styles than is generally discussed.

The scoring of questionnaires stemming from the Response Style Theory (the RSQ, the CRSQ) select a predominating coping style for an individual based on its precedence of application: the individual may make alternate coping style-based endorsements or judgments, but the person is seen as being driven primarily by one stronger style. This approach does not seem to allow for that possibility that coping styles are used in interchangeable ways, depending on context or circumstance, and thus does not allow for any degree of functional independence between these coping styles either. The probability of a person having or utilizing multiple coping styles makes some intuitive sense, and seems particularly likely in childhood. Abela et al (2002) first pointed out the potential for children to have more than one cognitive coping style, and the adaptive benefit this might have as they navigate new and complex social situations. Abela et al (2002) argued that perhaps the predominating shift towards ruminative

coping in adolescence is due to ongoing disappointment or failure with adaptive problem-solving efforts, leading the child to desist from selecting a problem-solving response over time, but, as was highlighted in the discussion of the second study, it is possible that the endorsement of multiple coping styles is maintained into adulthood, where their functioning plays out in unique or context-specific ways. This seems to support a degree of parallelism between pathways of well-being or vulnerability, as illustrated by the unique Paths *a* and *b* seen in Figure 6.1 above. In this discussion of duality or parallelism, it is important to remember that while a degree of absolute or *conceptual* relatedness is always possible, it is their *functioning* and *trajectories* that need to be embraced as potentially distinct or having unique predictive power.

The findings of the second study also supported these unique trends amongst discrete grouping of positive expectancies (optimism) and coping (problem-solving) tendencies versus negative expectancies (pessimism) and coping (rumination) tendencies. This is perhaps a good juncture to note that distraction coping tendencies did not seem to play out in any significant ways in these first two studies. Rather, the discrete dyads above (optimism/problem-solving vs. pessimism/rumination) seemed to again become apparent. In this second study, where these processes were examined at the point of late childhood, the role of pessimism and levels of rumination seemed to become especially pertinent. It was as if these more ‘negative’ processes were subsumed within the first larger cross-sectional, developmental study, but came to the fore when we

turned our attention to one of the most important cohorts when studying the potential onset of vulnerability and psychopathology: late childhood to early adolescence. In this study, we saw that the relationship between dispositional pessimism and symptoms of anxiety was fully mediated by levels of rumination coping, indicating a clear aetiological pathway. Once more, the uniqueness of pathways of resilience versus those of vulnerability seemed apparent: pessimism was strongly related to rumination coping and symptoms of anxiety, just as it was related to internalizing behaviours in the first study, but was not inversely related to levels of problem-solving coping, and its relatedness to optimism was only moderate. The apparent pathways of unique prediction outlined in Figure 6.1 above therefore seemed again supported by the patterns of results seen in this second study.

The third study of this thesis had both the advantage, and, at times, disadvantage, of employing Lockhart's vignette-style approach to the study of optimism and pessimism. The advantages are clear and have been discussed: this approach allows for a more 'generous' or 'other-relevant' depiction of children's optimism, and was able to demonstrate the capacity of this optimism to be tempered or adjusted in the presence of other cognitive or domain-specific demands. The only disadvantage of this approach is that it is rather difficult, if not impossible, to isolate any 'pure' or subscale measure of optimism or pessimism. Its methodology depends upon a more reductionist take, where judgments for the malleability of positive versus negative traits over time are seen

as inversely representing positive (optimistic) outcomes, or negative (pessimistic) outcomes. This makes it somewhat hard to reconcile the findings of the vignette approach with the model outlined above in Figure 6.1. The YLOT score obtained at this time, however, once more indicated a reduction in optimism with age, and no significant increase in pessimism with age, which supports notions of their functional independence. The outcomes obtained on the vignettes, moreover, did seem to reconcile well, or share some similarity, with the scores obtained on the subscale items of the YLOT.

Finally, the fourth pilot study returned some findings of relevance to the schematic model proposed above in Figure 6.1. The interventionist study was perhaps too rudimentary (due to a lack of comparison measures or control groups) to truly inform this model of discrete pathways of resilience and vulnerability, but, for what it is worth, this intervention study *was* able to show the amenability of these pathways to change, even if the focus or impetus of that change remains unknown. In extension of the limitations pertaining to this final applied study, it should be noted that the method of community-based convenience sampling was a shortcoming relevant to *all* the studies contained in this thesis, potentially biasing the results and confounding the utility of the new model proposed in Figure 6.1. While the convergence of findings across these independent samples in some way counters this limitation, it must be duly acknowledged as a potential confound of the results obtained. Nevertheless, the outcomes of the interventionist study, like those of the preceding three studies, provided some

support for the parallel pathways of well-being vs. vulnerability illustrated in Figure 6.1.

The second goal of this fourth study was to examine the latent factors or dimensionality of the YLOT. The results of this factor analytic component also lend some support for the model of discrete aetiological pathways proposed in Figure 6.1 above. Firstly, it was found that the items of the YLOT did not load on one single or principal ‘disposition’ factor (that is, the items did not load together in a purely inverse way), rather three distinct latent variables or factors became apparent. As discussed above in the section on the FA of the YLOT, the first of these dimensions pointed to a clear pessimism factor, as evidenced by those items whose endorsement aligns with a negative outcome. Every pessimism item but one loaded significantly on this first factor. The second factor was one of optimism, containing most, but not all, of the optimism items in the YLOT. The third factor contained items that seemed to connote some sort of check upon optimistic tendencies, containing two negatively endorsed optimism items (“I am a lucky person”, and “Overall, I expect more good things to happen to me than bad things”), and one positively endorsed pessimism item (“each day I expect bad things to happen”). This author argued in favour of this cluster of items being seen as a check upon more global, instinctive levels of optimism (though one could see it in a less positive light, as a more insidious form of pessimism that undermines optimistic tendencies – there is certainly room for speculation here), where this ‘check’ could be accounting for the moderate degree of relatedness

observed between the pure subscale measures of optimism and pessimism in each of the studies of this thesis. For this reason, this ‘check’ is included in the new predictive model put forward above (see Figure 6.1), and perhaps this represents the degree of conceptual overlap between, or relatedness of, these variables. It remains to be seen if future work examining other methodological dichotomies (e.g., rumination vs. problem-solving, hope vs. non-hope, internalizing vs. externalizing tendencies) can similarly show this kind of conceptual overlap rather than inverse-relatedness, or whether this is something unique to the optimism construct itself. For the moment, the more nuanced dimensionality of the YLOT that emerged from this study, as an underlying framework that allows for discrete processes of optimism versus pessimism, seems to align with, rather than against, the model of discrete predictive pathways of resilience and vulnerability proposed above.

Towards a new ontology of optimism: Challenges to potential assumptions and misconceptions in its theoretical foundation

In discussing the divergent methodologies in the preceding section, and the relevance they have for building a new model of predictive pathways of resilience or vulnerability, the marked degree of theoretical and conceptual dissension in the field becomes quite clear. Theoretical models or positions necessarily underpin the methodologies used in this thesis; it seems clear,

however, that more conservative notions about positive and negative affective processes are being maintained within new avenues of positive psychological research. Specifically, these new approaches purport to assess notions of skills, resources, and talents independently from any consideration of deficit or vulnerability, so as to show their unique importance in understanding well-being, yet there is a strong reliance on more traditional methodologies wherein resilience and vulnerability are seen as inversely related, mutually exclusive tendencies (thus forms the impetus for the proposal of the aetiological model outlined above in Figure 6.1). There is a strong need, therefore, to revisit and refine these conceptual foundations, so as to better support the articulated goals of the positive psychology zeitgeist. So as to avoid the pitfall of simply redefining the theory to fit a new set of expected outcomes (a theory-driven approach that has been critiqued throughout this thesis), it would perhaps be better to encourage the development of more exploratory tools for empirical investigation, such as the vignette approach developed by Lockhart et al (2002), with an added advantage of allowing for pure assessments of optimism and pessimism that are free from deduction or inverse inference.

Theories of optimism: Typologies and functions

The greatest sense of discord in this area seems to stem from the divergent optimism typologies endorsed or posited by various researchers in the field. Multiple optimisms seem present: situated optimism, unrealistic optimism and

dispositional optimism, and Lockhart et al's (2002) protective optimism. The validity and accuracy of notions of dispositional and protective optimism have been discussed extensively so far, in reference to the YLOT and Vignettes approaches, respectively. The findings of the studies contained in this thesis seem substantive to the elucidation of situated and unrealistic optimism also.

'Situating optimism' was a term coined to better explicate the role of specific expectancies in guiding one's behaviour, rather than limiting optimism to a more dispositional, foundational influence (Armor & Taylor, 1998). Specifically, this form of optimism is grounded in a set of specific expectations about future outcomes, and has been promulgated as the basis of any undesirable outcomes that might stem from optimism. While general expectations and dispositional outlook seem to promote mostly positive outcomes in life, highly situated optimistic expectancies have been discussed as very easily leading to disappointment, disillusionment, and a lack of contact with reality (Armor & Taylor, 1998). In this sense, it is this very specific and situated form of optimism that is most likely to be unrealistic (in a probabilistic sense) in some way. The third study of this thesis provided an interesting example of the utility of comparing a situated measure of optimism (the Vignettes), and a dispositional measure of optimism (the YLOT), and goes some way toward documenting whether there are any major qualitative differences between the two, including apparent 'contact with reality'. It was seen that younger children were more likely to make optimistic judgments in answer to the hypothetical trait-based scenarios

than the older children, yet both groups were just as discerning when the demands of ‘reality’, or ‘rules’ of biological growth, took precedence over the possibility of an optimistic outcome. It is important to note, however, that the vignettes pertained to a hypothetical ‘other-relevant’ outcome, not a personal expectation. Future work comparing hypothetical and self-relevant vignettes should prove valuable, and might be able to demonstrate whether expectations of one’s *own* success in life are as discerning as the hypothetical judgments made in this third study.

In terms of the relatedness of situated and dispositional types of optimism, it was seen that while levels of YLOT optimism and Vignette optimism were correlated to some degree, the most pertinent aspect to the vignette-measured optimism seemed to be a hope of changing negative states or traits, rather than maintaining things that were already positive. This seemed to denote a kind of activity or agency to this ‘big’ optimism that could certainly lead to disappointment if the expectation of change was not realized. Perhaps definitions of ‘big’ and ‘little’ optimism might be usefully augmented by a consideration of the likelihood of disappointment or disillusionment. It could be that children’s little optimism is protective and quite dispositional, while their big optimism is more fragile and more situated in certain sets of domain-specific rules or applications. Elucidating and synthesizing these multiple types of optimism may be what is needed to more fully finesse the theory in the area, and consequently guide new the development of new methodologies. Clearly, ongoing systematic

research is needed to really clarify the potential discreteness or overlap of these multiples forms or functions of optimism.

Reconciling the existing research methodologies and findings with a new foundation to the study of optimism and pessimism through childhood and adolescence

The YLOT has formed the common methodological ground of this thesis, and in doing so has also largely determined the conceptual scope of optimism and pessimism within this body of work. The YLOT stems from a dispositional, self-regulatory conception of optimism, yet as this thesis has shown, both the nature and functions and optimism and pessimism are likely to be much more complex and varied than such an internal, somewhat static, position can account for. The YLOT holds a definite competitive edge in its ease of administration, its consideration of discrete subscales or measures of optimism and pessimism, and its close affinity to other indices of emotion and behaviour, yet as a methodological tool it does impose a certain degree of theoretical supposition upon the application in progress. The vignette approach has certainly received a good deal of praise in this thesis, as a new and innovative approach that allows for a more discerning and generous form of child optimism to be elicited. This more exploratory approach therefore seems to be less constrained by the many typologies of optimism that pervade the literature. Yet, as has already been

emphasized, even this method relies rather heavily on the conventional view of optimism and pessimism functioning as opposing tendencies, inversely related and therefore mutually exclusive. This body of work, however, has endeavoured to show that optimism and pessimism might be more unique, or functionally distinct than previously thought.

The studies within this thesis have raised the possibility that these two cognitive processes might operate on distinct planes of affect, with parallel but mostly independent influences upon one particular realm of behavioural and emotional regulation. An attempt to graphically represent (see Figure 6.1), and justify, such a position was pursued above when aligning the dispositional findings with those pertaining to more behavioural outcomes such as coping and internalizing symptoms. Taking all four studies of this thesis together, the constructs of optimism and pessimism do seem to display an affinity to their correlates in quite discrete ways, with optimism contributing to positive outcomes, and pessimism to negative outcomes, with little or no inverse potential. Optimism did not seem to necessarily protect against negative outcomes, and pessimism did not seem to detract from more positive outcomes. This position was best supported by the findings of the first two studies of this thesis, where the most salient effects of optimism were evinced in favour of positive outcomes such as a stronger PS coping style, rather than exerting some 'remedial' effect upon levels of dysphoria (such as anxiety or depression) or maladaptive rumination coping. Conversely, pessimism stood out most strongly in relation to

levels of disadvantageous ruminative coping and levels of anxiety, and did not seem to have much bearing upon levels of positive coping. In this sense, the two seemed to operate on two divergent planes, as if two related but distinct trajectories of affect might be independently set in train for any given child.

This apparent independence was further supported by the age-related outcomes observed in the first and third studies of this thesis: these two studies both looked at levels of optimism and pessimism from middle childhood to late adolescence, and both demonstrated that while optimism levels appeared to decrease with increasing age, levels of pessimism did not appear to increase in a complementary way. This provides further support against the notion of optimism and pessimism functioning as interrelated polar opposites. Again, it seems more as if the two responded to increasingly divergent and unique demands with increasing age. That fact that this outcome was observed using both a well-established (the YLOT) and more innovative (the Vignettes) methodology certainly supports some degree of verisimilitude. Further work is needed to clarify the ways in which processes of optimism and pessimism might meet or separate through development. It may be that the two are more interrelated in the younger years, as temperament interacts with the environment in very prospective ways, yet functionally diverge in significant ways in late childhood and adolescence, as individual vulnerabilities or resiliencies take greater toll. One might postulate that processes of optimism and pessimism move away from being prospective and self-regulatory, to more retrospective and self-fulfilling. This

aspect of the model proposed in Figure 6.1 certainly requires further investigation and clarification, and could perhaps usefully extend this model into a better working research framework. Certainly, any such documentation would have major implications for interventionist efforts, particularly those targeting older children, and could possibly also help to resolve some of the anomalies in the optimism literature.

This potential new research focus of studying the factors *precipitating* either adaptive self-regulation or dysregulation necessarily involves a shift away from focusing only on the presence/absence of the factors themselves, and any such effort would certainly benefit from employing a more ontologically distinct framework like that put forward in Figure 6.1. Specifically, if a model like Figure 6.1 allows us to see factors such as optimism, hope, or self-efficacy as *agents* or *processes*, rather than as static traits or covariates, we are likely to learn a great deal more about what distinguishes a resilient individual from a vulnerable individual. There is an undeniable need to move away from the study of simple correlates of resilience and well-being, to embracing a more *active* and purposive consideration of mediating pathways of resilience, as *distinct* from pathways of vulnerability and dysphoria. Only in this way can a more refined and relevant ontology of optimism in childhood emerge, and, indeed, a more nuanced understanding of lifespan resilience be comprehensively embraced by the discipline of positive psychology as a whole.

Concluding comments

The issue of uniqueness versus interrelatedness of factors conferring resilience or vulnerability forms the essence of this research dissertation. When explicating the actual (mal)adaptive roles of optimism and pessimism in child development research, there has grown a concomitant belief in the need to better ground these roles in the theories and methodologies purporting their assessment. Specifically, when discussing these ‘roles’, there must be a consideration of both actual, applied roles (the potential real-world impact of optimism and pessimism upon children’s apparent levels of vulnerability or resilience), *and* a reflection upon the ways in which these constructs are harnessed within such research to account for, or explicate, *other* emotional or behavioural outcomes. To the extent that cognitive states predict or correlate with other affective and behavioural outcomes, their inclusion as covariates in hierarchical explanatory frameworks is warranted. To the extent, however, that processes of optimism and pessimism *themselves* mediate and perpetuate clear trajectories of either global well-being or vulnerability, their articulation as distinct indices of self-regulation within more nuanced ontological models seems entirely justified.

As has been discussed in depth, the processes of optimism and pessimism appear to have a real and significant bearing upon children’s cognitive and emotional development, and these influences might be more unique and functionally distinct from each other than has been thought in the past. Certainly,

the studies of this thesis support the notion of optimism and pessimism having both a contemporaneous and ongoing impact upon children's wellbeing. These two aspects of self-regulation seem both developmentally relevant and individually varied, and as such warrant ongoing research dedication from child development researchers. Yet what this thesis has also endeavoured to convey is the onus on those researchers to more closely scrutinize the methodological tools they are employing in such investigative efforts, lest some of the potential nuances and subtypes of these factors be lost in simplistic aggregate and inversely-interpreted scores of optimism and pessimism. There is a need for researchers in this area to follow lines of investigation that allow optimism and pessimism to function in distinct and perhaps unexpected ways, which is best done by including these factors as important and measurable dependent variables, rather than simply including 'high or low' optimism/pessimism as a covariant or independent variable.

The tendency within the discipline to conceptualize optimism and pessimism as co-varying aspects of static temperament has exacerbated the tendency to rely on optimism/pessimism as a convenient, dichotomous framework within which to interpret more salient behavioural and emotional outcomes, a default position that has been seen in many previous avenues of applied research. It is sincerely hoped that the work contained in this Thesis will go some way toward promoting a new ontological basis to the study of children's optimism and pessimism, one that better recognizes the potential dynamism,

uniqueness, fluidity, and sensitivity of these processes throughout the lifespan. As the discipline-wide investment in a more positive psychology flourishes, it is hoped that other more conventional interpretative frameworks are similarly challenged, so as to heighten the integrity of our explanatory frameworks and make us more receptive to a possibility of change and flux in an ever-changing and hope-filled world.

Appendices A, B and C are included with the print copy held in the University of Adelaide Library.

APPENDIX A

The Youth Life Orientation Test (YLOT; Ey et al., 2005)

APPENDIX B

The Children's Response Style Questionnaire (Abela, Rochon & Vanderbilt, 2000)

APPENDIX C

Modified "anxiety" version of the Children's Response Style Questionnaire

APPENDIX D

Example scenarios from the series of hypothetical trait-based vignettes

Scenarios

Instructor: “I am going to read you some stories about people, stories about what sort of person they are. After I have told you about how the person was growing up, you get to decide what you think they are like now as an adult. There are no right or wrong answers, just say what you think is most likely or possible.”

Part A: (assessing “unconstrained” optimistic tendencies)

[One of four negative trait scenarios, where trait change over time would constitute a positive outcome:]

1. When John was 5 years old, he wasn’t very good at saving up any money he had, he always spent it all. When John was 10 years old, he would still spend all the money that he earned or got given. Now John is 21 years old – do you think:
 - a. He still spends up all the money he has,
 - b. He now saves up *some* of the spare money he finds he has, or
 - c. He saves up *all* of the spare money he has??

[One of four positive trait scenarios, where trait stability over time would constitute a positive outcome:]

1. When Alice was 5 years old, she never broke anything, she was always careful and took good care of things. When Alice was 10 years old, she would still never break anything, she was still really careful. Now Alice is 21 – do you think:
 - a. She is still really careful and never breaks anything,
 - b. She sometimes isn’t as careful now and sometimes breaks things,
or
 - c. She often breaks things now, and is quite careless??

Part B: (assessing optimistic tendencies in the presence of domain-specific constraints, i.e., laws of growth)

[One of four negative trait scenarios, where trait change over time would constitute a positive outcome:]

1. Bob was born missing one arm. When Bob was 5 years old, he hoped that his missing arm would grow back one day. When Bob was 10 years old, he still hoped that his missing arm would grow back one day. Now Bob is 21 – do you think:
 - a. His arm has fully grown back now,
 - b. His arm has grown back a little bit, or
 - c. He is still missing his arm??

[One of four positive trait scenarios, where trait stability over time would constitute a positive outcome:]

1. When Annie was 5 years old, she had a great big jacket that she loved to snuggle up in. When Annie was 10 years old, the jacket fit really well and she still loved wearing it. Now Annie is 21: do you think:
 - a. She still wears this favourite jacket a lot,
 - b. She sometimes wears the jacket, or
 - c. She never wears the jacket anymore??

Part C: (assessing optimistic tendencies in the presence of parameters of health-related knowledge)

[One of four negative trait scenarios, where trait change over time would constitute a positive outcome:]

1. When George was a teenager, he was quite overweight because he liked to eat hamburgers and chips everyday. When George was a young adult, and had finished school, he was still overweight because he still liked to eat hamburgers and chips everyday. Now George is older, with children of his own – do you think:
 - a. He is still overweight because he still eats hamburgers and chips everyday,
 - b. He eats hamburgers and chips only on the weekends, and is only a little bit overweight, or

- c. He rarely eats hamburgers and chips anymore, and has a normal body weight??

[One of four positive trait scenarios, where trait stability over time would constitute a positive outcome:]

1. When Steve was a teenager, he was very fit and went for a run everyday. When Steve was a young adult, and had finished school, he was still very fit and still went for a run every day. Now Steve is older, with children of his own – do you think:
 - a. He is still very fit and still goes for a run everyday,
 - b. He only sometimes goes for a run and isn't as fit anymore, or
 - c. He never goes for runs now, and isn't at all fit??

APPENDIX E

Statistical results from the multiple regression procedures undertaken in pursuit of the mediation model analyses in Study One (as discussed in Chapter 2)

Table E.1

Hierarchical regression for the prediction of YLOT optimism subscale scores from the Independent Variables of the study (age, extraversion, neuroticism, distraction coping, problem-solving (PS) coping, rumination coping, internalising behaviours and externalising behaviours)

	Predictor	β	t	R ²	R ² change
Step 1	Age	-.461	-4.96**	.213	
Step 2	Age	-.380	-.482**		
	Extraversion	.307	3.88**		
	Neuroticism	-.081	-.945		
	Distraction	-.097	-1.15		
	PS	.423	4.96**		
	Rumination	.086	1.06		
	Internalising	-.061	-.722		
	Externalising	-.086	-.965	.575	.362

Note: ** $p < .01$

Table E.2

Repetition of the above analysis for the prediction of YLOT pessimism subscale scores

	Predictor	β	t	R ²	R ² change
Step 1	Age	.070	.672	.005	
Step 2	Age	.000	-.001		
	Extraversion	-.057	-.570		
	Neuroticism	.378	3.46**		
	Distraction	.079	.740		
	PS	-.222	-.205*		
	Rumination	.141	1.36		
	Internalising	.139	1.30		
	Externalising	-.122	-1.081	.316	.311

Note: * $p < .05$, ** $p < .01$

Table E.3
 Repetition of the above analysis for the prediction of YLOT total optimism scores

	Predictor	β	t	R ²	R ² change
Step 1	Age	-.249	-2.45*	.062	
Step 2	Age	-.156	-1.71		
	Extraversion	.206	2.25*		
	Neuroticism	-.322	-3.23**		
	Distraction	-.069	-.710		
	PS	.299	3.03**		
	Rumination	-.017	-.183		
	Internalising	-.169	-1.63		
	Externalising	.058	.566	.431	.370

Note: * $p < .05$, ** $p < .01$

Testing of Mediation Model: Does PS coping mediate the reduction in total optimism with increasing age?

Table E.4
 Step 1: Age (IV) as a predictor of PS coping (M)

	β	t	R ²	Sig.
Age	-.228	-2.24	.052	$p < .001$

Table E.5
 Step 2: PS coping (M) as a predictor of total optimism (DV)

	β	t	R ²	Sig.
PS coping	.415	4.36	.172	$p < .001$

Table E.6
 Step 3: Age (IV) as a predictor of total optimism (DV)

	β	t	R ²	Sig.
Age	-.249	-2.45	.062	$p < .001$

Table E.7

Step 4: Testing the mediation model: Hierarchical multiple regression for the prediction of total optimism by age, after controlling for PS coping

	Predictor	B	t	Sig.	R ²	R ² change
Step 1	Age	-.249	-2.45	$p < .05$.062	
Step 2	Age	-.162	-1.67	$p > .05$		
	PS coping	.378	3.90	$p < .001$.197	.136

Testing the potential mediation of PS coping for the age-related reduction in subscale optimism:

Step 1: Age (IV) as a predictor of PS coping (M) – confirmed (see Table E.4 above)

Table E.8

Step 2: PS coping (M) as a predictor of subscale optimism scores (DV)

	β	t	R ²	Sig.
PS coping	.577	6.73	.333	$p < .01$

Table E.9

Step 3: Age (IV) as a predictor of subscale optimism scores (DV)

	β	t	R ²	Sig.
Age	-.461	-4.96	.213	$p < .01$

Table E.10

Step 4: Testing the mediation model: Hierarchical multiple regression for the prediction of subscale optimism by age, after controlling for PS coping

	Predictor	B	t	Sig.	R ²	R ² change
Step 1	Age	-.461	-4.96	$p < .01$.213	
Step 2	Age	-.348	-4.32	$p < .01$		
	PS coping	.497	6.18	$p < .01$.447	.234

APPENDIX F

Statistical results from the multiple regression procedures undertaken in pursuit of the mediation model analyses in Study Two (as discussed in Chapter 3)

Testing Mediation Model 1.1: Rumination coping as mediator (M) of relationship between pessimism (IV) and SCAS (anxiety) scores (DV):

Table F.1

Step 1: Pessimism (IV) as predictor of rumination (M)

	β	t	R ²	Sig.
Pessimism	.491	4.72	.241	<i>p</i> < .001

Table F.2

Step 2: Rumination (M) as a predictor of SCAS scores (DV)

	β	t	R ²	Sig.
Rumination	.516	4.71	.266	<i>p</i> < .001

Table F.3

Step 3: Pessimism (IV) as a predictor of SCAS scores (DV)

	β	t	R ²	Sig.
Pessimism	.337	2.80	.114	<i>p</i> < .01

Table F.4

Step 4: Testing the mediation model: Hierarchical multiple regression for the prediction of SCAS scores by pessimism, after controlling for rumination coping

	Predictor	β	t	Sig.	R ²	R ² change
Step 1	Pessimism	.337	2.80	<i>p</i> < .01	.114	
Step 2	Pessimism	.087	.669	<i>p</i> > .05		
	Rumination	.470	3.61	<i>p</i> < .01	.272	.158

Testing Mediation Model 1.2: Problem-Solving (PS) coping as mediator (M) of the relationship between subscale optimism (IV) and SCAS (anxiety) scores (DV)

Table F.5

Step 1: Optimism (IV) as a predictor of PS coping (M)

	β	t	R ²	Sig.
Optimism	.366	3.30	.134	$p < .01$

Table F.6

Step 2: PS coping (M) as a predictor of SCAS scores (DV)

	β	t	R ²	Sig.
PS coping	.131	1.03	.017	$p > .05$

Testing Mediation Model 1.3: Rumination coping as mediator (M) of the relationship between subscale optimism (IV) and SCAS scores (DV)

Table F.7

Step 1: Optimism (IV) as a predictor of rumination coping (M)

	β	t	R ²	Sig.
Optimism	-.319	-2.82	.102	$p < .01$

Table F.8

Step 2: Rumination (M) as a predictor of SCAS scores (DV)

	β	t	R ²	Sig.
Rumination	.516	4.71	.266	$p < .001$

Table F.9

Step 3: Optimism (IV) as a predictor of SCAS scores (DV)

	β	t	R ²	Sig.
Optimism	-.120	-.944	.014	$p > .05$

APPENDIX G

Illustrated tasks from the workbook provided to children participating in the Optimistic Kids intervention in Study 4 (see Chapter 5)

Cartoon Drawing!

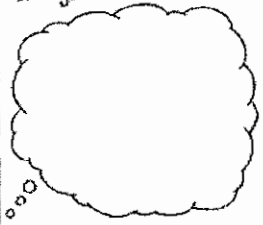

Problem	Thought 	Feeling
	Thought 	Feeling

Figure G.1

Thought substitution exercise

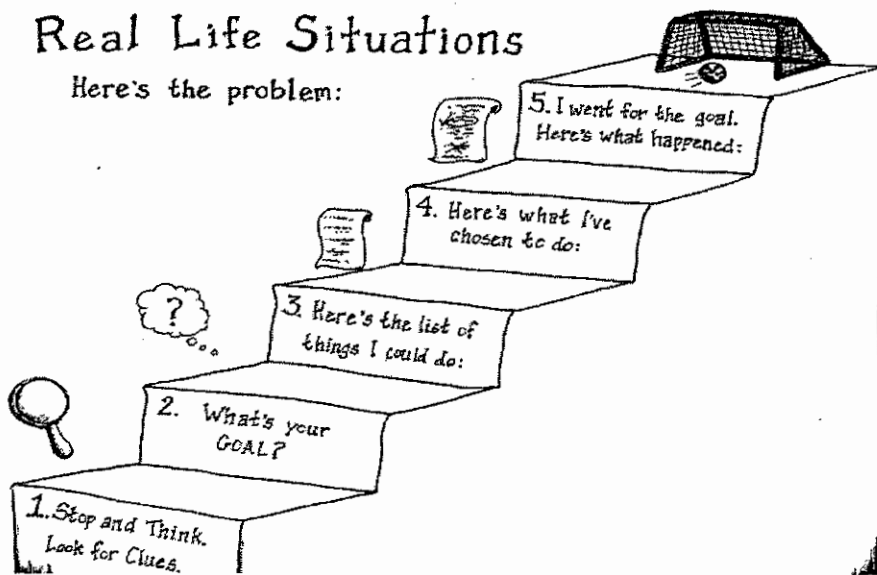


Figure G.2

The real-life problem-solving framework

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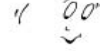
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APPENDIX G

Illustrated tasks from the workbook provided to children participating in the Optimistic Kids intervention in Study 4 (see Chapter 5)

 **Cartoon Drawing!**  

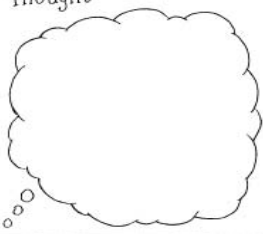
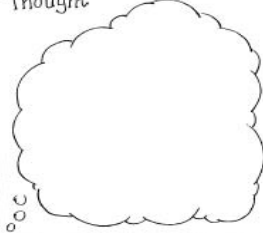
Problem	Thought 	Feeling
	Thought 	Feeling

Figure G.1

Thought substitution exercise

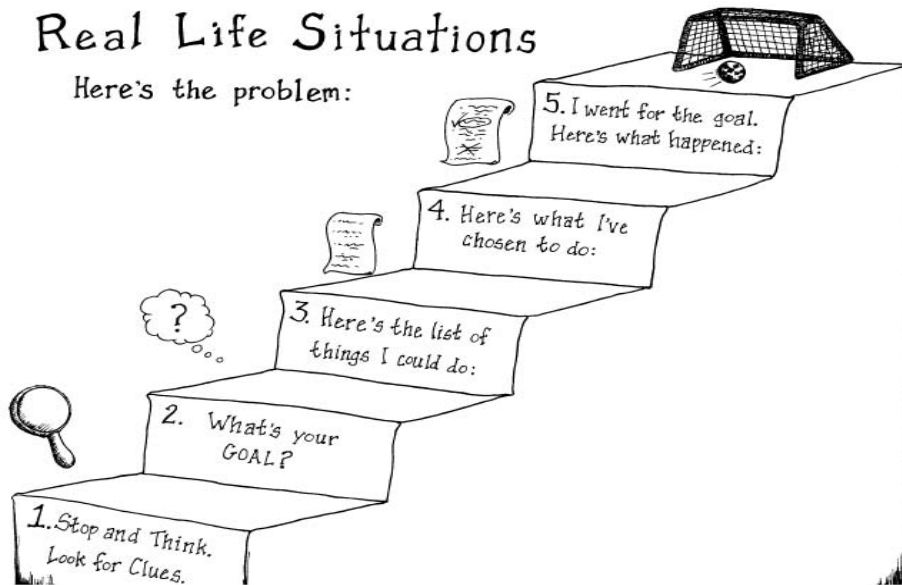


Figure G.2

The real-life problem-solving framework