The Stability and Predictive Capability of Schemas in the Context of Adolescent Mental Health and Well-Being

by

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A Thesis
presented to
The University of Guelph

In partial fulfillment of requirements
for the degree of
Master of Arts
in
Psychology

Guelph, Ontario, Canada

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THE STABILITY AND PREDICTIVE CAPABILITY OF SCHEMAS IN THE CONTEXT OF ADOLESCENT MENTAL HEALTH AND WELL-BEING

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Negative schemas are principal vulnerability factors conferring risk for psychopathology, particularly depression. Few studies have examined how positive schemas may provide unique etiological and phenomenological information about an individuals’ emotional functioning and well-being. Given risk for depression intensifies across adolescence, examining the course of cognitive vulnerability to depression during this developmental period is also important. Using positive clinical psychology and cognitive-developmental frameworks, this thesis examined a) the prospective associations of positive and negative schemas in relation to youths’ emotional functioning and well-being and b) the stability of schema content over time. One hundred thirty-nine adolescent girls ($n = 64$), boys ($n = 71$), and unknown ($n = 4$) aged 8 to 13 ($M = 11.20$, $SD = 1.21$) completed measures of schema content, emotional functioning, depressive symptoms, happiness, and life satisfaction at Time 1 (Fall 2012) and Time 2 (Spring 2013). Negative and positive schemas exhibited stability over time. Positive schemas predicted additional variance in depression, above and beyond negative schemas. Positive schemas did not predict additional unique variance in happiness or life satisfaction. These findings have implications for the incorporation of positive schemas into cognitive models of youth depression and goals for prevention, intervention, and positive youth development.
Acknowledgements

I am grateful for the many individuals who have been instrumental to my success, understanding, and personal growth throughout my thesis journey. First, to my supervisor, Dr. Margaret Lumley: thank you for your unfailing support, guidance, expertise, and motivational “pep-talks” over the past two years. Your warmth and advice have been a source of constant comfort! I would also like to thank my committee member, Dr. Heidi Bailey, for providing me with opportunities to engage new ideas and examine alternative perspectives, as well as for her infectious energy and passion for research. Your shrewd insights into my methodological and statistical queries were always welcomed and appreciated. Thank you as well to Dr. Stephen Lewis for serving on my examination committee and for your thoughtful questions and feedback during my defense. Dr. Kaitlyn McLachlan, thank you for chairing my defense. Similarly, thank you Dr. Ian Newby-Clark for your advice around the statistical analyses involved in my thesis.

Additionally, I am thankful to the members and alumni of the Resilient Youth Research Group: Brae, Kristy, Jordan, Hayley, and Jessie. Thank you for sharing your time, resources, and thoughts on this thesis, as well as your general mentorship and guidance.

I could not have undertaken this endeavour without the love, support, and understanding of my family and friends. To my mother and sisters: your strength and resilience continually inspires me. Thank you for your unyielding love and refuge. And finally, to John: thank you for trading movie nights for literature reviews and long weekend getaways for thesis edits. Your love, calm, and ability to always ease my worries has helped to motivate me and gain perspective and meaning from this process.
# Table of Contents

Abstract ........................................................................................................................................... ii

Acknowledgements ........................................................................................................................ iii

Table of Contents ............................................................................................................................... iv

List of Tables .......................................................................................................................................... vii

List of Appendices ................................................................................................................................. viii

Introduction ............................................................................................................................................ 1

Evolving Models of Mental Health ....................................................................................................... 2

How Development Can Go Right ........................................................................................................ 3

Positive Youth Development .............................................................................................................. 4

Subjective Well-Being .......................................................................................................................... 5

Happiness ............................................................................................................................................. 6

Life Satisfaction .................................................................................................................................... 7

How Development Can Go Awry ......................................................................................................... 8

Depression and Emotional Difficulties Among Youth ........................................................................ 8

Cognitive Vulnerability to Depression ................................................................................................. 9

Schemas, Depressive Symptoms, and Subjective Well-Being During Adolescence .......................... 10

Negative Schemas and Depression .................................................................................................... 10

Unique Role of Positive Schemas in Depression .................................................................................. 11

How Schemas Contribute to Youths’ Well-Being ............................................................................... 13

The Stability of Schemas Throughout Adolescence ........................................................................... 13

The Current Study: Objectives and Hypotheses ................................................................................ 14

Method ................................................................................................................................................. 16
Participants .................................................................................................................. 16
Descriptive Measures .................................................................................................. 17
    Demographics .......................................................................................................... 17
Schema Measures ........................................................................................................ 17
    Negative Schemas .................................................................................................... 17
    Positive Schemas ..................................................................................................... 18
Measures of Youth Functioning .................................................................................. 19
    Children’s Depression Inventory ........................................................................... 19
    Strengths and Difficulties Questionnaire, Emotional Symptoms Subscale ........... 19
    Happiness .................................................................................................................. 20
    Life Satisfaction ....................................................................................................... 20
Procedure ...................................................................................................................... 21
Results .......................................................................................................................... 22
Preliminary Analyses ................................................................................................... 22
Schemas as Predictors of Youth Functioning .............................................................. 24
    Schemas and Poor Emotional Functioning ............................................................. 25
    Schemas and Youth-Reported Happiness ................................................................. 26
    Schemas and Youth-Reported Life Satisfaction ..................................................... 26
Stability of Youths’ Schemas ...................................................................................... 26
    Negative Schemas .................................................................................................... 27
    Positive Schemas ..................................................................................................... 27
Discussion .................................................................................................................... 28
    Schemas and Youths’ Emotional Functioning ....................................................... 29

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants</td>
<td>16</td>
</tr>
<tr>
<td>Descriptive Measures</td>
<td>17</td>
</tr>
<tr>
<td>Demographics</td>
<td>17</td>
</tr>
<tr>
<td>Schema Measures</td>
<td>17</td>
</tr>
<tr>
<td>Negative Schemas</td>
<td>17</td>
</tr>
<tr>
<td>Positive Schemas</td>
<td>18</td>
</tr>
<tr>
<td>Measures of Youth Functioning</td>
<td>19</td>
</tr>
<tr>
<td>Children’s Depression Inventory</td>
<td>19</td>
</tr>
<tr>
<td>Strengths and Difficulties Questionnaire, Emotional Symptoms Subscale</td>
<td>19</td>
</tr>
<tr>
<td>Happiness</td>
<td>20</td>
</tr>
<tr>
<td>Life Satisfaction</td>
<td>20</td>
</tr>
<tr>
<td>Procedure</td>
<td>21</td>
</tr>
<tr>
<td>Results</td>
<td>22</td>
</tr>
<tr>
<td>Preliminary Analyses</td>
<td>22</td>
</tr>
<tr>
<td>Schemas as Predictors of Youth Functioning</td>
<td>24</td>
</tr>
<tr>
<td>Schemas and Poor Emotional Functioning</td>
<td>25</td>
</tr>
<tr>
<td>Schemas and Youth-Reported Happiness</td>
<td>26</td>
</tr>
<tr>
<td>Schemas and Youth-Reported Life Satisfaction</td>
<td>26</td>
</tr>
<tr>
<td>Stability of Youths’ Schemas</td>
<td>26</td>
</tr>
<tr>
<td>Negative Schemas</td>
<td>27</td>
</tr>
<tr>
<td>Positive Schemas</td>
<td>27</td>
</tr>
<tr>
<td>Discussion</td>
<td>28</td>
</tr>
<tr>
<td>Schemas and Youths’ Emotional Functioning</td>
<td>29</td>
</tr>
</tbody>
</table>
List of Tables

Table 1: Descriptive statistics ........................................................................................................................................ 62
Table 2: Intercorrelations with 95% confidence intervals among study variables of interest ........................................................................................................................................ 63
Table 3: Summary of hierarchical regression analyses predicting depressive symptoms, happiness, and life satisfaction ........................................................................................................................................ 64
Table 4: Paired samples t-tests examining differences in negative and positive schemas over time ........................................................................................................................................ 65
List of Appendices

Appendix A: Adolescent Assent Form ........................................................................................................66
Appendix B: Parent/Guardian Consent Form ..................................................................................................68
Appendix C: Demographic Information Form ..............................................................................................71
Appendix D: Schema Questionnaire for Children .........................................................................................72
Appendix E: Positive Schema Questionnaire ..................................................................................................73
Appendix F: Children’s Depression Inventory .................................................................................................74
Appendix G: Strengths and Difficulties Questionnaire .................................................................................77
Appendix H: Subjective Happiness Scale ......................................................................................................78
Appendix I: Brief Multidimensional Students’ Life Satisfaction Scale .......................................................79
**Introduction**

Extant research on youth functioning has a tendency to examine development from a deficit-focused, one-dimensional perspective, placing emphasis on the importance of risk factors, deleterious sequelae, and poor outcomes for youth (Larson, 2000). Research examining protective factors, positive developmental cascades, and outcomes associated with flourishing and well-being for youth is equally warranted. A reorientation of research efforts that better articulate adaptive emotional functioning serves to simultaneously contribute to more holistic models of mental health and dispel the hegemonic assumption that mental health is simply the absence of psychopathology (Keyes, 2002, 2006, 2007).

Indeed, research to date suggests positive factors function not only as indicators of mental health, but may also safeguard against psychopathology and foment the development of adaptation and resiliency over time (e.g., broaden-and-build theory; Fredrickson, 2001). Furthermore, some researchers have found the absence of positive factors, as opposed to the presence of negative ones, more instrumental in identifying the risk for, maintenance of, and recovery from poor emotional functioning (e.g., Jaenicke et al., 1987; Keyfitz, Lumley, Hennig, & Dozois, 2013; McClain & Abramson, 1995). Despite such findings, a paucity of research has examined positive and negative variables simultaneously in the context of adolescent mental health challenges and prosperity. In the current project, the labels positive and negative are used to describe variables that are ostensibly considered positive (e.g., optimism) or negative (e.g., worthlessness) with the awareness that such characterizations are one construction and may oversimplify the manifestation of complex human beliefs and functioning (Pawelski, 2016).

A prime example of this asymmetrical literature is exemplified by the decades of research establishing negative cognitive schemas as principal vulnerability factors conferring risk for
psychopathology, particularly emotional difficulties and depression (Abela & Hankin, 2008). By comparison, only a handful of studies have examined how positive schemas – core beliefs about the self, such as “I believe in myself” – may provide unique etiological and phenomenological information about depressive symptoms and also well-being for youth (Friedmann, Lumley, & Lerman, 2016; Keyfitz et al., 2013; Tomlinson, Keyfitz, Rawana, & Lumley, 2016). Aligned with positive psychology (Seligman & Csikszentmihalyi, 2000), positive clinical psychology (Wood & Tarrier, 2010), and positive youth development (Larson, 2000, 2006) perspectives, the present study seeks to address this imbalanced zeitgeist by examining the respective roles of positive and negative schemas in uniquely contributing to aspects of adolescents’ emotional difficulties and well-being.

**Evolving Models of Mental Health**

Despite the word “development” connoting growth, improved competency, and increasing autonomy, researchers currently understand more about how development can go *awry* than how it can go *right* (Larson, 2000). The volume of research examining developmental psychopathology is starkly juxtaposed against the dearth of research examining factors that explain how youth overcome adversity and experience aspects of life that make it worth living (Seligman & Csikszentmihalyi, 2000). This deficiency has persisted despite several theoretical (Fredrickson, 2001; Wood & Tarrier, 2010) and empirical (Jaenicke et al., 1987; Keyfitz et al., 2013; Prieto, Cole, & Tageson, 1992) assertions that point to the merit of examining positive variables in the context of psychopathology as well as in their own right.

This stagnation may be attributable to the pervasive and specious assumption that mental health – and, by proxy, associated positive well-being variables – are merely the inverse of mental illness and associated psychopathological negative variables (Keyes, 2002, 2006, 2007).
From this perspective, decreases in youths’ psychological distress (e.g., a reduction of depressive symptoms) are deemed to simultaneously align with heightened well-being (e.g., increased happiness) and vice versa (Renshaw et al., 2014). As early as 1948, the World Health Organization recognized this flawed logic, writing that health and well-being is “a state of complete physical, mental, and social well-being and not merely the absence of disease” (p. 1, emphasis added). Despite this early recognition, researchers are only recently appreciating that mental health is more nuanced and not simply signaled via the absence of mental illness. For example, Keyes (2006) demonstrated how untenable this assumption is in a sample of youth aged 12 to 18. Nearly 40% of youth were considered mentally healthy, approximately half of what would be inferred if mental health were deduced from prevalence estimates of mental illness (Keyes, 2006, p. 400). Pawelski (2016) similarly demonstrates this logical fallacy in a series of allegories and thought experiments, concluding “…the positive is not the same thing as the absence of the negative; well-being is not the same as the absence of ill-being” (p. 361). Thus, a paradigm shift is currently underway, whereby one-dimensional deficit-based models of mental health are no longer deemed satisfactory. From this perspective, it is considered equally important to be cognizant of factors that help youth flourish as it is to examine those that prevent and reduce psychopathology. Dual-factor (also known as two-continua or multicomponent) models thereby propose that contributors to psychological distress and well-being are related-yet-distinct components of human functioning, and as such should be modeled by separate-yet-associated mental health continua (Renshaw et al., 2014).

How Development Can Go Right

Adolescence is considered to be a developmental period of transition between childhood and adulthood, beginning with puberty and ending once autonomy and independence from
caregivers is established. This period has historically been viewed as a time of “storm and stress” during which conflict with parents, mood disruptions, and risky behaviours increase significantly (Hollenstein & Lougheed, 2013). However, adolescence need not be viewed as so ubiquitously deterministic. Indeed, researchers are increasingly emphasizing ways in which development can go right and highlighting factors that align with positive outcomes for youth.

**Positive youth development.** A positive youth development (PYD) perspective considers the malleability of human growth and the potential for all youth to experience successful and healthy development (Larson, 2000, 2006; Lerner et al., 2005; Silbereisen & Lerner, 2007). PYD theory arose from developmental systems theorists with an interest in examining how plasticity is exhibited during development. This influence led PYD theorists to view adolescents not as “problems to be managed,” but as “resources to be developed” (Silbereisen & Lerner, 2007, p. 16). Equipped with this strengths-based vocabulary, PYD theory asserts that all youth possess strengths that can be capitalized upon to cultivate thriving and well-being. Thus, a PYD perspective delineates optimistic outcomes for youth, an approach mostly absent from deficit-based models of development.

It is important to develop an understanding of factors that might engage youth in the process of positive development. Adolescence is a particularly salient developmental period during which to observe these dynamics for several reasons. First, there are substantial increases in the onset and prevalence of mental health difficulties at this time, particularly in terms of significant increases in rates of clinical and subclinical depression (e.g., Hankin et al., 1998). Furthermore, even youth without a diagnosable psychopathology may display positive development deficits, including boredom, lack of initiative, and motivational deficiencies (Larson, 2000). An accumulation of knowledge regarding factors that promote positive
emotional development may aid in prevention efforts and yield an understanding of how to best utilize these elements to buffer against youths’ proximal and chronic stressful life events as well as experiences of ennui (Larson, 2000; Wood & Tarrier, 2010). As well, it is during adolescence that aspects of self-identity begin to coalesce and stabilize (Brinthaupt & Lipka, 2002; Swanson, Spencer, & Petersen, 1998), and stable maladaptive conceptualizations of self may serve as early vulnerability factors in the development of emotional difficulties (Young, 1990). By considering variables that contribute to positive development, gains can be made to benefit all youth, including those at risk for developing psychopathology and those who convey a general disengagement with life.

**Subjective well-being.** An increasingly common index of positive youth development is subjective well-being (SWB)

1. SWB is proposed to include both cognitive and affective evaluations of well-being such as: life satisfaction (a global judgement of one’s life and satisfaction in important domains); high levels of positive affect (i.e., experiencing positive emotions); and low levels of negative affect (i.e., experiencing few negative emotions; Diener, 2000, 2009; Park, 2004). While an individuals’ SWB may be determined to some degree by their objective life circumstances, SWB is largely determined by how individuals subjectively think and feel about their life conditions and is generally stable over time (Diener, 2009; Park, 2004). In line with evolving models of mental health, Diener (1984) posits a necessary component of SWB is the presence of positive characteristics, and not simply the absence of negative factors. The present study will consider two aspects of SWB: happiness and life satisfaction.

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1 SWB has been divided into two streams of research: one likening well-being with “feeling good” (also referred to as emotional well-being and aligning with a hedonic philosophical tradition) and one equating well-being as an indicator of human potential for growth and flourishing (also known as subjective psychological or social well-being and aligning with an eudemonic philosophical tradition; Keyes, 2009, p. 10). Some studies (e.g., López-Pérez, Sánchez, & Gummerum, 2016) have found variability in children and adolescents’ endorsements of these respective definitions.
**Happiness.** Although happiness has oft been used synonymously with SWB in the literature, happiness can also be examined in isolation as one of several latent factors that loads onto the overarching construct of SWB (Diener, 2006, 2009). Happiness has been defined and measured in several ways. For example, some researchers define happiness as the *presence* of positive affect and the *absence* of negative affect (Bradburn, 1969). In this way, happiness is measured by subtracting an individual’s rating of total negative affect from their rating of total positive affect (Kozma & Stones, 1980). Others argue that the *frequency*, rather than the *intensity*, of positive affect is the central indicator of happiness, and as such measure happiness via the *number* of positive affective experiences an individual has had (Diener, Colvin, Pavot, & Allman, 1991; Diener, Sandvik, & Pavot, 1991). By contrast, Lyubomirsky & Lepper (1999) posit that the best indicator of happiness is one’s own *subjective* rating of happiness, suggesting individuals have an intrinsic awareness of whether they are happy or not. In keeping with this, and given that some individuals view themselves as happy despite facing difficult life circumstances and varying frequencies of positive and negative affect, a subjective rating of happiness may best encapsulate this construct and is thus employed in the present study.

In their comprehensive review, Lyubomirsky, King, & Diener (2005) found cross-sectional and longitudinal support for the relation between self-reported happiness and culturally valued successful life outcomes, including: mental and physical health; ability to cope with distress; sociability and altruism; and creativity and original thinking. Importantly, it was found happiness *preceded* and *potentiated* positive outcomes, and was not merely the *product* of these outcomes. While the study of happiness among child and adolescent populations has increased in the last decade, the literature is largely deluged with adult findings. Despite this, similar results have been yielded in the limited number of studies examining happiness in adolescent samples.
For example, Stiglbauer, Gnambs, Gamsjäger, and Batnic (2013) found positive experiences at school predicted happiness, and happiness in turn potentiated future positive experiences at school. Higher levels of happiness among youth have also been shown to be associated with higher levels of self-esteem (Furnham & Cheng, 2000), self-efficacy (Caprara, Steca, Gerbino, Paciello, & Vecchi, 2006), and character strengths such as love, zest, hope, and gratitude (Park & Peterson, 2006). Quantitative and qualitative research has found youths’ social experiences relate to happiness, including interactions with friends and family and engaging in extracurricular activities (Chaplin, 2009; Holder & Coleman, 2009; Suldo, Frank, Chappel, Albers, & Bateman, 2014). Together, these studies showcase the value of a developmental approach for understanding happiness both as an indicator and a predictor of positive developmental outcomes for youth.

**Life Satisfaction.** Life satisfaction has been defined as an individuals’ subjective, cognitive evaluation of how satisfied they are with the quality of their life, both globally and in particular domains (Diener, 2000). Life satisfaction is distinct from happiness in that the former requires a cognitive appraisal of life, whereas the latter focuses on affective experiences (Lewinsohn, Redner, & Seeley, 1991; Lucas, Diener, & Suh, 1996). Extant research implies life satisfaction among adolescents is related to a host of desirable characteristics and outcomes (see Huebner et al., 2004 and Proctor, Linley, & Maltby, 2009 for reviews). Huebner and colleagues have linked several demographic, personality, cognitive, and behavioural factors in youth to both global and domain-specific aspects of life satisfaction (Huebner et al., 2004). For example, they have found support for the relation between life satisfaction and cognitive variables such as self-esteem and locus of control (Dew & Huebner, 1994). Life satisfaction is also positively related to aspects of physical health (Frisch, 2000; Piko & Keresztes, 2006) and valued characteristics
among youth such as: openness, conscientiousness and extraversion (Suldo, Minch, & Hearon, 2015); hope, mastery and optimism (Ben-Zur, 2003; Shogren, Lopez, Wehmeyer, Little, & Pressgrove, 2006); and prosocial behaviours (Gilman, 2001). Conversely, research has found life satisfaction is negatively related to: violence and aggression (Valois, Zullig, Huebner, & Drane, 2001); drug use (Zullig, Valois, Huebner, Oeltmann, & Drane, 2001); and depression and anxiety (McKnight, Huebner, & Suldo, 2002) among youth. Life satisfaction may also mitigate the diathesis-stress cascade between stressful experiences and internalizing and externalizing psychopathology (McKnight et al., 2002; Park, 2004). Thus, life satisfaction may not merely be an epiphenomenon, but may also be an impetus for youth to grow and prosper and engage in the process of positive development.

**How Development Can Go Awry**

A PYD approach states all youth have the potential to experience positive development and aspects of life that allow them to thrive. To this end, an equal understanding of factors that thwart and impede positive development is necessary to achieve a more inclusive understanding of adolescent mental health and well-being. As noted, a considerable body of research highlights a dramatic increase in the prevalence rates of mental health difficulties during the transition from childhood to adolescence (e.g., Hankin et al., 1998). Thus, the current study aims to simultaneously consider factors that promote or detract from adaptive emotional functioning. A consideration of the latter follows.

**Depression and emotional difficulties among youth.** Depression is undoubtedly one of the most commonly diagnosed mental illnesses among youth (Abela & Hankin, 2008). Several researchers have found the transition from childhood to adolescence a particularly critical zenith as prevalence rates of depression among youth increase six-fold between the ages of 10 and 14
Subsyndromal emotional difficulties and symptoms of depression are also remarkably high among adolescents, with prevalence rates of 20 to 50% (Kessler, Avenevoli, & Merikangas, 2001). Many of the outcomes and associated factors experienced by youth with diagnosable depression are also exhibited by youth with subthreshold emotional difficulties, including: heightened risk for future major depressive episodes; anxiety; poor psychosocial functioning; suicidal ideation; and suicide attempts (Fergusson, Horwood, Riddler, & Beautrais, 2005; Georgiades, Lewinsohn, Monroe, & Seeley, 2006; Gotlib, Lewinsohn, & Seeley, 1995). It is therefore essential to develop an understanding of vulnerability factors that put youth at risk for the development of emotional problems and depressive symptomatology or disorder.

Cognitive vulnerability to depression. Cognitive theories of vulnerability to depression have received innumerable theoretical (e.g., Ingram, 1984) and empirical (e.g., Dozois & Dobson, 2001b) attention. According to these theories, cognition – how one perceives, recognizes, judges, and navigates one’s environment – is thought to have causal implications in the onset, maintenance, and recovery from depression through a diathesis-stress mechanism. That is, cognitive vulnerability to depression is related to the experience of a negative, stressful, or traumatic event. This sensitization results in a synergistic reaction between cognitive vulnerability and stressful life events, and is theorized to foment the subsequent development of depressive symptomatology.

Beck’s (1967, 1987) influential cognitive theory of depression aligns with these central assumptions, relying on the concept of schemas to explain this cascade of events. Cognitive schemas refer to one’s core mental representation of self, are derived from previous experience, and can be either positive (e.g., “I believe in myself”) or negative (“I am worthless”) in content valence. While schemas have both contextual (i.e., positive vs. negative) and structural (i.e.,
tight-knit vs. loose-knit) features, the former are the focus of the present study. Theorized to develop early in childhood, primarily though not exclusively through attachment-based relationships (Young, Klosko & Weishaar, 2003), schemas are thought to be relatively enduring, influencing how an individual perceives, encodes, and retrieves information about his/her social environment. Individuals at risk for depressive symptomatology are characterized by a “depressotypic cognitive style” containing depressotypic schemas and a set of dysfunctional attitudes such as “I am a failure” or “no one loves or cares about me.” The interaction between these depressotypic schemas and stressful life events trigger a deleterious cascade of negative self-referent processing, culminating in a “negative cognitive triad”; that is, negative beliefs about the self, the world, and the future (Beck, 1967, 1987). According to Beck, the development of the negative cognitive triad is both necessary and sufficient to incite depressive symptoms. While the vast majority of studies examining cognitive theories have employed adult samples (see Dozois & Beck, 2008 for review), more recent support for Beck’s (1967, 1987) cognitive-diathesis stress theory of depression in adolescent samples is also evident (e.g., Abela & Hankin, 2008; Abela & Sullivan, 2003; Bruce et al., 2006; Lakdawalla, Hankin, & Mermelstein, 2007; Lewinsohn, Joiner, & Rohde, 2001).

Schemas, Depressive Symptoms, and Subjective Well-Being During Adolescence

Negative schemas and depression. Extant research regarding cognitive schema content and emotional dysfunction among youth has focused almost exclusively on the etiological and maintaining role of negative cognitive schemas (Abela & Sullivan, 2003; Calvete, Orue, & Hankin, 2015; Carter & Garber, 2011; Dozois & Beck, 2008; Garber, Weiss, & Shanley, 1993; Hammen & Zupan, 1984; Hankin, Abramson, Miller, & Haeffel, 2004; Kercher, Rapee, & Schniering, 2009; Lewinsohn et al., 2001; Lumley & Harkness, 2007; Timbremont & Braet,
2004). Such studies have yielded consistent cross-sectional (Garber et al., 1993; Hammen & Zupan, 1984; Lumley & Harkness, 2007) and longitudinal (Abela & Sullivan, 2003; Calvete et al., 2015; Carter & Garber, 2011; Hankin et al., 2004; Kercher et al., 2009; Lewinsohn et al., 2001) support for the potent presaging role of negative schema content for depression among adolescents. For example, Garber et al. (1993) found negative schema content was related to depressive symptoms in a sample of approximately 700 adolescents age 7 to 12; interestingly, the magnitude of this effect was generally greater than that evidenced in adult samples. Further, such vulnerability has been demonstrated in children as young as six (Goldstein, Hayden, & Klein, 2015). Taken together, this research highlights negative schemas as important constructs to consider in the context of adolescent depression.

**Unique role of positive schemas in depression.** Just as there is a dearth of research examining positive variables in general in the context of psychopathology, the potential unique contribution of positive schemas is disconcertingly absent from empirical and theoretical conceptualizations of youth depression. Positive schemas are defined as positive core beliefs about the self, such as “I believe in myself” and “I can trust others.” Given the strong theoretical support for Clark and Watson’s (1991) tripartite model – which states depression is characterized not only by the presence of negative affect but also the absence of positive affect – the lack of positive schema research is particularly problematic. The tripartite model considers experiences of both positive and negative affect as important contributors to long-term mental health and well-being as opposed to any one type of affect in isolation, and in particular specifies the absence of positive affect as a unique marker of depressive symptomatology. Similar theory and empirical work has been largely missing from consideration of positive and negative cognitive aspects of depression. Consistent with the extant research milieu, this gap may in part be
attributable to the misperception that positive cognition is merely the inverse of negative cognition, despite evidence that positive schemas exist on a continuum distinct from negative schemas (MacLeod & Moore, 2000). By recognizing positive schemas cannot be understood through knowledge of negative schemas, new research models that prioritize understanding positive schemas in childhood psychopathology – particularly depression – can emerge.

To date, a handful of studies have yielded evidence suggesting the utility of studying positive schemas in relation to depressive symptoms among children (Friedmann et al., 2016; Gencoz, Voelz, Gencoz, Petit, & Joiner, 2001; Goldstein et al., 2015; Hayden et al., 2013; Jaenicke et al., 1987; Keyfitz et al., 2013; Lumley, Dozois, Hennig, & Marsh, 2012; MacLeod & Salaminiou, 2001; Prieto et al., 1992; Shirk, Boergers, Eason, & Van Horn, 1998; Whitman & Leitenberg, 1990). Some studies suggest a lack of positive schemas may have more etiological importance in a diathesis-stress model of youth depression than the presence of negative schemas (e.g., Keyfitz et al., 2013; Goldstein et al., 2015; McClain & Abramson, 1995; Whitman & Leitenberg, 1990). For example, Keyfitz et al. (2013) examined the cross-sectional effectiveness of five positive schema themes (worthiness, optimism, self-efficacy, trust, and success) in predicting depressive symptomatology among a sample of 170 youth aged 9 to 14. Positive schemas were inversely related to youth depressive symptoms, and explained more variance in these symptoms than negative schema content (Keyfitz et al., 2013). However, a more recent longitudinal study failed to replicate these results, finding only negative schema content predicted depressive symptomatology (24% variance) at a trend level ($p = .07$) among youth at follow-up (Friedmann et al., 2016). Thus, a primary goal of the present study will be to reconcile these discrepant findings.
How schemas contribute to youths’ well-being. An understanding of youth well-being cannot be accomplished through inferences from the absence of ill-being. To date, the relative contributions of positive and negative schemas in understanding how youth experience positive development, particularly life satisfaction and happiness, has not been extensively examined. However, wider cognitive research suggests examining these relations may be useful. For example, Robinson and Kirkeby (2005) found individuals high in life satisfaction exhibit tightly connected positive semantic networks, and these networks were consequently more easily activated by positive emotions than individuals with more diffuse networks. Caprara et al. (2006) similarly found positive thinking (optimism, life satisfaction, and self-esteem) predicted happiness across time in a sample of over 600 adolescents. Most recently, Tomlinson et al. (2016) found cross-sectional evidence indicating positive schemas are uniquely associated with youths’ ratings of life satisfaction and happiness, above and beyond the predictive utility of negative schemas. Indeed, Renshaw et al. (2014, p. 15) suggest the positive psychology paradigm is fundamentally rooted in attempts to understand how positive self-schemas form, their importance in predicting youths’ ability to thrive, and investigations of how they may be fostered throughout development. In this way, a longitudinal attempt to replicate the aforementioned results is both conceptually and practically relevant, standing to contribute to conceptual models of positive youth development and intervention efforts, and thus forms the second goal of the current study.

The stability of schemas throughout adolescence. Beck (1967) suggests schemas are relatively enduring characteristics that exhibit stability over time. Indeed, evidence for the stability of depressotypic schemas among youth has accumulated (e.g., Abela & Hankin, 2008; Hankin, 2008), with research indicating such schemas become evident by early adolescence (Lumley et al., 2012). However, the broader question of whether positive and negative schema
content more generally exhibits stability among youth has been relatively understudied. This question bears importance given adolescents may be experimenting with identity formation and exploration throughout adolescence (Brinthaupt & Lipka, 2002; Swanson et al., 1998) and thus cognitive content and construction of their worldview may not yet be definitively established. Furthermore, identifying periods of time when negative schema content stabilizes and/or positive schema content destabilizes stands to contribute to more holistic models of adolescent psychopathology and mental health and inform more efficacious intervention and prevention endeavours. There are some exceptions to this understudied question. Specifically, Hayden and colleagues have found marginal evidence for the stability of positive and negative cognitive processing styles (as measured by the self-referent encoding task [SRET]) among children examined from ages six through nine (Goldstein et al., 2015; Hayden et al., 2013). More recently, Friedmann et al. (2016) examined the longitudinal stability of positive and negative schema content and organization in a sample of youth aged 9 to 14. While both negative and positive schema content and structure exhibited stability over time, only a quarter of participants ($n = 50$) were available for longitudinal follow-up, and the amount of time between initial and follow-up data collection was highly variable among participants (Friedmann et al., 2016). Given these methodological limitations, a replication attempt examining schema stability among youth was warranted.

The Current Study: Objectives and Hypotheses

The current study examined the longitudinal trajectory and unique predictive capability of positive and negative schema content in relation to adolescents’ emotional functioning, happiness and life satisfaction. More specifically, this study sought to understand whether positive schema content provides unique information about aspects of youths’ emotional
functioning *above and beyond* information afforded by negative schema content alone.

Information about youths’ emotional functioning, happiness, and life satisfaction collected at two time points six months apart provided the basis for this longitudinally designed study. Informed by extant literature, PYD (Larson, 2000, 2006), and positive clinical psychology (Wood & Tarrier, 2010) perspectives, the following objectives and hypotheses were put forth:

1. **Schemas as Prospective Predictors of Emotional Functioning.** The first objective of this study was to examine whether schema content at Time 1 prospectively predicted emotional functioning among youth at Time 2. It was hypothesized schema content at Time 1 would prospectively predict adolescent-reported depressive symptoms at Time 2. Specifically, it was predicted depressive symptoms at Time 2 would be predicted by low levels of positive schema content and high levels of negative schema content at Time 1. Furthermore, positive schemas were hypothesized to be uniquely associated with adolescent-rated depressive symptoms, contributing unique variance beyond the variance accounted for by negative schemas.

2. **Schemas as Prospective Predictors of Subjective Well-Being.** The second objective of this study was to prospectively examine whether schema content at Time 1 predicted youths’ happiness and life satisfaction at Time 2. It was hypothesized schema content at Time 1 would prospectively predict adolescent-reported happiness and life satisfaction at Time 2. More specifically, it was hypothesized life satisfaction and happiness at Time 2 would be characterized by weak negative and strong positive schema content at Time 1. As well, positive schemas were hypothesized to be uniquely associated with happiness and life satisfaction, contributing unique variance beyond the effect explained by negative schemas.
3. **Trajectory of Schemas among Youth.** The third objective of the present study was to better understand the trajectory of positive and negative schema content in adolescence. While one previous study has found support for the stability of positive and negative schemas in adolescents (Friedmann et al., 2016), methodological complications limit the validity of these findings. Attempting to replicate these results using a more robust methodology would lend validity to these findings. In light of Friedmann et al.’s (2016) results, it was hypothesized that both positive and negative schema content would exhibit stability over the course of this two time-point longitudinal study in the current sample of adolescents.

**Method**

**Participants**

Participants in this study were a community sample of 139 early adolescent girls \((n = 64)\), boys \((n = 71)\), and unknown \((n = 4)\) between the ages of 8 and 13 \((M = 11.20, SD = 1.21)\). Sixty-four percent of participants were Caucasian \((n = 85)\) and 36% \((n = 48)\) were from ethnically diverse backgrounds, including Asian \((n = 18)\), African American or Caribbean \((n = 4)\), Hispanic or Latino \((n = 5)\), First Nations/Inuit/Metis or Middle Eastern or South Asian \((n = 3)\), and “Other” \((n = 18)\). The study participants were recruited from four elementary schools in the Wellington Catholic District School Board (WCDSB) in Guelph, Ontario, and all participants were in grades 4 to 8. Recruitment and data collection for the first wave took place during the Fall semester of 2012. A total of 413 consent packages were sent home to parents/guardians via their children (see Appendix A), and 139 were returned providing parental consent for the study (34% response rate). Adolescent assent was also obtained from all participants (see Appendix B). The second wave of data collection took place approximately six months after the initial data collection in
the Spring semester of 2013 ($M = 185, R = 175-194$ days). A safeguard power analysis was also conducted to ensure that the sample size was adequately powered to detect a medium effect size based on previous research. Specifically, a confidence interval was constructed around effect sizes from previous research, and the lower limit of this interval was used in safeguard power calculations to account for sampling error and provide a conservative sample size estimate (Al-Aidroos et al., 2016; Perugini, Gallucci, & Costantini, 2014). The present sample size was determined to adequately power the necessary statistical analyses (e.g., correlations, hierarchical multiple regressions with multiple predictors) to detect a medium effect size (Cohen, 1992). Further, and in keeping with a meta-analytic mindset (Stanley & Spence, 2014), it is reasonable to conclude that future replications investigating these variables may do so with a sample size similar to that which is employed in the present study.

**Descriptive Measures**

**Demographics.** Information regarding participant age, gender, grade, ethnicity, current living situation, parental marital status, and parental occupation were collected through a demographic information form (see Appendix C).

**Schema Measures**

**Negative schemas.** The Schema Questionnaire for Children (SQC; Stallard & Rayner, 2005, see Appendix D) is a 15-item self-report measure of negative schema content in youth (e.g., “I am a failure”). Items are rated on a 6-point Likert scale ranging from 1 (*completely untrue of me*) to 6 (*describes me perfectly*), with higher scores indicating higher levels of negative schema content. The SQC was derived from Young’s (1990) adult schema theory, which proposes adult psychopathology arises in part from the development and maintenance of early maladaptive schemas (EMSs) shaped during childhood (e.g., unrelenting standards/hypercriticalness, social
isolation/alienation, mistrust/abuse; Stallard & Rayner, 2005, p. 219). While Young (1990) originally proposed 16 EMSs, 15 have subsequently been supported in a psychometric evaluation with a community sample (Schmidt, Joiner, Young, & Telch, 1995). The SQC possesses strong face validity and concurrent validity with the Young Schema Questionnaire (Stallard & Rayner, 2005). Reliability of the SQC is similarly well established (Rijkeboer & de Boo, 2010; Stallard, 2007; Stallard & Rayner, 2005). This measure has also been reliably used to identify negative schema content among adolescent and community samples (Friedmann et al., 2016; Keyfitz et al., 2013; Lumley et al., 2012; Stallard & Rayner, 2005; Stallard, 2007) thus justifying its use in the present study. The SQC showed adequate internal consistency in the current study (T1 $\alpha = .83$, T2 $\alpha = .73$).

**Positive schemas.** The Positive Schema Questionnaire (PSQ; Keyfitz et al., 2013, see Appendix E) measures adolescents’ positive schema content. The PSQ was developed as a positive schema complement to the SQC. This 20-item self-report measure assesses five positive schema themes, each containing four items. Items are rated using a 6-point Likert scale ranging from 1 (completely untrue of me) to 6 (describes my perfectly). Higher scores represent higher levels of positive schema content. The five positive schema themes include: Optimism (e.g., “I believe things will turn out well”), Trust (e.g., “I trust other people”), Self-Efficacy (e.g., “I can respond well to challenges”), Success (e.g., “If I try hard I can usually do well”), and Worthiness (e.g., “I believe in myself”). The PSQ has demonstrable face validity, adequate predictive and discriminant validity, and strong internal consistency reliability ($\alpha = 0.80$ to $0.90$; Keyfitz et al., 2013). Furthermore, the PSQ has been successfully used to measure positive schemas in adolescents aged 9 to 14 (Friedmann et al., 2016; Keyfitz et al., 2013) and 14 to 17 (Tomlinson
et al., 2016) and therefore is appropriate for use in the present sample of adolescents. In the current study, the PSQ showed good internal consistency ($T1 \alpha = .94$, $T2 \alpha = .95$).

**Measures of Youth Functioning**

**Children’s Depression Inventory** (CDI; Kovacs, 1981, see Appendix F). The CDI is a 27-item self-report questionnaire designed to assess behavioural, affective, and cognitive symptoms of depression among children. For each item, children were asked to choose one of three statements that best indicated how they felt. Each item is rated using a three-point scale: 0 (*no or low symptoms*), 1 (*mild symptoms*), and 2 (*severe symptoms*). The CDI has sufficient internal consistency ($\alpha = .80$ to .94) and test-retest reliability (Saylor, Finch, Spirito, & Bennett, 1984). In the current study, the CDI demonstrated excellent reliability ($T2 \alpha = .90$).

**Strengths and Difficulties Questionnaire, Emotional Symptoms Subscale** (SDQ; Goodman, 1997, see Appendix G). The SDQ provides a measure of prosocial behaviour and psychopathology for youth ages 3 to 16. The current study employed the self-report Emotional Symptoms subscale as a Time 1 measure of adolescents’ emotional functioning. The Emotional Symptoms subscale is comprised of 5 items, and each item is rated on a 3-point Likert scale, ranging from 0 (*Not True*) to 2 (*Certainly True*). Example items from this subscale include “I am often unhappy, depressed or tearful” and “I get a lot of headaches, stomach-aches or sickness.” The SDQ is a psychometrically sound measure with satisfactory internal consistency, test-retest reliability, and is consistent across informants (Goodman, 2001; Muris, Meesters, & van den Berg, 2003). The Emotional Symptoms subscale is highly correlated with youth-reported ($r = .74$) and parent-reported ($r = .70$) internalizing symptoms as measured by the Child Behaviour Checklist (CBCL), and depression scales such as the Children’s Depression Inventory (CDI, $r = .67$; Muris et al., 2003). Furthermore, individuals with SDQ scores at or above the 90th
percentile are significantly more likely to have a diagnosable health difficulty (Goodman, 2001). In the current study, the Emotional Symptoms subscale demonstrated acceptable internal consistency at Time 1 ($\alpha = .75$) and Time 2 ($\alpha = .70$) and concurrent validity with regard to T2 CDI scores ($r = .66$).

**Happiness.** The Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999, see Appendix H) is a brief, 4-item self-report measure of individuals’ global subjective happiness. Respondents are asked to indicate: their overall happiness; their happiness in relation to others; and happiness based on descriptions of happy and unhappy people. Items are rated on a 7-point Likert scale ranging from 1 (e.g., *not at all*) to 7 (e.g., *a great deal*). A higher mean score on the SHS is indicative of greater subjective happiness. Lyubomirsky & Lepper (1999)’s SHS has shown good to excellent internal consistency ($\alpha = 0.79$ to 0.94) and good test-retest reliability ($r = 0.55$ to 0.90). Convergent and discriminant validity have also been established (Lyubomirsky & Lepper, 1999). Finally, the SHS is a useful measure of subjective happiness in an adolescent sample (e.g., Tomlinson et al., 2016). The SHS demonstrated adequate internal consistency in the present study ($T1 \alpha = .69$, $T2 \alpha = .77$).²

**Life satisfaction.** The 6-item Brief Multidimensional Students’ Life Satisfaction Scale (BMSLSS; Seligson, Huebner, & Valois, 2003, see Appendix I) is a short self-report version of the Multidimensional Student’s Life Satisfaction Scale. Each item is rated on a 7-point Likert scale (1 = *Terrible*, 4 = *Mixed*, 7 = *Delighted*), with a higher overall score indicating greater levels of life satisfaction. The BMSLSS provides a measure of overall life satisfaction as well as satisfaction in various domains of life, including satisfaction with family, friends, school, self, [² Of note, the fourth item of the SHS (“Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?”) exhibited poor agreement with the total SHS score. Exploratory analyses revealed that dropping this fourth item (which is reverse coded) resulted in reliability coefficients of $\alpha = .85$ at Time 1 and Time 2. However, review of reliability studies with the SHS did not yield similar results, and thus all four items of this scale were used in the present analyses.]
and living circumstances (e.g., “I would describe my satisfaction with my friendships as…”).

Studies assessing the reliability of the BMSLSS have yielded consistent and acceptable results for internal consistency ($\alpha = 0.68$ to $0.75$; Funk, Huebner, & Valois, 2006; Huebner, Seligson, Valois, & Suldo, 2006; Seligson et al., 2003; Seligson, Huebner, & Valois, 2005). In the current sample, the BMSLSS demonstrated good internal consistency ($T1 \alpha = .89$, $T2 \alpha = .87$).

**Procedure**

Upon review and ethical clearance from the Research Ethics Board of the University of Guelph and the WCDSB, students from participating elementary schools were provided with information about the study and encouraged to deliver an information and consent package to their parent/guardian for permission to participate. Once parental consent was received, the first of a two-wave phase of data collection commenced in the Fall of 2012. The first and second waves of data collection were completed in a designated area at each of the four participating schools (e.g., library, technology room, gymnasium). These areas were arranged with twenty 10” Acer Aspire netbook computer stations. Each station was equipped with a netbook, mouse, chair, and privacy shield. Trained research assistants and graduate students ran the testing sessions, and a minimum of five were present at each collection to ensure participants had an opportunity to ask questions if needed. Adolescents were provided with verbal and written information about the study and provided the opportunity to consent to participate. Once these instructions were complete, participants completed the study measures in the following order at Time 1: demographic information form, PSQ, SQC, SDQ, BMSLSS, and SHS. At Time 2, participants completed the PSQ, SQC, CDI, BMSLSS, and SHS. The CDI was inadvertently omitted from Time 1 data collection, thus, the SDQ Emotional Symptoms subscale at Time 1 was employed as a proxy variable to control for depressive symptoms at Time 2. Research suggests the SDQ is a
strong and valid predictor of depressive symptoms (Goodman et al., 2000). Further, the present study and previous research indicates the SDQ Emotional Symptoms subscale is highly correlated with the CDI (Muris et al., 2003). Each testing session took approximately 45 minutes to 1 hour to complete. Participants were provided with a small token of thanks (e.g., toy, snack) at the end of the session. The second wave of data was collected in a similar fashion approximately six months later in the Spring of 2013. Additional incentives for participation included the chance to win movie gift certificates and a computerized tablet.

**Results**

**Preliminary Analyses**

All analyses were conducted in the statistical software program Statistical Package for the Social Sciences (SPSS). To adequately address the issue of missing data, mean estimates for each participant were calculated and inputted when 15 percent or less of their data were absent for a particular measure. Preliminary analyses included examining the data for evidence of normality by observing frequencies, the distributions of the variables of interest, skewness and kurtosis. Depressive symptoms (CDI), emotional symptoms (SDQ), and negative schemas (SQC) were positively skewed at their respective time points, such that the sample generally displayed moderate to low levels of emotional symptoms, depressive symptoms, and negative self-beliefs. Similarly, positive schemas (PSQ), life satisfaction (BMSLSS), and happiness (SHS) were negatively skewed at each time point, such that the sample displayed moderate to high levels of positive self-beliefs and subjective well-being. This pattern was expected given the nature of a non-clinical, community sample of youth.

Means and standard deviations for all study variables are presented in Table 1, and intercorrelations among variables of interest and their respective confidence intervals are
presented in Table 2. To account for the influence of confounding variables, age and gender were examined to evaluate their relations with the variables of interest. Univariate correlations were conducted to determine whether age was a necessary covariate, and no statistically significant relations emerged (i.e., all \( p \)'s > .05), although the correlation between age and negative schemas at Time 2 approached statistical significance (\( r = -.17, p = .07 \)).

Independent groups t-tests were conducted to determine the influence of gender on the central study variables (PSQ, SQC, SDQ, CDI, BMSLSS, SHS). Gender had a statistically significant effect on emotional symptoms at Time 1, \( t(119) = -2.15, p < .05 \), Cohen’s \( d = .37 \), such that girls (\( M = 3.73, SD = 2.50 \)) displayed significantly higher levels of emotional symptoms compared to boys (\( M = 2.76, SD = 2.41 \)). As such, models including Time 1 emotional symptoms included gender as a covariate. A statistically significant gender difference was also observed for the positive schema theme success at Time 1, \( t(119) = 2.34, p < .05 \), Cohen’s \( d = .43 \), such that males (\( M = 21.34, SD = 3.45 \)) reported significantly higher levels of success compared to females (\( M = 19.42, SD = 5.32 \)).

Although not conforming to typical conventions for statistical significance (\( p < .05 \)), several comparisons between gender and the study variables of interest approached statistical significance. Specifically, males displayed higher ratings of positive schemas at Time 1 (\( M = 92.34, SD = 17.55 \)) compared to females (\( M = 86.15, SD = 20.29 \)) at a trend level, \( t(119) = 1.79, p = .08 \), Cohen’s \( d = .33 \). Exploratory analyses including gender as a covariate in models with total positive schemas at Time 1 as a predictor did not yield substantial changes in the model statistics. Similarly, males displayed higher levels of life satisfaction at Time 1 (\( M = 35.66, SD = 4.70 \)) compared to females (\( M = 33.45, SD = 8.47 \)) at a trend level, \( t(96.21) = 1.79, p = .08 \), Cohen’s \( d = .32 \). Again, exploratory analyses including gender as a covariate in models of life satisfaction at Time 1 did not produce notable changes in model statistics. Gender also had an
effect approaching statistical significance for the schema themes of self-efficacy ($t(119) = 1.95, p = .054$, Cohen’s $d = .35$) and optimism at Time 1 ($t(119) = 1.91, p = .06$, Cohen’s $d = .35$), such that males exhibited higher levels of these positive schema themes ($M = 18.31, SD = 4.50$ and $M = 17.64, SD = 4.58$, respectively) compared to females ($M = 16.65, SD = 4.87$ and $M = 16.15, SD = 4.04$, respectively). Given these associations only approached a trend level, all with small effect sizes according to Cohen’s (1988) standards, and that model statistics were not noticeably impacted, gender was not controlled for in analyses including these variables.

Finally, given that the majority of the sample reported a Caucasian background, there was not enough variability to evaluate the influence of ethnicity on the study variables of interest.

**Schemas as Predictors of Youth Functioning**

An overarching objective of this study was to determine whether schema content at Time 1 was a significant predictor of youth functioning among adolescents at Time 2. To this end, an initial review of correlations between the study variables of interest revealed that schemas were significantly related to emotional functioning for youth across both time points, generally with medium to large effect sizes (see Table 2; Cohen, 1988). As well, the pattern of correlations was in line with hypotheses such that higher levels of negative schemas and lower levels of positive schemas were related to poorer emotional functioning, and lower levels of negative schemas and higher levels of positive schemas were associated with indices of youths’ subjective well-being. Of note, when comparing the magnitude of the correlations, negative schemas at Time 1 were more strongly related to poor emotional functioning at Time 1 ($r = .62$) compared to positive schemas at Time 1 ($r = -.26$). The inverse pattern was observed for indices of subjective well-being, such that positive schemas at Time 1 were more strongly associated with happiness ($r = .66$) and life satisfaction ($r = .73$) at Time 1 compared to negative schemas at Time 1 ($r = -.30$).
and $r = -.31$, respectively). By contrast, correlations between positive and negative schemas at Time 1 and predictors of youth functioning at Time 2 were more similar in magnitude. The potential implications of this pattern of results is more fully explored in the Discussion.

To further understand schemas as prospective predictors of youth functioning and to determine whether positive schemas at Time 1 provide unique incremental information about youth functioning at Time 2, a series of hierarchical multiple regression models (using guidelines outlined by Field, 2013 and Keith, 2006) were conducted. A review of the statistical assumptions for hierarchical multiple regressions was conducted to ensure no serious statistical violations were present (see Field, 2013, p. 1310-1340). Data for all models adhered to these assumptions (e.g., no evidence of multicollinearity, evidence for additivity, acceptable Cook’s distance, VIF and Tolerance values) with the exception of some evidence for heteroscedasticity. Highly influential cases were examined by reviewing outliers on stem and leaf plots of standardized DFBeta, and the statistical models were conducted systematically without such cases (and their various combined iterations) to determine their influence on the model parameters. It was determined that the exclusion of these influential cases did not result in substantial changes to the parameters of interest in these models (i.e., no substantial changes to conventions of statistical significance, $\Delta R^2$, $\beta$, $r$) and therefore analyses proceeded with the inclusion of such cases.

**Schemas and poor emotional functioning.** The first hierarchical model examined the role of schemas in predicting poor emotional functioning among youth. Regression statistics for the model are presented in Table 3. Gender and emotional symptoms at Time 1 explained 29% of the variance in Time 2 depressive symptoms. Negative schemas at Time 1 explained an additional 3% of the variation in Time 2 depressive symptoms. Consistent with hypotheses, positive schemas contributed an additional 9% of variance in depressive symptoms, above and
beyond negative schemas, emotional symptoms, and gender. Within this multivariate model, the best predictors of depressive symptoms were positive schemas and emotional symptoms at Time 1, followed by negative schemas at Time 1.

**Schemas and youth-reported happiness.** A second hierarchical multiple regression was conducted to understand the role of schemas in predicting youth-reported ratings of happiness at Time 2 (see Table 3). Youth-reported happiness at Time 1 accounted for 19% of the variance in Time 2 youth-reported happiness. Negative schemas at Time 1 did not contribute any additional unique variance in the prediction of youth happiness at Time 2. In contrast to hypotheses, positive schemas at Time 1 also did not contribute any additional unique variance in the prediction of youth-reported happiness at Time 2.

**Schemas and youth-reported life satisfaction.** A third hierarchical multiple regression was conducted to understand the prediction of schemas for youth-reported ratings of life satisfaction at Time 2 (see Table 3). Time 1 life satisfaction ratings explained 26% of the variance in Time 2 ratings of life satisfaction among youth. Negative schemas at Time 1 contributed an additional 9% variance in Time 2 ratings of life satisfaction. Contrary to hypotheses, positive schemas at Time 1 did not contribute any additional unique variance in the prediction of youth-reported life satisfaction at Time 2.

**Stability of Youths’ Schemas**

To examine the stability of positive and negative schemas in adolescents, Pearson ($r$) correlations were calculated to evaluate whether schemas at Time 1 were related to schemas at Time 2 and if so to consider the magnitude of such relations. All correlations are presented in Table 2.
Negative schemas. Negative schemas at Time 1 were significantly and positively correlated with negative schemas at Time 2, $r = .51, p < .001$. The magnitude of this correlation is considered large according to Cohen’s (1988) standards. A paired samples $t$-test was also conducted to examine mean differences between total negative schemas at Time 1 and Time 2. This analysis was not statistically significant, $t(106) = 1.20, ns$, Cohen’s $d = .12$, indicating total mean levels of negative schemas at Time 1 ($M = 34.71, SD = 11.40$) were not significantly different from total mean levels of negative schemas at Time 2 ($M = 33.51, SD = 8.86$).

Positive schemas. Overall, positive schemas at Time 1 were significantly and positively correlated with positive schemas at Time 2, $r = .44, p < .001$, which is considered to be a large effect size (Cohen, 1988). In light of the comparatively sparse literature on positive schemas generally, a more detailed examination of the stability of specific positive schema themes was also conducted. In this way, there were significant and positive correlations between each of the five positive schema subscales at Time 1 and their associated subscales at Time 2 with large effect sizes. The nature of these correlations was as follows: worthiness ($r = .52, p < .001$); trust ($r = .50, p < .001$); success ($r = .42, p < .001$); self-efficacy ($r = .41, p < .001$); and optimism ($r = .39, p < .001$). This pattern of correlations suggests higher reports of overall positive schemas and specific positive schema themes at Time 1 relate to higher respective scores at Time 2.

In addition, paired samples $t$-tests were conducted to examine mean differences between total positive schemas and specific positive schema themes of worthiness, trust, success, self-efficacy, and optimism (see Table 4). No statistically significant differences emerged with the exception of the positive schema theme of optimism, such that youth reported higher levels of optimism at Time 2, albeit with a small effect size (Cohen’s $d = .24$, see Table 4). However, some mean differences approached statistical significance. Specifically, total positive schemas
and ratings of the positive schema theme of self-efficacy were lower at Time 1 in comparison to their Time 2 counterparts at a trend level ($p = .053$, Cohen’s $d = .19$ and $p = .052$, Cohen’s $d = .19$, respectively), although these are considered to be small effect sizes.

**Discussion**

The present study is the first to evaluate the longitudinal relations of both positive and negative schemas to symptoms of psychopathology and ratings of happiness and life satisfaction in an adolescent sample. The overarching goal of this study was to ascertain the respective roles of positive and negative schemas in predicting both ostensibly positive (i.e., subjective well-being) and ostensibly negative (i.e., depressive symptoms) aspects of youths’ functioning. In this way, the present study aligns with the theoretical frameworks of positive youth development (Larson 2000, 2006) and positive clinical psychology (Wood & Tarrier, 2010) by considering positive and negative variables in concert so as to provide a more holistic, parsimonious understanding of how youth may languish or flourish (Keyes, 2002, 2006, 2007).

Findings from this study illuminate how adolescents’ core self-beliefs may provide fundamental information about their overall well-being during this critical developmental transition. Specifically, the present study is commensurate with previous research findings among youth demonstrating an inverse relation between positive schemas and symptoms of psychopathology (e.g., Keyfitz et al., 2013; MacLeod & Moore, 2000; McClain & Abramson, 1995; Prieto et al., 1992; Whitman & Leitenberg, 1990). Further, and in line with hypotheses, positive schemas were found to provide unique prospective information about youths’ depressive symptomatology, contributing variance above and beyond that afforded by negative cognitive schemas alone. Interestingly, the relative importance of positive and negative schemas differentially contributed to youths’ ratings of subjective well-being, such that neither positive
nor negative schemas uniquely contributed to youth ratings of happiness at Time 2 beyond Time 1 happiness, while negative schemas emerged as the only unique predictor of youths’ ratings of life satisfaction at Time 2 after controlling for Time 1 life satisfaction ratings. Finally, the examination of schema stability was congruent with hypotheses and extant research (e.g., Friedmann et al., 2016; Hankin, 2008; Hayden et al., 2013), such that both negative schemas, positive schemas, and specific positive schema themes exhibited stability over a six-month period in this sample of youth. Together, these findings confer a more refined perspective on the presaging role of youths’ positive and negative core self-beliefs, providing a more integrative account of youths’ well-being than afforded by previous investigation. With replication, and extensions to broader more diverse samples including clinical samples, this profile of results stands to provide relevant, balanced information about the assessment of youths’ areas of vulnerability and strength, and may provide a more nuanced repertoire for cognitive behaviour therapy and intervention agendas.

**Schemas and Youths’ Emotional Functioning**

A central goal of the present study was to add to existing knowledge on schemas in the context of adolescent-reported poor emotional functioning, specifically by considering the respective roles of both positive and negative cognitive schemas over time. Consistent with hypotheses as well as with previous research (e.g., Friedmann et al., 2016; Jaenicke et al., 1987; Keyfitz et al., 2013; Prieto et al., 1992; Shirk et al., 1998; Whitman & Leitenberg, 1990), positive schemas were inversely related to youth-reported emotional and depressive symptoms at both time points, such that low levels of positive schemas were associated with higher levels of these symptoms. Relatedly, higher levels of self-reported negative schemas were found to associate with higher levels of emotional and depressive symptoms, a finding commensurate
with a large body of literature supporting this association in children and adolescents (e.g., Abela & Sullivan, 2003; Carter & Garber, 2011; Hankin et al., 2004; Lumley & Harkness, 2007). Of particular interest was exploring the relative importance of schema content in the prediction of poor emotional functioning in youth. In this multivariate context, positive schemas explained an additional 9% unique variance in a longitudinal model of youth-reported depressive symptoms, even after controlling for the effects of Time 1 emotional symptoms, gender, and negative schemas. These findings are in accordance with previous research highlighting the utility of positive cognitive constructs in predicting poor emotional functioning in adolescents (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999; Keyfitz et al., 2013; Muris, 2002; Whitman & Leitenberg, 1990). Furthermore, these results help to extend and clarify the discrepant findings of Keyfitz et al. (2013) and Friedmann et al. (2016). Specifically, these findings align with that of Keyfitz et al. (2013) in concluding that – at this stage of development – low levels of positive schemas may also serve as a strong predictor of vulnerability to depression in addition to high levels of negative schemas.

While models of cognitive vulnerability to depression have focused almost exclusively on negative cognitive schemas, the results of the present study suggest the importance of integrating positive schemas into developmental models of depressive psychopathology. In particular, these cognitive findings align with Clark and Watson’s (1991) tripartite model of affect, whereby depression is defined primarily by low positive affect (or anhedonia), while emotional disorders generally – namely depression and anxiety – share the presence of high negative affectivity. In this way, the absence of positive affect is viewed as a specific marker of depressive symptomatology, and such a model has been supported in child and adolescent samples (e.g., Gencoz et al., 2001). Further support for this model was demonstrated in a recent
study examining the trajectory of negative affect and anhedonia in a five-wave longitudinal study with adolescents (Conway, Zinbarg, Mineka, & Craske, 2017). Symptoms of low positive affect were found to progress independently of negative affect, lending credibility to utility of distinguishing between markers with positive and negative valence in the context of psychopathology. The fact that low levels of positive schemas were instrumental in the prediction of depressive symptomology suggest that cognitive variables may have a dissociable and predictive function similar to that of affect, and thus helps to broaden tripartite models by considering cognitive and affective qualities. This study thus dovetails well with a tripartite encapsulation of poor emotional functioning in youth and also helps to extend this perspective to include relevant self-beliefs.

These findings support conceptualizing positive and negative schemas as existing on related yet separate continua given that the pattern of results for negative and positive schemas were distinct (e.g., MacLeod and Moore, 2000). Future research should consider whether and how positive and negative schemas share similar mechanisms in conferring risk and vulnerability for depression. For example, Keyfitz (2017) considered how youths’ positive schemas impact their interpretation of daily life events to subsequently influence their views of the self, the world, and outlook on the future, in line with diathesis-stress models of negative schemas interacting with stressful life events to predict depressive outcomes (i.e., the negative cognitive triad). Findings from this study suggest that youth with low levels of positive schemas may tune into negative aspects of positive daily life events, culminating in decreased positive processing of life experiences and subsequent vulnerability to emotional difficulties. In this way, low levels of positive schemas may signal vulnerability to depression in their own right, and may also foment vulnerability through their synergistic reaction with youths’ daily life events. Thus, further
consideration of the underlying mechanisms of risk through which positive and negative schemas operate is warranted, and may enrich theoretical understandings of cognitive vulnerability to depression, having implications for more efficacious prevention and intervention efforts.

**Schemas and Youths’ Subjective Well-Being**

While relatively sparse by comparison to literature on schemas in the context of poor emotional functioning in youth, extant research has signaled how schemas may also provide fundamental information about aspects of mental health and well-being (e.g., Caprara et al., 2006; Mak, Ng, & Wong, 2011; Robinson & Kirkeby, 2005; Tomlinson et al., 2016). In keeping with the study hypotheses, positive schema content was significantly and positively related to both life satisfaction and happiness at both time points, while negative schema content was significantly and negatively related to these outcomes at Time 1 and Time 2. However, in a multivariate context, neither positive nor negative schemas were found to prospectively predict youths’ ratings of happiness, while negative schemas emerged as the only unique predictor of youths’ ratings of life satisfaction, contributing an additional 9% of unique variance after controlling for Time 1 life satisfaction. This finding is particularly surprising given that broadly, positive variables tend to predict positive outcomes (e.g., Fredrickson, 2001) and in light of Tomlinson et al.’s (2016) cross-sectional finding that positive schemas contributed an additional 38% and 37% variance to the prediction of life satisfaction and happiness, respectively, above and beyond negative schemas, age, and gender. However, there are several potential explanations for these aberrant findings in the present study.

First, the intercorrelations among these study variables indicate that positive schemas at Time 1 were more strongly correlated with life satisfaction and happiness at Time 1 (r = .73 and r = .66, respectively) relative to Time 1 negative schemas (r = -.31 and r = -.30, respectively). By
comparison, the magnitude of the correlations between Time 1 positive schemas and Time 2 life satisfaction and happiness ($r = .36$, $r = .35$, respectively) and Time 1 negative schemas and Time 2 life satisfaction and happiness ($r = -.43$ and $r = -.24$) were more comparable in magnitude. Further, the strength of correlations between Time 1 positive schemas and positive outcomes at Time 2 were substantially reduced in comparison to the relation between Time 1 positive schemas and the corresponding Time 1 outcomes. Thus, positive schemas may provide more predictive power in determining positive outcomes in contemporaneous cross-sectional models (e.g., Tomlinson et al., 2016) while the utility of positive schemas in predicting positive outcomes (namely, life satisfaction) over time may be reduced or tempered relative to negative schemas. In line with this logic, Friedmann et al. (2016) found negative cognitive schemas to be a more potent predictor of youth-reported resilience across time compared to positive schemas, and thus the possibility that negative cognitive schemas may be more salient in predicting positive outcomes in youth is a possibility worth exploring. Similarly, in an adult sample, Wong (2010) found negative cognitions outperformed positive cognitions in the prediction of life satisfaction in a multiple regression model. As well, some researchers have proposed that negative thoughts and cognitions may also serve as robust determinants of aspects of well-being, allowing individuals to maintain a level of pragmatism about life expectations (e.g., Carroll, Sweeny, & Shepperd, 2006; Peterson, 2000). These findings underscore the complex longitudinal relations among positive and negative cognitive and affective variables and support broad inclusion of ostensibly positive and negative variables within the same models to best understand well-being (Gruman, Lumley, & Gonzales-Morales, in press). Given that this is the first longitudinal study examining the respective relations between positive and negative schemas in the context of happiness and life satisfaction outcomes in youth, further research is
needed to clarify the respective roles of positive and negative schemas in the context of
happiness and life satisfaction before definitive conclusions can be drawn.

Second, the differential pattern of these results may be attributable to a notable distinction
between how life satisfaction and happiness are conceptualized and evaluated. Researchers have
proposed that life satisfaction is a cognitive component of subjective well-being, requiring an
individual’s conscious evaluation of their satisfaction in specific domains of life as well as life as
a whole according to subjectively determined and valued standards (Caprara & Steca, 2005;
Diener, 2000; Lewinsohn et al., 1991). In contrast, happiness is seen to correspond to an affective
component of subjective well-being, a state characterized by predominantly positive affective
experiences or negative affective experiences (Lewinsohn et al., 1991). Thus, although happiness
and life satisfaction are related in the present study, they are generally viewed to be distinct
constructs (Lucas et al., 1996). The pattern of results in this study and other studies (e.g.,
Tomlinson et al., 2016) lend support to the distinction between these constructs of subjective
well-being, and thus provide meaningful support for their discriminant validity. Further, this
cognitive/affective distinction may help to explain why negative schemas emerged as a unique
predictor of life satisfaction, while neither positive nor negative schemas predicted happiness
among youth in the present sample, in that the former aligns better with a cognitive form of
evaluation and reflection. Future research should attempt to examine these nuances by examining
both schemas and measures of daily affect when exploring predictors of life satisfaction and
happiness in adolescents.

There may also be additional variables unexplored in the current study that help to
account for the present findings between schemas, life satisfaction, and happiness. In particular,
cognitive theories generally employ diathesis-stress frameworks, whereby schemas are seen to
interact with environmental events, and such interactions propagate particular behavioural outcomes (e.g., negative schemas interacting with negative life events to predict depression in youth; Ingram, Miranda, & Segal, 1998). A conceptually similar model has been proposed to understand relations between positive schemas, positive life events, and positive outcomes associated with well-being for youth (Keyfitz, 2017). Indeed, Keyfitz (2017) found that positive schemas interact with subjective ratings of positive life events to predict long-term subjective well-being among adolescents. Specifically, high levels of positive schemas were associated with higher levels of both life satisfaction and happiness and were not impacted by positive life events; however, for youth with low levels of positive schemas, their evaluations of happiness and life satisfaction were dependent upon experiences of positive life events. Thus, future research investigating life satisfaction and happiness stand to benefit from examining such interactive models which include measuring youths’ experiences of daily life events. Such inclusion may lend itself to a better understanding of how cognition relates to daily events and long-term well-being in adolescence.

Finally, happiness can be viewed as both a trait that is relatively consistent, irrespective of life circumstances, or a state that changes in response to environmental fluctuations (Csikszentmihalyi & Wong, 1991; Diener, 2009; Stones, Hadjistavropoulos, Yuuko, & Kozma, 1995, Veenhoven, 1994). However, there are debates among researchers regarding the extent to which happiness should be conceptualized using state or trait dimensions (e.g., Veenhoven, 1998; Stones et al., 1995; see Diener, 2009, p. 83, for review). Lyubomirsky and Lepper’s (1999) Subjective Happiness Scale (SHS) conceptualizes happiness in a trait-like manner, and it is possible alternative results may have been obtained with different measures of happiness, for example a ratio of positive to negative affective experiences or state conceptualizations of
happiness. Further, some researchers have found that self-reports of subjective well-being and happiness are conflated by self-enhancement biases (Wojcik & Ditto, 2014), and in this way high ratings of trait-like happiness may reflect an individuals’ adherence to self-preservation as opposed to an accurate reflection of happiness with environmental conditions. Thus, future research should explore the relations between cognition and varying measures of state and trait happiness, as well as the extent to which self-enhancement biases impact such ratings among adolescents.

**Stability of Youths’ Schemas**

The final goal of this study was to shed light on a matter of theoretical and practical import: the general stability of negative and positive schema content in youth. Support was found for the stability of negative schema content, as well as overall positive schema content and specific positive schema themes across time. These results replicate evidence of the stability of negative schema content in adults (e.g., Dozois & Dobson, 2001a), adolescents (Hankin, 2008) and children (Goldstein et al., 2015; Hayden et al., 2013). As well, these findings lend validity to Friedmann et al.’s (2016) results demonstrating the longitudinal stability of positive schema content, strengthening these findings through replication in a larger sample of youth examined over a shorter and consistent time period. Similar to Friedmann et al. (2016), evidence was also found for the stability of the five positive schema subscales, which correlated with their respective subscale at both time points. Total levels of positive schemas and specific positive schema themes, with the exception of optimism, did not show significant differences over time, providing further evidence that positive schema content has coalesced by early adolescence. Although the present study examined stability in a range of adolescents (aged 8 to 13), there were no age-related differences in schema stability in the present sample. A beneficial avenue for
future research could involve replication of these findings such that a growth curve of schema stability could be approximated across development. These endeavours may benefit from the methodological approach employed by Hayden and colleagues (2013, 2015) who have studied a specific age group of youth over a longer period of time as opposed to a wider age range of youth over a shorter duration.

As mentioned, in the current study optimism at Time 1 was significantly different from optimism at Time 2, such that higher levels of optimism were evident at the latter time point among youth. Total positive schemas and self-efficacy also followed this pattern, although these differences were not statistically significant. Friedmann et al. (2016) also obtained similar results for self-efficacy. Optimism is defined as one’s belief that life outcomes will be favourable, or the ability to identify positive aspects of potentially difficult or unfavourable situations (Keyfitz et al., 2013; Scheier & Carver, 1985). Self-efficacy is considered to be “beliefs in one’s capabilities to mobilize the motivation, cognitive resources and courses of action needed to meet given situational demands” (Wood & Bandura, 1989, p. 408). The timing of data collection in the current study (fall and spring, respectively) may help to explain these findings. The beginning of a school year may be a time of transition when youth encounter novel or difficult situations, and their outlook on responding appropriately to these challenges may be more diminished. However, as the school year progresses, youth may have experienced successes in dealing with such challenges, leading to an increased sense of competency and mastery when needing to respond to such situations. However, these results should be interpreted with caution given their relatively small effect sizes and measurement at only two time points; replication is warranted before additional conclusions can be drawn.
An alternative interpretation of the present findings may be that the lack of change in schema content is a result of youth being exposed to fairly stable life experiences that exert a consistent influence on their cognitive content. Such interpretations further point to the utility of integrating life experiences into models examining schemas and outcomes of emotional functioning and well-being in youth. However, the present study employed a similar methodological approach to previous studies examining the trajectory of schemas in youth, and is also consistent with the psychometric literature more broadly looking at variable stability, and thus it is believed to be an accurate representation schema continuity. Further, as noted by Keyfitz et al. (2017), “typical” schema content (i.e., moderate to high levels of positive schemas) tend to operate relatively independent of life experiences. Given the community sample and review of variable skewness mentioned previously, this pattern of schema content is characteristic of this participant group. The cognitive literature more broadly suggests that it is schemas which determine our interpretation of life experiences, rather than everyday experiences fueling our self-conceptualizations. Future research should aim to examine this directional obscurity when examining schema stability in youth.

Together, these results provide novel information about schema trajectory during a sensitive period of transition in early adolescence, and may help to inform appropriate timing of cognitive interventions aimed at targeting restructuring of cognitive schemas. While adolescence has often been typified as a time of “storm and stress,” during which adolescents are actively constructing their world view and experimenting with identity formation (Brinthaupt & Lipka, 2002; Swanson et al., 1998), the present study imbues a perspective of steady, consistent views of the self among youth, both positive and negative in valence. In this vein, the present study suggests efforts aimed to prevent depression and bolster well-being may be most effective if
implemented prior to this stage in development, when schemas appear to have already become solidified. While schemas have been theorized to be relatively malleable and amenable to modification, remediation prior to this continuity is likely to be most efficacious. As well, given the paucity of research on positive schemas generally, it is unclear whether low levels of positive schemas are as amenable to modification as high levels of negative schemas. Alternatively, the fact that none of these variables exhibited perfect correlations between Time 1 and Time 2 can also be interpreted as an opportunity to engage youth in the process of positive development, particularly in circumstances when youth may display objectively low levels of positive schema content.

Limitations

Despite several strengths of the current study, there are notable limitations which may have influenced the direction and nature of these findings, and as a matter of course should be reviewed to better inform future research endeavours. First, the sample size was not sufficiently powered to adequately explore the effects of gender, ethnicity, and age. Given that gender was significantly associated with emotional symptoms and the positive schema theme of success at Time 1, as well as life satisfaction, total positive schemas, and the positive schema themes of self-efficacy and optimism at Time 1 at a trend level, additional analyses exploring the interaction between gender and these variables would have been advantageous. Indeed, a significant body of literature points to this period of developmental transition as a critical phase during which rates of emotional and depressive symptoms rise and sex differences begin to emerge (Hankin et al., 1998). As well, there may be notable gender differences in terms of youths’ subjective well-being, as evidenced by Tomlinson et al. ’s (2016) finding that the relation between positive schemas, life satisfaction, and happiness was stronger for adolescent females in
comparison to males. While there were no statistically significant relations between age and the study variables of interest (although the relation between age and Time 2 negative schemas approached significance at a trend level), previous research has found that age may also an important factor to consider when elucidating relations between schemas, depressive symptoms, and subjective well-being. For example, Friedmann et al. (2016) found that age was significantly and negatively correlated with positive schema content, and Tomlinson et al. (2016) found positive schemas were more strongly associated with happiness for older versus younger adolescents.

As well, the present study could have benefitted from providing more nuanced information about the unique predictive power of specific positive schema themes if a larger sample size were available. Previous research by Keyfitz et al. (2013), Friedmann et al. (2016) and Tomlinson et al. (2016) have identified that particular positive schema themes may differentially provide useful information in the prediction of depressive symptoms, life satisfaction, and happiness, and exploring such associations could add to theoretical models such as content specificity theory (Beck, Brown, Steer, Eidelson, & Riskind, 1987). For example, Keyfitz et al. (2013) found the positive schema theme worthiness to have particular utility in the prediction of youth-reported depression, and Tomlinson et al. (2016) found worthiness helped to predict both adolescent life satisfaction and happiness. Thus, future research on positive schemas should be well-powered with an adequate sample size to conduct fine-grained analyses examining the differential effects of such themes. This research could provide valuable information about fostering processes of positive youth development and targeted areas of cognitive intervention.
In addition, the present study employed a community sample of youth in which the majority of participants exhibited sub-clinical levels of emotional and depressive symptoms and moderate to high levels of happiness and life satisfaction. As such, the generalizability of these findings to clinical populations is limited. However, subsyndromal levels of emotional and depressive symptoms are impairing in their own right and are potent predictors of future symptomatology within the clinical range (e.g., Fergusson et al., 2005; Georgiades et al., 2006; Gotlib et al., 1995; Harrington, Fudge, Rutter, Pickles, & Hill, 1990). Thus, these findings do provide important information about factors relevant to the early stages of childhood depression and subjective well-being.

A notable methodological weakness of the present study was the inability to provide a direct measure of depressive symptoms at Time 1. Ideally, to adequately demonstrate the relations between schemas at Time 1 and depressive symptoms at future time points, a specific measure of depressive symptoms at Time 1 would have allowed more control and provided a more rigorous and sound multivariate analysis. However, several studies have demonstrated that the SDQ is reliably associated with validated measures of childhood depression such as the CDI and Centre for Epidemiological Studies Depression Scale for Children (CES-D), and have also found that the emotional symptoms subscale adequately predicts depressive symptomatology in samples of youth (Alpaslan, Kocak, & Avci, 2016; Essau, Olaya, Pasha, Gilvarry, & Bray, 2013; Goodman, 2001; Goodman, Ford, Simmons, Gatward, & Meltzer, 2003; Muris et al., 2003; Tsang, Wong, & Lo, 2012). Further, the SDQ emotional symptoms subscale at Time 1 correlated strongly with the CDI at Time 2, and thus it can be reasonably concluded that the SDQ emotional symptoms subscale at Time 1 adequately controlled for depressive symptoms to explore the relations of schemas in this multivariate framework. Nonetheless, future studies should
endeavour to assess depressive symptoms using validated scales of depression with children and employing the same measurement at each time point to provide a more rigorous methodology and assuage concerns of measurement error.

In a similar vein, the present study is limited by relying solely on self-report measures. While adolescents may be considered the best informants of their own internalizing symptoms (Hope et al., 1999; Saylor et al., 1984), multi-informant methodologies may provide a more inclusive depiction of youths’ functioning. As well, including more indirect measures of cognitive schemas and processing such as the psychological distance scaling task (PDST; Dozois & Dobson, 2001a, 2001b; youth version Lumley et al., 2011) and self-referent encoding task (SRET; Kuiper & Derry, 1982) may also be valuable in elucidating youths’ conscious and unconscious schemas relevant to predicting depressive symptoms and subjective well-being.

**Future Directions and Implications**

Future research activities examining the respective roles of positive and negative schemas in the context of complex adolescent mental health should endeavour to collect larger sample sizes to allow for more fine-grained, nuanced analyses. Specifically, future studies ought to include measures of adolescents’ positive and negative affect, positive and negative daily life events, as well as multi-method and multi-informant perspectives to reduce common method variance. Inclusion of such additional measures could also help to clarify the cognitive/affective distinction between life satisfaction and happiness, resolving the role of schemas in these respective aspects of subjective well-being. It is also recommended that future studies continue with a longitudinal framework given important nuances between cross-sectional and longitudinal findings and the fact that cognitive schemas are theorized to influence the interpretation of life experiences, subsequently determining well-being in a transactional manner. Such studies could
also benefit from examining these variables across a longer period of time with the inclusion of additional time points when schemas and well-being outcomes can be sampled (e.g., at least three time points over 12 months).

As well, while the present study focused exclusively on cognitive schema content, there is evidence in both adult (e.g., Dozois, 2007; Dozois & Dobson, 2001a) and adolescent (e.g., Dozois, Eichstedt, Collins, Phoenix, & Harris, 2012; Friedmann et al., 2016; Lumley et al., 2012) for the utility of examining the organization of schema networks (i.e., tightly interconnected or diffuse) in predicting positive and negative aspects of functioning. Future studies should incorporate measures of both content and organization to examine similarities or differences under which schemas operate to predict functional outcomes.

As mentioned, careful examination of gender and age differences, as well as examining specific positive and negative schema themes, would also lend valuable information to the models presented in the current study, and future researchers should integrate such factors into their analyses. As well, to the extent that schemas were determined to be well consolidated in this sample of adolescents aged 8 to 12, a pressing aim for future research will be to evaluate early identification of both low levels of positive schemas and high levels of negative schemas to aid in effectual prevention and intervention. Developmental literature broadly posits early intervention is most efficacious given the capacity for neuroplasticity in young children, and thus intervening early before maladaptive schemas are consolidated will likely be most effective in preventing depressive symptomatology and promoting mental health and well-being.

Finally, a recent study conducted by Steffen, Elliot, Lasse, Olsen, & Smith (2016) explored how extreme forms of positive thinking in an adult population may actually potentiate negative outcomes and decreased well-being, in line with theories positing how views held in
moderation associate with positive outcomes whereas extreme or excessive styles predict negative aspects of human functioning. Future research may also wish to consider such gradations of schemas to evaluate how moderate versus extreme views of the self, both positive and negative in valence, predict adaptive functioning over time in youth.

Overall, the current study provides a preliminary account of positive and negative cognitive schema content in the context of a more holistic model of adolescent mental health and well-being, adding to extant literature by offering evidence for the stability of schemas in youth and the respective predictive utility of schemas in these domains. While a lack of positive schemas may be a more potent longitudinal predictor of adolescent-reported depressive symptoms, negative schemas appear more useful in projections of life satisfaction, while the role of schemas in the context of youths’ subjective happiness over time requires further investigation. Together, these results lend credibility to positive clinical psychology assertions (e.g., Wood & Tarrier, 2010) by exemplifying how studying both positive and negative cognitions offer incremental heuristic and theoretical value beyond information gleaned from studying such cognitions in isolation. With replication, these findings may provide worthwhile avenues for investigating the prophylactic role of schemas in psychopathology and opportunities to harness schema content to bolster flourishing and well-being.
References


Table 1

Descriptive statistics

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<th>Time 1</th>
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<tr>
<td></td>
<td>M</td>
<td>SD</td>
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<td>11.13</td>
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<td>Success</td>
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<td>4.59</td>
<td>20.79</td>
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<td>Trust</td>
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<td>4.62</td>
<td>15.80</td>
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<td>2.50</td>
<td>6.46</td>
<td>7.10</td>
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<td>Life Satisfaction</td>
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<td>6.95</td>
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<td>Happiness</td>
<td>5.29</td>
<td>1.08</td>
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<td>1.13</td>
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Table 2

*Intercorrelations with 95% confidence intervals among study variables of interest*

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<td>1. T1 Negative Schemas</td>
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<td>2. T1 Positive Schemas</td>
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<td></td>
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<td>3. T1 Emotional Symptoms</td>
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<td>-.26**</td>
<td>[.50,.72]</td>
<td>[.42,.09]</td>
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<td>4. T1 Life Satisfaction</td>
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<td>.73**</td>
<td>-.34**</td>
<td>[.47,.14]</td>
<td>[.63,.80]</td>
<td>[.49,.17]</td>
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<tr>
<td>5. T1 Happiness</td>
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<td>-.46**</td>
<td>.76**</td>
<td>[.46,.13]</td>
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<td>9. T2 Life Satisfaction</td>
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<td>-.53**</td>
<td>.51**</td>
<td>.51**</td>
<td>-.56**</td>
<td>.68**</td>
<td>-.87**</td>
<td>[.30,.61]</td>
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*Note.* * indicates $p < .05$, ** indicates $p < .001$
Table 3

Summary of hierarchical regression analyses predicting depressive symptoms, happiness, and life satisfaction

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<td>B [95% CI]</td>
<td>SE B</td>
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<tr>
<td>T2 Depression symptoms</td>
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<tr>
<td>T1 Emotional symptoms</td>
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<tr>
<td>Gender</td>
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<td>Negative schemas</td>
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<tr>
<td>Positive schemas</td>
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<tr>
<td>R²</td>
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<td>.32</td>
</tr>
<tr>
<td>ΔR²</td>
<td>.29</td>
<td>.03</td>
</tr>
<tr>
<td>F Change</td>
<td>19.19***</td>
<td>4.32*</td>
</tr>
<tr>
<td>T2 Happiness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1 Happiness</td>
<td>.43 [.26, .61]</td>
<td>.09</td>
</tr>
<tr>
<td>Negative schemas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive schemas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.19</td>
<td>.20</td>
</tr>
<tr>
<td>ΔR²</td>
<td>.19</td>
<td>.01</td>
</tr>
<tr>
<td>F Change</td>
<td>23.71***</td>
<td>1.67</td>
</tr>
<tr>
<td>T2 Life Satisfaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1 Life Satisfaction</td>
<td>.48 [.32, .63]</td>
<td>.08</td>
</tr>
<tr>
<td>Negative schemas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive schemas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.26</td>
<td>.35</td>
</tr>
<tr>
<td>ΔR²</td>
<td>.26</td>
<td>.09</td>
</tr>
<tr>
<td>F Change</td>
<td>36.08***</td>
<td>14.15***</td>
</tr>
</tbody>
</table>

Note. * indicates p < .05, ** indicates p < .01, *** indicates p < .001
Table 4

**Paired samples t-tests examining differences in negative and positive schemas over time**

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$ ($SD$)</td>
<td>$M$ ($SD$)</td>
<td></td>
</tr>
<tr>
<td><strong>Negative schema total</strong></td>
<td>34.71 (11.40)</td>
<td>33.51 (8.86)</td>
<td>1.20</td>
</tr>
<tr>
<td><strong>Positive schema total</strong></td>
<td>89.02 (19.11)</td>
<td>92.61 (16.66)</td>
<td>-1.96</td>
</tr>
<tr>
<td>Worthiness</td>
<td>19.16 (4.80)</td>
<td>19.65 (3.90)</td>
<td>-1.18</td>
</tr>
<tr>
<td>Trust</td>
<td>15.08 (4.65)</td>
<td>15.70 (5.18)</td>
<td>-1.30</td>
</tr>
<tr>
<td>Success</td>
<td>20.32 (4.64)</td>
<td>20.84 (3.55)</td>
<td>-1.20</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>17.51 (4.51)</td>
<td>18.38 (3.83)</td>
<td>-1.96</td>
</tr>
<tr>
<td>Optimism</td>
<td>16.94 (4.33)</td>
<td>18.04 (3.93)</td>
<td>-2.47*</td>
</tr>
</tbody>
</table>

*Note.* * indicates $p < .05$
Appendix A: Adolescent Assent Form

COLLEGE OF SOCIAL AND APPLIED HUMAN SCIENCES
Department of Psychology

Youth Online Assessment of Self-Concept and Mood:

Dr. Margaret Lumley
voice: (519) 824-4120 ext. 56798
fax: (519) 837-8629 e-mail:mhumley@uoguelph.ca

Introduction

Your school board along with University of Guelph is running a research project studying young people's strengths and difficulties and how these relate to emotions, feelings about school, grades and learning skills. Results will be used to help us understand more about the strengths and challenges young people face at school and what might help them achieve more positive school experiences.

Participating in this study will take about 45 minutes both now and one more time in the spring. You will be asked about your problems and strengths, including questions about your self (e.g., "I look on the bright side of things"), feelings (e.g., "How happy do you feel?"), and feelings about school (e.g., "learning is fun because I get better at things"). To see how these strengths, beliefs, and feelings relate to your school performance, we are also asking your permission to get information about your grades and learning skills ratings from all your report cards this school year.

It is possible that questions about your feelings could upset you. We find most young people enjoy participating in similar studies. You will be entered into a draw to win an IPOD or 1 of 5 $20 Cineplex gift certificates to thank you for participating.

Your parents have given permission for you to participate in the study, but it is now your choice whether or not you would like to. During the study if there is a question you don't want to answer you don't have to. You may also say you want to stop doing the study without telling us why.

Your answers are used for our research and are private. We are interested in studying groups overall and do not look carefully at one student's answers except that we will tell your principal the top two personal strengths you show in the survey but nothing else about your answers. We are asking questions about your mood, but we won't be looking at individual results or following up with you. We are giving all students the information about KIDS HELPLINE in case they need to talk to
somebody or need some help with how they are feeling. We can also take you to guidance if you’d like to talk to someone now. We are interested in research that helps us know how to help young people succeed personally and academically.

This project has been reviewed and received ethics clearance by the Research Ethics Board of the University of Guelph and the Wellington Catholic District School Board (WCDSB).

IF YOU WOULD LIKE TO PARTICIPATE CLICK NEXT
Appendix B: Parent/Guardian Consent Form

UNIVERSITY
of GUELPH

COLLEGE OF SOCIAL AND APPLIED HUMAN SCIENCES
Department of Psychology
Parent/Legal Guardian Information and Consent Form

Strengths in Motion Project

Dr. Margaret Lumley: Department of Psychology

voice: (519) 824-4120 ext. 56798 fax: (519) 837-8629 email: mlumley@uoguelph.ca

Introduction: As a part of its shift to a strengths-based approach to education, the Wellington Catholic District School Board in conjunction with the University of Guelph is supporting a research project to look at youth-identified strengths and school engagement and how these relate to youth emotional wellbeing, academic performance, and learning skills. Results will be used to inform our understanding of factors that lead to positive functioning at school.

Procedure: We are asking that parents give permission for their child to complete two confidential surveys, one in Fall 2012 and one in Spring 2013. These surveys will be completed on-line, taking about 45 minutes of class time. The survey inquires about strengths, beliefs, feelings and school engagement. To see how these surveys relate to school performance, we are also asking your permission to access your child’s report cards (grades and learning skills only) issued in this academic year. We are interested in group patterns only and will not be analyzing a particular student’s results. There is one exception to this. If you and your child agree, to participate in this project we will give your school principal the name of your child’s top two personal strengths (e.g., “Creativity”, “Optimism”) to use in their strengths programming initiative at the school. To gain a parent perspective, we also request that you as the parent/legal guardian complete a brief questionnaire about your child. Within the next year or so, we may also request your consent to contact you to invite your child to participate in an optional follow-up.

There are no known physical or social risks of participating in this research. Questions about feelings might upset some children, however, we believe the chance of this is minimal given the support from school administration and the measures that we use. In our experience, young people have enjoyed participating in similar projects, however, participating in this study may not directly benefit your child. We are collecting information about mood and distress but will not have appropriate information to address any clinical or diagnostic concerns about a particular child and will not be following up with parents about individual results. We will be giving all youth the phone number for KIDS HELPLINE in the case they would like to talk to someone about upset feelings. Youth will be offered an opportunity to enter a draw to win an IPOD or 1 of 5 $20 gift certificates to Cineplex Theatres to thank them for their participation. Parents who return the questionnaire will be entered into a draw to win one of five $30.00 gift certificates to Stone Road Mall.

Your child will be told that he or she has a choice whether or not to participate and will also be told that he or she may withdraw from the study or choose not to answer a particular question at any time, without penalty. Withdrawal or refusal to answer questions will not influence any privileges or resources that your child receives from the school. If students withdraw, their data will be destroyed.
Confidentiality: We will be collecting identifying information on the youth, but such information will not be attached to the other measures completed, except one file that will contain the student’s names and top two strengths. This file will be created by Dr. Lumley then and once shared with the school principal will be destroyed. All measures completed by youth and parents are identified by ID number only. There is a master file that links participants’ identities to the ID number which will be electronically stored for 7 years and then destroyed. Data files without identifying information will be kept indefinitely at Guelph University. All information provided (except your child’s top two strengths) is strictly confidential and will be used for research purposes. Schools will not have access to any information we collect except your child’s top two strengths. We will be providing school personnel and interested parents with the major results of the study at an information night. Like you, we are interested in the wellbeing of youth and helping them to succeed personally, socially, and academically.

This project has been reviewed and received ethics clearance by the Research Ethics Board of the University of Guelph and the Wellington Catholic District School Board (WCDSB). If you have any questions or concerns regarding your family’s rights or treatment as participant(s) in the project, you may contact Sandy Auld in the Research Ethics Board at the University of Guelph at 519-824-4120 ext. 56606 (reb@uoguelph.ca), or Dr. Margaret Lumley, whose contact information is listed above.
CONSENT FORM: STRENGTHS IN MOTION PROJECT

Please return to Classroom teacher

☐ I (the parent/guardian) consent to my child’s participating in the two data collections in Fall 2012 and Spring 2013 for the Strengths In Motion Project and permit the researchers to share my child’s top two strengths as reported by my child in the study with my child’s school principal.

☐ I (the parent/guardian) consent to the researchers accessing my child’s report cards issued from September 2012 to June 2013.

☐ I (the parent/guardian) agree to complete a brief 1-page questionnaire.

☐ I (the parent/guardian) consent to University researchers contacting us to invite participation in the optional follow-up component of the study.

<table>
<thead>
<tr>
<th>Child’s School: _______________</th>
<th>Child’s teacher: _______________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child’s Name: _______________</td>
<td>Child’s Date of Birth: __________</td>
</tr>
<tr>
<td>_____________________________</td>
<td></td>
</tr>
<tr>
<td>(Parent/Guardian Name)</td>
<td>Parent/Guardian Signature</td>
</tr>
<tr>
<td>_____________________________</td>
<td></td>
</tr>
<tr>
<td>Parent Contact #: ___________</td>
<td>Parent Email Address: ___________</td>
</tr>
<tr>
<td>_____________________________</td>
<td></td>
</tr>
<tr>
<td>(Date)</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C: Demographic Information Form

1. I have read the above consent form and I am willing to participate.  
   □ Yes  □ No

2. When is your birth date? (dd-mm-yyyy) _______________________

3. What is your gender?  
   □ Male  □ Female

4. What grade are you in (please indicate the number, e.g. 5)? _______________________

5. Which group do you identify with the most?  
   □ Caucasian  
   □ Asian  
   □ African or Caribbean  
   □ Hispanic or Latino  
   □ First Nations, Inuit, or Metis  
   □ Middle Eastern  
   □ South Asian  
   □ Other (please specify) _______________________

6. With whom do you currently live?  
   □ Parents/guardians  
   □ Other relatives/siblings  
   □ With peers  
   □ With partner  
   □ Alone  
   □ Other (please specify) _______________________

7. Are your parents...  
   □ Living together  
   □ Divorced  
   □ Adoptive/Foster  
   □ Mother a widow  
   □ Father a widower  
   □ Both deceased

8. What is your Father’s or Guardian’s occupation? _______________________

9. What is your Mother’s or Guardian’s occupation? _______________________

10. What is your ID Number? _______________________
Appendix D: Schema Questionnaire for Children

SQC

Stallard and Rayner (2005)

<table>
<thead>
<tr>
<th>1</th>
<th>Completely untrue of me</th>
<th>6</th>
<th>Describes me perfectly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1.</td>
<td>It is important to be better than others at everything I do</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Other people are better than me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>No one loves or cares about me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>It is important that my parents or caregivers are involved in everything I do</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>I am not responsible for what I do or say</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I am a failure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>I am more important and special than others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>People will be cross or upset if I say thing I really want to say</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I must not show my feelings to others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>It is more important to put other people’s wishes and ideas before me own</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Others are out to get or hurt me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>No one understands me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>People I love will never be there for me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>I need other people to help me get by</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Bad things happen to me</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix E: Positive Schema Questionnaire

PSQ

Keyfitz et al. (2013)

Instructions: Please read the following statements. To the right of each you will find six numbers, ranging from “1” (Completely untrue of me) on the left to “6” (Describes me perfectly) on the right. Choose the number which best indicates how much you believe each statement is true for you.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completely untrue of me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>I believe in myself</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I feel I can depend on people to keep my secrets</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I believe things will turn out well</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I feel comfortable depending on other people</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I have the ability to be successful</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I can deal with difficult situations</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I know how to find something good in every situation</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I think I have many good qualities</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I trust other people</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I can adapt to new situations</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I usually see the positive side of things</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>If I try hard I can usually do well</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I can respond well to challenges</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I value many things about myself</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I do well when I try my best</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>When things are bad I can still think of something good</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>I value myself</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I feel comfortable telling people important things about myself</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>If I try I will succeed</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>I can deal with tough things</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix F: Children’s Depression Inventory

CDI

Kovacs (1981)

Kids sometimes have different feelings and ideas.

This form lists the feelings and ideas in groups. From each group of three sentences, pick one sentence that describes you best for the past two weeks. After you pick a sentence from the first group, go on to the next group.

There is no right or wrong answer. Just pick the sentence that best describes the way you have been recently.

Item 1
☐ I am sad once in a while.
☐ I am sad many times.
☐ I am sad all the time.

Item 2
☐ Nothing will ever work out for me.
☐ I am not sure if things will work out for me.
☐ Things will work out for me O.K.

Item 3
☐ I do most things O.K.
☐ I do many things wrong.
☐ I do everything wrong.

Item 4
☐ I have fun in many things.
☐ I have un in some things.
☐ Nothing is fun at all.

Item 5
☐ I am important to my family
☐ I am not sure if I am important to my family.
☐ My family is better off without me.

Item 6
☐ I hate myself.
☐ I do not like myself.
☐ I like myself.

Item 7
☐ All bad things are my fault.
☐ Many bad things are my fault.
☐ Bad things are not usually my fault.

Item 8
☐ I do not think about killing myself.
☐ I think about killing myself but would not do it.
☐ I want to kill myself.

Item 9
☐ I feel like crying every day.
☐ I feel like crying many days.
☐ I feel like crying once in a while.

Item 10
☐ I feel cranky all the time.
☐ I feel cranky many times.
☐ I am almost never cranky.

Item 11
☐ I like being with people.
☐ I do not like being with people many times.
☐ I do not want to be with people at all.
**Item 12**
- I cannot make my mind up about things.
- It is hard to make up my mind about things.
- I make up my mind about things easily.

**Item 13**
- I look O.K.
- There are some bad things about my looks.
- I look ugly.

**Item 14**
- I have to push myself all the time to do my schoolwork.
- I have to push myself many times to do my schoolwork.
- Doing schoolwork is not a big problem.

**Item 15**
- I have trouble sleeping every night.
- I have trouble sleeping many nights.
- I sleep pretty well.

**Item 16**
- I am tired once in a while.
- I am tired many days.
- I am tired all the time.

**Item 17**
- Most days I do not feel like eating.
- Many days I do not feel like eating.
- I eat pretty well.

**Item 18**
- I do not worry about aches and pains.
- I worry about aches and pains many times.
- I worry about aches and pains all the time.

**Item 19**
- I do not feel alone.
- I feel alone many times.
- I feel alone all the time.

**Item 20**
- I ever have fun at school.
- I have fun at school only once in a while.
- I have fun at school many times.

**Item 21**
- I have plenty of friends.
- I have some friends but I wish I had more.
- I do not have any friends.

**Item 22**
- My schoolwork is alright.
- My schoolwork is not as good as before.
- I do very badly in subjects I used to be good in.

**Item 23**
- I can never be as good as other kids.
- I can be as good as other kids if I want to.
- I am just as good as other kids.

**Item 24**
- Nobody really loves me.
- I am not sure if anybody loves me.
- I am sure that somebody loves me.

**Item 25**
- It is easy for me to get along with friends.
- I get into arguments with friends many times.
- I get into arguments with friends all the time.

**Item 26**
- I fall asleep during the day all the time.
- I fall asleep during the day many times.
- I almost never fall asleep during the day.

**Item 27**
- Most days I feel like I can’t stop eating.
- Many days I feel like I can’t stop eating.
- My eating is O.K.
☐ It is a little hard to remember things.
☐ It is very hard to remember things.
Appendix G: Strengths and Difficulties Questionnaire

SDQ

Goodman (1997)

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of the child's behaviour over the last six months.

<table>
<thead>
<tr>
<th>Item</th>
<th>Not True</th>
<th>Somewhat True</th>
<th>Certainly True</th>
</tr>
</thead>
<tbody>
<tr>
<td>Considerate of other people's feelings</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Restless, overactive, cannot stay still for long</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Often complains of headaches, stomach-aches or sickness</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Shares readily with other children (treats, toys, pencils etc.)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Often has temper tantrums or hot tempers</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Rather solitary, tends to play alone</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Generally obedient, usually does what adults request</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Many worries, often seems worried</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Helpful if someone is hurt, upset or feeling ill</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Constantly fidgeting or squirming</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Has at least one good friend</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Often fights with other children or bullies them</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Often unhappy, down-hearted or tearful</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Generally liked by other children</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Easily distracted, concentration wanders</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Nervous or clingy in new situations, easily loses confidence</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Kind to younger children</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Often lies or cheats</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Picked on or bullied by other children</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Often volunteers to help others (parents, teachers, other children)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Thinks things out before acting</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Steals from home, school or elsewhere</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Gets on better with adults than with other children</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Many fears, easily scared</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sees tasks through to the end, good attention span</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Appendix H: Subjective Happiness Scale

SHS

Lyubomirsky and Lepper (1999)

For each of the following statements and/or questions, please circle the point on the scale that you feel is more appropriate in describing you …

1. In general, I consider myself:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not a very happy person</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A very happy person</td>
</tr>
</tbody>
</table>

2. Compared to most of my peers, I consider myself:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less happy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>More happy</td>
</tr>
</tbody>
</table>

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A great deal</td>
</tr>
</tbody>
</table>

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A great deal</td>
</tr>
</tbody>
</table>
Appendix I: Brief Multidimensional Students’ Life Satisfaction Scale

BMSLSS

Seligson, Huebner, & Valois (2003)

These six questions ask about your satisfaction with different areas of your life. Circle the best answer for each.

1. I would describe my satisfaction with my family life as:
   a) Terrible
   b) Unhappy
   c) Mostly dissatisfied
   d) Mixed (about equally satisfied and dissatisfied)
   e) Mostly satisfied
   f) Pleased
   g) Delighted

2. I would describe my satisfaction with my friendships as:
   a) Terrible
   b) Unhappy
   c) Mostly dissatisfied
   d) Mixed (about equally satisfied and dissatisfied)
   e) Mostly satisfied
   f) Pleased
   g) Delighted

3. I would describe my satisfaction with my school experience as:
   a) Terrible
   b) Unhappy
   c) Mostly dissatisfied
   d) Mixed (about equally satisfied and dissatisfied)
   e) Mostly satisfied
   f) Pleased
   g) Delighted

4. I would describe my satisfaction with my satisfaction with myself as:
   a) Terrible
   b) Unhappy
   c) Mostly dissatisfied
   d) Mixed (about equally satisfied and dissatisfied)
   e) Mostly satisfied
   f) Pleased
   g) Delighted

5. I would describe my satisfaction with where I live as:
   a) Terrible
   b) Unhappy
   c) Mostly dissatisfied
   d) Mixed (about equally satisfied and dissatisfied)
   e) Mostly satisfied
   f) Pleased
   g) Delighted

6. I would describe my satisfaction with my overall life as:
   a) Terrible
   b) Unhappy
   c) Mostly dissatisfied
   d) Mixed (about equally satisfied and dissatisfied)
   e) Mostly satisfied
   f) Pleased
   g) Delighted