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**INTROSPECTIVENESS DURING ADOLESCENCE:
AN INVESTIGATION OF A PERSONALITY TRAIT
AND ITS RELATIONSHIP WITH
PSYCHOLOGICAL WELL-BEING**

A thesis
submitted in partial fulfilment
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Massey University
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ANNA CLAIRE REYNOLDS

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ABSTRACT

Historically, introspectiveness as a personality trait has been treated as a uni-dimensional and simplistic process that operates the same way for everyone. Consequently, the relationship between introspectiveness and psychological well-being has been treated as equally simplistic and universally uniform. This is in spite of research examining other self-focus processes suggesting that this relationship is likely to be considerably more complex. Therefore, the aim of this thesis was to explore introspectiveness more thoroughly and broadly than prior research has, in order to more adequately understand this complex phenomenon and its relationship with psychological well-being. An adolescent sample group was selected given the propensity for introspectiveness during this developmental period.

The first study investigated a 12-item introspection instrument (Hansell, Mechanic and Brondolo, 1986, Introspection Scale) to ascertain whether there are distinct types of introspection embedded within it, and whether they would be associated with different types and amounts of self-reported symptoms. A factor analysis revealed three reasonably distinct factors or ‘types’ of introspection, which were identified as Self Analysis, Egocentrism, and Psychological Awareness. These broad types of introspection, as well as individual items on the Introspection scale, were associated with differing types and amounts of self-reported problems, providing support for the hypothesis that introspectiveness is a multi-faceted process with varying implications. In particular, some aspects of Psychological Awareness were generally associated with adaptive attributes, and Self Analysis (or reflecting on the ‘whys’ of life) was associated with problematic attributes.

Investigating how these types of introspection relate to emotional symptoms in the context of three important psychological resources (mindfulness, cognitive flexibility and emotional clarity), was investigated in a second study. Path analysis techniques were used to examine these relationships. Support was found for an indirect relationship between introspection and emotional symptoms, through the three psychological resources. This suggested that the relationship between introspection and psychological well-being depends on other intrapersonal or contextual factors, and that therefore, adaptive levels of psychological resources may influence the relationship between introspection and psychological well-being.

The implications of this research for both empirical understanding of cognitive processes potentially specific to adolescence, as well as broader clinical and therapy contexts, are discussed.

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FOREWORD

During my work as an intern psychologist at a child and adolescent mental health setting, I was simultaneously but separately working with two teenagers. They were both admirable and talented young men, both aged 15 years, who incidentally both had the same first name, but that was where the similarities ended. Their difficulties were quite different, as well as their personalities. One would talk the proverbial leg off a donkey, and at times it was difficult to direct him, while the other was quite the opposite, and was extremely quiet. While the second young man never missed a session, always seemed grateful for the work I did with him, and made gradual progress over time, I often wondered where his mind went. Of course at times I asked him to reflect on things he'd thought about during the week, and had an idea of the nature of his anxious thoughts, but I never once thought to ask him about his inner dialogue in general. I didn't ask him about whether he thought a lot about himself and his life and reflected, or whether he daydreamed or ruminated or where his mind went when he was sitting in class, or in the long car ride home after our sessions. After finishing my work with him, and reflecting on the case, I thought about how much better I might have known him and the background to his emotional difficulties had I asked about these things. What role if any, did his quiet nature have to do with his anxiety? Was it just a 'normal' symptom of adolescence? Was he a young man whose tendency to be introspective lead him to ruminate and become unhealthy self-conscious? Or was he not particularly introspective at all and simply a person who preferred to stand back and observe those around him and therefore was externally rather than internally motivated?

This young man was someone I thought of often during the writing of this thesis, one of the many inspirations behind this work, and an example of where its findings have practical application for the many adolescent clients like him.

CHAPTER ONE: INTRODUCTION

General Overview of this Thesis

This thesis begins with a general introduction and literature review. These sections orientate the reader to the general area of self-focus processes, their functions and the factors that are important to consider when discussing the relationship between self-focus and associated outcomes, especially psychological well-being. The role and importance of the ecological and psychological context within which self-focus occurs, is emphasised. Since psychological factors are of particular interest to clinical psychologists, the *psychological* context of self-focus processes is emphasised in this thesis.

Specific types of self-focus are then described and evaluated in terms of their adaptiveness or maladaptiveness. “Neutral” self-focus processes are then introduced, and their relationship with psychological well-being is discussed. Introspectiveness as a theoretically “neutral” self-focus process is then introduced, as is its importance for understanding a person’s relationship with themselves and their inner world. As introspection is particularly prominent during adolescence, a brief overview of this developmental period is presented, to help orientate the reader to the importance of introspection during adolescence.

Past research suggesting that introspectiveness is always detrimental to psychological well-being during adolescence, is then critically analysed. Past suggestions that introspection may be multifaceted rather than uni-dimensional and that the *type* of introspection is important in influencing the nature of its relationship with psychological well-being is introduced, and evidence from research examining other types of self-focus processes is drawn on to illustrate this.

Findings that other self-focus process interact with their psychological context to influence their relationship with psychological well-being is also cited, to illustrate that psychological contextual factors are an important point of investigation that has yet to be applied to the relationship between introspection and psychological well-being. Three psychological “resources” or factors which have been shown to be important in the experience and recovery from emotional distress are proposed by this thesis as potential influencing factors in the relationship between introspection and psychological

well-being. These three psychological resources are mindfulness, cognitive flexibility and emotional clarity.

After the introduction/literature review, the next two main sections of the thesis describe the methods, statistical analyses and findings of two separate studies. These studies were designed to investigate the two main research questions that emerged from the literature review, and which address gaps in understanding of the relationship between introspectiveness and psychological well-being. The first study investigates whether there are different types of introspection, and how these are related to psychological well-being. The second study extends this investigation by exploring the relationship between these types of introspection and psychological well-being in the context of the three psychological resources (mindfulness, cognitive flexibility and emotional clarity).

Finally, a general discussion of the importance of these findings is presented, along with an exploration of the contribution of this thesis to understanding of introspection during adolescence, and its implications for clinical work with this potentially vulnerable age group.

* * * * *

The life of the mind is not the rotation of a machine
through a cycle of fixed phases, but the flow of a torrent
through its mountain-bed, scattering itself in spray as it
plunges over a precipice and pausing in the deep
transparency of a rock pool.

-R.G. Collingwood (philosopher & historian, 1889-
1943)

The ability to reflect on and consider one's inner experiences is part of the tapestry of consciousness, and is part of what makes us human. While we are social beings, it is with our thoughts that we are alone, and it is this private experience that is of considerable importance to our ability to navigate the social and physical world and to our emotional well-being (Morin, 2005). From the development of self-knowledge and establishment of a stable self-concept (Morin, 2005), to self-guidance and regulation (Harris, 1990), aiding in planning (Meacham, 1979), memory (Sokolov,

1972) and problem-solving (Roberts, 1979), there are many adaptive functions that general self-reflection serves. Equally, self-focus can sometimes be maladaptive, for example if it is ruminative or characterised by worry, leading to emotional distress or other undesirable outcomes. Also, self-focus processes can be simultaneously maladaptive and adaptive, as in the case of post-traumatic growth, which can co-occur with emotional distress following trauma (see for example, Tedeschi & Calhoun, 1996). What determines whether a self-focus process is maladaptive or adaptive is a complex question, and there are a number of different factors that influence the relationship between self-focus and psychological well-being. The valence of self-focus (that is, whether it is inherently negative or positive) also influences whether it is maladaptive or adaptive, but research shows other factors are also important (Watkins, 2008).

One aspect of self-focus processes which inevitably varies between individuals is the tendency to which a person engages in any one type of internal focus. That is, people will vary in the degree to which they actively dissociate and daydream about other things while working, or to which they are mindfully aware of the task at hand, or the valence of the thoughts they are more likely to have. Also, some people are active thought-explorers in that they will carefully mentally evaluate and explore situations or experiences, while others do less of this.

Ecological Context

An important consideration when examining the adaptiveness of self-reflection, both in terms of its practical implications as well as its impact on psychological well-being, is the ecological context within which it occurs. One of the few authors to discuss the interaction between everyday mental life and its situational context, Evans (2013) describes how our everyday 'stream of consciousness' interacts with the physical and social environment. At any one point in time, a person can attend mindfully to the immediate task at hand or sensory experiences, so that few conscious thoughts are going through one's mind, be actively thinking about that task, or dissociate completely and daydream about any number of different things. For example, a student riding the school bus could be focusing on the sensory experience of the warm sunshine on his or her skin (being mindfully aware), be worrying about a test at school later that day or looking forward to a party at the weekend, or be actively focussing on Facebook on their smart phone. Of course they may switch between these as their attention wanes or

they are interrupted by an external influence. That is, the content of one's thought processes is not dependent on the external environment, but can exist in line with it, and aspects of the external situation influence the content, valence and direction of one's thoughts.

The environmental context within which self-reflection occurs is important because the two interact, influencing whether the potential outcomes are adaptive or maladaptive. For example, Watkins (2008) describes how a stressful or negative environment could affect an individual's mood, increasing the likelihood of negative thoughts and unpleasant memories coming to mind. Another example is provided by Morrison and O'Connor (2005), who found that reported environmental stress in college students, in combination with depressive rumination, predicted levels of social dysfunction months later. Even conversational topics have been found to predict negative affect in people with social anxiety, for example, post-event rumination was associated with emotional distress after self-disclosure, but not small-talk, in people who were socially anxious (Kashdan & Roberts, 2007). In an extensive meta-analysis of self-focussed attention and negative affect, Mor and Winquist (2002) found that whether self-focus was associated with negative affect or not was influenced by the valence of a particular event that was focussed on. That is, self-focus following a positive event was less likely to be associated with negative affect.

These examples illustrate how aspects of the situational context or environment influence whether self-focus is maladaptive or adaptive. Few authors have explicitly discussed how contextual factors affect the consequences of self-focus generally. However, this is an important point to consider when examining the relationship between self-focus and psychological well-being.

Psychological Context

Aspects of a person's psychological context (that is, intrapersonal factors) can also influence whether self-focus is associated with adaptive or maladaptive outcomes, such as psychological well-being. For example, self focus processes have quite different consequences depending on an individual's mood. Watkins (2008) points out that if a person is in a negative mood, the nature of thoughts, memories and perceptions that come to mind are also more likely to be negative. Low self-esteem also colours a person's psychological experience; that is, if one's attention is focussed inward toward

negative self-perceptions, this is likely to exacerbate negative affect (Watkins, 2008). As Ciesla and Roberts (2002) assert, “the process of turning one’s attention inward may be particularly caustic if one’s thoughts are dominated by self-depreciating....cognitions” (p. 447).

There is evidence that the experience of anxiety and depression also has implications for a person’s individual experience of self-focus processes. For example, while the self-focus process of worry can be adaptive in that it promotes healthy activity such as motivation and the use of adaptive coping strategies (Davey, Hampton, Farrell, & Davidson, 1992), there is evidence that when it is combined with trait anxiety it is no longer adaptive. This is thought to be because an inherent characteristic of anxiety is a lack of confidence in one’s ability to find effective solutions to problems and/or the solutions themselves (Watkins, 2008). This lack of confidence interacts with the initial worry to produce a pathological vicious cycle. That is, the affective consequences of worry seem to depend on the existence and severity of background anxiety.

There is also evidence that the consequences of the self-focus process of rumination (described in more depth in the next section), can depend on whether a person is depressed to begin with, as well as their self-esteem. For example, evidence suggests that rumination is particularly pathological if it occurs alongside dysphoric mood (Nolen-Hoeksema, 1991). Nolen-Hoeksema’s response style theory states that this is because people who are not depressed do not tend to excessively focus attention on negative self-beliefs or negative affect. On the other hand, for people who are depressed, rumination prolongs pre-existing negative affect by exacerbating negative mood and by blocking the formation of adaptive problem-solving responses (Mor & Winquist, 2002). Self-esteem has also been found to moderate the ability of rumination to predict both the onset of depressive episodes and treatment outcome (Robinson & Alloy, 2003; Ciesla & Roberts, 2002), in that low self-esteem is associated with the onset of episodes and longer treatment. These two examples provide further evidence of how features of a person’s psychological context can influence whether self-focus is an adaptive or maladaptive process.

Types of Self-focus

Thus far, this literature review has provided a brief overview of how ecological and psychological contextual factors can influence the associated outcomes of self-focus

processes in general. As this next section illustrates, the *type* of self-focus a person engages in also has important implications for whether it is adaptive or maladaptive (Watkins, 2008). Some forms of self-focus, such as depressive rumination and pathological worry, are inherently maladaptive, and associated with emotional distress and psychopathology (Pyszczynski, Hamilton, Greenberg, & Becker, 1991). Other types of self-focus, such as self-reflection, are generally associated with adaptive problem solving, goal attainment and self-regulation. There are numerous types of self-focus that vary in both their style and content, which have general affective, as well as clinical implications for the etiology and maintenance of some psychological disorders (Watkins, 2008). The main ones most relevant to this thesis are briefly described below.

Maladaptive types of self-focus.

Perseverative Cognition/Repetitive Thought.

This is defined as “the repeated or chronic activation of the cognitive representation of one or more psychological stressors” (Watkins, 2008, p. 164), as in worry, rumination, anticipatory stress and cognitive intrusions. Its core feature is chronic activation of cognitive representations of one or more stressors that result in continued activation of the body’s physiological stress responses, which has been found to lead to physical disease (for example, Brosschot, Gerin, & Thayer, 2006).

Rumination.

As illustrated earlier, rumination is associated with depressive symptomology, and is inherently a maladaptive process. It is a thinking style characterised by a tendency to focus on the experience of depressive symptoms and to direct one’s attention to the reasons for and consequences of one’s depression (Nolen-Hoeksema, 1991). The self-focus style of rumination is problematic partly because it prevents the individual from engaging in adaptive problem solving, but also because it prolongs and exacerbates depression, as the individual focuses their attention on the distress that they are experiencing (Nolen-Hoeksema, 1991). Research has emerged recently suggesting that rumination as a repetitive self-focused thought process is multi-faceted rather than unitary, and that different facets of rumination relate differently to negative affect (Burwell & Shirk, 2007; Treynor, Gonzalez, & Hoeksema, 2003).

Worry.

Worry is defined as recurrent thoughts characterised by fear of risks, uncertainties and expected negative outcomes. As illustrated earlier, worry is adaptive to a certain degree, but pathological worry is associated with anxiety and low mood. Worry, by definition, is particularly problematic when it is uncontrollable, subjective and recurrent (Watkins, 2008). This type of worry tends to be associated with general cognitive dysfunction and negative affect (Borkovec, Ray, & Stober, 1998).

Adaptive types of self-focus.***Reflection.***

The process of reflection is defined as “self-attentiveness motivated by curiosity or epistemic interest in the self” (Trapnell & Campbell, 1999, p. 297). Reflection is generally associated with adaptive outcomes. Specifically, it has been found to be associated with positive coping strategies (Burwell & Shirk, 2007) and the personality trait of ‘openness to experience’ (Trapnell & Campbell, 1999). There is also evidence that reflection is associated with healthier interpersonal relationships as the objective self-knowledge that reflection provides facilitates more authentic relationships (Trapnell & Campbell, 1999). There is also evidence that self-reflection, which induces insightful problem solving, induced both experimentally and is consistently associated with protection from negative affect (Treynor et al., 2003). Trapnell and Campbell are quick to caution, however, that even adaptive reflection may be associated with some degree of negative affect temporarily, as parts of the self that are undesirable or disliked are highlighted when a person looks inward. As Taylor and Brown (1988) assert, “removing the rose-coloured coating from one’s looking glass is unlikely to enhance self-confidence and optimism. In the long term however, it is largely adaptive (Trapnell & Campbell, 1999)”.

Self-focus processes that can be either maladaptive or adaptive.***Mind-wandering.***

Mind-wandering is defined as “the shift of attention away from a primary task toward internal information such as memories” (Smallwood & Schooler, 2006, p. 946). The research in this area discusses mind-wandering as a process which involves the unintentional movement of attention from a primary task of focus, to other things, partly

because we are not always consciously aware of our mind drifting off (Schooler, 2002). The focus of research in the area of mind-wandering seems to have originated in the cognitive and experimental psychology field, and consequently focussed largely on the process implications of this process, for example, the resulting impairment in skills necessary for tasks that involve working memory such as encoding and reading. That is, the emotive and psychological consequences of mind-wandering do not appear to have been explored yet. However, the broad nature of mind-wandering, it could be associated with negative or positive affect, and therefore be maladaptive or adaptive.

Self-Focussed Attention.

Ingram (1990), in a review of research findings in this area, explains that self-focussed attention is “an awareness of self referent, internally generated information that stands in contrast to an awareness of externally generated information” (p. 156). This type of self-focus describes a very broad general tendency to be hyper-aware of any internal processes, that is, thoughts, feelings, attitudes or physiological experiences. Self-focussed attention has been assessed using a wide variety of measures, including experimentally induced self-focus via mirrors (for example, Carver, Blaney, & Scheier, 1979), and asking participants to write essays about themselves (for example, Pyszczynski, Holt, & Greenberg, 1987). Self-report measures have also been used, such as the Public and Private Self-consciousness Scale (Fenigstein, Scheier, & Buss, 1975). In a meta-analysis of self-focussed attention studies, Mor and Winquist (2002) concluded that while there was generally an association between self-focussed attention and reported emotional distress, they argued that examining it as a multi-faceted construct would provide a more comprehensive understanding of this process and the nature of its relationship with psychological well-being. They also stated that “the results of our review lead us to conclude that it is not self-focussed attention, in and of itself that is related to negative affect. Instead, it is the role self-focussed attention plays as part of a self-regulatory process that underlies the association with negative affect” (p. 652). In other words, whether self-focussed attention is maladaptive to some degree depends on other factors. That is, that there is probably not a simple cause and effect relationship between the two as assumed previously. This is an important point about the relationship between self-focus and psychological well-being, and will be discussed in later chapters.

* * * * *

As described thus far, there are many different types of self-focus, which vary in whether they are associated with adaptive or maladaptive outcomes, and are moderated by a range of contextual factors. This emphasises the importance of considering the nature of self-focus as well as its ecological and psychological context when examining its association with function or dysfunction. Overall, the types of self-focus that are characterised by awareness, curiosity and openness (e.g. reflection), and which result in self-regulation and adaptive problem solving, are most likely to be adaptive. Conversely, self-focus that is narrowly focussed on stressors tends to be maladaptive, particularly if this focus is repetitive and chronic (e.g. Watkins, 2008; Nolen-Hoeksema, 1991).

Next, introspectiveness (also sometimes referred to as ‘introspection’), the type of self-focus that this thesis is focussed on, is described and discussed in the context of its association with adaptive and maladaptive outcomes.

Introspectiveness.

Introspectiveness, as a personality trait, is derived from the term “introspection”. As a *process*, introspection has a long history in philosophy and psychology, and is defined in the Oxford psychology dictionary online as “the act of looking inward, the examination of one’s mental processes”. Its original application in psychology was by Wilhelm Wundt and his contemporaries, who defined it as an investigative tool, that is, the method by which they gathered subjective impressions from their research participants by asking them to reflect on their immediate sensory experiences (Eysenck & Keane, 1992; Ryle, 1949).

“Introspectiveness” on the other hand, refers to a personality trait, that is, the tendency to be introspective. It is defined as the tendency to focus inward, actively explore one’s inner world and “experience and reflect on private thoughts, feelings and fantasies.....[to be] self-reflective and examine one’s own motives, goals and dreams” (Levy & Farber, 1986, p. 570). Throughout this thesis, introspection is used to refer to the process of actively looking inward and exploring inner processes, while introspectiveness refers to this process as a personality trait.

Like mind-wandering, self-focussed attention and private self-consciousness, at least by definition, introspectiveness is *neutral*, that is, in theory, is not inherently necessarily adaptive or maladaptive. One of the main distinctions between introspection and other types of self-focus is that introspection is an active process of self-exploration (rather than merely “attention to” or awareness of inner processes, as in self-focussed attention).

Why Introspectiveness is Important

Understanding the personality trait of introspectiveness is important for several reasons. As a clinical psychologist, introspectiveness is of personal relevance and interest in terms of both its implications for the experience of emotional distress and psychopathology, as well as its wider implications for assessment and therapeutic intervention.

While introspection is theoretically neutral both the type of introspection a person engages in and the amount that they do so, could have important implications for understanding the experience of emotional distress. This is because it is a cognitive process which invariably could be negative in valence from time to time or maladaptive in some other way, so has implications for the experience of depression, anxiety and emotional distress generally. If clinicians understand the process by which introspection may be associated with psychological distress, they can come to understand which types of introspection are maladaptive, and which are adaptive for particular people, knowledge which could be incorporated in therapeutic goals. Equally, the amount of time a person spends in introspective thought has implications for their experience of emotional distress, in that it could potentially exacerbate it (depending on its type), as it draws a persons attention inward to the distressing experience. In this way, how introspective a person is could provide information about how that person relates to their internal experience, how sensitive and how much attention they pay to their thoughts and associated emotions, and therefore could provide a more thorough and broader understanding of the nature and severity of their emotional distress. In other words, it could provide valuable information about both a person’s relationship with their distress, as well as their relationship with their self.

Since introspection is an ‘every-day’ process common to everyone it makes up part of the background psychological context within which emotional distress exists,

and so is an important area for the assessment phase of therapy, regardless of the therapeutic modality implemented. Understanding more about what a person spends their time thinking about generally and to what degree, would help to provide a broader context to a clinician's understanding of how their clients' emotional distress originated and how it is maintained that is, part of what is referred to as a formulation in Cognitive Behaviour Therapy (CBT) (Beck, 1976).

In CBT, for example, the client and therapist gather information about specific situations which are particularly problematic for a client, such as a depressed client with low self-esteem who feels worse after interactions with her over-achieving sister. In this case the clinician would help the client to identify 'hot', or particularly emotionally laden thoughts that accompany this experience, in order to identify problematic thought patterns and underlying maladaptive beliefs (Beck, 1995). An understanding of what this client introspects about generally would help to inform how these problematic thought patterns or underlying maladaptive beliefs affect her daily life. For example, if she had the maladaptive core (self) belief "I'm never good enough", and she experienced automatic thoughts such as "I can never do anything right", and spent the majority of her time introspecting about past failures and the reasons for her current distress, she would have quite a different emotional experience to someone who had the same maladaptive core belief but who generally was not particularly introspective.

Equally, the type of introspection a client engages in could be important. For example, if that same client otherwise spends most of her day to day introspection thinking about day to day tasks and looking forward to an upcoming holiday, she would have a different general psychological experience and probably less severe depression than someone who introspects about why their life has turned out differently to how they had hoped.

Understanding more about introspection, and incorporating this knowledge in assessment and treatment, also applies to so-called "third wave" therapies such as Acceptance and Commitment Therapy (ACT) (Hayes, 2004). These therapies consider the wider cognitive context within which problematic thinking occurs (that is, second-order change), and suggest that altering the function and context of thoughts is possible without necessarily directly changing their content (Hayes, 2004). In ACT for example, experiential avoidance and cognitive fusion are seen as particularly problematic and so are targets for treatment. A person who is particularly introspective may actually be less

likely to be experientially avoidant, as experiential avoidance is the active avoidance of internal processes (O'Brien & Murrell, 2008). A person who is highly introspective but also shows high levels of cognitive fusion, may have particular difficulty disengaging from problematic thoughts and so the treatment goal of increased psychological flexibility may be particularly beneficial.

Introspection is also thought to provide the self-reflection necessary for identity development during adolescence, and a major reason why adolescents are particularly introspective (e.g. Levy & Farber, 1986; Hansell et al., 1986; Mechanic, 1983; Adams, Abraham, & Markstrom, 1987), therefore understanding about introspection is especially relevant to this age group. This will be elaborated on later. First, a brief exploration of the challenges and characteristics of adolescence is presented next, in order to orientate the reader to introspectiveness within a developmental context. This is followed by a discussion of the research findings regarding the adaptive, and in particular, maladaptive functions of introspectiveness.

Adolescence

Adolescence can be so difficult. I constantly wonder if there is some way to help you avoid the sadness and the troubles, although I know that if I somehow could protect you from experiencing the pain inherent in growing up, you would never be able fully to experience pleasure nor achieve maturity easily...I fear for you, because I remember so vividly.

- Polly Devlin (novelist, broadcaster, 1944-). From a letter she wrote to her daughter.

When I was a boy of 14, my father was so ignorant I could hardly stand to have the old man around. But when I got to be 21 I was astonished at how much the old man had learned in 7 years.

- Mark Twain (author, 1835-1910)

As the quote from Polly Devlin illustrates, adolescence is remembered by most of us as a difficult and often confusing time. Yet, at the same time, as Mark Twain so

dryly expresses, teenagers tend to have a belief that they are more worldly and wise beyond their years. Adolescence is a time of considerable physical, socio-emotional and psychological maturation, and a time of many complexities and confusion. These complexities and confusion may even be increasing across generations as young people are entering this development phase earlier than ever before, and consequently are generally less cognitively equipped to understand the associated physical changes (Evans et al., 2005).

Biologically, the onset of puberty and hormonal changes precipitates development at a pace much more rapid than during childhood, but at a rate that is more individualised and less correlated with age than earlier development (Blyth & Traeger, 1983). Considerable structural brain development also occurs, particularly in the areas devoted to executive functions [that is, cognitive functions involving management of thoughts and behaviour (Choudhury, Blakemore, & Charman, 2006; Paus, 2009; Sebastian, Burnett, & Blakemore, 2008; Blakemore, 2012)]. Correspondingly, the development of formal operational thought (Piaget, 1976), or metacognition which is the ability to think about thinking, allows for abstract and higher-level thought. With this comes the ability to reflect on the past, as well as the future, to a greater degree than ever before (Kuhn, 2009).

Ironically, at a time when the demands of the social world are increasing, and becoming more complex as the adolescent takes on more individual responsibility, there is also an increased awareness of and hypersensitivity to peer influence and the opinions of others (Elkind, 1967; Sebastian et al., 2008). This can leave the young person vulnerable to the often harsh social world that is the teenage life. A perception of an 'imaginary audience' (Elkind, 1967) is associated with greater depression and loneliness (Goossens, Beyers, Emmen, & van Aken, 2002).

For a multitude of reasons that are not yet thoroughly understood, the vulnerability to psychological disorders increases during adolescence (Paus et al., 1999). In fact, the majority of people who go on to experience depression later in life experience their first episode during the transition from middle to late adolescence, and there is a six fold increase in rates of depression during this time (Abella & Hankin, 2011). Aside from the obvious emotional distress and associated maladjustment that depression during adolescence inflicts, there is also evidence that it interferes with the achievement of the developmental tasks of adolescence (Chichetti & Rogosch, 2002).

These developmental tasks include the development of the ‘self’, such as consideration of identity, goals and dreams (Harter, 2006; Kuhn, 2009), and psychological ‘autonomy’, or confidence and ability to make decisions for oneself (Masten & Coatsworth, 1998). Therefore, for a multitude of reasons, research that informs knowledge about factors that contribute to the emergence and experience of depression during adolescence is of high importance (Broderick & Korteland, 2004; Rood, Roelofs, Bogels, Nolen-Hoeksema, & Schouten, 2009).

While there have been some recent developments, there is generally a paucity of research contributions to the understanding of how cognitive factors contribute to depression during adolescence, or how this differs to that experienced by adults (Garber, Weiss, & Shanley, 1993; Steinberg & Morris, 2001). Kazdin & Nock (2003), in a review of CBT with adolescents, make the point that research has not yet adequately established how cognitive developmental factors influence the process and effectiveness of CBT with this age group. Kazdin & Nock argue that understanding of adolescent cognitive development is crucial in order to adequately identify the mechanisms of change inherent in this therapy so that it can be tailored to utilise and promote these mechanisms for successful interventions within this age group. While there does not seem to have been any significant advances in the knowledge in this area since Kazdin & Nock’s article was published, there has been an increase in the number of published studies examining the role of rumination in depression during adolescence. This research has discovered that adolescent rumination is even a stronger predictor of depression than is the case for adults (Garnefski, Legerstee, Kraaij, Van Den Kommer, & Teerds, 2002), and that adolescents also tend to engage in rumination more often than adults do (Nolen-Hoeksema & Corte, 2004).

Other research has established worry as a common feature of adolescence; in one study, 90% of adolescents in a non-clinical sample reported significant worry about themselves (Henker, Whalen, & O’Neil, 1995), and another study found that adolescents who worry are also more likely than adults to keep it to themselves, when talking the worries through with others could otherwise act as an effective coping technique (Brown, Tuefel, Birch, & Kancherla, 2006).

Clearly, the research demonstrates that adolescents are particularly inclined to introspect, ruminate, and worry, and that the relationships between these cognitive processes and psychological well-being seem to be different and more pronounced than

for adults. This emphasises that the manner in which adolescents relate to their inner worlds has important implications for vulnerability to psychological maladjustment and depression.

Introspectiveness and Psychological Well-being

Existing research examining introspectiveness has focussed on the developmental period of adolescence, because as we have seen, adolescents are the most introspective age group and so its implications are greater for those in this developmental period. Introspectiveness is currently measured with a 12-item instrument designed by authors Hansell et al. (1986). There are limitations of constraining such a diverse and complex psychological phenomenon to a scale without consideration of contextual factors, but at this time this appears to be the only tool available to measure this construct.

The authors who have written about this psychological phenomenon have discussed introspectiveness as a uni-dimensional construct that can be associated with both adaptive and maladaptive outcomes. However, as is described below, the empirical research has found it to be associated with largely maladaptive outcomes such as low self-esteem and general emotional distress.

Adaptive Aspects of Introspectiveness

There are a number of authors who are of the opinion that introspectiveness is an adaptive process, particularly during the developmental phase of adolescence. For example, it has been argued that introspection provides the self-focus necessary to develop a sense of identity (Levy & Farber, 1986; Kroger & Green, 1996; Harter, 2006; Kuhn, 2009), one of the primary tasks of adolescence, and this is thought to be the main reason why adolescence is characterised by a heightened tendency to introspect (Berzonsky & Sullivan, 1992). The focussing of cognitive attention on oneself allows the adolescent to consider and integrate aspects of the self that until adolescence, are relatively fragmented, inconsistent and unstable (Adams et al., 1987; Elkind, 1974). Both self-report and laboratory studies show that adolescents who are in the process of identity formation, and who have not yet reached the 'achieved' status of identity development, are indeed the most self-focussed (Adams et al., 1987; Berzonzky & Sullivan, 1992; Garcia, Kerekes, Arnten, & Archer, 2012). As a consequence of this

self-focus, adolescents reach the 'achieved' status of identity development. They are more 'mature' in that they show higher levels of self-directedness, and both acceptance by their peers as well as self-acceptance (Garcia et al., 2012), factors which are protective against emotional distress (Wolfe, Gedo, & Terman, 1972).

Additionally, introspection is argued to be directly beneficial during adolescence because it provides a form of distraction, allowing a temporary escape from a sometimes overwhelming external reality. Levy and Farber (1986) argue that through introspection, the adolescent's inner self becomes a psychological 'ally': a safe haven when the external world is uncertain, relationships with parents and peers become especially volatile, and the demands from others are multiple. At this time, they argue, a relationship with the self, at least, must be comforting (Levy & Farber, 1986). There is in fact evidence that this tendency to be self-focussed acts as a coping mechanism during difficult life challenges during adolescence (Peterson & Roscoe, 1991; Schwartz, Maynard, & Uzelac, 2008).

Introspection is also thought to aid in achieving successful interactions with others, facilitating a social connectedness which then becomes a buffer against psychological distress (Goossens & Marcoen, 1999). Several authors have posited that the key to this is the developing ability to empathise with others, which is achieved through introspection (Kohut, 1957; Offer, Ostrov & Howard, 1981; Blos, 1982; Deutsch, 1967). It has even been argued that introspection and empathy are almost identical cognitive processes (Deutsch, 1967), as they each require an understanding of one's own experience as well as that of other people's, facilitating the ability to connect with others and understand interpersonal relationships. A tendency to be introspective has also been argued to be adaptive because it requires the ability to think before acting, and therefore requires impulse control (Levy & Farber, 1986), which is socially adaptive.

Maladaptive Aspects of Introspectiveness

The empirical research in this area however, using Hansell et al's Introspection scale, has uncovered a far less favourable picture of introspection. Largely, it has found that introspection is associated with detrimental factors during adolescence (Hansell & Mechanic, 1985). Even Levy and Farber (1986), argue that what they term 'excessive' introspection is engaged in by adolescents who are desperately searching for inner

refuge, so that those adolescents do not have to rely on the external world for validation. They argued that they can then become unhealthy self-obsessed, leading to negative psychological outcomes such as anxiety, depression and low self-esteem (Levy & Farber, 1986). The authors go on to argue that introspection goes against the natural adolescent 'urge' to act out in order to release intrapsychic tensions related to the impulses of adolescence.

Hansell et al. (1986) reasoned that the developmental propensity to introspect during adolescence might explain the surge in psychological distress that appears during this time. Specifically, they argued that the attention to inner processes that characterises introspection encourages hyper vigilance to thoughts and feelings and emotional distress that may be associated with them, thus intensifying this distress and lowering self-esteem. They argued that this is particularly problematic for adolescents because this developmental period is characterised by difficult emotional experiences. In the first study to examine introspection empirically using an introspective measure (the 12-item scale they developed for 12-18 year olds), Hansell et al. examined the developmental pattern of introspectiveness, as well as associated psychological symptoms. Results indicated that increased introspectiveness was associated with anxiety, depression, and psycho-somatic symptoms, leading the authors to speculate that introspective thought leads adolescents to experience psychological difficulties. They went on to suggest that interventions should focus on distracting teens from self-focused thought, thus interrupting the process of this thought leading to negative affect.

In a longitudinal examination of introspectiveness and adolescent development over a seven year period, Chen, Mechanic, and Hansell (1998) also found that anxiety, depression and psycho-somatic symptoms were associated with large amounts of time spent in introspection. Specifically, across time, introspection and symptom reporting seemed to mutually influence each other, rather than introspective thought predisposing psychological distress as was initially suspected (Hansell et al., 1986). Chen et al. (1986) included Hansell et al.'s Introspection scale as well as a self-report measure of physical development in order to assess the developmental relationship between introspection and puberty. In general, introspection was positively correlated with physical development (controlling for age), which the authors suggested indicates that the hormonal changes associated with puberty cause teens to think about themselves

more, or that developmental changes in the complexity of their social relationships cause them to become more introspective.

There is also evidence that introspectiveness is associated with lowered self-esteem. Yarcheski, Mahon, and Yarcheski (1998) examined the relationship between self-esteem and introspectiveness in both teenagers and young adults aged 18-25 years. Since other authors have suggested that adolescents might avoid introspecting to protect their self-esteem (Elkind, 1967; Levy & Farber, 1986), Yarcheski et al (1998) hypothesised that these variables would be inversely related. They did in fact find that self-esteem and introspection were negatively correlated, that is, higher introspection was related to lower self-esteem, and this relationship was unique to the teenage participants. The authors suggested that this implies that as is probably the case for the relationship between introspection and psychological well-being in general (Chen et al., 1998), the relationship between self-esteem and introspection is a bi-directional one in which they each mutually influence one another. It would make sense that a person who looks inward and sees someone they do not like, would suffer lower self-esteem than someone who does not have the same tendency to introspect, or someone who introspects but has a more positive self-concept (Schieman & Van Gundy, 2001). However, since this study was correlational in nature, a third variable could have been involved in causing the observed relationship between self-esteem and introspection.

Attempts to account for opposing arguments.

As described above, Hansell et al (1986) argue that introspection is related to emotional distress during adolescence because it draws the young person's attention inward to difficult emotional experiences which are common during this developmental period. Certainly, adolescence can be difficult, and other research does suggest that drawing attention to the self can induce emotional distress (Schieman & Van Gundy, 2001; Carver et al., 1979; Ciesla & Roberts, 2002). However, even during the often tumultuous period of adolescence there are times of happiness and enjoyment for most young people, so presumably introspecting about one's emotions and feelings at these positive moments is not distressing. Also, as we have seen, there are types of self-focus that are adaptive, such as reflection and problem-solving, so the argument that the general tendency to explore and pay attention to one's inner processes (introspect) is always maladaptive appears to be too simplistic.

In an attempt to reconcile Hansell and colleagues' findings with those that have found that self-focus can be adaptive (for example, in facilitating self-regulation, Harris, 1990), Hoyer and Klein (2000) reasoned that this must mean a 'medium' amount of introspection is optimal, that is, that there is a curvilinear relationship between the two. However, they found no evidence for this. Therefore, Hoyer and Klein argued that the *amount of time* a person devotes to engaging in introspective thought is of little relevance to psychological well-being, and that it is more likely to be the *type* of introspective thought that is important. They also argued that a more contextual and detailed examination of how, when and in which circumstances introspectiveness is related to psychological well-being is required.

To date, Hoyer and Klein's (2000) suggestions have not been investigated. However, their argument that the *type* of introspection could be influential in determining the nature of its relationship with psychological well-being certainly makes sense. This is because research indicates that other types of self-focus (for example, rumination) are more multi-faceted than first thought (Trapnell & Campbell, 1999), and, as we have seen, different types of self-focus are associated with different degrees of psychological well-being. The fact that introspection is a broad general tendency to pay attention to and explore one's inner processes, also makes it likely that it could be multi-faceted.

Investigating types of introspection is an important area of investigation if more is to be understood about how and why the tendency to be introspective is associated with emotional distress, as thus far it does not appear that the relationship between introspection and psychological well-being is well understood. Exploring different types of introspection and their associations with emotional distress is the first aim of this thesis. This will provide a more holistic and comprehensive understanding of the psychological construct of introspection.

Introspectiveness and Psychological Resources

At the beginning of this literature review, the point was raised that a person's psychological context can influence whether a self-focus process is adaptive or maladaptive. That is, it is not just the content per se of inner dialogue that influences whether self-focus processes are associated with function or dysfunction, but also aspects of the psychological context within which it occurs. Research shows that factors

such as mood (Watkins, 2008), self-esteem (Ciesla & Roberts, 2007) and the existence of an emotional disorder (Mor & Winquist, 2002) moderate the relationship between self-focus and psychological well-being. This lends support to the possibility that other intrapersonal factors, such as the psychological ‘resources’ or strengths a person has, may influence whether engaging in introspective thought is associated with emotional distress or not. Investigating the role of psychological resources in the relationship between introspectiveness and psychological well-being would help to build understanding of the relationship between these two factors, and help researchers and clinicians to understand for whom introspection may be associated with vulnerability to emotional distress, and for whom it may not.

Considering how contextual factors such as psychological resources influence the relationship between affective experience and self-focus processes is similar to the general trend in psychotherapy which has moved toward an acknowledgement of the overall context of cognitive and emotional experiences (Hayes, 2004). That is, a person’s overall relationship with their distress, in addition to its content, are regarded as important considerations in both the assessment and treatment of emotional disorders (Hayes, 2004; Masuda & Tully, 2012).

These ideas about the perspective of one’s experiences could specifically apply to introspectiveness. That is, the psychological resources an individual has, or the type of perspective they take when introspecting may influence the type of psychological outcomes that are consequently experienced. Therefore, a person who is able to utilise psychological resources, may be less likely to experience emotional distress that the research shows can otherwise be associated with introspection (for example, Hansell et al., 1986). This thesis proposes three psychological resources; mindfulness, cognitive flexibility and emotional clarity, as potentially important, and the second aim of this thesis is to investigate the effects of them. These three psychological resources and how they might influence the relationship between introspectiveness and emotional distress, are discussed next.

Mindfulness and introspectiveness.

If an individual is able to distance themselves from their thoughts in a way that allows them to relate to their thoughts as an observer might, they are less likely to experience emotional distress that may come as a result of introspectiveness (Corcoran

& Segal, 2008). One way in which healthy distancing (or *decentring* as it is often referred to), and a subsequent reduction in distress can be achieved is through mindfulness (Sauer & Baer, 2010). Mindfulness is a component of meditation which originated in Buddhism over 2000 years ago (Kabat-Zinn, 2003), and especially in the last ten years, has been increasingly emphasised in Western therapy and scientific enquiry (Hayes & Feldman, 2004). Most commonly, mindfulness is defined as “the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment” (Kabat-Zinn, 2003, p. 145). Bishop et al. (2004) consider mindfulness to be a two-component process. The first of these involves the individual self-directing their attention to their immediate experience, and the second component involves viewing one’s experiences with calm curiosity, acceptance, openness and non-judgment, regardless of whether those experiences are negative or positive. This process seems to promote a healthy cognitive distance between an individual’s inner experiences and their conscious awareness of them, that is, meta-awareness.

There is a large and convincing body of evidence that mindfulness is effective in relieving emotional distress and improving overall well-being for people who experience clinical disorders. It has been incorporated in a successful treatment for depression, called Mindfulness-Based Cognitive Therapy (MBCT), a therapy specifically designed to increase meta-awareness by encouraging a mindful perspective on all experiences (Teasdale et al., 2002, Study 2). It has also been shown to be an effective management tool for anxiety (Gooi et al., 2010). Mindfulness has been shown to be beneficial for all age groups including children and adolescents (Thompson & Gauntlett-Gilbert, 2008).

Mindfulness could potentially influence the relationship between introspectiveness and psychological well-being. A mindful perspective (for example, introspecting in a mindful way) can involve modifying the content of *what* is mentally processed (for example, redirecting attention to the sensation of breathing when a distressing thought comes to mind), modifying *how* it is processed (that is, merely focussing on the awareness of unpleasant physical sensations, thoughts and feelings, rather than ruminating and judging one’s current distress) as well as the *perspective* by which it is processed, that is, via decentring. These processes help achieve an objective rather than subjective perspective of personal experiences, so that unpleasant thoughts,

feelings, or sensations are seen as not an inherent part of the self, and therefore less threatening and more controllable (Teasdale & Chaskalson, 2011).

All three of these facets of mindfulness have implications for introspectiveness and its relationship with psychological well-being. This thesis proposes that a person who tends to often reflect about themselves, but who is able to react non-judgmentally to their thoughts, or be aware that they are ‘just thoughts’ and not literal truths, and ‘ground’ themselves in the present moment, are less likely to be vulnerable to the emotional distress that introspection could otherwise induce. For example, an adolescent who tends to often introspect about who they are as a person and who they would like to be, but is unsure of these things, is less likely to experience emotional distress if they are non-judging of their uncertainty, than a young person who becomes frustrated with themselves that they are not certain about who they are or want to be.

Secondly, the use of mindfulness outside of introspection may also reduce distress. For example, if an individual is able to engage with and appreciate enjoyable sensory experiences such as the warmth of the sun, or the feel of cool sand, is likely to benefit from the grounding that mindfulness provides. This could have the effect of reducing his or her vulnerability to potential emotional distress from unpleasant introspective experiences.

Cognitive flexibility and introspectiveness.

Cognitive flexibility is another psychological resource that may influence the relationship between introspectiveness and psychological well-being. In fact, flexibility in self-focus processes in general has already been suggested as a potential moderator of the relationship between self-focus and emotional distress, but has yet to be empirically examined. For example, in reviews of the relationship between self-focus processes and emotional distress, both Ingram (1990) and Mor and Winquist (2002) argued that chronic self-focus need not be associated with emotional distress, but is likely to be if it is inflexible, that is, if it is difficult to disengage from in accordance with situational demands.

Cognitive and psychological flexibility each reflect a basic underlying ability to manage oneself in response to the external environment and one’s goals (Finkenauer, Engels, & Baumeister, 2005). Other authors, for example, Martin and Rubin (1995) describe cognitive flexibility as “a person's: (a) awareness that in any given situation

there are options and alternatives available; (b) willingness to be flexible and adapt to the situation; and (c) self-efficacy in being flexible” (p. 623).

Psychological flexibility has been found to facilitate psychological adjustment and is a main treatment goal of Acceptance and Commitment Therapy (ACT, e.g. Hayes et al., 2003). This field of research describes psychological flexibility as a person’s ability to connect with the present moment in order to either change or maintain behaviour that is in accordance with achieving an individual’s goals (Hayes, Strosahl & Wilson, 2003). It has also been implicated as a facilitator of mindfulness processes (Greco, Lambert, & Baer, 2008), suggesting a mutually influential relationship between the two constructs of psychological flexibility and mindfulness.

A person who is psychologically *inflexible* is likely to attempt to control their emotions, thoughts and behaviour by using regulation strategies rigidly, and/or excessively (Greco et al., 2008), and show a difficulty in choosing adaptive responses (Williams, Ciarrochi, & Heaven, 2012). Maladaptive strategies they may adopt include inhibition, suppression, or avoidance (known as ‘experiential avoidance’), which in the short term avoid distress, but tend to exacerbate it in the long term (Krause, Mendelson, & Lynch, 2003). The psychologically inflexible person may also excessively avoid internal experiences (known as ‘experiential avoidance’), have difficulty paying attention to the moment in order to be fully aware, and therefore be unable to effectively act in accordance with one’s goals and values (known as ‘cognitive fusion’, Hayes et al., 2003). This tends to lead to behavioural responses that are habitual and reactive, and that often result in poor problem solving and distress (Langer, 1989).

Cognitive flexibility is an important psychological resource to consider in discussions about vulnerability to emotional distress because it is implicated in the cognitive behavioural model of depression (Beck, 1976) and according to this theory, the cognitive style of a depressed person involves rigidity of thought and black and white (all or nothing) thinking. This is then argued to maintain depression by narrowing the individual’s ability to consider alternatives to troublesome situations, thus emphasising maladaptive rigidity (Young, Weinberger, & Beck, 2001).

Deficits in cognitive flexibility have been found to be characteristic of many forms of psychopathology including panic disorder and social phobia (Gloster, Klotsche, Chaker, Hummel, & Hoyer, 2011), post-traumatic stress (Palm & Follette, 2011), depression (e.g. Bond & Bunce, 2000), general emotional distress (e.g. Bond &

Bunce, 2003), and anxiety (e.g. Kashdan, Barrios, Forsyth, & Steger, 2006), and in one study, predicted eating disorder severity over and above disordered eating-related cognition (Masuda, Price, Anderson, & Wendell, 2010). Inversely, psychological flexibility has also been shown to be directly associated with high levels of emotional well-being (Sauer & Baer, 2010; Kashdan & Rottenberg, 2010).

A person who tends to be introspective as well as cognitively flexible may have a different experience of introspection than a person who is rigid and inflexible in their thinking style. This is because cognitive flexibility may enable the exertion of control over introspective thought processes. That is, cognitive flexibility may facilitate the redirection of thought should a person become distressed while introspecting, resulting in at least momentary relief from that distress. For example, if an adolescent introspects about why they have failed a maths test, they are more likely to be able to emotionally regulate if they are able to re-direct their thought to more pleasant things, or away from self-defeating conclusions they might have come to about their maths skills. The ability to use flexibility to consider alternative explanations for a poor performance (rather than assuming it was a direct result of their intelligence), for example, “that was a really difficult test, everyone else did poorly also”, would also be adaptive.

Emotional clarity and introspectiveness.

A third psychological resource which could influence the relationship between introspectiveness and psychological well-being is emotional clarity. Emotional clarity is the pre-cursor to emotion regulation (Salovey et al., 1995; Larsen, 2000; Wilkowski & Robinson, 2008), and is defined as the ability to recognise and identify emotions (Salovey et al., 1995). It is one of the three components of Salovey & Mayer’s conceptualisation of emotional intelligence (the other two are attention to emotions, and repair of emotions). Of the three processes, emotional clarity seems to have the strongest association with emotional distress (Mowrer & Arkin, 2010).

The effects of emotional clarity, or a lack thereof, are complex, and extend to both psychological and social domains. In addition to its role in facilitating the regulation of emotion, emotional clarity also appears to allow cognitive resources to be allocated to more sophisticated aspects of emotive experience such as goal oriented cognition and behaviour (Flynn & Rudolph, 2010). Boden, Bonn-Miller, Kashdan, Alvarez, & Gross (2012) posited that reduced emotional clarity interferes with the

ability to engage in cognitive reappraisal (the process of altering how one perceives an emotion-eliciting event in order to emotionally adjust, Boden et al., 2012) and found evidence for this in a study of post-traumatic stress disorder in military veterans. Emotional clarity may also allow individuals to use other adaptive coping styles such as active coping, and positive re-interpretation and growth (Gohm & Clore, 2002). At its worst, reduced emotional clarity results in alexithymia (the clinical term for severe difficulty understanding emotion), difficulty identifying physiological arousal and a tendency to exhibit a stimulus-bound, concrete cognitive style (Parker, 2005).

Reduced emotional clarity tends to lead to either over or under-engagement with one's emotions. In the process of attempts to self-regulate, the individual becomes unhealthily involved in trying to work out what they are feeling or, actively avoids and disengages from emotion (Wilkowski & Robinson, 2008). These processes seem to be equally maladaptive psychologically, and precipitate involuntary and impulsive behaviour responses which often have negative interpersonal consequences (Flynn & Rudolph, 2010). Reduced emotional clarity has been found to be associated with post-traumatic stress disorder (for example, Boden et al., 2011), panic attacks (Tull & Roemer, 2007) and depression (Flynn & Rudolph, 2010). Other studies have shown that reduced emotional clarity is associated with rumination, vulnerability to distress, social anxiety, generalised anxiety and low self-esteem (Lischetzke & Eid, 2003) and self-harm (Mikolajczak, Petrides, & Hurry, 2009; Chapman, Gratz, & Brown, 2006). Emotional clarity, however, positively correlated with positive affect (Mowrer & Arkin, 2010), faster recovery from negative moods (Salovey et al., 1995), adaptive coping and the ability to interpret emotion-related physiological reactions (Gohm & Clore, 2002).

For a person who tends to be introspective, whether or not they also have sufficient emotional clarity may be particularly important in terms of whether introspection is associated with emotional distress. This is because a person who tends to be introspective, and therefore whose attention is often directed inward, but who struggles to understand and therefore regulate their emotional experience, is more likely to experience emotional distress, as the internal direction of their attention intensifies felt distress (e.g. Ciesla & Roberts, 2002). Conversely, an individual who tends to be introspective but who is able to understand their emotional experiences is less likely to be confronted with emotional confusion. They are also more likely to be able to regulate

any distress that may arise from introspective thought. These make for a greater likelihood of a positive, adaptive outcome.

Emotional processes such as emotional intelligence, clarity and regulation may be particularly crucial during the developmental period of adolescence, due to the heightened sensitivity to, and importance of, social acceptance at this time (Zavala, Valadez, & Vargas, 2008). This is because a teen who has skill and adaptiveness at negotiating their emotions as well as the wider peer group and social world may be better socially and psychologically adjusted than one who struggles to understand their emotions and therefore those of their peers. Emotional clarity is particularly relevant during adolescence, due to this developmental period being characterised by a general lack of emotion regulation – a time when impulses and hormones rule and neurological development of impulse control has not yet fully developed (Evans et al., 2005). Additionally, areas of the brain related to emotional processing and social cognition are very much still developing during adolescence (Blakemore, 2008), including emotion perspective-taking, which reaches its developmental peak in this developmental period (Choudhury et al., 2006), as is the cognitive capacity for the process of reflection on emotion (Cotton, 2000). Therefore, understanding the relationship between introspectiveness and emotional clarity is particularly pertinent for this age group.

Summary

This chapter introduced self-focus processes and illustrated how ecological and psychological contextual factors can influence whether these processes are maladaptive or adaptive. Introspectiveness as a particular self-focus of interest was then introduced, as was its relationship with psychological well-being as it has been understood in the literature thus far. Past research exploring the relationship between introspectiveness and psychological well-being has treated introspection as a uni-dimensional construct which is consistent across all people and all contexts. While some authors from the psychoanalytic field have argued that introspection facilitates the formation of identity, social connectedness and a stable emotional life in adolescence, the empirical research reports that it is associated with reduced psychological well-being. That is, a small number of studies using a self-report introspection scale have detected a negative correlation between introspectiveness and psychological well-being. These authors have argued that this demonstrates that introspection is a maladaptive process, and this is

always the case for all adolescents across all contexts (for example, Hansell & Mechanic, 1985). Due to the varying and complex nature of self-focus in general and introspectiveness specifically, the relationship between introspectiveness and psychological well-being is unlikely to be this simple, nor is it likely to always be associated with reduced psychological well-being. Some authors, referring to introspection specifically (Hoyer & Klein, 2000) and self-focus in general (Mor & Winquist, 2002), have argued that self-focus processes should instead be treated as multi-faceted processes that vary considerably between individuals, resulting in or from a variety of affective experiences (Hoyer & Klein, 2000).

It is likely that this also applies to introspectiveness, and a first step in exploring this is to begin viewing and exploring it as a multi-dimensional process. While some attempt has been made to encourage the exploration of introspectiveness as a process which has multiple manifestations, that is, as types of introspection rather than amounts (Hoyer & Klein, 2000), this is yet to be actively investigated. Exploring this is the first aim of this thesis.

Secondly, research examining self-focus processes that are similar to introspectiveness has illustrated the importance of considering psychological contextual factors in the relationship between self-focus processes and psychological well-being (Watkins, 2008). This has yet to be applied to introspectiveness, and exploring this is the second aim of this thesis. This thesis proposes that three psychological ‘resources’ or strengths (mindfulness, cognitive flexibility and emotional clarity) may influence the relationship between introspectiveness and psychological well-being.

In order to adequately understand the relationship between introspectiveness and psychological well-being, a more comprehensive understanding about this complex psychological phenomenon is required. Examining introspection more broadly than it has been examined previously, by exploring *types* of introspection, will help achieve this. Considering introspectiveness within the context of psychological resources will also help to gain a more thorough understanding of how introspection and psychological well-being are related. Exploring the connection between psychological resources, introspectiveness and psychological well-being is also important to help identify those who may be particularly vulnerable to, or protected against the emotional distress that introspectiveness can apparently induce. This will allow clinicians to identify how and for whom introspection may perpetuate emotional distress or be protective against it.

This is particularly pertinent for adolescents, who seem to be the most introspective of any age group.

Overall Aim of this Thesis

To explore the phenomenon of introspectiveness, and its relationship with (a) vulnerability to psychological well-being, and (b) psychological resources, in a potentially vulnerable adolescent sample group.

Aims of Study 1.

- 1) To investigate whether there are different types of introspection and how these are associated with psychological well-being in a sample group of adolescents.

Aims of Study 2.

- 2) To investigate if psychological resources (specifically, mindfulness, emotional clarity and cognitive flexibility) are associated with the relationship between introspectiveness and psychological well-being, and whether or not this varies as a function of type of introspection.

Hypotheses

- 1) Given research shows that self-focus processes and their relationships with psychological well-being are varied, and that the potential scope of introspection is very broad, it was expected that there would be different types of introspection embedded within the introspection scale, and that these would be associated with differing degrees of self-reported psychological well-being.
- 2) Past research has established that the psychological context within which self-focus occurs plays an important role in influencing whether a self-focus process is maladaptive or adaptive. Therefore, it is expected that this will also be the case for introspection. That is, it is expected that the degree to which a person has certain psychological protective factors or resources (cognitive flexibility, emotional clarity and mindfulness skills) will influence the relationship between introspection and psychological well-being.

CHAPTER TWO: ETHICAL CONSIDERATIONS

There were several ethical issues about these studies that were considered important by both the researcher and the Massey University Human Ethics Committee that approved this project. The first of these is the potential vulnerability of the participants due to their age. To manage any distress that may have been raised by questions which ask about emotions, participants were forewarned about this possibility before completing the questionnaire, informed that they could exit at any time, and were encouraged to speak to an adult they trusted or an external support agency if they found that any of the questions raised difficult emotions for them (contact details for Youthline and Whatsup were provided).

Secondly, there was the requirement that parental consent should be sought, given the age of the participants. While of course this could not be actually be ensured given that the questionnaires were often completed without the presence of the researcher, a message was presented which suggested participants inform a parent or guardian about the study before completing it. Parents/guardians were also directed to a brief information blurb about the nature of the study, and which informed them that if they thought issues may be raised for their teens if they participated, that they withdraw their child from the study.

CHAPTER THREE: METHOD STUDY 1

The aim of Study 1 was to investigate whether there are different types of introspection and how these are associated with psychological well-being in a sample group of adolescents.

Participants

The participants in this study were 148 teenagers aged between 13 and 18 years ($m = 14.79$, $sd = 3.54$) who were enrolled at school in New Zealand at the time of participating. Of these, 103 were female and 45 were male. The majority (114) identified themselves as a New Zealander of European descent/Pākehā ethnicity, 12 identified as Asian, 4 as Māori, 4 as Pacific Islander and 14 as 'Other'.

Recruiting of participants.

A sample group of typical adolescents aged 13-18 was sought. Most participants were recruited through advertisements placed on three teen-interest websites (www.sussed.co.nz, www.urge.co.nz, and www.tearaway.co.nz), and on the social networking website, Facebook. Twenty participants were recruited through visits to a Wellington high school, and these participants completed a paper copy of the questionnaire.

Materials and Procedure

This study used a questionnaire (see Appendix D) as its data-gathering tool, and this was presented either online or on paper. The online version of the questionnaire was placed on the Massey University website, and participants accessed it either by clicking on the link to it which was placed on one of the advertising websites, or by typing the address in their computer's internet browser. The hard-copy version of the questionnaire, that is, the version that participants from the high school completed, contained exactly the same questions as the online version. The questionnaire was comprised of five sections, which are described below.

After reading the information sheet and indicating their informed consent to participate by clicking "continue", participants were asked to complete the first section of the questionnaire. In this section they indicated their age, ethnicity and gender.

Positive and Negative Affect Scale (PANAS, Watson, Clark, & Tellegen, 1988).

Participants then completed the second section of the questionnaire, which was the Positive and Negative Affect Scale (PANAS, Watson et al., 1988). This scale consists of 20 emotive words that indicate either positive or negative affect such as “interested” and “guilty”, and participants are asked to rate how much they have felt that way in the past few weeks, by choosing “very slightly or not at all”, “a little”, “moderately”, “quite a bit”, or “extremely”, on a 5 point scale. This scale was selected as a measure of affect suitable for this study firstly because it provides an indication of protection against, and vulnerability to, psychological distress in a non-clinical sample, as indicated by the number of positive and negative emotions selected, respectively (Watson et al., 1988). The second reason the PANAS was selected as a measure of affect for this study was because it has been shown to be reliable and valid for use within an adolescent sample for example, Huebner and Dew (1995) found the internal consistency of the scale to be .84 for the negative sub-scale, and .85 for the positive sub-scale, within an adolescent sample group.

Introspection Scale (Hansell et al., 1986).

The third section of the survey was Hansell et al.’s (1986) Introspection scale, which was designed to detect the personality trait of introspectiveness in adolescents. This scale consists of 12 questions that enquire about things such as how often respondents think about themselves, pay attention to their feelings and think about who they are as a person. Two examples of questions from this scale are; “how much do you pay attention to your own thoughts?” and “how much do you picture in your mind what your life is like?” Participants responded to each question by choosing “very little”, “a little”, “some”, “much”, or “very much” on a 5 point scale. Hansell et al. (1986) reported the internal consistency of each item being at least .54. This scale was chosen as a measure of introspectiveness in adolescents because it was specifically designed for use with this age group and it appears to be the only published scale of its type.

Self-Esteem Scale (Rosenberg, 1965).

Participants then completed the fourth section of the survey which was the Rosenberg (1965) 10-question Self-Esteem scale, which consists of a series of

statements (e.g. “On the whole, I am satisfied with myself”), to which participants responded by clicking on one of four buttons labelled “strongly disagree”, “disagree”, “agree” and “strongly agree”, on a 4-point scale. Self-esteem was considered an important variable to include because it is an indicator of psychological well-being. Rosenberg’s self-esteem scale was chosen because it is the most widely used global self-esteem measure (Blascovich & Tomaka, 1991), and has undergone more psychometric analysis than any other self-esteem instrument (Byrne, 1996; Gray-Little, Williams, & Hancock, 1997; Wylie, 1989). Internal consistency estimates for this scale have ranged from .72 to .88 across a large number of studies, and test-retest reliability estimates over 1 week and 7 months have been estimated to be .82 and .67 respectively (Vispeal, Boo, & Blieler, 2001). The Rosenberg Self-Esteem Scale has been widely used within adolescent populations, including by Rosenberg himself (Rosenberg, 1967).

Strengths and Difficulties Questionnaire (Goodman, 2001).

Finally, participants completed the Strengths and Difficulties Questionnaire (SDQ, Goodman, 2001). This scale was designed for use with children and adolescents aged between 3 and 16 years, but norms have been generated for young people up to 18 years of age (Goodman, 2001). Different versions of the SDQ were developed for parents or teachers of children, and a self-report version for adolescents. It is widely used in both research settings, and as an initial screening measure in child and adolescent mental health services. The questionnaire consists of 25 items, to which respondents select ‘not true’, ‘somewhat true’ or ‘certainly true’ on a 3-point scale. The scale assesses areas grouped into five different domains, four of which are indicative of psychological and behavioural problems: Emotional Symptoms, Hyperactivity/Inattention, Conduct Problems and Peer Relationship Problems. The fifth domain (Pro-social Behaviour) identifies psychological and behavioural strengths. The SDQ was selected for this study as it provides a global indication of general problems that may be indicative of emotional distress. It was also selected because it is widely used in research settings with children and adolescents and has adequate reliability (internal consistency of .73, and 4-6 month test-retest reliability of .63, Goodman, 2001).

After completing the questionnaire, participants had the opportunity to enter their name and email address (separately from the questionnaire) so that they could enter the draw to win a \$25 Visa Prezzy Voucher.

CHAPTER FOUR: RESULTS STUDY 1

The aim of Study 1 was to ascertain whether there are different types of introspection within the Introspection scale, and how these are associated with self-reported psychological well-being within a potentially vulnerable adolescent sample group. Correlational analyses, a factor analysis and standard regression procedures were used to investigate this. The frequency distributions for scores on each of the scales are presented first, followed by the results of each statistical analysis.

Preliminary Data Review

Histograms of the total scores for each scale were first examined by eye in order to check that the data were not skewed, which could otherwise have inflated or deflated the analysis. No items needed to be removed. The reader should note that as in Study 1, the total possible scores for most of the scales are different from those in the original publication of the instruments. This is because a uniform response scale for all instruments was designed for ease of completion, and so the norms for some of the scales cannot be reported. The exceptions to this are the Strengths and Difficulties Questionnaire (SDQ) and the Rosenberg Self-Esteem scale, and so their original norms are stated below.

Introspection Scale (Hansell et al., 1986)

As shown in Figure 1, scores on the Introspection scale ranged from 20-60 out of a possible 60. The mean score was 41.6 with a standard deviation of 8.3.

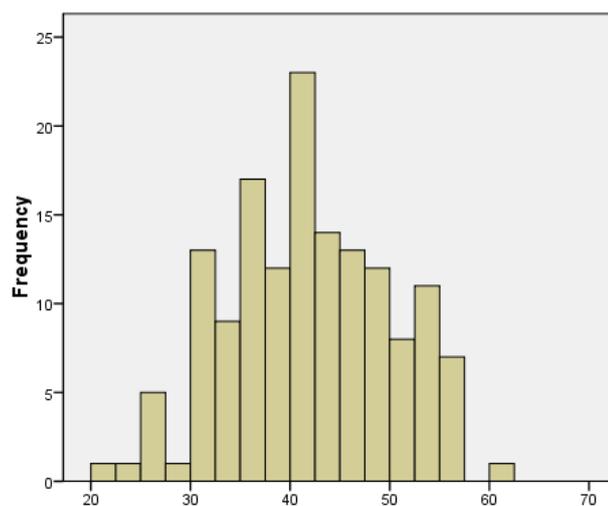


Figure 1. Frequency distribution of Hansell et al.'s (1986) Introspection Scale.

Positive and Negative Affect Scale (Watson et al., 1988).

Positive affect domain.

As shown in Figure 2, scores on the Positive Affect domain of the PANAS ranged from 11-48 out of a possible 50. The mean score was 31.0 with a standard deviation of 8.2.

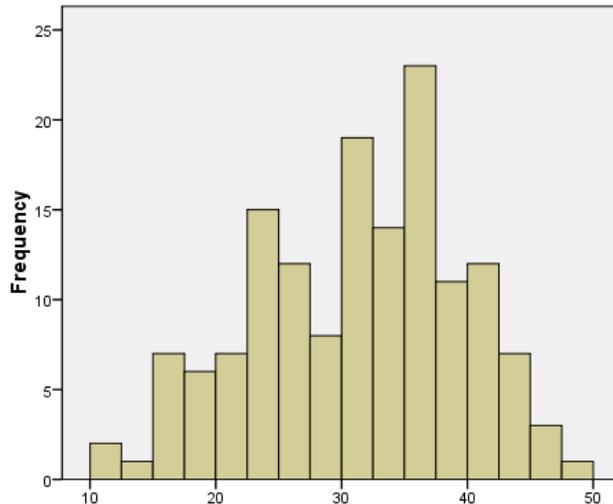


Figure 2. Frequency distribution of the Positive Affect domain of the Positive and Negative Affect Scale.

Negative affect domain.

As shown in Figure 3, scores on the Negative Affect domain of the PANAS ranged from 10-47 out of a possible 50. The mean score was 23.2 with a standard deviation of 7.6.

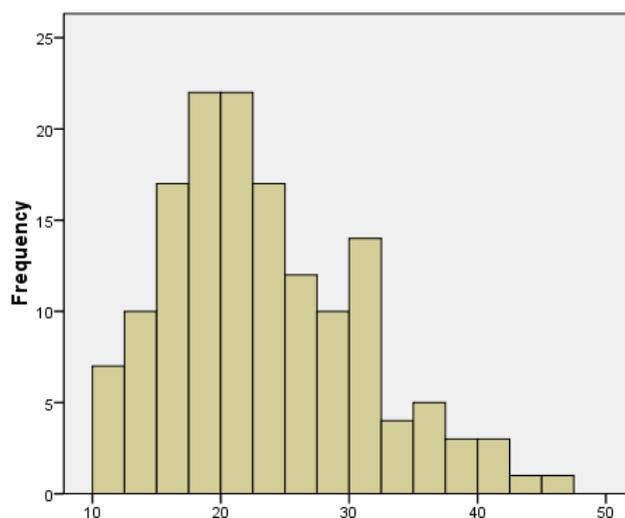


Figure 3. Frequency distribution of negative affect domain of the Positive and Negative Affect Scale.

Strengths and Difficulties Questionnaire (Goldman, 2001)

Emotional symptoms domain.

As shown in Figure 4, scores on the Emotional Symptoms domain of the SDQ ranged from 0-10 out of a possible 10. The mean score was 4.2 with a standard deviation of 2.6. The 'normal' range for an adolescent's score on this scale is 0-5 (Goldman, 2001).

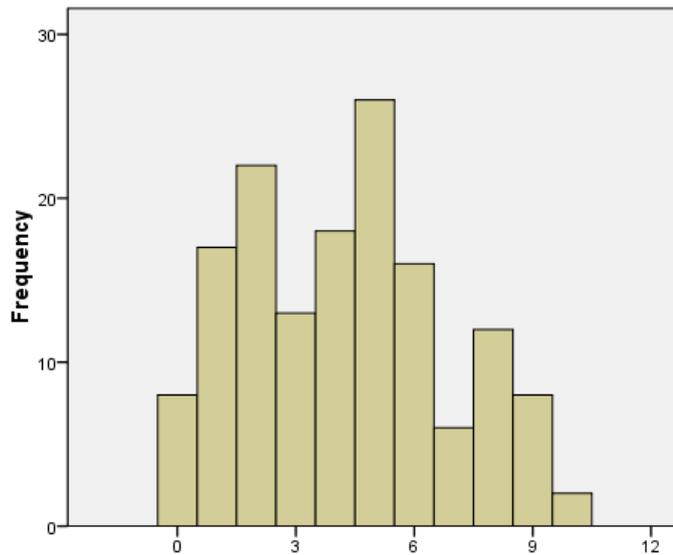


Figure 4. Frequency distribution of the Emotional Symptom domain of the Strengths and Difficulties Questionnaire.

Conduct problems domain.

As shown in Figure 5, scores on the Conduct Problems domain ranged from 0-6 out of a possible 10. The mean score was 1.52 with a standard deviation of 1.4. The 'normal' range for an adolescent's score on this scale is 0-3 (Goldman, 2001).

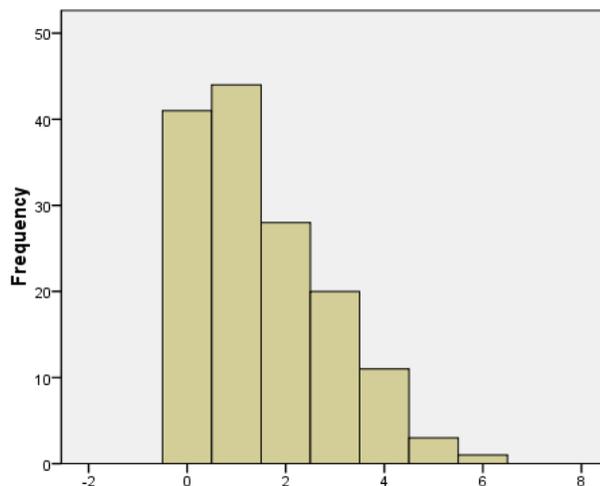


Figure 5. Frequency distribution of the Conduct Problem domain of the Strengths and Difficulties Questionnaire.

Peer problems domain.

As shown in Figure 6, scores on the Peer Problems domain ranged from 0-9 out of a possible 10. The mean score was 3.0 with a standard deviation of 2.0. The ‘normal’ range for an adolescent’s score on this scale is 0-3 (Goldman, 2001).

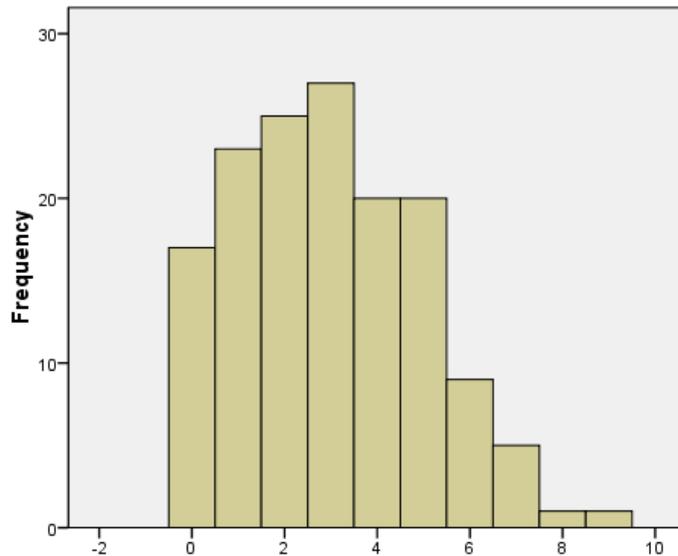


Figure 6. Frequency distribution of Peer Problem domain of the Strengths and Difficulties Questionnaire.

Prosocial behaviour domain.

As shown in Figure 7, scores on the Prosocial Behaviour domain ranged from 1-6 out of a possible 10. The mean score was 4.2 with a standard deviation of 1.3. The ‘normal’ range for an adolescent’s score on this scale is 5-10 (Goldman, 2001).

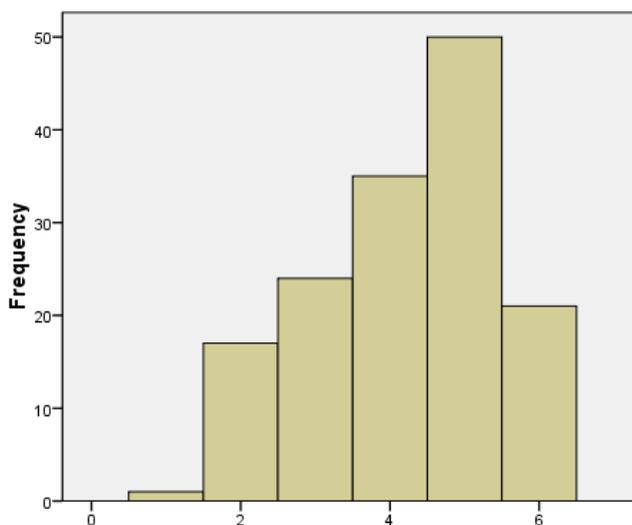


Figure 7. Frequency distribution of the Prosocial Behaviour domain of the Strengths and Difficulties Questionnaire.

Total difficulties domain.

As shown in Figure 8, scores on the Total Difficulties domain ranged from 1-30 out of a possible 40. The mean score was 13.3 with a standard deviation of 6.1. The 'normal' range for an adolescent's score on this scale is 0-15 (Goldman, 2001).

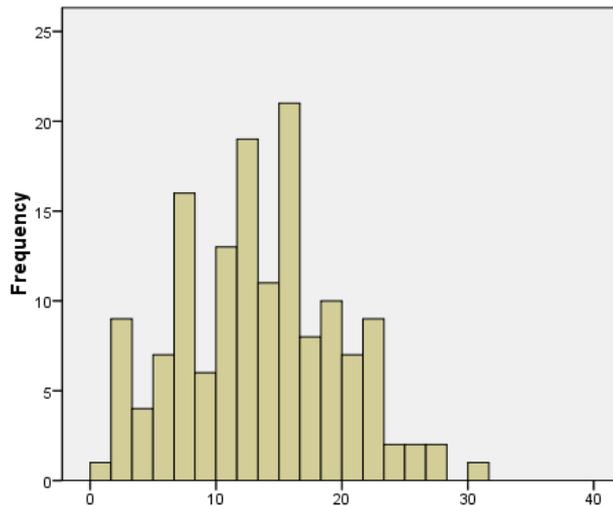


Figure 8. Frequency distribution of the Total Difficulties domain of the Strengths and Difficulties Questionnaire.

Self-Esteem Scale (Rosenberg, 1965)

As shown in Figure 9, scores on the Self-Esteem scale ranged from 3-30 out of a possible 40. The mean score was 17.0 with a standard deviation of 6.0. A 'normal' score (for an adult) on this scale is usually about 20.

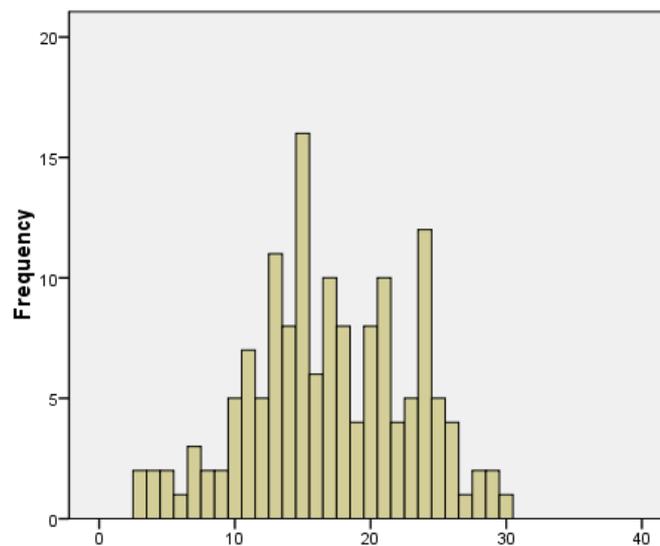


Figure 9. Frequency distribution of the Rosenberg (1965) Self Esteem Scale.

Inferential Statistics

Table 1
Zero Order Correlations between variables

1) Total IS									
2) Positive Affect	.16**								
3) Negative Affect	.25**	.17*							
4) Self Esteem	-.29**	.56*	-.47*						
5) Emotional Symptoms	.36**	-.41**	.59**	.63*					
6) Peer Problems	.12	.33**	.40**	.58**	.53**				
7) Hyperactivity	.01	.27**	.32**	.31	.32**				
8) Conduct Problems	.01	-.18**	.28**	.18**	.24**	.20*			
9) Total Difficulties	.18**	.50	.57**	-.62**	.78**	.30**	.70**	.60**	
10) Prosocial Behaviour	.09	.34**	.08	.29**	.20*	.20*	.30**	-.16	.30**

Note. * $p < .05$; ** $p < .01$

Before calculating the correlations, preliminary analyses were conducted to ensure that the assumptions of normality, linearity and homoscedasticity were not violated. Pearson correlations were used to examine the relationship between Total Introspection and Self Esteem, as these variables were judged to be normally distributed. In all other cases, relationships between variables were explored using the non-parametric alternative to Pearson correlation, namely, Spearman correlational analysis (Pallant, 2001).

As can be seen from

Table 1, (aside from correlations between the Total Difficulties domain of the SDQ and the factors that contribute to it), the strongest significant positive correlations ($r > .50$) were between Emotional Symptoms and Negative Affect ($r = .59, p < .01$), Self Esteem and Positive Affect ($r = .56, p < .05$), Peer Problems and Emotional Symptoms ($r = .53, p < .01$), and Conduct Problems and Hyperactivity ($r = .50, p < .01$). The strongest significant negative correlations were between Emotional Symptoms and Self Esteem ($r = -.63, p < .05$) and Peer Problems and Self Esteem ($r = -.58, p < .01$).

Total Introspection was most strongly associated with Emotional Symptoms, although this was a moderate correlation ($r = .36, p < .01$). Emotional Symptoms was

the only variable that was significantly associated with all other variables, most strongly with Self Esteem ($r = -.63, p < .05$).

Table 2
Inter-correlations in the Introspection scale

Individual Introspection Scale Item (How much do you.....)	Item-total score correlation
Q3. Try to figure yourself out?	.70
Q12. Think about who you are?	.67
Q10. Think about how you feel?	.66
Q11. Think about why you do things?	.63
Q9. Picture what your life is like?	.63
Q8. Think about yourself when you're alone?	.61
Q5. Think about what you're like as a person?	.59
Q6. Think about why your life is the way it is?	.58
Q7. Wonder about the real reason you behave the way you do?	.57
Q1. Think about yourself?	.57
Q2. Pay attention to your feelings?	.51
Q4. Pay attention to your thoughts?	.50

In order to begin to ascertain the internal structure of the Introspection scale, Spearman's correlations (used because scores for individual items on the Introspection Scale were not normally distributed), were conducted between each individual item on the scale and the overall score. As Table 2 shows, the item that contributed the most to overall scores was *Q3: How much do you try to figure yourself out?*, which contributed to approximately 49% ($r^2 = .49$) of the variance in overall scores. The item that contributed the least was *Q4: How much do you pay attention to your thoughts?*, which contributed to approximately 25% ($r^2 = .25$) of the variance in overall scores.

Table 3
Correlations between Variables and Introspection scale Items

Individual Introspection Scale Item (How much do you.....)	Psychological and Behavioural Measures								
	ES	CP	Hyp	PP	Total D	PS	SE	NA	PA
Q3. Try to figure yourself out?	.21*	.03	.04	.02	.12	.03	-.21*	.21*	.08
Q12.Think about who you are?	.32**	.01	.00	.05	.15	.17*	-.16*	.27**	.08
Q10.Think about how you feel?	.18*	-.04	-.09	.10	.06	.01	-.17	.18**	.20*
Q11.Think about why you do things?	.23**	.00	.03	.18*	.16*	.03	-.26**	.22**	.08
Q9.Picture what your life is like?	.21*	-.03	.02	.03	.09	.00	-.28**	.20*	.07
Q8.Think about yourself when you're alone?	.20*	.07	.00	.16	.14	-.03	-.11	.11	.05
Q5.Think about what you're like as a person?	.16	.04	-.07	.08	.08	.06	-.21*	.12	.18*
Q6.Think about why your life is the way it is?	.23**	.16*	.07	.15	.22**	.04	-.30**	.29**	.03
Q7.Wonder about the real reason you behave the way you do?	.33**	.04	.10	.22**	.24**	-.05	-.30**	.22**	.01
Q1.Think about yourself?	.28**	.06	-.04	.04	.12	.04	-.11	.14	.04
Q2.Pay attention to your feelings?	.28**	.07	-.01	-.00	.13	.15	-.10	.19*	.04
Q4.Pay attention to your thoughts?	.05	.04	-.10	-.08	-.05	.25**	.08	.31**	.31**

Note. * $p < .05$; ** $p < .01$

Note. ES=Emotional Symptoms, CP=Conduct Problems, Hyp=Hyperactivity, PP=Peer Problems, Total D=Total Difficulties, PS=Prosocial, SE=Self Esteem, NA=Negative Affect, PA=Positive Affect

The Introspection scale items in Table 3 are presented in descending order according to their relative contributions to overall Introspection scores. As can be seen from this table, individual Introspection Scale items were only moderately correlated with the variables of interest. *Q11: How much do you think about why you do the things you do?*, *Q6: How much do you wonder about why your life is the way it is?* And *Q7: How much do you wonder about the real reason you behave the way you do?* were the items significantly positively correlated with the most negative variables. The item most strongly associated with the adaptive variables (Pro-social Behaviour and Positive Affect) was *Q4: How much do you pay attention to your thoughts?* ($r = .25$, $p < .01$ and $r = .31$, $p < .01$ respectively). Q4 was also the item which was found to contribute the least to overall Introspection scores.

The strongest positive correlation was between *Q7: How much do you wonder about the real reason you behave the way you do?* and Emotional Symptoms ($r = .33$, $p < .01$), indicating that higher responses on this item were associated with higher levels of Emotional Symptoms. The strongest negative correlation was shared between *Q6: How much do you wonder about why your life is the way it is?* And *Q7: How much do you wonder about the real reason you behave the way you do*, which were both moderately associated with lower levels of Self Esteem ($r = -.30$, $p < .01$).

Factor Analysis

In order to examine the Introspection scale for subtypes of introspection, an exploratory factor analysis was conducted. Prior to conducting the test, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (Kaiser, 1974) and Bartlett's test of sphericity (Bartlett, 1954) were performed to ensure that the sample was appropriate for a factor analysis, which it was. Principal components analysis was the extraction method selected, in order to account for both unique and common variance amongst the items on the scale. This, and examination of the scree plot revealed three factors with eigenvalues greater than one, which, in combination, accounted for 59.33% of the total variance within the scale. The Varimax rotation method (with Kaiser normalisation) was then used to rotate the data for ease of interpretation. This is shown in Table 4.

Table 4
Factor Analysis of the Introspection scale

Individual Introspection Scale Item (How much do you..)	Component		
	1	2	3
Q11.Think about why you do the things you do?	.80		
Q7.Wonder about the real reason you behave the way you do?	.78		
Q12.Think about who you are?	.64	.30	
Q6.Think about why your life is the way it is?	.64		
Q5.Think about what you are like as a person?	.50	.33	
Q2.Pay attention to your feelings?		.87	
Q3.Try to figure yourself out?	.39	.67	
Q4.Pay attention to your own thoughts?		.65	
Q10.Think about how you feel?	.31	.59	.33
Q8.Think about yourself when you're alone?			.83
Q1.Think about yourself?		.43	.70
Q9.Picture what your life is like?	.53		.56

Note. Factor loadings above .60 are indicated in bold italic text.

Table 4 shows the Introspection scale items that contributed to each factor. Items that loaded less than .50 (this figure was selected as it appeared to allow for a clear break between items that loaded heavily and those that did not) are not shown. Component 1 items were considered to be self-analytical in nature (and so named '*Self Analysis*'), component 2 items were considered to be those that focussed on being aware of psychological processes (and so named '*Psychological Awareness*'), and component 3 items were considered to be those that were egocentric in nature in that they were

indicative of spending a lot of time engaged in self-thought (and so named 'Egocentricity'). Table 5 shows which Introspection scale items contribute to each factor. These three factors were then used in further analyses, and the associated results are presented next.

Table 5
Introspection scale items contributing to each Factor

Self Analysis	Psychological Awareness	Egocentricity
Q11. How much do you think about why you do the things you do?	Q2. How much do you pay attention to your feelings?	Q8. How much do you think about yourself when you're alone?
Q7. How much do you wonder about the real reason you behave the way you do?	Q3. How much do you try to figure yourself out?	Q1. How much do you think about yourself?
Q12. How much do you think about who you are?	Q4. How much do you pay attention to your thoughts?	
Q6. How much do you think about why your life is the way it is?		

Table 6
Correlations Between Variables and the Self-Analysis Factor

Psychological and Behavioural Measures	Factor: Self-Analysis
Emotional Symptoms	.31**
Conduct Problems	.07
Hyperactivity	.05
Peer Problems	.21*
Total Difficulties	.24**
Pro-social Behaviour	-.00
Self Esteem	-.35**
Negative Affect	.28**
Positive Affect	.09

Note. * $p < .05$; ** $p < .01$

Table 6 shows that Self Analysis was associated with slightly elevated levels of Emotional Symptoms ($r = .31, p < .001$), Positive Affect ($r = .26, p < .001$), Total Difficulties on the SDQ ($r = .23, p < .001$) and Peer Problems ($r = .21, p < .001$). Self Analysis was also associated with lowered levels of Self-Esteem ($r = -.32, p < .001$).

Table 7
Correlations between Variables and the Psychological Awareness Factor

Psychological and Behavioural Measures	Factor: Psychological Awareness
Emotional Symptoms	.23**
Conduct Problems	.03
Hyperactivity	-.01
Peer Problems	-.02
Total Difficulties	.09
Pro-social Behaviour	.16
Self Esteem	-.12
Negative Affect	.22*
Positive Affect	.15

Note. * $p < .05$; ** $p < .01$

Table 7 shows that Psychological Awareness was associated with higher levels of Emotional Symptoms ($r = .23, p < .01$), and Negative Affect ($r = .22, p < .05$). It was also associated with slightly higher levels of Prosocial Behaviour and Positive Affect, but these were not statistically significant.

Table 8
Correlations between Variables and the Egocentricity Factor

Measures	Factor: Egocentricity
Emotional Symptoms	.26**
Conduct Problems	.07
Hyperactivity	-.00
Peer Problems	.14
Total Difficulties	.17*
Pro-social Behaviour	-.01
Self Esteem	-.09
Negative Affect	.14
Positive Affect	.02

Note. * $p < .05$; ** $p < .01$

Table 8 shows that Egocentricity was associated with elevated levels of Emotional Symptoms ($r = .26, p < .01$) and Total Difficulties on the SDQ ($r = .17, p < .05$).

Multiple regression.

Standard multiple regression was used to ascertain which of the Introspection scale factors (that is, the different types of introspection that emerged in the factor analysis) were able to predict particular psychological and behavioural outcomes. The variables Conduct Problems, Hyperactivity, Pro-social Behaviour and Positive Affect were not included due to their not correlating highly enough ($r < .2$) with any of the factors. Before the analysis was conducted, several checks were performed to ensure the data was suitable for a standard multiple regression procedure. The sample size was indeed large enough (Stevens, 1996, recommends that there be at least 15 subjects for each variable; in the present case there was approximately 16). Multicollinearity and singularity assumptions were not violated (that is, the variables were not too highly correlated, and they represented statistically independent constructs, Pallant, 2001). The standardised residual plot was used to identify outliers (those with residual values above 3.3 or less than -3.3, Tabachnick & Fidell, 1996). Examination of the standardised residual plot also allowed for checking that the assumptions of normality, linearity and homoscedasticity were not violated.

Table 9, Table 10, Table 11, Table 12, and Table 13 show the multiple regression analyses used to determine the ability of the three factors to predict Emotional Symptoms, Peer Problems, Total Difficulties, Self Esteem and Negative Affect, respectively.

Table 9
Multiple Regression Analysis for predicting Emotional Symptoms

Variable	Emotional Symptoms		
	B	B	Standard Error
Self-analysis	.70	.25*	.25
Egocentricity	.41	.15	.15
Psychological Awareness	.21	.07	.27

Note. * $p < .05$; ** $p < .01$

Model $F(3,144) = 7.50$, $p < .001$, Adjusted $R^2 = .12$

The regression model for Emotional Symptoms was significant, and explained 12% of the variance in this factor. *Self Analysis* emerged as a significant predictor, meaning that Emotional Symptoms were higher in participants who reported engaging

in this type of Introspection ($p < .05$). *Egocentricity* and *Psychological Awareness* were not significant predictors of Emotional Symptoms.

Table 10
Multiple Regression Analysis for predicting Peer Problems

Variable	Peer Problems		
	B	β	Standard Error
Self Analysis	.51	.23*	.20
Egocentricity	.29	.14	.20
Psychological Awareness	-.39	-.17	.21

Note. * $p < .05$; ** $p < .01$

Model $F(3,144) = 3.65$, $p < .05$, Adjusted $R^2 = .05$

Table 10 shows that the model was significant and explained 5% of the variance in Peer Problems. *Self Analysis* emerged as a significant predictor of Peer Problems. *Egocentricity* and *Psychological Awareness* were not significant predictors of Peer Problems.

Table 11
Multiple Regression Analysis for predicting Total Difficulties

Variable	Total Difficulties		
	B	β	Standard Error
Self-analysis	1.48	.22*	.61
Egocentricity	.76	.12	.59
Psychological Awareness	-.31	.21	.65

Note. * $p < .05$; ** $p < .01$

Model $F(3,144) = 3.54$, $p < .05$, Adjusted $R^2 = .05$

Table 11 shows that the model was significant and explained 5% of the variance in Total Difficulties of the SDQ. *Self Analysis* emerged as a significant predictor of Total Difficulties. *Egocentricity* and *Psychological Awareness* were not significant predictors of Total Difficulties.

Table 12
Multiple Regression Analysis for predicting Self Esteem

Variable	Self Esteem		
	B	β	Standard Error
Self Analysis	-2.4	-.36**	.58
Egocentricity	.22	.04	.40
Psychological Awareness	.04	.01	.62

Note. * $p < .05$; ** $p < .01$

Model $F(3,144) = 5.65$, $p < .01$, Adjusted $R^2 = .12$

Table 12 shows that the model was significant and explained 12% of the variance in Self-esteem. *Self Analysis* emerged as a significant predictor of Self Esteem. *Egocentricity* and *Psychological Awareness* were not significant predictors of Self Esteem.

Table 13
Multiple Regression Analysis for predicting Negative Affect

Variable	Negative Affect		
	B	β	Standard Error
Self Analysis	1.90	.23*	.75
Egocentricity	.10	.01	.73
Psychological Awareness	1.13	.13	.80

Note. * $p < .05$; ** $p < .01$

Model $F(3,144) = 4.94$, $p < .01$, Adjusted $R^2 = .07$

Table 13 shows that the model was significant and explained 7% of the variance in Negative Affect. *Self Analysis* emerged as a significant predictor of Negative Affect. *Egocentricity* and *Psychological Awareness* were not significant predictors of Negative Affect.

CHAPTER FIVE: STUDY 1 DISCUSSION

Hoyer and Klein (2000) originally reasoned that because there is evidence that both large amounts (Ingram, 1990) and small amounts (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996) of introspection are risk factors for emotional distress, that a 'medium' amount of self-devoted thought must be optimal. However, in their survey of more than 600 adults, Hoyer and Klein found no evidence that this was the case. They concluded that these results suggest that it must be that the *content* of introspective thought that has implications for psychological well-being, more than the *amount* of, or time spent introspecting. Evidence from research examining the relationship between other types of self-focus, such as rumination and psychological well-being also suggests that the content of self-focus is a potential mediating factor between self-focus and psychological well-being. The aim of the present study was to examine whether different types of introspection (as defined by Hansell et al.'s (1986) Introspection scale) were related to specific adaptive and maladaptive psychological and behavioural variables. An adolescent subject pool was selected given their heightened tendency to be introspective, and the significance of introspective thought during this developmental period.

The effect sizes of detected relationships in this study were reasonably small, at most predicting approximately 10% of the variance in the variables included in this study. While this means caution must be exercised when concluding the implications of these findings, it still provides some insight into the kinds of introspection processes and psychological and behavioural characteristics that might be associated with one another.

When considered as a total score, introspection was largely associated with negative outcomes, most notably, increased negative affect, lower self-esteem, and higher amounts of emotional symptoms, but also with very slightly elevated positive affect. This suggests that as hypothesised, introspection is associated with not only psychological maladjustment and is therefore a multi-faceted concept rather than a singular one as past research has treated it (for example, Hansell & Mechanic, 1985; Hansell et al., 1986). The finding that introspection was mostly associated with maladaptive outcomes is consistent with other research in this area, in that all studies have found total introspection scores to be associated with undesirable attributes.

However, the present study revealed some associations between individual scale items and *desirable* attributes, suggesting that the use of the scale as a total score measure only overrides the detection of adaptive aspects of introspection.

Adaptive types of Introspection

The introspection items that were associated with the protective variables (that is, prosocial behaviour and positive affect) were the three items: self-reported tendency to pay attention to one's thoughts; thinking about how one feels; and what one is like as a person. Paying attention to one's thoughts could be considered to be similar to the processes involved in meta-cognition, or decentring, which is promoted by mindfulness skills, and which has been shown to be protective against experiencing emotional distress such as depression and anxiety (Teasdale et al., 2002). This is because these processes allow the individual to reflect on their cognitive experiences in a distanced and objective manner. In other words, negative thoughts are consequently more likely to be viewed as passing events in the mind, rather than "bought into" as reflections of truth (Teasdale et al., 2002). This type of introspection was also associated with negative affect, perhaps suggesting that the valence of associated affect depends on whether the associated thoughts are negative or positive, which would make sense according to cognitive-behaviour theories (Beck, 1967). Or, it could reflect a general raised emotionality that for whatever reason is associated with this type of introspection. That is, the awareness of one's inner psychological processes increases the emotion that is associated with them and therefore because one notices them, the experience of them is intensified (Scheier & Carver, 1983). Interestingly, paying attention to one's thoughts was the introspection scale item which contributed the *least* to total introspection scores, suggesting it is conceptually different to most other types of introspection.

The second introspection scale item that was associated with positive variables was the self-reported tendency to think about how one feels. This may be because this tends to occur for these respondents when they are feeling happy or in a positive mood, or, it could be because it implies a degree of emotional awareness, clarity or efficient emotion regulation (e.g. Watkins, 2008). Gaining qualitative information about the context and motivation for this introspection process would help clarify this, in future research.

Thinking about what one is like as a person was the third type of introspection significantly associated with positive attributes (higher self-esteem and positive affect). Again this may be because this type of introspection tends to occur when those respondents are feeling positive to begin with, but may also be reflective of, or an overlap with general high self-esteem. Exploring the association between self-esteem and different types of introspection more thoroughly would help to clarify this.

Maladaptive types of Introspection

The types of introspection that were most significantly associated with negative variables (primarily reduced self-esteem and emotional symptoms) were the three items: thinking about the reasons for one's behaviour; why one's life is the way it is; and thinking about why one does the things they do. For example, the item enquiring about thinking about the reason for one's behaviour was associated with higher emotional symptoms, more peer difficulties and general difficulties, lower self esteem and negative affect. This suggests the presence of problematic behaviour and an awareness of it, (or at least the perception of problematic behaviour), that is associated with an internal exploration perhaps in an attempt to gain some understanding of it. It may also suggest a self-consciousness that could be associated with anxiety, or a difficulty managing one's behaviour that results in impulsive problematic actions, and an awareness of this as being a problem. There are potential parallels between these types of introspection (thinking about the "why's" of life) and the cognitive process of rumination, and this will be discussed later.

As discussed in the introduction to this thesis, there has been the suggestion that adolescents who engage in identity-related introspection, such as thinking about who one is or wants to be, are better off than those who do not tend to think about these things as often. These adolescents have been argued to have a more integrated sense of self, to be more considerate of other people, and are therefore more likely to be popular among their peers (for example, Wolfe et al., 1972). It was also suggested that through considering their own identity, adolescents who introspect about who they are, are able to better empathise with others (Blos, 1982; Deutsch, 1967; Kohut, 1957; Offer, Ostrov & Howard, 1981) and therefore relate to them better. However, in the current study, "identity-related" items on the Introspection scale – that is, thinking about who one is, what one is like as a person, and trying to figure oneself out, did not load together in the

factor analysis. This provides support for this theses' argument that there are distinct types of introspection. This also speaks to the importance of not assuming that introspection is a uni-dimensional process, even when types of introspection seem intuitively similar to one another.

Individually, the "identity-related" items were largely associated with negative variables, although thinking about what one is like as a person was also associated with small levels of positive affect. Also, thinking about who one is was associated with a small degree of pro-social behaviour, perhaps lending some support to the claim that introspecting promotes empathy which is beneficial for social relationships (Wolfe et al., 1972).

The current study included a factor analysis of Hansell et al.'s (1986) Introspection Scale in order to examine whether there were subtypes of introspection embedded within it. This factor analysis did in fact suggest that the scale detects three reasonably distinct types of introspection, again lending additional support to the hypothesis that introspection is a multi-faceted multi-dimensional concept. The three types of introspection suggested by the factor analysis were defined as self analysis, egocentricity and psychological awareness. The differing correlations between the factors and the variables of interest included in this study provides support for Hoyer and Klein's (2000) hypothesis that the type of introspection a person engages in has implications for the types of psychological and behavioural experiences that individual has. Given the small relationships between individual introspection items and variables included in this study, more predictive weight is provided by the scale's factors rather than individual scale items.

The self analysis factor contained items were considered to be self-analytical in nature because they enquire about thought related to the motives behind one's behaviour, reasons for one's life situation and thinking about personal identity. Also, there are three 'why' questions (that is thinking about the reason for something) in the Introspection Scale, and all of them loaded most heavily on this factor. The self analysis factor contained the highest number of items that were associated with undesirable variables. All items contributing to this factor were associated with higher levels of emotional symptoms, lowered self-esteem, and higher levels of negative affect. Thinking about the reasons for an individual's behaviour appears to be associated with higher levels of peer problems, perhaps suggesting an awareness of and an attempt to

explore reasons for problems with one's peers. In general, the self analysis type of introspection was associated with negative psychological outcomes, suggesting that engaging in introspective thought that is seeking answers is associated with psychological distress. It is possible that self-analysing could be considered similar to the psychological process of rumination, which is associated with depression and negative affect (Katz & Bertelson, 1993).

The egocentricity factor included scale items that enquired about thinking about the self when alone and thinking about the self. These items were considered to be indicative of egocentricity because they are concerned with devoting time to thinking about the self in general. Egocentricity was significantly correlated with emotional symptoms, specifically, higher egocentricity scores were associated with higher self-reported levels of emotional symptoms. This suggests that devoting time to thinking about the self in general (or at least, the perception that one does), is associated with negative psychological effects. Perhaps this is because it distracts from meeting the demands of the environment (for example, daydreaming while one is supposed to be concentrating in class), or from meeting the requirements of maintaining social relationships (for example, daydreaming while one is expected to be listening to a friend confiding in them). This would make sense given the influence of the ecological context in which self-focus processes occur, and the effect this has on whether self-focus processes are adaptive or maladaptive.

The third and final factor, psychological awareness, included paying attention to one's thoughts and feelings and trying to figure oneself out. These items were largely related to maladaptive attributes. However, although the correlations did not quite reach statistical significance, psychological awareness was correlated with slightly elevated levels of the adaptive attributes (significantly more so than the other two factors). This suggests that perhaps in some contexts, or for some people, a general awareness of one's psychological experiences can be adaptive. This seems plausible given that the ability to appreciate and savour positive psychological experiences is psychologically protective (Watkins, 2008), as is achieving a sense of self through introspecting about identity related concerns (Levy & Farber, 1986).

CONCLUSION

The results of Study 1 provided support for the hypothesis that introspection is not a uni-dimensional construct as prior research has assumed (for example, Hansell et al., 1986), but instead is multi-faceted, with different levels of psychological variables associated with each type of introspection. This study extended the findings of Hoyer and Klein (2000) and their argument that considering types of introspection is important when exploring the relationship between introspectiveness and psychological well-being. Specifically, the present study found that some types of introspection were associated with both adaptive and maladaptive attributes. Even identity-related considerations, while previously argued to provide protection against emotional distress during adolescence (e.g. Levy & Farber, 1986; Wolfe et al., 1972), were associated with both adaptive and maladaptive attributes, highlighting the complexity of the relationship between psychological well-being and introspection. This complexity echoes that indicated by research into other types of self-focus and their relationship with psychological well-being (e.g. Watkins, 2008).

Analyses revealed that there were three broad types of introspection within Hansell et al.'s (1986) Introspection scale for adolescents. These were identified as self analysis, egocentricity and psychological awareness. Self analysis and egocentricity were largely related to negative psychological outcomes, most notably emotional symptoms, negative affect and self esteem. Parallels were drawn between what research shows can cause a self-focus process to become maladaptive, that is, contextual factors and the *way* in which a person relates to their inner experience (such as in the case of rumination).

Psychological Awareness was largely associated with negative symptoms, however out of the three factors, it was the most strongly associated with adaptive attributes. Also, close inspection of psychological awareness showed that one of its items (paying attention to one's thoughts) was the only scale item that was associated with *both* protective variables that were measured in this study. Therefore, it was suggested that for some people or in some contexts, psychological awareness can be adaptive.

In order to better understand how these types of introspection are related to emotional symptoms, and how psychological contextual factors may influence the

relationship, a second study was conducted. Specifically, this second study examined how psychological resources interact with the relationship between emotional symptoms and introspectiveness.

CHAPTER SIX: STUDY 2 METHOD

The aim of Study 2 was to investigate if psychological resources (specifically, mindfulness, emotional clarity and cognitive flexibility) are associated with the relationship between introspectiveness and psychological well-being, and whether or not this varies as a function of type of introspection.

Participants

The participants in this study were a separate sample group from Study 1. This study included 259 teenagers aged between 13 and 18 years ($m = 15.29$, $sd = 1.44$) who were enrolled at school in New Zealand at the time of participating. Of these, 192 were female and 67 were male. The majority (217) identified themselves as a New Zealander of European descent/Pākehā ethnicity, 18 identified as Māori, 9 as Asian, 2 as Pacific Islander and 13 as ‘Other ethnicity’.

Recruiting of participants.

In this study, all participants were recruited via an advertisement placed on the social networking website, Facebook. Using Facebook as a sole recruitment source was possible at the time Study 2 was conducted, due to the increase in numbers of young people with Facebook accounts in the year between when Study 1 and Study 2 were conducted.

Materials and Procedure

This study consisted of a questionnaire (See Appendix G), which was placed on the Massey University website, and participants accessed it by clicking on the link to it which was placed within the advertisement.

After reading the information sheet and indicating their informed consent to participate by clicking ‘continue’, participants were asked to indicate their age, ethnicity and gender.

Each instrument that was included in the questionnaire is described below. Where they are available, reliability statistics provided by the instruments’ original authors are provided.

Child and Adolescent Mindfulness Measure (CAMM, Greco et al., 2011).

Participants then completed the CAMM. This is a 10-item scale developed as the first measure of its type designed for children and adolescents. It contains items

enquiring about a respondent's ability to observe non-judgmentally, act with awareness, and accept without judgment. This scale is reported to have high internal consistency ($\alpha=.81$). Higher scores indicated higher levels of mindfulness skills.

Cognitive Flexibility Inventory (Dennis & Vander Wal, 2010).

The Cognitive Flexibility Inventory is designed to measure the type of cognitive flexibility that is required in order for a person to modify maladaptive thoughts and replace it with balanced thinking. Higher scores indicate higher levels of cognitive flexibility. This instrument was not designed specifically for adolescents, but was originally used with an undergraduate sample group to establish its reliability and validity (which were satisfactory). The original 20-item CFI is reported to have high test re-test reliability (.83), and adequate internal consistency ($\alpha = .77$). Since research shows respondent dropout and missing values can be a significant problem with long questionnaires (Roszkowski & Bean, 1990), and the CFI is a 20-item scale, I randomly selected 10 items in order to halve its length. Reducing the length of a scale is a common and acceptable practice as long as the removal of items is done in a manner which protects the reliability and validity of the instrument (Coste, Guillemin, Pouchot, & Fermanian, 1997). In the present case, this was achieved by examining the item-total correlations of the 10 randomly chosen items, to ensure that they were not significantly different from those of the non-selected items. The short-form version also had adequate internal consistency ($\alpha = .79$), similar to the original scale, which shows that the 10 randomly selected items adequately represent the internal consistency of the original scale. This also suggests that the test-retest reliability of the short-form version, had it been calculated, would probably be similar to that of the original scale.

Emotional Symptoms – the “Emotional Symptoms” Domain of the Strengths and Difficulties Questionnaire (ES, Goodman, 2001).

The next part of the questionnaire was the Emotional Symptoms domain of the Strengths and Difficulties Questionnaire, as described in Study 1. Again, this was included in Study 2 to provide a measure of vulnerability to negative affect, anxiety, low mood and depression. Higher scores indicate higher levels of emotional symptoms.

Introspection Scale (IS, Hansell et al., 1986).

Participants next completed the Introspection scale (Hansell et al., 1986). See Study 1 methodology for a description of this scale. Higher scores indicated higher levels of introspectiveness.

Emotional Clarity Measure (from the Trait Meta-Mood Scale, Salovey et al., 1995).

Finally, participants completed the Emotional Clarity Measure, from Salovey et al.'s (1995) Trait Meta-Mood Scale, which is an instrument designed to detect all facets of emotional intelligence. This part of the scale measures a person's ability to recognise and understand their own emotions. While this scale was not specifically designed for use within an adolescent population, it has been used successfully with this age group (Fernandez-Berrocal, Alcaide, Extremera, & Pizarro, 2006).

After completing the questionnaire, participants had the opportunity to enter their name and email address (anonymously) so that they could enter the draw to win a \$20 Warehouse Voucher.

CHAPTER SEVEN: STUDY 2 RESULTS

The first aim of Study 2 was to provide a preliminary investigation of how psychological resources can influence the type of affective experiences associated with introspectiveness. This consisted of investigating the ability of Introspectiveness combined with the psychological resources, to predict emotional distress. This was done in order to check that the combination of Psychological Flexibility, Mindfulness, Emotional Clarity and Introspection, was predictive enough of emotional symptoms to warrant further investigation. Standard multiple regression was used to investigate this.

The second aim of Study 2 was to examine how Introspectiveness related directly and indirectly, to Emotional Symptoms, in the context of psychological resources. Path analysis procedures were used to examine this.

The third aim of Study 2 was to examine how general Introspectiveness (that is, total scores on the Introspection scale), compared to the types (factors) of Introspection, related to Emotional Symptoms.

Preliminary procedures for refining the data before analysis are described, followed by the descriptive statistics for each instrument. Then the results of a factor analysis (to check whether the factor analysis from the first study held in a different sample group) is presented, followed by the correlations between variables. Finally, data analysis specific to each aim of the study is presented.

Preliminary Data Review

Histograms of the total scores for each scale were first examined by eye in order to check that the data were not skewed, which could otherwise have inflated or deflated the analysis. Then, histograms of the individual items on each scale were examined by eye, as well as by using a measure of internal consistency to check if there were any items which showed a bias toward one particular response, or, an abnormal distribution of responses. These individual items were then removed from the data set before further analysis was completed. The items which were removed are listed below. All histograms presented here are of the data *after* these items were removed. As in Study 1, the total possible scores for each scale are different from those in the original publication of the instruments. This is partly because some items were removed from the scales, and partly because a uniform scale across all instruments was used for ease of completion.

Mindfulness - Children's Acceptance and Mindfulness Measure (CAMM, Greco et al., 2011).

Scores on the CAMM ranged from 13 to 49 out of a possible 50. Higher scores indicated higher levels of mindfulness. The mean score was 24.9 with a standard deviation of 6.6. This scale displayed excellent internal consistency with a Cronbach's Alpha of .85. Items 10 and 5 were removed because reliability analyses showed the reliability of the scale would be improved from .77 to .80 if these items were removed.

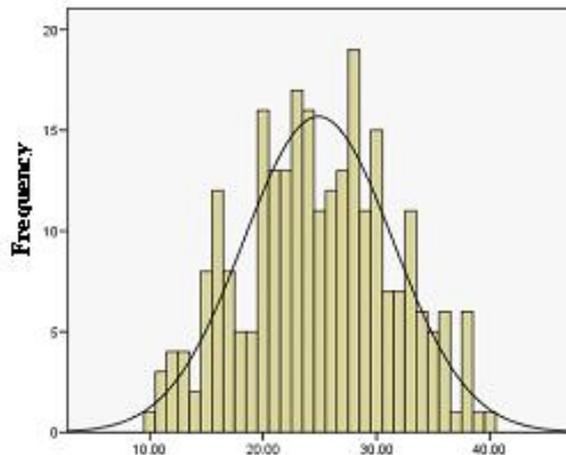


Figure 10. Children's Acceptance and Mindfulness Measure (CAMM) scores

Cognitive flexibility – Cognitive Flexibility Inventory (CFI, Dennis & Vander Wal, 2010).

Scores on the CFI ranged from 15 to 45 out of a possible 45 with a mean of 30.7 and a standard deviation of 5.8. Higher scores indicated greater levels of cognitive flexibility. As mentioned earlier, this shortened version of the CFI demonstrated good internal consistency with a Cronbach's Alpha of .79.

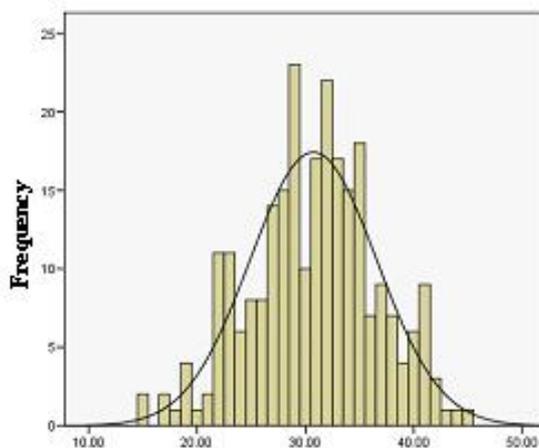


Figure 11. Cognitive Flexibility (CFI) scores

Emotional symptoms – the “Emotional Symptoms” Domain of the Strengths and Difficulties Questionnaire (ES, Goodman, 2001).

Scores on the ES scale ranged from 5 to 25 with a mean of 14.6 and a standard deviation of 5.1. Higher scores indicated higher levels of emotional symptoms. This scale showed excellent internal consistency with a Cronbach’s Alpha of .84, and no items were removed.

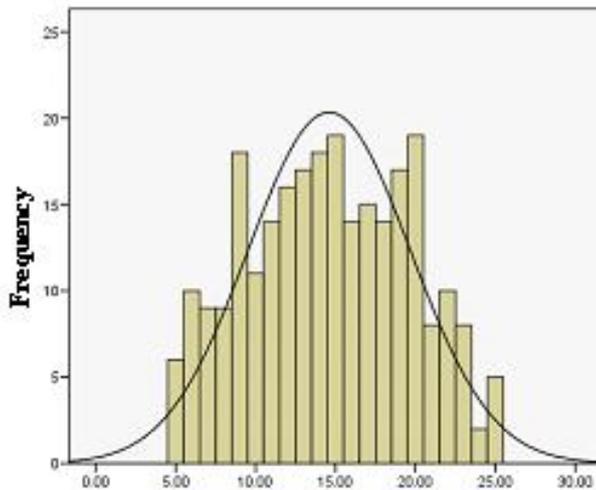


Figure 12. Emotional Symptom Scale (ESS) scores

Introspection Scale (Hansell et al., 1986, IS).

Scores on the Introspection Scale ranged from 12 to 50 out of a possible 60 with a mean of 41.4 and a standard deviation of 9.1. Higher scores indicated higher levels of introspectiveness. This scale showed excellent internal consistency with a Cronbach’s Alpha of .89 and no items were removed.

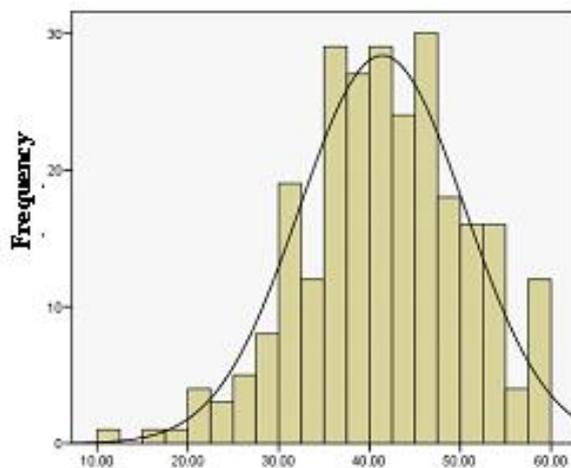


Figure 13. Introspection Scale (IS) scores

Emotional Clarity Scale (ECS, Salovey et al., 1995).

Scores on the Emotional Clarity Scale ranged from 9 to 40 out of a possible 40 with a mean of 25.1 and a standard deviation of 6.3. Higher scores indicated higher levels of emotional clarity. This scale showed good internal consistency with a Cronbach's Alpha of .81 and no items were removed.

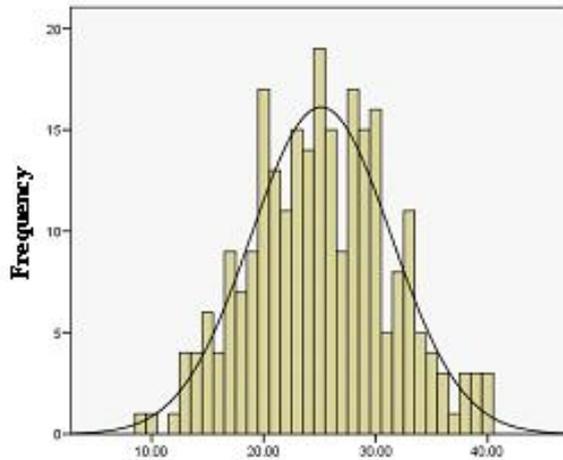


Figure 14. Emotional Clarity Scale (ECS) scores

Factor Analysis

A confirmatory factor analysis was performed on the Introspection scale in order to gauge whether the factors (subtypes of introspection) detected in Study 1 (*Egocentricity*, *Self Analysis* and *Psychological Awareness*), would be replicated in Study 2. Examination of the scree plot generated from the analysis revealed two factors with eigenvalues greater than one, which, in combination, accounted for 56.14% of the total variance within the scale. The Varimax rotation method (with Kaiser normalisation) was then used to rotate the data for ease of interpretation. The factor loadings (as represented using the Varimax rotation method) are shown in Table 14.

Table 14
Confirmatory Factor Analysis of the Introspection Scale

Introspection Scale Items (How much do you...)	Component		
	1	2	3
Q1. Think about yourself?	.78		
Q2. Pay attention to your feelings?	.71		.36
Q4. Pay attention to your thoughts?	.71		.47
Q3. Try to figure yourself out?	.71		.32
Q5. Think about what you are like?	.51	.42	
Q7. Think about the real reason you behave the way you do?		.78	
Q6. Think about why your life is the way it is?		.75	
Q8. Think about yourself when you're alone?	.46	.63	
Q9. Picture what your life is like?	.33	.60	
Q11. Think about why you do things?		.36	.78
Q12. Think about who you are?	.40	.34	.66
Q10. Think about how you feel?	.47		.60

Note. □ = Egocentricity, ■ = Self Analysis, ■ = Psychological Awareness.

As can be seen in Table 14, the *Psychological Awareness* factor emerged as a distinct factor, as in Study 1. *Self Analysis* loaded on two factors, but these over-lapped to some degree, as items 11 and 12 loaded on both of these factors, suggesting that these items load similarly and could still be considered an individual factor. The third factor, *Egocentricity*, did not emerge as a particularly distinct factor, and so was not included in later analyses.

A second exploratory factor analysis was then conducted with all five of the scales, in order to examine their uniqueness from one another, given that there is some face value similarity between the types of attributes assessed by each scale. Examination of the scree plot generated from the analysis revealed eight factors with eigenvalues greater than one (although most of the items loaded on just five factors). The Varimax rotation method (with Kaiser normalisation) was then used to rotate the data for ease of interpretation. The factor loadings (as represented using the Varimax rotation method) are shown in Table 15.

Table 15
Exploratory Factor Analysis of all Five Scales

Item	Component							
	1	2	3	4	5	6	7	8
Emotional Symptoms 2	.74							
Emotional Symptoms 3	-.71	-.41						
Mindfulness 8	.71							
Emotional Symptoms 1	-.68							
Emotional Symptoms 4	-.64							
Emotional Symptoms 5	-.53						-.38	
Cognitive Flexibility 7	.49	.31						.31
Cognitive Flexibility 2	.47	.38						
Mindfulness 7		.78						
Mindfulness 9		.78						
Mindfulness 4		.68						
Mindfulness 6		.61					.32	
Mindfulness 3		.59						
Mindfulness 1	.34	.55			.34			
Emotional Clarity 5	.35	.49			.37			
Emotional Clarity 6		.48			.32			
Cognitive Flexibility 4			.81					
Cognitive Flexibility 8			.75					
Cognitive Flexibility 3			.75					
Cognitive Flexibility 1			.62					
Cognitive Flexibility 9			.59					.37
Cognitive Flexibility 6			.59				-.35	
Introspection Scale 4				.79				
Introspection Scale 2				.77				
Introspection Scale 3				.76				
Introspection Scale 1				.72				
Introspection Scale 8				.52		.39		
Emotional Clarity 8					.75			
Emotional Clarity 7					.74			
Emotional Clarity 2					.68			
Emotional Clarity 1					.56			.38
Emotional Clarity 4					.55			
Introspection Scale 6						.75		
Introspection Scale 7						.72		
Introspection Scale 5						.52		
Emotional Clarity 3				.46				.63
Mindfulness 2								.33
Cognitive Flexibility 5		.31						.69

Note. Loadings greater than .60 appear in bold italics

As can be seen from Table 15, the scales loaded on five components, one for each scale, with some overlap between a few items of each. This overlap between scales

would be expected given the similarity in the psychological constructs that they measure, and this factor analysis suggests sufficient distinction between them.

Correlations

Correlations were calculated to examine the data exploratively. Before this was done, preliminary checks were conducted to ensure that the assumptions of normality, linearity and homoscedasticity were unvalidated. Pearson correlations were used as the data were satisfactorily normally distributed. These correlations appear in Table 16.

Table 16
Correlations between variables and total Introspection scores

	Introspectiveness	Emotional Symptoms	Emotional Clarity	Mindfulness	Cognitive Flexibility
Introspectiveness	1.0				
Emotional Symptoms	.25**	1.0			
Emotional Clarity	-.01	-.49**	1.0		
Mindfulness	-.21**	-.69**	.63**	1.0	
Cognitive Flexibility	.13*	-.34**	.38**	.39**	1.0

*Note.** $p < .05$; ** $p < .01$

Table 16 shows that all correlations between the variables and total Introspection scale scores were statistically significant except between Emotional Clarity and Introspection. The strongest of the significant correlations was between Emotional Symptoms and Mindfulness, which were negatively correlated ($r = -.69, p < .01$). Emotional Symptoms and Emotional Clarity were moderately negatively correlated ($r = -.49, p < .01$). Mindfulness and Emotional Clarity were quite strongly correlated ($r = .63, p < .01$). Out of all of the variables, Introspectiveness was most strongly correlated with Emotional Symptoms ($r = .25, p < .01$).

Table 17
Correlations between variables and Introspection factors

	Psychological Awareness	Self Analysis	Emotional Symptoms	Emotional Clarity	Mindfulness	Cognitive Flexibility
Psychological Awareness	1.0					
Self Analysis	.51**	1.0				
Emotional Symptoms	.06	.26**	1.0			
Emotional Clarity	.07	-.17**	-.49**	1.0		
Mindfulness	-.04	-.29**	-.69**	.63**	1.0	
Cognitive Flexibility	.20**	.06	-.34**	.38**	.39**	1.0

Note. * $p < .05$; ** $p < .01$

Table 17 shows that *Psychological Awareness* and *Self Analysis* were moderately correlated ($r = .51, p < .01$). The only other variable that *Psychological Awareness* was significantly correlated with was Cognitive Flexibility ($r = .20, p < .01$). *Self Analysis* was correlated with all of the variables of interest except for Cognitive Flexibility. *Self Analysis* was positively correlated with Emotional Symptoms ($r = .26, p < .01$), and negatively with Emotional Clarity ($r = -.17, p < .01$), and Mindfulness ($r = -.29, p < .01$).

Aim 1: To Investigate how Psychological Resources in Combination with Introspectiveness Relate to Emotional Symptoms

In order to generally investigate the relationship between Introspectiveness, Mindfulness, Cognitive Flexibility and Emotional Clarity in terms of their collective and unique contributions to Emotional Symptoms, a regression procedure was conducted. This provided an understanding of how the different variables contribute to Emotional Symptoms scores simultaneously, that is, how the combination of Introspectiveness and psychological resources are related to Emotional Symptoms.

A standard regression technique was used, as this allows variables to be entered simultaneously, rather than sequentially, as no specific apriori prediction was made about the relative contributions of the variables to scores on the dependent variable (that is, Emotional Symptoms). Before the analysis was conducted, several checks were performed to ensure the data was suitable for this kind of analysis. These consisted of checking the sample was indeed large enough (Stevens, 1996, recommends there be at least 15 subjects for each variable; in the present case there was approximately 52). Multicollinearity and singularity assumptions were also checked and were found to be satisfactory, that is, the variables were not too highly correlated, and so represented statistically independent constructs. The standardised residual plot was then examined to check for outliers (those variables with residual values above 3.3 or less than -3.3, as recommended by Tabachnick & Fidell, 2007).

Table 18 shows the standardised regression co-efficients (β), the unstandardised regression co-efficients (B) and the semi-partial correlations (sr^2) for this regression analysis.

Table 18
Standard Multiple Regression of Psychological Resources on Emotional Symptoms

	Emotional Symptoms			
	B	β	Standard Error	sr^2 (unique)
Introspectiveness	.08	.14**	.03	.02
Mindfulness	-.41	-.52**	.05	.15
Emotional Clarity	-.13	-.16**	.05	.01
Cognitive Flexibility	-.12	-.14**	.04	.01

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

Model $F(4,245) = 62.80$, $p < .001$, Adjusted $R^2 = .54$

As can be seen from Table 18, the regression model predicting Emotional Symptoms from the combination of Introspectiveness, Mindfulness, Emotional Clarity and Cognitive Flexibility, was statistically significant ($p < .001$), and R^2 indicated that the model was able to predict 54% of the variance in Emotional Symptom scores. The standardised regression co-efficients (β) for all of the predictor variables were statistically significant ($p < .01$), with Mindfulness scores contributing the most to the variance in Emotional Symptom scores, followed by Emotional Clarity, and Introspectiveness and Cognitive Flexibility. This indicates that all of the predictor variables make a statistically significant contribution to the variance in Emotional Symptom scores.

The semi-partial correlation co-efficients squared (sr^2) indicate by how much R^2 (that is, the total amount of variance in Emotional Symptom scores provided by the model), would be *reduced* if each of the predictor variables were removed individually, over and above the combined removal of the other variables. As can be seen from the table, removing Mindfulness would have the greatest effect, followed by Introspectiveness, then Emotional Clarity and Cognitive Flexibility. It is interesting to note that while Introspectiveness' overall contribution to Emotional Symptom scores was the lowest-equal out of all of the variables, if removed, it would cause the second greatest (behind Mindfulness), reduction in the collective predictive power of this combination of variables.

Aim 2: To compare how general Introspectiveness relates, indirectly and directly, to Emotional Symptoms

Path Analysis

Path analysis is a type of Structural Equation Modelling (SEM). This methodology is similar to regression, in that both are based on linear statistical models. The advantages of path analysis include that it provides a more holistic analysis of the relationships between the variables than regression does as it does not require variables to be either dependent or independent, applies multiple equations between variables simultaneously, and it allows for a thorough estimate of measurement error (Suhr, 2012). Path analysis is designed to test a pre-determined theory, rather than as a theory-building technique, as it is possible that more than one model of relationships between

variables could adequately fit the data (Munro & Sexton, 1984). For this reason, it is a statistical technique that must be used with caution.

The path analysis model-fitting programme AMOS 7.0 (Arbuckle, 2005) was used to conduct this analysis, in order to examine how general Introspectiveness (that is, total scores on the Introspection scale) related to Emotional Symptoms, compared to the different factors of the Introspection scale, within the overall context of the psychological resources of interest (Cognitive Flexibility, Emotional Clarity and Mindfulness). The AMOS programme provides this by calculating an indication of the fit of the hypothesised relationship between variables (the hypothesised model) to those actually observed in the data, as well as the indirect and direct effects of the variables on one another (Meyers, Gamst, and Guarino, 2006).

Fit indices.

Meyers et al. (2006) recommend that in SEM and path analysis, the chi squared statistic, the Normed Fit Index (NFI), the Comparative Fit Index (CFI), and the Steigers Root Square Error of Approximation (RMSEA) provide the most accurate estimate of a hypothesised model's fit to the data. Therefore, these were the fit indices used in this study. The chi square statistic provides an estimate of the predicted and observed relationships between the variables, and a statistically non-significant result indicates adequate fit of the model to the data (Meyers et al., 2006). This is commonly relied upon as the most important fit index. However, the chi square statistic is extremely sensitive to sample size (Meyers et al., 2006). For models with more than 200 cases (as in the present study) the chi square is usually significant (Meyers et al., 2006), potentially falsely suggesting a poor fit between the model and the data, when the difference between the model and the data is actually only very small. Therefore, Meyers recommends that the other fit indices are considered in addition to the chi square statistic when examining model fit. This recommendation was applied in the present study.

The NFI and CFI both measure the difference between the model and the 'independence' model (that is, a model in which there are no relationships between the variables), and can vary between 0 and 1, with 1 being optimal and results greater than .95 being acceptable (Byrne, 2010). The RMSEA compares the residuals in the sample data with those which would be expected in the population. An RMSEA of less than .08 indicates a good fit, .08-.1 indicates a moderate fit and greater than .1 represents an

inadequately fitting model (Meyers et al., 2006). That is, the smaller the RMSEA, the better the estimated fit.

The path analysis procedure.

The hypothesised model is represented in Figure 15. Each single headed arrow represents a predictive relationship of one variable directly influencing another. This hypothesised model was designed in order to reflect both an indirect and direct relationship between Introspectiveness and Emotional Symptoms so that these could be compared, as well as directional relationships established by prior research. The directional arrows between all variables except for between Introspectiveness and Mindfulness, were based on established findings from prior research. The hypothesised relationship between Introspectiveness and Mindfulness, since it has never been examined empirically before, was based on my prediction that the degree to which a person is introspective is more likely to influence the degree to which they are mindful, rather than the other way around.

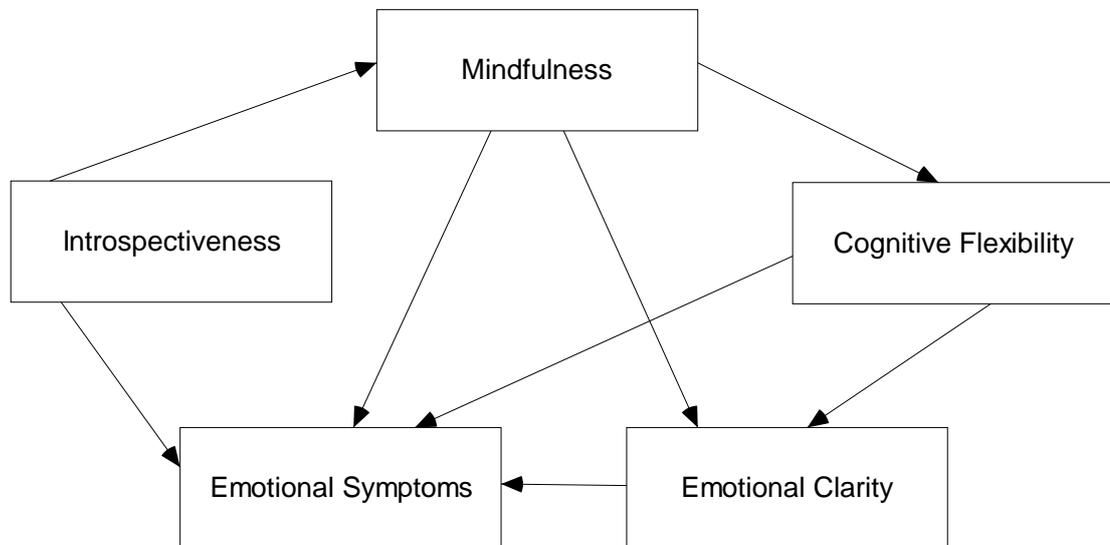


Figure 15. Hypothesised path model for the relationship between variables and general Introspectiveness.

The hypothesised model (Figure 15) overall showed a poor fit with the data ($\chi^2 = 12.20$, d.f. = 2, $p < .01$, CFI = .97, NFI = .97, RMSEA = .14). The outcome model with the associated path co-efficients included appears in Figure 16. All path co-efficients (regression weights) were significant ($p < .05$), suggesting that the relationships predicted match the data, but that the overall ‘shape’ of the model is not quite matching the data accurately enough.

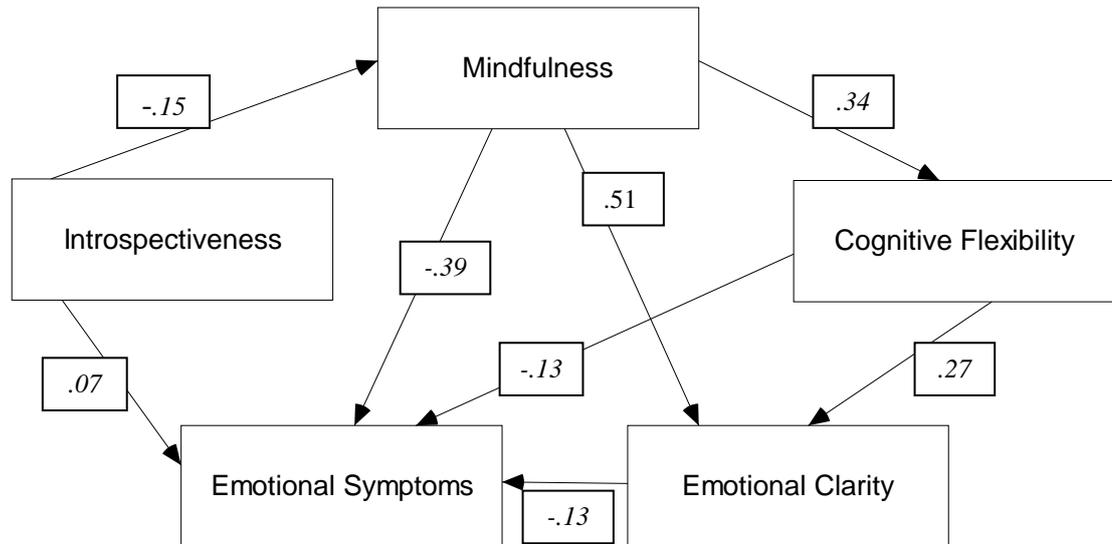


Figure 16. Outcome path model for variables and general introspectiveness.

Next, since the hypothesised model did not adequately fit the data, some paths needed to be adjusted. Known as path ‘pruning’ this is a common technique used in structural equation modelling to adjust model fit (Hoyle, 1995). This involved removing the ‘weakest link’, that is the weakest path co-efficient, the one between Introspectiveness and Emotional Symptoms. However, this model still showed a reasonably poor fit to the data ($\chi^2 = 18.90$, d.f = 3, $p < .001$, CFI = .96, NFI = .95, RMSEA = .14). So, it was decided that it would be reasonable to suspect the poor fit was due to a path being missing from the model, that is, that there was a relationship between two variables that had not been accounted for yet – Introspectiveness and Cognitive Flexibility. So, a uni-directional arrow predicting that Introspectiveness scores would influence Cognitive Flexibility, was entered into the model.

This model (Figure 17), showed adequate fit to the data ($\chi^2 = 7.06$, $p = .03$, d.f. = 2, CFI = .99, NFI = .98, RMSEA = .09). Estimates showed that the model, as in the regression analyses presented earlier, was able to account for approximately 51% of the variance in Emotional Symptoms.

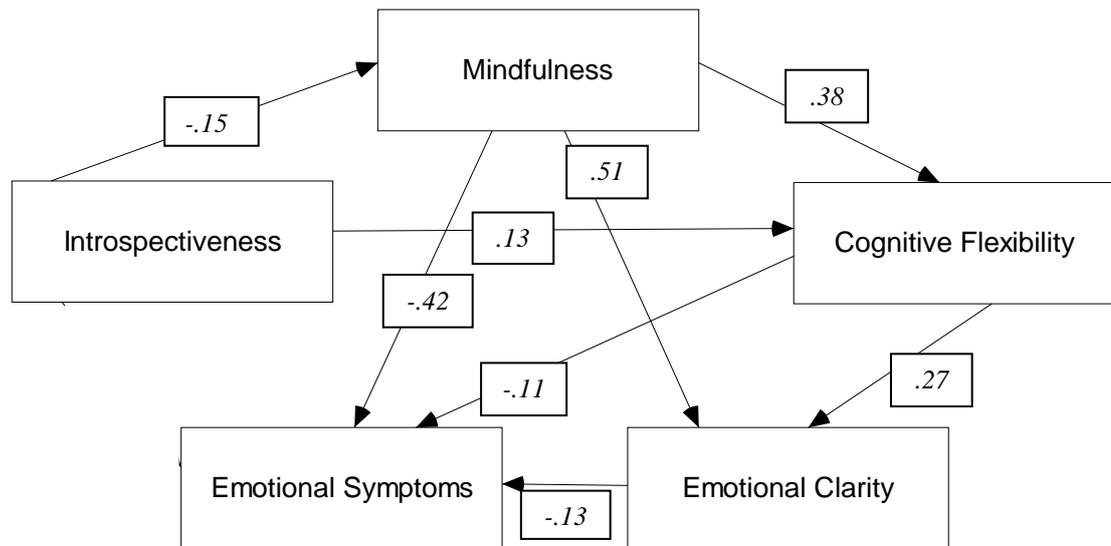


Figure 17. Final path model for variables and general introspectiveness.

Figure 17 shows that Introspectiveness had a small direct effect on both Cognitive Flexibility and Mindfulness scores, but compared to Cognitive Flexibility and Mindfulness, was a poor direct predictor of Emotional Symptoms. Introspectiveness was more strongly related to Emotional Symptoms indirectly through Mindfulness, Cognitive Flexibility and Emotional Clarity than it was directly. Mindfulness was the strongest direct predictor of Emotional Symptoms and it also moderately directly predicted levels of the other two psychological resources (Cognitive Flexibility and Emotional Clarity). Cognitive Flexibility had a small direct effect on Emotional Symptoms, and a moderate effect on Emotional Clarity. Cognitive Flexibility was also indirectly related to Emotional Symptoms via Emotional Clarity. Emotional Clarity was a weak direct predictor of Emotional Symptoms.

Aim 3: To investigate how the different factors of the Introspection scale relate to Emotional Symptoms, compared to general Introspectiveness

Next, factors of the Introspection scale (that is, types of Introspection: *Self Analysis* and *Psychological Awareness*) were then entered into the model instead of total Introspectiveness scores, in order to examine the differing relationships with Emotional Symptoms. They were entered together in the same ‘location’ as total Introspectiveness scores, in order to ascertain whether they related to the other variables

in the same manner as total Introspectiveness did. No specific directional relationship was hypothesised between the two types of Introspection, and so the “.51” in the diagram is the correlation between the two. Both types of Introspection were expected to influence Cognitive Flexibility scores.

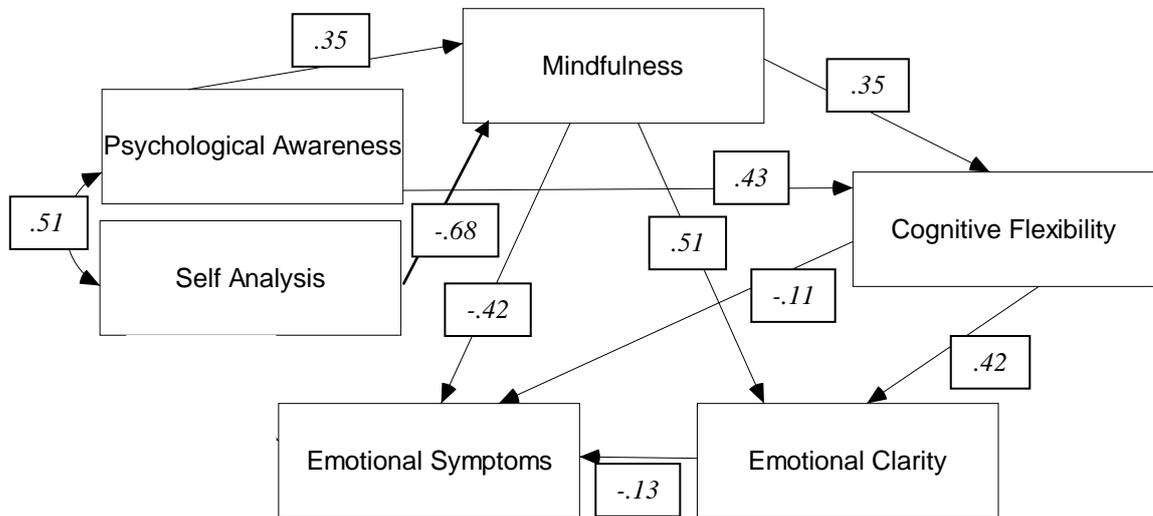


Figure 18. Final path model, with the different types of introspection included.

This model (Figure 18), when the non-significant path between Self Analysis and Cognitive Flexibility was removed, was a good fit to the data ($\chi^2 = 9.86$, d.f. = 5, $p = .08$, NFI = .98, CFI = .99, RMSEA = .06). As can be seen from the figure, the two types of Introspection were not directly related to Emotional Symptoms, but indirectly connected to Emotional Symptoms through Mindfulness, and to some degree, Cognitive Flexibility. Both types of Introspectiveness significantly influenced levels of Mindfulness. Specifically, participants higher in Self Analysis showed lower Mindfulness scores (and vice versa), and participants higher in Psychological Awareness were also higher in Mindfulness. Psychological Awareness was both indirectly (through Mindfulness) and directly related to Cognitive Flexibility, in that higher levels of Psychological Awareness predicted higher levels of Cognitive Flexibility. Self Analysis and Emotional Symptoms were not significantly related.

Summary of Main Findings – Study 2

The first aim of this study was to investigate how psychological resources (mindfulness, emotional clarity and cognitive flexibility), in combination with Introspectiveness, relate to emotional symptoms. Regression analyses were used to examine the relative and collective contributions of each variable to emotional symptoms, and together were able to account for about half the variance in emotional symptoms. When considered separately, all variables were found to make a unique and statistically significant contribution to the variance in emotional symptoms. While introspectiveness made only a small contribution to emotional symptoms, when removed from the equation, it reduced the overall predictive power of the group of variables, slightly more so than all the other variables except for mindfulness. Collectively, these results demonstrate that general introspectiveness (at least how it is conceptualised by the Introspection scale) makes a small but unique contribution to the prediction of emotional distress. It also shows that introspection, in combination with cognitive flexibility, mindfulness and emotional clarity, is able to predict a significant proportion of a person's level of emotional distress.

The second aim of Study 2 was to use path analyses to examine the indirect and direct relationships between introspectiveness and emotional symptoms, in the context of the psychological resources (cognitive flexibility, emotional clarity and mindfulness). Path analyses showed that total introspectiveness was not significantly directly related to emotional symptoms, and was more significantly to emotional symptoms indirectly through the psychological resources.

The third aim of the study was to investigate how general introspectiveness, compared to types of introspection, related to emotional symptoms in the context of psychological resources. The two types of introspection that were retained from Study 1 (psychological awareness and self analysis) were not at all directly related to emotional symptoms either, but like total introspection, related to emotional symptoms indirectly through psychological resources. Psychological awareness moderately directly influenced levels of mindfulness and cognitive flexibility, whereas self analysis directly influenced only levels of mindfulness. These results reiterate findings from Study 1 that different types of introspection are associated with different levels of emotional distress, and suggest that the relationship between introspectiveness and emotional distress is indirect. Prior research has assumed a direct relationship between introspection and

psychological well-being, so this finding is an important one. It suggests that other factors such as psychological resources play a role in the relationship between introspectiveness and psychological well-being that has not been considered by other researchers.

In summary, these results lend support to the hypothesis that introspectiveness is a multi-faceted and individualised phenomenon rather than a uni-dimensional one with uni-dimensional implications. It also suggests that the relationship between introspectiveness and emotional distress is more complex, and indirect, than assumed by prior research. These results and their implications are discussed in more depth in the next chapter.

CHAPTER EIGHT: DISCUSSION, STUDY 2

First Aim of Study 2: To Investigate how Psychological Resources in Combination with Introspectiveness Relate to Emotional Symptoms

The first aim of Study 2 was to investigate how the combination of introspectiveness and three psychological resources (cognitive flexibility, mindfulness and emotional clarity) related to emotional symptoms in terms of their ability to collectively predict a person's level of reported emotional symptoms. These three specific psychological resources were chosen because the literature states that they have important implications for psychological well-being and therefore were thought to potentially influence the relationship between introspectiveness and emotional distress. Considering introspectiveness in combination with psychological resources is an interesting point of investigation because introspection occurs within a person's individual psychological "context" and so the association between introspectiveness and emotional distress is best examined within this context. Examining the collective predictive ability of these variables in terms of their ability to predict emotional symptoms was an important first step, as if this combination proved to hold little overall predictive value there would be little point continuing with further investigation.

Fortunately, the combination of cognitive flexibility, mindfulness, emotional clarity and introspectiveness was able to account for approximately half of the variance in emotional symptoms, which is quite substantial. This suggests that this particular combination of variables is able to provide a reasonably comprehensive estimate of an adolescent's level of emotional distress, and therefore, provides information valuable information about how this emotional distress is experienced. The size of the contribution of each individual variable to the estimate of emotional symptoms varied however, and this is discussed next.

Introspectiveness made a statistically significant, but small contribution to the prediction of emotional symptoms, as was the case in Study 1. There are several possibilities for this relationship only being small. First, this may mean that introspectiveness has very little meaningful implications for the experience of emotional distress, which is possible but seems unlikely given the findings of other studies using the introspection scale (e.g. Hansell et al., 1986) and the association between other similar types of self-focus processes and psychological well-being (e.g. Watkins, 2008).

The second possibility is that using Hansell et al's Introspection scale is an incomplete way of conceptualising this complicated construct, and this will be discussed in the next chapter. The third possibility is that aspects of the Introspection scale "cancel" each other out, that is, the types of introspection (factors), have differing relationships with emotional distress, so that these relationships become muted. There is some evidence for this possibility, and this will be discussed further when the results of the path analysis investigation are covered later in this chapter.

The fact that there is a relationship between introspection, the three psychological resources and emotional symptoms demonstrates a number of things. First, it shows that individual differences in a person's psychological resources, in combination with introspectiveness are related to differing levels of emotional symptoms and potentially, vulnerability to experiencing emotional distress. This emphasises the importance of considering contextual factors which may interact with introspectiveness to influence whether an individual is vulnerable to, or likely to be protected from experiencing emotional distress. In other words, this finding provides support for considering individual differences in the relationship between introspectiveness and emotional distress, rather than assuming that there is a simplistic cause and effect relationship between these two factors common across all individuals, as prior research has (e.g. Hansell & Mechanic, 1985). Considering an adolescent's psychological resources allows for an understanding of how that particular individual experiences the relationship between introspection and psychological well-being, and therefore provides a broader and more informative view of this complicated phenomenon and its practical implications.

Cognitive flexibility provided the same proportion of predictive variance to emotional symptom scores as Introspectiveness did, that is, it predicted about 3% of the variance in emotional symptoms (calculated by squaring beta, that is, β^2). Again the small size of this contribution is possibly due to two main reasons. First, it could be because cognitive flexibility has little meaningful relevance to emotional distress, although this is unlikely since other studies using other measures of this construct have detected a sizable relationship between these two constructs (for example, Masuda & Tully, 2012). Second, the small predictive relationship between cognitive flexibility and emotional symptoms could be due to something about the particular instrument used in the current study. For example it might be because it conceptualises cognitive flexibility in a way which is less directly relevant to emotional factors than other instruments

designed to assess cognitive flexibility. As discussed in the method section for this study, Dennis and Vander Wal's (2010) Cognitive Flexibility Inventory was selected because it provides an assessment of the kind of cognitive flexibility that involves the ability to see situations as potentially controllable, to see alternative explanations for situations, and to create alternative solutions to difficulties. A measure that assesses this type of cognitive flexibility was preferred over one which is more 'psychological' and assesses cognitive fusion and experiential avoidance, that is, the type of psychological flexibility that is inherent in acceptance and mindfulness processes (e.g. the Avoidance and Fusion Questionnaire for Youth; Greco et al., 2008). This preference was because it was thought that Dennis and Vander Wal's scale would be more directly relevant to introspectiveness, given that introspection is a cognitive process. However, using a flexibility scale which was specifically designed for assessing this attribute in young people, such as the Avoidance and Fusion Questionnaire for Youth, may have yielded different results.

Emotional Clarity scores contributed a similar amount to emotional symptoms as cognitive flexibility. Specifically, lower emotional clarity predicted higher emotional symptom scores, although this relationship was statistically significant, it was a small relationship and therefore potentially of little practical significance. It is likely that the relationship between emotional clarity and emotional symptoms is stronger than the results of this study would suggest, given the established connection between emotional distress and emotional understanding (for example, Ciarrochi & Heaven, 2008). It is possible that the measurement tool (that is, the emotional clarity domain of the Trait Meta Mood Scale) was not the most appropriate one for this particular age group. While this particular scale has been used successfully with an adolescent population (for example, Fernandez-Berrocal et al., 2006), another scale designed specifically for this age group (such as the awareness scale of the Emotion Expression Scale for Children, Penza-Clyve & Zeman, 2002) may have been more appropriate and therefore yielded stronger results.

Mindfulness, on the other hand, out of all of the predictor variables, was able to account for the largest proportion of the variance in emotional symptom scores. This finding adds to the growing body of research establishing mindfulness as a significant protective factor against emotional distress. The unique contribution of the present study to the mindfulness literature is that it has explored the interaction between mindfulness and self-focus, and how these two factors interact in their relationship with

psychological well-being. Also, while assessing mindfulness skills in children and adolescents is a relatively new area, and few relevant measures are available for this population, the present study helps establish the Child and Adolescent Mindfulness Measure (Greco et al., 2011) as a valid measure of mindfulness skills in a potentially vulnerable adolescent population.

Second Aim of Study 2: To compare how general Introspectiveness relates indirectly and directly, to Emotional Symptoms

The second aim of Study 2 was to use path analyses to examine the indirect and direct relationships between introspectiveness and emotional symptoms, in the context of three psychological resources (cognitive flexibility, emotional clarity and mindfulness). This was done in order to provide a preliminary investigation of how these three psychological resources may interact to influence the relationship between introspection and emotional distress. Results showed that the direct relationship between introspection and emotional symptoms was very small. However, the indirect relationship between these two variables, through the psychological resources (especially mindfulness), was a significant finding.

This new contribution to the knowledge about the relationship between introspectiveness and emotional distress demonstrates several things. First, it has implications for prior experimental research in this area which has assumed a direct cause and effect relationship between introspectiveness and emotional distress, and for some theories about why introspectiveness appears to be related to emotional distress. For example, Mechanic (1983), and Hansell et al. (1986), in their initial investigation of their scale designed to measure this construct, argued that introspectiveness is problematic because it directs attention to, and therefore amplifies negative emotions or distressing internal experiences, which are more common during adolescence as opposed to any other developmental period. Others (Yarcheski et al., 1998) add that introspectiveness is problematic because it directs attention to aspects of self-belief that are negative, and so self-esteem is lowered.

It is certainly possible that these proposed mechanisms or reasons why introspectiveness is associated with emotional distress have merit, yet there is no empirical evidence for them. The present study however, has provided some preliminary empirical evidence of psychological resources as mechanisms that may explain the relationship between introspectiveness and emotional symptoms. This study

therefore, has provided new evidence that the relationship between introspectiveness and emotional symptoms is actually more indirect than direct, and mediated by many potential factors, three of which are cognitive flexibility, mindfulness and emotional clarity.

The fact that the relationship between introspectiveness and emotional symptoms appears to be an indirect one suggests that any of the psychological resources may mediate the overall relationship between introspectiveness and emotional symptoms for different people. That is, since everyone will inevitably have differing levels of cognitive flexibility, mindfulness skills and emotional clarity (and indeed any other adaptive psychological resource), the relationship between emotional symptoms and introspectiveness is likely to be different for different individuals. If this was the case, it raises the possibility that intervention at the point of psychological resources may 'protect' introspectors from the potential distress associated with introspectiveness. Of course, further experimental research involving manipulation of variables would be needed to investigate any causal effects, but this is a promising finding, and supports the central argument of this thesis that introspection is a multi-faceted concept which has differing implications for psychological well-being, which differ between individuals.

Third Aim of Study 2: To investigate how the different factors of the Introspection scale relate to Emotional Symptoms, compared to general Introspectiveness

The third aim of Study 2 was to use path analyses to examine the differences between the two types of introspection that were included in this study (psychological awareness and self analysis) and general introspectiveness (that is, total Introspection scale scores), in terms of their association with emotional symptoms. This was done in order to further examine the hypothesis that different types of introspection would be associated with different outcomes. Path analyses allowed for an examination of the implications of different types of introspection in a more holistic way than in Study 1. Results showed that the two types of introspection related differently than total introspection scale scores, and than each other, to the other variables in the model. The main difference was that, while both significantly predicted mindfulness scores, they did so in different directions. That is, self analysis predicted lower levels of mindfulness, while psychological awareness predicted higher levels of mindfulness. This has implications both for understanding about the relationship between types of

introspection and other attributes, as well as for how introspectiveness is conceptualised by the Introspection scale.

These opposing relationships suggest that considering the ‘why’s’ of life (perhaps similar to ruminating) is quite different psychologically to simply paying attention to one’s everyday thoughts and feelings (which could be considered to be similar to mindful awareness). Specifically, since both rumination (for example, Nolen-Hoeksema, 1991), and mindfulness (for example, Teasdale et al., 2002) are associated with vulnerability to and protection from psychological distress respectively, this would suggest that psychological awareness is associated with protection from emotional distress and self analysis is associated with vulnerability to it. This re-iterates the finding from Study 1 that different types of introspection are associated with different levels of emotional symptoms, in this case, indirectly through mindfulness.

The fact that self analysis and psychological awareness each influenced levels of mindfulness differently also has implications for the way in which introspection has been conceptualised by the Introspection scale. These differing effects between total introspection and facets of it probably creates a “watering down” effect, in that the variability in the scale is ‘muted’ when all introspection items are included. As a result, individual introspection factors were much stronger predictors of the other variables, than introspection as a total score was. This suggests that the Introspection scale may be of more practical research use, in terms of its relationship with and ability to predict levels of other cognitive attributes, when its factors are considered separately. Even then however, the relatively small relationship between introspectiveness and the other variables suggest that it is not an ideal measure of this psychological phenomenon. This point will be discussed in further depth in the next chapter.

Psychological Awareness.

One of the introspection factors, psychological awareness (the tendency to pay attention to one’s thoughts and feelings and to think about who one is), directly predicted higher levels of mindfulness, and both indirectly and directly was associated with higher levels of cognitive flexibility. This suggests that the manner in which an adolescent introspects has implications for the degree to which they are mindful. Additionally, those that are psychologically aware are also more likely to be mindful and more cognitively flexible. While further research would be required to establish if there are any causal links between these attributes, these results suggest that there is

something about psychological awareness that is adaptive and which reflects an ability to think in a way which is conducive to cognitive flexibility and mindfulness. For example, in order to be cognitively flexible, a person first may need to have some degree of meta-awareness of their thoughts and feelings. Or it may be that psychological awareness is analogous to a general metacognition or abstract thinking ability that is generally conducive to other adaptive processes such as mindfulness and cognitive flexibility. Psychological awareness may also reflect a style of thought that is similar to the openness, awareness and curiosity that is characteristic of other adaptive self-focus processes such as reflection (for example, Trapnell & Campbell, 1999).

Another possibility implied by the findings relating to psychological awareness is that this type of introspection could be predictive of, or is a factor which separates those who are more easily able to learn mindfulness skills, or to ‘naturally’ be mindful, from those who find it more difficult. Certainly the openness, awareness, and curiosity characteristics of adaptive self-focus processes (including psychological awareness) sound very similar to those inherent in mindfulness. This connection would make sense given that paying attention to thoughts and feelings is surely a precursor to the non-judgment and acceptance of them, that is, mindful awareness. As far as this author is aware there is no published research which has examined individual differences as predictors of mindfulness ability. While more research would be required, the present study raises an interesting possibility regarding practical implications of introspection for the success of mindfulness based treatment programmes, and the personality characteristics of those people most likely to benefit from them.

In Study 1, psychological awareness was generally associated with maladaptive attributes (emotional symptoms and negative affect), and its correlations with the adaptive attributes (positive affect and pro-social behaviour), while stronger than egocentricity and self analysis, did not reach statistical significance. This contrast with the finding that psychological awareness was more strongly associated with adaptive attributes (that is, increased mindfulness and cognitive flexibility) in Study 2 is an interesting finding. One explanation for this is that the relationship between psychological awareness and psychological well-being is complex, and so this relationship can vary as a function of other psychological contextual factors, as the findings of Study 2 suggest, and so is the case for other types of self-focus (Watkins, 2008).

Self analysis.

The second introspection factor, self analysis (the tendency to think about the ‘whys’ of life) related differently to the other variables than introspection as a total score did, but also differently than psychological awareness did. Specifically, self analysis had a negative relationship with mindfulness in that lower levels of self analysis directly and strongly predicted higher levels of mindfulness. That is, participants who reported higher levels of self analysis were significantly less likely to be mindful. The self analysis type of introspection consists of the items of the scale which are to do with reflecting on the reasons behind the way things are, which, in a way, is the opposite of the underlying philosophy of mindfulness. This makes sense given the negative correlation between these two variables in the present studies. The fact that self analysis appears to quite strongly (it predicted 71% of the variance in mindfulness scores) and directly influence levels of mindfulness suggests there is quite a significant negative relationship between the two. Given the adaptiveness of mindfulness (for example, Baer, 2003), this suggests that self analysis is an unhealthy form of introspection. It could be that this is because self analysis has similar characteristics to those types of self-focus that are the most maladaptive, such as, rumination and other characteristics that are chronically negative, repetitive and focussed on stressors rather than adaptive problem solving (for example, Watkins, 2008). Perhaps reflecting on the reasons for past events and life situations can easily lead to distress in young people who do not have resources such as cognitive flexibility, emotional clarity and/or mindfulness skills.

Conclusion

As hypothesised, the results of this study indicate that introspection is more complex than apparently first assumed by many researchers. Different aspects of introspection are associated with different degrees of psychological well-being, and this suggests that introspection may not directly “cause” negative affect (or be caused by negative affect) or other undesirable outcomes, as some other authors have argued previously. Path analyses found evidence for a directional path that passed from introspection, through the psychological resources, then emotional symptoms, suggesting an indirect relationship between introspectiveness and emotional symptoms. While the relationship between introspectiveness and emotional symptoms was not especially strong, and causal inferences cannot be made, it suggests that the relationship

between introspection and psychological well-being is more complex than previously assumed by researchers in this area, which raises some interesting hypotheses for future research in the area of introspection and vulnerability to negative affect during adolescence. These are discussed in the final chapter.

CHAPTER NINE: GENERAL DISCUSSION

The primary aims of this thesis were to examine the personality disposition of introspectiveness in more detail than has been done so previously, and to explore how individual differences in psychological resources relate to introspectiveness, potentially influencing its affective implications. Like previous research in this area, an adolescent sample group was selected given the observations that adolescents tend to be more introspective than any other age group (Levy & Farber, 1985).

This thesis included two studies which both found that the Introspection scale could be divided into different factors, or types of introspection, lending support to the hypothesis that introspection is a multi-faceted construct, not a unitary one, as prior research has assumed (for example, Hansell et al., 1985). Both studies of this thesis also illustrated that the different types of introspection (both the factors within the scale and the individual scale items) to a certain degree, had differing affective implications associated with them. These findings are consistent with those of research examining other self-focus processes, in that different types of self-focus are associated with different outcomes (Watkins, 2008; Ingram, 1990).

In general though, total scores on the Introspection Scale were found to be associated with heightened emotional distress, as all empirical research examining this psychological construct has. This is surprising given that introspection at least in theory, is not inherently adaptive or maladaptive, and so could be either. Other authors, such as Hansell and colleagues have argued that introspection is inherently maladaptive during adolescence because it draws one's attention inward to psychological experiences that are more likely to be distressing during adolescence. While this thesis did not focus on disconfirming or confirming this theory, it did at least confirm that introspection is much more complicated than prior authors have assumed, shedding doubt on such a simplistic argument. Instead, it is likely that research using Hansell et al.'s (1986) scale has found introspection to largely be associated with maladaptive attributes such as low self-esteem and emotional distress because aspects of the scale are more strongly associated with negative affect (such as the self analysis factor), than other aspects which are associated with positive affect (such as the psychological awareness factor). The previous use of the Introspection scale only using total scores only has thus

provided a negatively biased view of introspection, and therefore a misunderstanding of its relationship with psychological well-being.

Some authors have argued that introspection is adaptive during adolescence, although they have stated this is because it helps promote identity development and that it establishes a protective relationship with the self (Levy & Farber, 1986), that it promotes empathy (Kohut, 1957; Offer, Ostrov & Howard, 1981; Blos 1982; Deutsch, 1967) and social connectedness (Goossens & Marcoen, 1999). While these theories of the adaptive function of introspection remain untested empirically, the present studies have found some empirical evidence that there are other aspects of introspectiveness that are adaptive.

The finding that the *type* of introspection a person engages in, in combination with other aspects of an individual's cognitive context has implications for psychological well-being further emphasises the complexity of this psychological construct and its relationship with psychological well-being. This finding is consistent with findings in the area of other self-focus processes, which emphasises that many intrapersonal factors influence whether self-reflection is maladaptive or adaptive (for example, Watkins, 2008). The implication of this for research in the area of introspection is that a much broader and individualised view of this psychological construct is required to adequately understand the process itself and its implications for psychological well-being. That is, the implications of introspectiveness are likely to vary between people, depending on their psychological resources. It is possible that other aspects of an individual's personality as well, such as their level of self-esteem or current mood, could also influence this relationship. The finding that the relationship between introspection and emotional symptoms was indirect, rather than direct, provides support for this possibility.

Clinical Implications

As described in the introduction to this thesis, understanding more about everyday introspectiveness provides a background to the cognitive context within which emotional disorders, especially depression, are experienced. Therefore, enquiring about what an individual introspects about helps to provide a context to dysfunctional thought processes, and so is an important point of enquiry in the assessment phase of the therapeutic process. The findings of the current studies suggest that enquiring about the self analysis and psychological awareness aspects of introspection are particularly

important for understanding the direction of problematic thought patterns, and how a typical adolescent's mental life might relate to their experience of emotional distress and the kinds of interventions that might be especially beneficial for them. For example, this research suggests that an adolescent who engages in the self analysis type of introspection is more likely to be low in mindfulness skills, emotional clarity and cognitive flexibility, so is likely to be particularly vulnerable to experiencing emotional distress. On the other hand, this is unlikely to be the case for an individual who is inclined to engage in the psychological awareness type of introspection, as they are more likely to be high in psychological resources, so they may be protected against the emotional distress that introspection can potentially induce. In other words, understanding how an adolescent client introspects on a day-to-day basis may provide information about other aspects of their psychological experience such as the degree of psychological resources that they possess, and therefore, their degree of vulnerability to experiencing emotional distress.

A significant amount of past research had concluded that self-focus during adolescence is inherently pathological (e.g. Garber et al., 1993) and should be discouraged because it draws attention inward and exacerbates emotional distress (Hansell et al., 1986). The present study provides evidence that a tendency to be introspective does not have to be associated with emotional distress, if it co-occurs with the implementation of psychological resources. In fact, given the benefits of introspection during adolescence, especially in terms of its promoting identity formation (e.g. Garcia et al., 2012), to suggest that adolescents should not self-focus is potentially detrimental for their cognitive and emotional development and associated vulnerability to emotional distress. So, adolescents who are particularly introspective (as long as they have psychological resources necessary to regulate cognitive and emotional experiences associated with introspection), may be the most resilient, or at least have the most potential ability to regulate and adjust to daily life stressors of adolescence. If this was shown to be the case empirically, introspection should be encouraged in a clinical context, if and only for adolescents who exhibit sufficient psychological resources to cope. For those adolescents whom are assessed as not possessing sufficient psychological resources to cope emotionally with introspection, interventions should focus on improving the adolescent's psychological resources, so that they are able to manage and regulate introspective experiences that are otherwise adaptive for development and protective against emotional distress.

Given that the aim of therapy, in some way or another, regardless of its theoretical orientation, is to indirectly or directly promote a person's psychological resources like those examined in the present studies, the findings are very relevant to understanding the process of therapeutic intervention. In the introduction to this thesis, the point was raised that there are gaps in the understanding about how cognitive development during adolescence relates to the mechanisms through which cognitive interventions work (Kazdin & Nock, 2003; Steinberg & Morris, 2001). This knowledge could be greatly improved if the tendency for adolescents to introspect, ruminate and worry was acknowledged and examined in empirical research in the context of cognitive-based interventions for psychological disorders. This thesis provides a step in this direction by showing that the relationship between the way an adolescent thinks about themselves is related to both emotional distress, and the kinds of psychological resources that psychological therapy generally aims to promote.

At the beginning of this thesis, my own personal experience with a seemingly very introspective adolescent client was described. For various reasons, at the time I did not ask about his everyday mental life and about what and how much he introspected. Having explored introspectiveness empirically myself, if I was to go back and work with him now, I would enquire about his everyday mental life, how much he introspected and what about specifically, and would take particular note if he seemed quite self-analytical in this process. I would also want to know about *how* he introspected, that is, whether he had adequate psychological resources to manage and regulate these experiences. Alongside this I would keep in mind the function of introspection during adolescence, and how this related to his particular identity, emotional and cognitive development. This would have provided me with a richer understanding of this young man, and guided both my diagnostic and treatment process with him. My therapeutic approach with adolescents in future will forever be informed by these considerations.

Limitations and Future Research

In both of the studies that comprise this thesis, the size of the relationship between introspectiveness and the measure of emotional distress was reasonably small. One could argue that this potentially means that past research has over-stated the importance of, or misunderstood introspectiveness itself as a psychological construct, or its relationship with psychological well-being. I would argue that introspectiveness is indeed important for psychological well-being and has not been over-stated, given that

it reflects the very psychological background within which a person relates to and understands emotional experiences. To this point, research has consistently shown there is a relationship between introspectiveness and various measures of psychological well-being, as it has similar types of self-focus (for example, Watkins, 2008). Instead, I would argue that past research, and the manner in which introspectiveness has been conceptualised by the Introspection scale, reflects a very limited view of what introspectiveness is and how it operates, and therefore reflects a misconception of its relationship with psychological well-being.

One reason for this limited view is that while the Introspection scale provides a simple and brief, easy to administer measure, it may not be sufficiently broad to adequately capture such a potentially vast and varied psychological construct. That is, there are infinite things and experiences that an individual can introspect about, and total Introspection scale scores do not provide a complete understanding of this construct. As this thesis and prior research (Hoyer & Klein, 2000) have illustrated, a broader more qualitative conceptualisation of introspection would be more appropriate. Perhaps diaries or self-reports could be used to gather a more thorough understanding of the general areas of thought focus, and how this relates more generally to perceived psychological well-being. Or, as recent mind-wandering research has implemented, a Personal Digital Assistant (PDA) which beeps at random intervals, at which time the adolescent records what they were thinking about at that time (Kane & McVay, 2012). This would also allow for a more complete understanding of the *process* of introspecting, in that researchers could answer important questions about how introspection develops and changes from moment to moment, and therefore how it might come to be related to adaptive outcomes or when and how it becomes pathological. Including measures of psychological resources, such as those included in this thesis, would develop understanding of how cognitive flexibility, emotional clarity or mindfulness skills interact qualitatively with the process of self-reflection and its outcomes. A measure of the valence of thoughts would also be important to gauge how this modifies any observed effects.

Another limiting factor in introspection research, and therefore a potential explanation for why effect sizes in the present studies were small, is that the Introspection scale on its own does not allow for a consideration of how contextual factors interact with introspectiveness. That is, it does not take the ecological context of the experience of introspection into account. As described in the introduction, Evans

(2013) discusses the experience of mental life in an everyday context, and the importance of situational demands which influence the direction or content of one's conscious attention. These situational demands or contextual factors are important considerations in the relationship between introspectiveness and any associated outcomes. For example, an adolescent who spends a great deal of time introspecting in particular situations such as while sitting in class (at the expense of concentrating on the lesson), or while being verbally disciplined by a parent or while a friend is trying to confide in them may have quite a different affective experience indirectly as a result of this neglect of situational demands. Therefore further research which includes a consideration of these ecological factors would provide a more comprehensive understanding of introspection and its relationship with psychological well-being. This could be achieved by specifying particular situations when enquiring about introspection, for example "during your down-time, how much do you think about what you are like as a person?" Or "when you are working at school, how much do you think about yourself?"

As mentioned in the introduction to this thesis, most introspection research has been conducted within adolescent populations, given the developmental peak in this process during the teenage years (e.g. Hansell & Mechanic, 1985). Extending the research methodology of the current studies to an adult population would extend the knowledge about the development of introspection, and help ascertain whether the findings of the present studies are specific to adolescence. This would help to discover whether there is a varying function of introspection across age groups. It would also be interesting to examine the difference in the relationship between introspection, cognitive flexibility and mindfulness across developmental stages. Given individual differences in the achievement of concrete versus operational thinking processes (Neimark, 1980), it may be that different results across age groups are more to do with the individual's cognitive development, than their chronological age.

Another limitation of this research, rather, of the Introspection scale, (as has been a criticism of other self-report scales, Trapnell & Campbell, 1999) is that the motive, need or value for engaging in each item is not measured. For example, an individual indicating that they often seek to "figure themselves out" could imply pathological self-obsession, a casual curiosity in the self or, even a difficulty understanding one's own emotions (Rieffe, et al., 2010). Assessing participants' *motives* for engaging in each type of introspection included in the Introspection scale would

provide a richer perspective of the introspection process, and could be examined qualitatively in further research.

The fact that these studies were cross-sectional in design is a limitation, as they cannot make claims of causality. For example, whether in fact introspectiveness leads to specific psychological outcomes, or is a consequence of them, or both, as some prior introspection research suggested (Yarcheski et al., 1998). Future research that is longitudinal or experimental in design could answer this question, thereby extending the findings of this thesis. A longitudinal study would also help to clarify the factors which contribute to the development of introspection, as well as those which influence the type of introspection an adolescent is more likely to engage in. One way in which this research could be conducted is by assessing individuals' levels of introspection, mindfulness, cognitive flexibility and associated emotional distress, across time and developmental stages. Mediation analyses would also provide a more thorough understanding of exactly how the variables are related and the precise effect of each variable on one another.

Conclusion

Despite these limitations, the studies that comprise this thesis have made valuable contributions to the literature by being the first to critically examine Hansell et al.'s (1996) Introspection scale, to use path analyses to examine the direct and indirect relationships between introspection and emotional distress, and to investigate psychological resources as contextual factors which influence the relationship between introspection and psychological well-being. Collectively, these studies have demonstrated that introspectiveness is a multi-faceted and complex process with varying implications for both vulnerability to and protection from emotional distress. The implications of this for prior research examining introspection are that engaging in introspection is not necessarily significantly wholly beneficial or detrimental on its own, and that other features of an individual's cognitive skills influence the relationship. In other words, the relationship between emotional distress and introspectiveness is more complicated than previously assumed, and depends on other factors. The present studies have also provided some evidence that the relationship between introspectiveness and psychological well-being is indirect, rather than direct, and that particular psychological resources may play a role in influencing the relationship between these two variables. Path analyses provided support for a directional pathway from introspection to

psychological resources, to emotional symptoms. These findings suggests that if introspection is negative in valence, as it will invariably be from time to time, then accompanying cognitive flexibility, emotional clarity or mindfulness may be particularly protective against experiencing negative affect.

By examining introspection more broadly than in previous research, and investigating the role of other variables in the relationship between introspection and psychological well-being, a more holistic and therefore valid exploration of this psychological phenomenon was provided. Specifically, support was provided for the hypothesis that *type* of introspection and psychological resources are both important considerations in the relationship between introspection and psychological well-being. This thesis has provided a new perspective for further research regarding the way in which introspectiveness is conceptualised, and the importance of considering this psychological phenomenon in its cognitive and ecological context.

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APPENDICES

APPENDIX A: Study 1 Permission Slip for School Participants

Dear Parents/Caregivers,

Your child has indicated that they would like to participate in a research study run by Massey University. We require that they have your permission to participate. Please read the information about the study below, and if you are comfortable with your child participating, sign where indicated.

Who is doing this research?

Anna Reynolds - a Doctorate of Clinical Psychology student at Massey University.

What is this research about?

We are investigating how and why during the teenage years, some thoughts teenagers have about themselves may cause negative emotions while other thoughts may not. These thoughts include thinking about goals for the future and paying attention to thoughts. This information will help lead us toward understanding why some teenagers are vulnerable to experiencing negative moods, low self-esteem, anxiety and depression.

If you give your permission to participate, your child will complete a questionnaire. There are four parts to the questionnaire; Part 1 asks them to indicate their age, gender and ethnic identity. Part 2 asks how often they experience different emotions. Part 3 asks what they think about when they're thinking about themselves and how often. Part 4 asks how they feel about themselves and Part 5 asks how life in general has been recently. **PLEASE NOTE: Participants will be circling options to answer the questions, and will not have to write anything. All responses are anonymous.**

Participants will complete the questionnaire at the school library at lunchtime.

If you have questions, please contact me (Anna) or my supervisor, Ian. A report outlining the findings of this study will be written up, and if your child requests a copy, this will be emailed to them.

Researcher:

Anna Reynolds, MA
 School of Psychology
 Wellington Campus
 Massey University
 reyanna4@hotmail.com

Supervisor:

Professor Ian Evans
 School of Psychology
 Wellington Campus
 Massey University
 I.M.Evans@massey.ac.nz
 (04) 801 5799 ext. 62125

(This project has been reviewed and approved by the Massey University Human Ethics Committee)

I have read the above information and provide permission for my child to participate in this research study:

Child's name:.....Parent/caregiver's name:.....

Parent/caregiver's signature:.....

APPENDIX B: Study 1 Information Sheet



MASSEY UNIVERSITY

COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

TE KURA PUKENGA TANGATA

Massey University, School of Psychology – Te Kura Hinengaro Tangata
PO Box 756, Wellington 6140, New Zealand T +6448015799 F +6448012692 www.massey.ac.nz

Emotional Experience during Adolescence

INFORMATION SHEET

Who is doing this research?

My name is Anna Reynolds and I am a student at Massey University. I am conducting this research project as partial requirement to complete a Doctorate in Clinical Psychology. The main supervisor for this project is Professor Ian Evans of Massey University's Wellington campus.

What is this research about?

This project aims to find out how and why during the teenage years, some thoughts about yourself may cause negative emotions while other thoughts may not. By thinking about yourself, we mean things like thinking about goals for the future and paying attention to your thoughts. This information will help us understand why some teenagers might come to experience negative moods and depression.

You are invited to complete our questionnaire which will take about 15-20 minutes of your time. There are four parts to the questionnaire; Part 1 asks you to tell us your age, gender and ethnic identity. Part 2 asks you how often you experience different emotions. Part 3 asks you about what you think about when you're thinking about yourself and how often. Part 4 asks you about how you feel about yourself and Part 5 asks you about how life has been for you in the past six months.

Who can participate?

Participants are being recruited through advertisements on teen websites as well as in a teen magazine. Anyone who is between 13 and 16 years of age is invited to participate. We are aiming to recruit at least 180 people, as this number is needed in order to conduct a statistically valid and meaningful analysis.

Completing the questionnaire, for some people, might raise some thoughts and feelings that could make them upset. If this happens to you, please talk to an adult you trust, or contact a help organisation, for example, Youthline either by calling 0800 37 66 33, email talk@youthline.co.nz or free text 234.

Do you think your parent/caregiver might have concerns about you completing this questionnaire?

If so, please ask them to read this information sheet including the box below, before you continue:

This questionnaire is made up of scales that have been used by other researchers all over the world for decades. The scales have been widely used with teenagers and children, and therefore all of the questions are age-appropriate and framed in a manner which is easily understandable for this age group. It is not anticipated that the questionnaire will cause any distress amongst most participants, but we recommend that if you think your teen might become upset answering questions about their thoughts and emotions, that you suggest they don't participate.

Your rights as a participant:

You are under no obligation to accept this invitation to complete the questionnaire. Completion and submission of the questionnaire implies that you give your consent to participate. You are free to exit the questionnaire at any time and delete any particular answers if you wish. Information resulting from this questionnaire will be securely stored at Massey University. Participation in the questionnaire is anonymous, and the information will only be viewed by the researcher, the main supervisor and the computer programmer/analyst of the psychology department of Massey University. At the end of the questionnaire you will be invited to enter the draw to win a \$25 Visa Prezzy Voucher. If you choose to enter the draw, you will be asked to enter your contact details so that we can send you your prize if you win. Your contact details will be completely separate from your questionnaire responses and not connected with them in any way. All information from this research will be stored for 5 years, and it will then be destroyed.

If you, or your parent/caregiver has any further questions please contact the researcher or supervisor. A report outlining the findings of this study will be written up for all participants if they request it, and will be available in January 2009.

Thank you,

Anna Reynolds

Researcher:

Anna Reynolds

School of Psychology

Wellington Campus

Massey University

reyanna4@hotmail.com

Supervisor

Professor Ian Evans

School of Psychology

Wellington Campus

Massey University

I.M.Evans@massey.ac.nz

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern A/B, Application 09/63. If you have any concerns about the conduct of this research, please contact Dr Karl Pajo, Chair, Massey University Human Ethics Committee: Southern B, telephone 04 801 5799 x 6929, email humanethicsouthb@massey.ac.nz

APPENDIX C: Study 1 Recruitment Advertisements on Websites

here's what's up



[Home](#) | [About Us](#) | [News](#) | [Links & Resources](#) | [FAQ's](#) | [Get Involved](#)

Research On Emotional Experience during Adolescence

By Anna Reynolds, Clinical Psychology student, Massey University

Anna is trying to find out how and why during the teenage years, some thoughts that teenagers have may cause negative emotions while other thoughts may not.

The kinds of thoughts she means are things like goals for the future and paying attention to your thoughts.

This information will help her understand why some teenagers might come to experience negative moods and depression.

If you are aged between 13 and 16, you are invited to complete her online questionnaire, which will take about 15-20 minutes of your time. You will also go into a draw to win one of five \$25 Prezzy Vouchers.

What's Up supports this research because negative moods and depression are a big issue for many teenagers and we need to understand as much as possible about what causes them and how we can deal with them.

Would you like to help research about what makes teenagers feel unhappy?





www.urge.co.nz
www.whakamanawa.co.nz

[GO](#)

Parental, welcome

- Urge Home
- Your Body
- Your Mind
- Drugs and Alcohol
- Relationships
- Sex
- Beyond School
- Our Society
- Connecting You

Between 13 & 16?

Complete this quiz, and go into the draw to win Visa Prezzy Vouchers >>

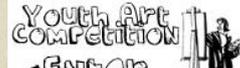


Between 13 & 16?
If you are aged between 13 and 16 and want to win a cool prize?...

[01](#) [02](#) [03](#) [04](#) [05](#) [06](#)

- Youthline Home
- About Us
- Contact Us
- Youthline Services
- Training & Youth Leadership
- Community Development
- Support Youthline
- What's On
- Forum
- Services Directory
- Shop





APPENDIX D: Study 1 Questionnaire



MASSEY UNIVERSITY
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES
TE KURA PUKENGA TANGATA
Massey University, School of Psychology – Te Kura Hinengaro Tangata
 PO Box 756, Wellington 6140, New Zealand T +6448015799 F +6448012692 www.massey.ac.nz

QUESTIONNAIRE

Please circle the following information about you. This allows us to make comparisons across different groups of people.

Your Age: 13 14 15 16 17 18

Your Gender : Male Female

Your Ethnicity: NZ Pākehā/European

Māori

Pacific Islander

Asian

Other (please write this here)

Positive and Negative Affect Scale (Watson et al., 1988)

This scale consists of a number of words that describe different feelings and emotions. Read each question and circle the number under each option that best describes how much you have felt that way in the *past few weeks*.

	Not at all	A little	Moderately	Quite a bit	Extremely
Interested	1	2	3	4	5
Distressed	1	2	3	4	5
Excited	1	2	3	4	5
Upset	1	2	3	4	5
Strong	1	2	3	4	5
Guilty	1	2	3	4	5
Scared	1	2	3	4	5
Hostile	1	2	3	4	5
Enthusiastic	1	2	3	4	5
Proud	1	2	3	4	5
Irritable	1	2	3	4	5
Alert	1	2	3	4	5
Ashamed	1	2	3	4	5
Inspired	1	2	3	4	5
Nervous	1	2	3	4	5
Determined	1	2	3	4	5
Attentive	1	2	3	4	5
Jittery	1	2	3	4	5
Active	1	2	3	4	5
Afraid	1	2	3	4	5

Introspection Scale (Hansell et al., 1986)

Next we are interested in your thoughts and feelings. Please think about the questions and use the following scale to record your answers.

	Very little	A little	Some	Much	Very much
1.How much do you think about yourself?	1	2	3	4	5
2.How much do you pay attention to your feelings?	1	2	3	4	5
3.How much do you try to figure yourself out?	1	2	3	4	5
4.How much do you pay attention to your own thoughts?	1	2	3	4	5
5.How much do you think about what you are like as a person?	1	2	3	4	5
6.How much do you think about why your life is the way it is?	1	2	3	4	5
7.How much do you wonder about the real reason you behave the way you do?	1	2	3	4	5
8.How much do you think about yourself when you're alone?	1	2	3	4	5
9.How much do you picture in your mind what your life is like?	1	2	3	4	5
10.How much do you think about how you feel?	1	2	3	4	5
11.How much do you think about why you do the things you do?	1	2	3	4	5
12.How much do you think about who you are?	1	2	3	4	5

Self Esteem Scale (Rosenberg, 1965)

Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle 1. If you agree, circle 2. If you disagree, circle 3. If you strongly disagree, circle 4.

	Strongly Agree	Agree	Disagree	Strongly Disagree
1.On the whole I am satisfied with myself	1	2	3	4
2.At times I think I am no good at all	1	2	3	4
3.I feel that I have a number of good qualities.	1	2	3	4
4.I am able to do things as well as most other people.	1	2	3	4
5.I feel I do not have much to be proud of.	1	2	3	4
6.I certainly feel useless at times.	1	2	3	4
7.I feel that I am a person of worth, at least on an equal plane with others.	1	2	3	4
8.I wish I could have more respect for myself.	1	2	3	4
9.All in all, I am inclined to feel that I am a failure.	1	2	3	4
10.I take a positive attitude toward myself.	1	2	3	4

Strengths and Difficulties Questionnaire (Goldman, 2001)

For each item below, please circle the number for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of how things have been for you over the last six months.

	Not true	Somewhat true	True
1.I try to be nice to other people. I care about their feelings.	0	1	2
2.I am restless, I cannot stay still for long.	0	1	2
3.I get a lot of headaches, stomach-aches or sickness.	0	1	2
4.I usually share with others (food, games, pens etc).	0	1	2
5.I get very angry and often lose my temper.	0	1	2
6.I am usually on my own. I usually play alone or keep to myself.	0	1	2
7.I usually do as I am told.	0	1	2
8.I worry a lot.	0	1	2
9.I am helpful if someone is hurt, upset or feeling ill.	0	1	2
10.I am constantly fidgeting or squirming.	0	1	2
11.I have one good friend or more.	0	1	2
12.I fight a lot. I can make other people do what I want.	0	1	2
13.I am often unhappy, down-hearted or tearful.	0	1	2
14.Other people my age generally like me.	0	1	2
15.I am easily distracted, I find it difficult to concentrate.	0	1	2
16.I am nervous in new situations. I easily lose confidence.	0	1	2
17.I am kind to younger children.	0	1	2
18.I am often accused of lying or cheating.	0	1	2
19.Other young people pick on me or bully me.	0	1	2
20.I often volunteer to help others (parents, teachers, children)	0	1	2
21.I think before I do things.	0	1	2
22.I take things that are not mine from home, school or elsewhere.	0	1	2
23.I get on better with adults than with people my own age.	0	1	2
24. I have many fears, I am easily scared.	0	1	2
25. I finish the work I'm doing. My attention is good.	0	1	2

APPENDIX E: Study 1 Consent form for School Participants



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COLLEGE OF HUMANITIES AND SOCIAL SCIENCES
TE KURA PUKENGA TANGATA
Massey University, School of Psychology – Te Kura Hinengaro Tangata
PO Box 756, Wellington 6140, New Zealand T +6448015799 F +6448012692 www.massey.ac.nz

Emotional Experience During Adolescence

Participant Consent Form—Individual

I have read the Information Sheet and have had the details of the study explained to me. My questions have been asked to my satisfaction, and I understand that I may ask further questions at any time.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature..... Date.....

Full name—printed.....

APPENDIX F: Study 2 Information Sheet



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INFORMATION SHEET

Introspection and understanding Emotions during Adolescence

Who is doing this research?

My name is Anna Reynolds and I am a student at Massey University. I am conducting this research project as partial requirement to complete a Doctorate in Clinical Psychology. The main supervisor for this project is Professor Ian Evans of Massey University's Wellington campus.

What is this research about?

This project aims to find out how and why during the teenage years, some ways of thinking about ourselves allows us to know and describe what we are feeling, while other ways of thinking cause us to become confused about we are feeling. This information will help us understand why some teenagers might come to experience negative moods and depression.

You are invited to complete our questionnaire which will take about 20-30 minutes of your time. There are six parts to the questionnaire; Part 1 asks you to tell us your age, gender and ethnic identity. Part 2 asks what you think about feelings you have. Part 3 asks about how you make decisions. Part 4 asks about your feelings. Part 5 asks about how often you think about who you are. Finally, Part 6 asks more about what you think about particular feelings you might have.

Who can participate?

Participants are being recruited through an advertisement on Facebook as well as through word-of-mouth. Anyone who is between 13 and 18 years of age and is currently enrolled at school in New Zealand, is invited to participate. We are aiming to recruit at least 200 people.

Completing the questionnaire, for some people, might raise some thoughts and feelings that could make them upset. If this happens to you, please talk to an adult you trust such as your school counsellor, or contact a help organisation, for example, Youthline either by calling 0800 37 66 33, email talk@youthline.co.nz or free text 234. Or, you could call Whats Up (another helpline for teens) on 0800 942 87 87, thelowdown.co.nz (depression website for teens), or see www.youthline.co.nz/services-directory.html for a full list of help organisations.

If you think that your parent/caregiver/s might have concerns about you filling in this questionnaire, please ask them to read the following information:

Dear parents/caregivers,

This questionnaire has been approved by the Massey University Human Ethics Committee and is made up of scales that have been used by other researchers all over the world for decades. The scales have been widely used with teenagers and children, and therefore all of the questions are framed in a manner which is appropriate for this age group. It is not anticipated that the questionnaire will cause any distress amongst most participants, but we recommend that if you think your teen might become upset answering questions about their thoughts and emotions, you suggest they don't participate.

Thank you Draw:

To thank you for filling in the questionnaire, you will have a chance to go into the draw to win one of twenty \$20 Warehouse vouchers which can be used at any Warehouse store in New Zealand. If you want to enter the draw, we will need you to provide us with your contact details so that we can send you a voucher if you win (please note that your contact details will NOT be attached to your questionnaire, so that your responses will remain anonymous). If you wish, you can fill in the questionnaire without entering the draw. We will need the prizewinners' caregivers or parents to sign a form to say that they know that you have the voucher, and this will need to be sent back to us before we can post you your voucher.

Prize winners will be notified via email.

Your rights as a participant:

You are under no obligation to accept this invitation to complete the questionnaire. Completion and submission of the questionnaire implies that you give your consent to participate. You are free to exit the questionnaire at any time and change your answers if you wish. Information resulting from this questionnaire will be securely stored at Massey University. Participation in the questionnaire is anonymous, and the information will only be viewed by the researcher, the main supervisor and the computer programmer/analyst of the psychology department of Massey University. At the end of the questionnaire you will be invited to enter the draw to win a \$20 Warehouse Voucher. If you choose to enter the draw, please enter your contact details when the box appears at the end of the survey, so that we can send you your prize if you win. Your contact details will be completely separate from your questionnaire responses and not connected with them in any way. All information from this research will be stored for 5 years, and it will then be destroyed.

If you, or your parent/caregiver has any further questions please contact the researcher or main supervisor. The findings of this study, which are expected to be available by the end of December 2010, will be displayed at <http://psyc-research.massey.ac.nz/reynolds>. If you would like to be informed when the results become available, please email the researcher at: reyanna4@hotmail.com.

Researcher:

Anna Reynolds

School of Psychology

Wellington Campus

Massey University

reyanna4@hotmail.com

Supervisor:

Professor Ian Evans

School of Psychology

Wellington Campus

Massey University

I.M.Evans@massey.ac.nz

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern A, Application 10/60. If you have concerns about the conduct of this research, please contact Professor Julie Boddy, Chair, Massey University Human Ethics Committee: Southern A, telephone 06 350 5799 x 2541, email humanethicsoutha@massey.ac.nz

APPENDIX G: Study 2 Questionnaire



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QUESTIONNAIRE

Please tell us the following information about you. This allows us to make comparisons across different groups of people.

Your age: 13 14 15 16 17 18

Your gender: Male Female

Your ethnicity: NZ Pākehā/European

Māori

Pacific Islander

Asian

Other (please write this here).....

We want to know about what you think, how you feel, and what you do. **Read** each sentence. Then, select the number that tells **how often each sentence is true for you.**

Child and Adolescent Mindfulness Measure (CAMM, Greco et al., 2011)

	Never True	Hardly ever true	Sometimes true	Often true	Always true
1. I get upset with myself for having feelings that don't make sense	1	2	3	4	5
2. At school, I walk from class to class without noticing what I'm doing	1	2	3	4	5
3. I keep myself busy so I don't notice my thoughts or feelings	1	2	3	4	5
4. I tell myself that I shouldn't feel the way I'm feeling	1	2	3	4	5
6. It's hard for me to pay attention to only one thing at a time	1	2	3	4	5
7. I get upset with myself for having certain thoughts	1	2	3	4	5
8. I think about things that have happened in the past instead of things that are happening now	1	2	3	4	5
9. I think that some of my feelings are bad and that I shouldn't have them	1	2	3	4	5

The Cognitive Flexibility Inventory (Dennis & Vander Wal, 2010)

	Never True	Hardly ever True	Sometimes true	Often true	Always true
1.I consider multiple options before making a decision	1	2	3	4	5
2.When I encounter difficult situations I feel like I am losing control	1	2	3	4	5
3.I try to think about things from another person's point of view	1	2	3	4	5
4.I like to look at difficult situations from many different angles	1	2	3	4	5
5.I find it troublesome that there are so many different ways to deal with difficult situations	1	2	3	4	5
6.I consider all the available facts and information when thinking about why someone did something	1	2	3	4	5
7.When encountering difficult situations I just don't know what to do	1	2	3	4	5
8.I am good at putting myself in others' shoes	1	2	3	4	5
9.I am capable of overcoming the difficulties in life that I face	1	2	3	4	5
10.I can think of more than one way to fix a difficult situation I'm in	1	2	3	4	5

Emotional Symptoms of the Strengths and Difficulties Questionnaire (Goodman, 1997)

	Strongly disagree	Sort of disagree	Neither agree nor disagree	Sort of agree	Strongly agree
1.I worry a lot	1	2	3	4	5
2.I am often unhappy, down-hearted or tearful	1	2	3	4	5
3.I am nervous in new situations, I easily lose confidence	1	2	3	4	5
4.I have many fears, I am easily scared	1	2	3	4	5
5.I get a lot of headaches, stomach-aches or sickness	1	2	3	4	5

Introspection Scale (Hansell et al., 1986)

	Very little	A little	Some	Much	Very much
1.How much do you think about yourself?	1	2	3	4	5
2.How much do you pay attention to your feelings?	1	2	3	4	5
3.How much do you try to figure yourself out?	1	2	3	4	5
4.How much do you pay attention to your own thoughts?	1	2	3	4	5
5.How much do you think about what you are like as a person?	1	2	3	4	5
6.How much do you think about why your life is the way it is?	1	2	3	4	5
7.How much do you wonder about the real reason you behave the way you do?	1	2	3	4	5
8.How much do you think about yourself when you're alone?	1	2	3	4	5
9.How much do you picture in your mind what your life is like?	1	2	3	4	5
10.How much do you think about how you feel?	1	2	3	4	5
11.How much do you think about why you do the things you do?	1	2	3	4	5
12.How much do you think about who you are?	1	2	3	4	5

Emotional Clarity Measure (Salovey et al., 1995)

	Never true	Hardly Ever true	Sometimes true	Often true	Always True
1.Sometimes I can't tell what my feelings are	1	2	3	4	5
2.I'm hardly ever confused about how I feel	1	2	3	4	5
3.My beliefs and opinions always seem to change depending on how I feel	1	2	3	4	5
4.I am usually aware of my feelings about things	1	2	3	4	5
5.I am usually confused about how I feel	1	2	3	4	5
6.I feel ok about my emotions	1	2	3	4	5
7.I am usually very clear about my feelings	1	2	3	4	5
8.I almost always know exactly how I am feeling	1	2	3	4	5

If you would like to enter the draw to win a \$20 Warehouse voucher (10 to be won), please enter your name and email address below so that we can contact you if you win. Remember that your questionnaire responses will NOT be connected to your contact details.

Name.....

Email address.....

APPENDIX H: Study 2 Recruitment – Facebook Advertisement

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Click here to take a quick anonymous survey about how you're feeling, and go in the draw to win a \$20 Warehouse Voucher (10 to be won)