

# The Well-being Value of Thinking About The Future in Adolescence

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## **Abstract**

Research has only recently begun to examine how individuals can be mentally healthy as opposed to simply showing the absence of distress. One way of defining mental wellness, Psychological Well-Being (PWB; Ryff, 1989), encompasses six dimensions of positive functioning. Cognitions relating to the future are a key element of well-being and are particularly relevant in the late adolescent developmental stage. The study's first aim was to examine how the positive and negative events adolescents anticipate in the future are seen as being implicated in various aspects of their well-being. The second aim was to examine the relationship between PWB self-report scores and levels of anxiety and depression. Sixth form students completed a task which elicited positive and negative events they were anticipating in the future and their thoughts about what was good or bad about those events. They also completed a measure of anxiety and depression and self-report scales of PWB. Open-ended responses about the consequences of the events (what was good or bad about them) were independently coded for the presence of the six PWB dimensions. Environmental Mastery was the most salient aspect of PWB present when participants discussed the consequences of both positive and negative events. The frequency of PWB dimensions present in adolescents' responses was similar between those with high and low levels of anxiety and depression, except those with high levels expressed significantly more responses related to Positive Relations with Others. On the self-report measures Positive Relations and Self-Acceptance showed unique relationships to depression scores, and Environmental Mastery and Self-Acceptance showed unique relationships to anxiety scores. The findings have implications for developing prevention strategies focusing on strengthening these aspects of PWB in the hope of protecting vulnerable people from future distress.

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## **Chapter 1. Introduction**

### **Chapter Overview**

Cognitions relating to the future play an important role in well-being, yet minimal research has examined the relationship between well-being and anticipatory cognitions in adolescence. Aside from young people's well-being being a prominent governmental aim (Office of National Statistics [ONS], 2011), thinking about the future is particularly pertinent at this developmental stage. The present study aims to investigate the relationship between future thinking and well-being in adolescence by examining adolescent expectations about the value of anticipated events on future well-being. A greater understanding of the impact that thinking about the future has on different aspects of well-being in adolescence could not only help to develop specific interventions for young people with low states of well-being, but may help to promote optimal well-being in the general population. The effect that early intervention will have over the life course is likely to have a lasting impact on improving quality of life.

This chapter will begin by introducing the concept of positive psychology in adolescence and an in depth discussion of the definitions of well-being. It will then discuss one particular approach to defining well-being – psychological well-being and the surprising lack of research in adolescents. The chapter will go on to discuss future thinking and provide evidence which has demonstrated how important cognitions relating to the future are for well-being. Following this, an argument for the necessity to explore these concepts in adolescence is given before a detailed description of the

limitations and gaps in the existing future thinking literature. Finally, literature investigating the relationship between psychological well-being and psychological distress will be discussed. The chapter will close with a summary of the present study protocol and the research questions it will aim to answer.

### **The Positive Psychology Movement**

Well-being is a state that human beings for Millennia have been striving to achieve. It is surprising, then, that it is only in the last two decades that research in psychology and psychiatry has begun to examine how individuals can be mentally well in life rather than simply how distress can be treated. There has been an abundance of literature focusing on pathology, unhappiness and human suffering, yet positive aspects of human functioning have traditionally been neglected (Seligman & Chikzentmihalyi, 2000). The emergence of positive psychology has helped to steer researchers away from an emphasis on negativity towards an understanding of the conditions and processes that foster happiness, personal growth and optimal functioning (MacLeod & Moore, 2000; Seligman & Csikszentmihalyi, 2000). This evolution from a diagnostic and treatment focus of mental illness to the concept of enhancing well-being has resulted in the awareness that psychological health is more than just the absence of psychopathology. Rather, it is “...a state of well-being in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community...” (World Health Organisation [WHO], 2001, p.1). This has been mirrored in the National Health Service, where there has been increasing interest in recovery being more than the alleviation of negative symptoms,

but instead being the engendering of physical, mental and social well-being (National Institute for Mental Health in England [NIMHE], 2005).

The majority of research in positive psychology thus far has used adult samples, so there is clearly scope for investigating strengths and well-being in adolescent populations (Norrish & Vella-Brodrick, 2009). Authors have recently increased requests to apply positive psychology in schools and youth-orientated settings (Chafouleas & Bray, 2004; Terjesen, Jacofsky, Froh, & DiGiuseppe, 2004). Teaching positive psychology concepts to young people may potentially equip them with knowledge and skills that may have a lasting positive impact on their lives. In a sample of 1,234 12-18 year olds, Keyes (2006) found that more young people reported moderate than high emotional, social and psychological well-being, illustrating that while many may not be in the clinical range, few are flourishing. These findings support the investigation of how adolescents who are moderately mentally healthy can pursue more optimal functioning. Like previous efforts to investigate what makes life worth living, the present study hopes to contribute to a more complete understanding of the positive aspects of human experience. Well-being has become not only a psychological priority, but a social and political one. Governments around the world are increasingly interested in the measurement of population well-being as an indicator of economic growth (Stiglitz, Sen & Fitoussi, 2009). The idea of nurturing people's strongest qualities in the endeavour of achieving optimal well-being is a valuable one. However, one of the first challenges for anyone engaged in this pursuit is the lack of consensus regarding a definition of well-being and what it means to be psychologically healthy (Ryff & Keyes, 1995).

## **What Does Being Psychologically Healthy Mean?**

Part of the difficulty in attaining a clear conceptualisation of well-being is the wide variety of constructs that are used interchangeably. Throughout the literature, researchers have used such terms as life satisfaction, quality of life, subjective well-being, flourishing, emotional and mental health, positive affect and happiness synonymously with well-being (Kozma, Stones, & McNeil, 1991). Among the diverse and extensive criteria of well-being generated, it is difficult to determine the essential features of positive psychological functioning. Ryan and Deci (2001) have highlighted the two overarching and conceptually distinct perspectives on what constitutes well-being. The first is the hedonic view, which understands well-being in terms of the subjective experience of enjoyment and happiness. Stemming from ideas of philosophers such as Aristippus and Bentham, the hedonic view stipulates that the ultimate goal of life is to achieve the maximum amount of pleasure and the minimum amount of pain (Kahneman, Diener, & Schwarz, 1999). The experience of pleasure/pain has been measured predominantly through Subjective Well-being (SWB), operationalised as involving high Positive Affect, low Negative Affect and high Satisfaction with Life (Diener & Lucas, 1999). The second school of thought is the eudaimonic view, which understands well-being as being derived from living in accordance with one's true values (Waterman, 1993). In contrast to the hedonic view, eudaimonic theories assert that well-being comes, not from pursuing pleasure through satisfying one's desires, but through engaging in activities that are personally meaningful and fulfilling one's potential in a process of self-realisation (Ryan & Deci, 2001). These ideas go back as far as Aristotle (350 B.C.) and share an element of common understanding of well-being as concerned with human growth and

flourishing, virtue and vitality. This orientation appears to be particularly relevant in developmental settings because it underlies the realisation of human potential and individual strengths (Ryff, 1989).

There has been heated debate between the perspectives of hedonic and eudaimonic theorists. SWB has been criticised for ignoring the complexity of what it means to live a good life (Ryff & Singer, 1998) and for being unconcerned about the types of activities, goals and attainments required to engender well-being (Ryan & Deci, 2001). Despite these criticisms, SWB is far more prevalent than eudaimonic research and has dominated the well-being arena as the primary outcome variable (Waterman, 2008). This is most likely because SWB theorists have established a clear and consistent set of operational definitions (i.e., high Positive Affect, low Negative Affect, high Satisfaction with Life) which are amenable to psychometric measurement and self-assessment (Ryan, Huta & Deci, 2008). In contrast, eudaimonic constructs by their nature encompass multiple dimensions and are multi-faceted, thus have less measurable targets for empirical examination. Assessments of well-being have been criticised for having limited theoretical grounding and neglecting important aspects of positive functioning (Ryff, 1989).

### **Psychological Well-being**

In response to the lack of credible assessment procedures, Ryff (1989) developed the taxonomy of Psychological Well-Being (PWB) which now clearly represents the eudaimonic perspective. It became apparent to Ryff (1989) that many

conceptualisations of positive psychological functioning converged. These included developmental perspectives which emphasised challenges confronted at different stages of the lifespan (Erikson, 1959; Buhler, 1935; Neugarten, 1968), as well as humanistic and existential approaches such as Allport's (1961) notion of maturity, Jung's (1933) formulation of individuation, Maslow's (1968) theory of self-actualisation and Roger's (1961) view of the fully functioning person. Integrating these conceptions, Ryff (1989) identified six core dimensions commonly recognised for human flourishing: Autonomy (the ability to evaluate oneself according to personal rather than other people's standards); Environmental Mastery (the ability to choose environments that meet one's needs); Personal Growth (the ability to be open to the self as expanding over time); Positive Relations with Others (the ability to create trusting, intimate, empathic interactions with others); Purpose in Life (the ability to create goals, intentions in order for life to feel meaningful) and Self-Acceptance (the ability to evaluate oneself and acknowledge one's good and bad qualities).

The fundamental proposition of Ryff's (1989) theory-driven model was that SWB was not a necessary requirement for positive psychological health. In contrast to SWB, PWB is not seen as being directly connected to Positive Affect, rather it theorises that happiness is a "by-product" of living a life to its full potential (Ryff & Singer, 1998). SWB and PWB have been repeatedly empirically dissociated (Ryan & Deci, 2001) suggesting that PWB may be able to predict additional variance in positive functioning. Researchers have shown PWB and SWB to have different patterns of biological (Ryff *et al.*, 2006) and psychological (Waterman, 1993)

associations and to load on correlated but separate factors (Keyes, Shmotkin & Ryff, 2002). However, evidence has also indicated that their dimensions overlap, thus representing constructs that operate together (Kashdan, Biswas-Diener & King, 2008; Waterman, Schwartz & Conti, 2008). In one study, participants were asked to rate features of the good life and it was found that both happiness and meaning were implicated (King & Napa, 1998). Results such as this, illustrate that well-being is probably best conceived as including aspects of both SWB and PWB. Rather than constraining the understanding of wellness by reducing its measurement to a single perspective, research may fare best by joining both views. The present study will use indicators of both SWB and PWB in its aim to understand more about well-being in adolescence.

To measure the six core dimensions of PWB, The Scales of Psychological Well-Being (SPWB, Ryff, 1989; Ryff & Keyes, 1995) were developed. The original instrument included 120 items (20 per dimension) with approximately equal numbers of positively and negatively worded items. The measure was shown to have high internal consistency (reliability coefficients for each dimension ranged from 0.86 to 0.93) and high test-retest reliability over six weeks (coefficients ranged from 0.81 to 0.88). All correlations of the scales with prior measures of well-being were significant and positive (Ryff, 1989). More recently, shorter versions comprising 84 items (14 per dimension), 54 items (9 per dimension), 42 items (7 per dimension) and 18 items (3 per dimension) have been widely applied in a variety of samples and settings. Factor analysis has shown that empirical data from 1108 adults fits the theoretical model of a six dimensional structure of PWB (Ryff & Keyes, 1995). Furthermore, in a sample of

4980 older adults the six-factor model was found to generate an improvement in fit over a model with fewer factors (Clarke, Marshall, Ryff, & Wheaton, 2001). Numerous other empirical studies have also provided evidence for the underlying theory to fit best into a six factor structure (e.g. Cheng & Chan, 2005; Kafka & Kozma, 2002; Van Dierendonck, 2004).

There has been widespread interest in the application of Ryff's theoretical framework, however, the psychometric properties of the proposed sub-scales have been contentious. Particular concern has arisen over the issue of distinctiveness, thus whether there is substantial independent variation among the dimensions. In an investigation of the data from three large studies, Springer and Hauser (2006) reported high associations between scores on the PWB dimensions, particularly between Personal Growth and Purpose in Life, and between Self-Acceptance and Environmental Mastery. They assert that this indicates conceptual overlap between the dimensions and therefore raises doubt about the factorial validity of the instrument. They conclude that their findings imply that either the measure is not adequate enough to distinguish the six theoretical factors, or that the theory itself is insufficient (there may be fewer than six underlying dimensions of PWB), or both. In defence of these contentions, Ryff and Singer (2006) emphasise two sources of evidence that point towards distinctiveness. Firstly, in the original publication the scales showed differential patterns of association with other measures (Ryff, 1989). Secondly, the dimensions showed differential age trajectories indicating that they are distinct at different stages of the life course (Ryff & Keyes, 1995). Other authors suggest that the high correlations can be explained by the presence of a more general



(second-order) factor that encapsulates a common aspect of well-being between these sub-factors (Abbot *et al.*, 2006). Despite these criticisms, all but one of the factor analytic studies of PWB, including Springer and Hauser (2006), illustrate that the best fitting structure is the theory-guided six-factor model. The work of Ryff (1989) and Ryff and Keyes (1995) has been highly influential and cited in 4,253 publications (retrieved Google Scholar, 15<sup>th</sup> May 2014).

As well as associations with socio-demographic factors such as gender (Ryff, 1995) and socioeconomic status (Ryff & Singer, 2008), PWB has shown cross-sectional age differences among young, middle, and older aged adults in multiple studies (e.g., Clarke, Marshall, Ryff & Rosenthal, 2000; Ryff & Singer, 2008). Specifically, some aspects of PWB increased with age, especially between young to midlife (e.g., Autonomy, Environmental Mastery), while others decreased sharply, especially from mid adulthood to old age (e.g., Purpose in Life, Personal Growth), and still others showed little age variation (e.g., Positive Relations with Others, Self-Acceptance; Ryff & Singer, 2008). What is as yet unknown is whether the patterns represent aging changes, or cohort differences, although other longitudinal analyses (over shorter age periods) have documented that PWB does, indeed, change with aging, particularly as individuals negotiate life challenges and life transitions (Kling, Seltzer, & Ryff, 1997; Kwan, Love, Ryff, & Essex, 2003). Ryff's interest in the pattern of PWB across the lifespan suggests that PWB lends itself well to the descriptive study of well-being in adolescence.

## **Adolescent Psychological Well-Being**

Despite Ryff's widely researched model, examining PWB in adolescents has been relatively rare. This is surprising considering young people's well-being is a prominent governmental aim (ONS, 2011) reflecting a growing international interest in measuring well-being as a supplement to more traditional economic measures of the progress of society. Much of the adolescent research has focused on objective indicators of well-being (e.g., educational achievement), even though such objective individual and family factors have been found to account for less than 10% of the variance in young people's well-being scores (The Children's Society, 2010). Applying Ryff's model to adolescents seems an important step in understanding more about the pattern of the six PWB dimensions during this optimal developmental process. Studies that have used the SPWB in adolescent samples have mostly aimed to investigate its psychometric properties. Similar to the adult literature, the SPWB have shown satisfactory coefficients for internal, predictive, convergent and discriminant validity in adolescent samples (Fernandes, Vasconcelos-Raposo & Teixeira, 2010; Kitamura *et al.*, 2004; Ruini, Ottolini, Rafanelli, Ryff & Fava, 2003; Vleioras & Bosma, 2005) and to continue to best fit a six factor structure (Van Dierendonck, 2004).

Other than examining the scale's psychometric properties, studies in school settings have examined associations between PWB and variables such as educational attainment and activity levels. Ryff and Singer (2008) found educational attainment to show positive associations with all six dimensions, with Purpose in Life and Personal Growth correlating particularly strongly. Sheldon and Lyubomirsky (2006) assessed

PWB over the course of a school term and found that adopting a significant positive new goal or activity (e.g. starting a sport or group, deciding on a career direction) was associated with increases in PWB. As will be discussed later, researchers have begun to use the SPWB to assess changes in scores in the six dimensions after interventions specifically focused on promoting PWB.

One variable that has been shown to be an important element of PWB in young people is life events. In university students, Locke (2013) found that positive and negative life events were currently having a beneficial impact on all PWB dimensions except Autonomy, and an adverse effect on Positive Relations with Others, Self-Acceptance and Environmental Mastery. Garcia and Siddiqui (2008) found that the number of recalled positive and negative life events predicted PWB for adolescents categorised as having self-destructive temperaments. The results of these studies suggest that further attention to the link between life events and PWB is needed. The present study aimed to investigate the relationship between PWB and *future* life events. No published studies have investigated PWB in relation to future events or examined how thinking about events in the future may contribute to PWB in adolescence. As expressed by Ryff and Keyes (1995), mapping the structure of PWB will require research from diverse sources, which an examination of the link between future thinking and PWB in adolescence will be one of.

### **Future Thinking**

Future thinking refers to the unique human ability to project the mind forwards in time and imagine future possibilities (Gilbert & Wilson, 2007). Although mentally re-

experiencing past events (episodic memory) has been an area of intense scientific interest, mental construction of potential future events has been a subject of comparatively little research (D'Argembeau & Van der Linden, 2004). Affective states associated with the anticipation of future outcomes have also been sparsely examined (Finkenauer, Gallucci, Van Dijk & Pollman, 2007; Gilbert & Wilson, 2007). The ability to mentally simulate possible futures and predict their hedonic consequences is of fundamental importance because it provides the basis for setting goals and making plans, exploring options and making decisions that guide an individual's behaviour (Bechara & Damasio, 2005; Seginer & Lilach, 2004). This has a clear adaptive value, enabling one to act flexibly in the present to constantly changing environmental circumstances to increase future survival (Suddendorf & Corballis, 2007).

A variety of tools have been developed to measure future thinking. Questionnaires such as The Zimbardo Time Perspective Inventory (ZPTI; Zimbardo & Boyd, 1999) and the Consideration of Future Consequences Scale (CFC; Strathman, Gleicher, Boninger, & Edwards, 1994) specifically assess individual differences in inclination and orientation to think about the future. The more recent Timestyle Inventory (Fortunato & Furey, 2009) measures future thinking perspective using items such as "people think of me as visionary" and "I am known for innovation". Experimental procedures investigating future thinking have varied from listing future hopes and fears (cited in Seginer, 2008), imagining future events associated with visual cues (D'Argembeau & Van der Linden, 2004), completing future-focused sentence stems (Barton, Houghton & Morley, 2005) to describing future projections and their

associated emotional responses (D'Argembeau, Lardi, & Van der Linden, 2012). One of the most widely used tools is the Future Thinking Task, based on an adapted verbal fluency paradigm (MacLeod, Rose & Williams, 1993). In this timed task, participants are required to generate events they are looking forward to (future positive events) and events they are not looking forward to (future negative events) in designated time periods over the short (week), medium (year) and long term (5-10 years) future. The Future Thinking Task has provided a way of distinguishing between different kinds of future thinking in the general population (e.g., Hepburn, Barnhofer & Williams, 2006; MacLeod & Conway, 2005) and in clinical samples (e.g., MacLeod *et al.*, 2005; MacLeod, Tata, Kentish, & Jacobsen, 1997; MacLeod & Salaminiou, 2001). The relationship between future thinking and well-being will be returned to later in the chapter.

### **Adolescence: An Essential Life Stage For Future Thinking**

The measures and experimental procedures described above have rarely been used to examine future thinking in young people. This is surprising, considering thinking about the future is particularly pertinent at this stage of life, especially for 16 to 18 year olds. Not only do adolescents at this age face a number of normative tasks set by parents, peers and teachers concerning expected life-span development, they are thrust into making future-orientated decisions, such as those related to university, career, lifestyle, partners and future family, which crucially influence their later adult life (Havighurst, 1974; Nurmi, 1991). Indicators such as teenage pregnancy, delinquency, suicide attempts and drug abuse may also be related to how young people see their future (Proctor, Linley, & Maltby, 2008). In addition, how adolescents see their future

plays an important part in acquiring autonomy from parents which is one of the key developmental tasks of late adolescence (Zimmer-Gembeck & Collins, 2003). Furthermore, the act of projecting oneself into meaningful future events may significantly contribute to a person's sense of self and identity (Conway, 2005; D'Armentau *et al.*, 2012). Future thinking may therefore be implicated in successfully forming an identity rather than remaining trapped in role-confusion, which according to Erikson's (1968) theory of lifespan development, is an essential task of the adolescent stage allowing an individual to move forward in life.

The importance of future-thinking has been shown in a study of 7,000 10-15 year olds which investigated the factors affecting young people's self-reported well-being (The Children's Society, 2010). Respondents were asked to rate how happy they were with their lives for 10 dimensions of well-being (relationship with family, relationship with friends, time use, health, the future, money and possessions, school, appearance and amount of choice in life). Participants rated feeling least happy with what might happen to them in the future and this stayed consistent over different ages. In addition, the correlation between happiness about the future and overall well-being was the third highest correlation and increased steadily with age. There were also significant gender differences, with females being less likely to feel positive about the future (63%) than males (72%). This showed that, like adults, expectations of the future are also a key element of young people's well-being. Thoughts about the future were prominent in response to the question, *what are the good things in your life at the moment?* For example, one participant reported: "I'm looking forward to success in academic terms, going to university if I get the grades. I have my future planned out

in my mind” (p.50). Thoughts about the future were also prominent in response to the question, *what are the bad things in your life at the moment?*, for example, “I am worried about my exams and the future” (p50). Furthermore, the largest percentage drop in self-reported well-being between the ages of eight and fifteen was for the future; mean happiness with what might happen in the future at age fifteen was 18% lower than at age eight (The Children’s Society, 2010). These findings not only illustrate the necessity of investigating future-thinking in more detail in the adolescent population, but bring into question the impact that future-thinking is having specifically after fifteen years old in late adolescence.

Current research on future orientation has begun to focus on 16-18 year olds, for example, Gabrielsen, Ulleberg and Watten (2012) who recently developed the Adolescent Life Goal Profile Scale specifically for this age group. Their findings suggest that giving importance to life goals, specifically those in line with nurturing social, family and intimate relationships and with generating life meaning increases well-being. The authors note that they restricted their research by only focusing on measures of SWB and that obtaining data from a wider range of well-being questionnaires, specifically those capturing PWB “could very well provide a fuller understanding of the nature of well-being that appears to be associated with the presence of life goals” (p1068). This is what the present study aims to achieve in a developmental setting, where Ryff’s (1989) eudaimonic conceptualisation of PWB is particularly relevant.

Research on how adolescents see their future has tended to focus on the content of what adolescents think about and the factors which influence this during the transition to adulthood years. A review asserted that environmental factors such as family support, parental encouragement and role models influence what adolescents think about in the future (Nurmi, 1991). In addition, the content of what young people think about in the future has been found to concern education, occupation, family and self-related topics such as their personal happiness and leisure activities (Lanz, Rosnati, Marta, & Scabini, 2001; Nurmi, 1991). When adolescents were asked about their personal goals, Nurmi (1992) found that their answers focused most on education, yet Cross and Markus (1991) found young adults hoped for experiences most related to occupation and family. In a review including literature spanning 16 years, adolescent future goals were found to relate most frequently to education and occupation (Massey, Gebhardt, & Garnefski, 2008). It has also been shown that young people, like other age groups, think about the near future significantly more frequently than the distant future (Tonn & Conrad, 2007) and construct more detailed representations of events imagined in the near future and more abstract and decontextualised representations of events imagined in the distant future (D'Argembeau & Van der Linden, 2004). Although these studies have contributed to important developments in understanding future orientation in adolescence, they have not examined the way that anticipating future events may have an impact on well-being.

Studies in adults have given greater attention to distinctions among different kinds of future thinking. Breaking future thinking into positive and negative component parts has enabled the influence of valence to be examined. MacLeod and Byrne (1996)



found that people in the general population (controls) tended to generate more positive than negative experiences in the Future-Thinking Task. People also take less time to generate positive than negative events (Newby-Clark & Ross, 2003). Furthermore, representations of positive events were clearer, contained more sensory details and were associated with a greater subjective feeling of pre-experiencing than representations of negative events (D'Argembeau & Van der Linden, 2004). Weinstein (1980) showed that people consistently predicted that they would be more likely than their peers to experience positive future events (e.g., having a good job) and less likely to experience negative future happenings (e.g., divorce). D'Argembeau and Van der Linden (2004) suggest that the ability to access positive rather than negative self-relevant information more easily may enhance the richness of positive future imaginings, in turn motivating behaviour and sustaining well-being. In contrast, overestimating the likelihood of negative events and/or underestimating the likelihood of positive future events or emotions has been found to dampen motivation and successful performance and interfere with one's mood, activities, responsibilities and quality of life (Bandura, 1997; MacLeod & Copley, 1995; Pyszczynski, Holt & Greenberger, 1987). Individuals with low well-being generated a similar number of positive future events for others despite giving fewer positive future events for themselves, suggesting that they are able to envisage future possibilities, but do not believe that these will happen to them (MacLeod & Conway, 2007). Studies like these demonstrate the impact that future thinking can have on well-being and the pertinence of gaining a greater understanding of these links.

## **The Relationship Between Future Thinking And Well-Being**

Thoughts about the future have been shown to be related to well-being in community samples. For example, Fortunato and Furey (2011) found that scores on future thinking correlated positively with resiliency and optimism, and negatively with measures of anxiety and depression. In adolescents, high levels of cognitions relating to making, working towards and implementing goals has been shown to be related to increased optimism, increased perceived competence, increased self-esteem (Snyder, 2002) and high life satisfaction (Valle, Huebner & Suldo, 2006). Furthermore, being engaged in striving towards valued goals has been found to be linked to SWB, especially when the goals match the individual's underlying motivation and are believed likely to happen (Brunstein, Schultheiss, & Grassman, 1998; Schmuck & Sheldon, 2001).

There is also evidence from the other end of the emotional spectrum that people with very low levels of well-being have disrupted future thinking. This has certainly been emphasised in cognitive theoretical accounts of depression and anxiety. The hopelessness theory of depression asserts that heightened anticipation of future negative events and reduced anticipation of future positive events plays a causal role in the development of depression (Abramson, Metalsky, & Alloy, 1989). Beck's theory of depression emphasises that a negative or pessimistic view of the future is a main component of the negative cognitive triad and may predict future depression scores (Beck, Rush, Shaw & Emery, 1979). As with adults, it has been suggested that young people with depression also report a significantly less positive view of the future (Kaslow, Stark, Printz, Livingston, & Tsai, 1992). Furthermore, there is strong

evidence that hopelessness about the future is a key psychological variable in suicidal behaviour, mediating the relationship between depression and suicidal intent (Salter & Platt, 1990). Anxiety also contains a large future thinking component as it is seen to primarily involve a tendency to exaggerate the probability and intensity of anticipated potential future danger and threat (Barlow, 1988; Kendall & Chansky, 1991).

A consistent finding using the Future Thinking Task is that depressed adults are impaired in their ability to generate positive future experiences compared to controls or anxious individuals, yet interestingly, they do not generate more negative future experiences (MacLeod & Byrne, 1996; MacLeod *et al.*, 1997c; MacLeod & Salaminiou, 2001). This effect has been shown in these studies to be consistent across the different future time periods. This deficit in positive future thinking has also been shown to differentiate between suicidal and non-suicidal individuals. Results have consistently shown that parasuicide patients (those engaged in deliberate but non-fatal acts of self-harm) are less able than controls to provide events they are looking forward to but do not differ from controls in the number of events they are not looking forward to (Conaghan & Davidson, 2002; MacLeod, Pankhania, Lee, & Mitchell, 1997; O'Connor, Connery & Cheyne, 2000). Taken together, these findings suggest that the future thinking of individuals with very low states of well-being (depressed or suicidal) is characterised mainly by a lack of positive anticipation in the absence of any increase in negative anticipation. These findings strengthen the distinction between positive and negative aspects of experience, suggesting that they may be two separate psychological systems rather than opposite ends of a single dimension (MacLeod & Moore, 2000). This has huge implications for developing treatments that

not only tackle negative thinking, but target the skill of positive future thinking. In line with the positive psychology movement, not only may interventions which strengthen the ability to anticipate positive events in the future help people to recover from depression, improving this skill in the general population may act as a buffer against ever developing mental illness in the first place (Seligman & Csikszentmihalyi, 2000).

A majority of studies using the Future Thinking Task have targeted individuals with clinical depression and suicidal ideation, yet few have been concerned with the relationship between anxiety and future thinking. In contrast to the deficit in positive future thinking seen in depression, individuals with panic disorder or generalised anxiety have been shown to generate more future negative experiences than controls and depressed individuals, but not fewer future positive experiences (MacLeod & Byrne, 1996; MacLeod *et al.*, 1997c). It has also been shown that individuals who are both anxious and depressed generate more negative and fewer positive anticipated experiences than controls (MacLeod & Byrne, 1996). Anxious and depressed young people have also been found to show pessimistic expectations for future events relative to controls (Dalglish *et al.*, 1997). Only one study has investigated future thinking in school aged adolescents using the Future Thinking Task. It found that pupils with higher levels of anxiety and those with higher levels of depression predicted significantly more negative events, yet no fewer positive events, in the future than a control group (Miles, MacLeod & Pote, 2004). The authors concluded that this finding reinforced the importance of negative cognitions as well as positive cognitions about the future in adolescent anxiety and depression. These findings do

not support previous research in adults which hypothesises that future thoughts are distinct in depression and anxiety. However, they have important implications in that adolescents may be helped to avoid future states of low well-being by being helped to identify life goals and plan achievable positive future episodes effectively (Miles *et al.*, 2004). The study also called for further research which specifically examines thinking at early and late adolescence; the latter which will be achieved by the present study.

### **Gaps In The Future Thinking Literature**

Key questions that arise from the repetitive finding that future thinking is related to well-being are: why does thinking about the future matter? Why is it important to have things to look forward to? Why is it disadvantageous to have things not looked forward to? The overwhelming focus of studies so far has been on the *quantity* of events predicted, rather than the qualitative aspects of the meaning behind events anticipated in the future. The perceived importance and value of future events is as important to investigate as the events themselves and has been called for by Atance and O'Neill (2001) who suggest that "future research might reveal not only quantitative but also qualitative differences in the types of positive and negative future outcomes individuals anticipate" (p.535). A step towards a better understanding of this has been devised in a study that asked participants to rate the perceived likelihood of future occurrences generated on the Future Thinking Task on a scale from one (not at all likely) to seven (extremely likely). An anxiety group and a depressed group of adults both gave higher expectations than controls of the likelihood of negative events happening, and lower expectations than controls of the likelihood of positive events

happening (MacLeod, Tata, Kentish, Carroll, & Hunter, 1997). A method for understanding the perceived importance or emotional value of future events has been developed by MacLeod *et al.* (1998) who, in addition to ratings of event likelihood, asked participants to rate how they would feel if events generated in the future were to happen on a scale of -3 (very negative) to +3 (very positive). With this composite measure that included expectancy and value as well as number of anticipated events, it was found that parasuicide patients continued to be characterised by lack of positive future thinking in the absence of any increased negative future thinking. In a similar study, MacLeod *et al.* (2005) found that number and likelihood of positive events and likelihood and value of negative events were related to hopelessness in a sample of parasuicides. Another study asked participants to rate their enjoyment of the future events elicited if they were to occur (MacLeod & Salaminiou, 2001). Participants with higher levels of well-being (controls) thought their future events would be more enjoyable, relative to those with low levels of well-being (clinically depressed). Godley, Tchanturia, MacLeod and Schmidt (2001) asked participants to rate how happy they would feel at the time if the future events they generated were to actually happen on a scale of -3 (very unhappy) to +3 (very happy). The researchers found that anorexia nervosa patients thought that future negative events would be greater, more likely and make them less happy than controls. Studies which have added subjective likelihood, emotion and enjoyment ratings to the Future Thinking Task have furthered investigations into the meaning of anticipating future events, however, a greater understanding of why they are important is needed.

Although researchers have done well to establish links between future thinking and low affective states, the literature has generally neglected to examine the impact of future thinking on the more sophisticated, multi-faceted conceptualisations of eudaimonic well-being. Only one published study has investigated PWB in relation to anticipating or planning for future events. It found that higher numbers of positive future thoughts generated on the Future Thinking Task were correlated with significantly higher levels of overall PWB (MacLeod & Conway, 2007). This study has undoubtedly advanced our understanding of the link between future thinking and well-being, however, another key question that arises from these findings is, exactly which particular dimensions of PWB are anticipated events seen as impacting upon? Since only total PWB scores were used in the analysis, it did not identify whether there were specific links between future thinking and each of the six dimensions of PWB. Edmonson (2012) developed a way of examining this and determining why future events mattered in adults with depression. Participants were asked to say why the events they were anticipating in the future were important for them. After assessing what it was about anticipated events that people found good (positive events) or bad (negative events), all responses were independently coded according to which of the six dimensions of PWB they mapped onto. Positive anticipated events were seen to have the greatest beneficial impact on Positive Relations with Others and the least impact on Autonomy. Negative anticipated events were seen to have the greatest detrimental effect on Environmental Mastery and Positive Relations with Others. Results were broadly consistent for depressed and non-depressed participants suggesting that low mood did not alter the structure of future thinking. Rather than relying simply on a rating of the perceived value of future events, this method has increased the sensitivity of the future thinking measure as it allows for a wide range of

responses that are more likely to reflect the true importance of anticipated future events. The present study aims to extend Edmonson's (2012) findings by examining future thinking in this way in a community sample of adolescents. Examining how anticipating future events are perceived as contributing more specifically to each of the six component parts of a young person's PWB seems pertinent. Not only will it contribute to a new source of evidence to the understanding of PWB, it may help to identify dimensions that are most relevant to enhancing well-being or protecting young people from psychological distress. Strengthening resources early on in life may increase the likelihood that people live more psychologically healthy lives into adulthood.

### **The Relationship Between Psychological Distress And Well-Being**

Considering the strong evidence derived from the future thinking literature illustrating the importance of positive experiences in psychological disorders, there is a clear need to understand more in the way of distinctions between different aspects or dimensions of positive experiences. In addition to the investigation of how future thinking is linked to different elements of well-being, further knowledge of how low affective states are related to different elements of self-reported well-being seems equally as important. Research investigating the relationship between distress and Ryff's (1989) scale of PWB in adult samples has shown patients with mood or anxiety disorders to report significantly lower levels in all six PWB dimensions compared to controls (Edmonson, 2012; Rafanelli *et al.*, 2000). More importantly, the evidence shows that certain facets of well-being are preserved more than others in patients with



affective disorders. In one study, Environmental Mastery and Self-Acceptance were found to show the most deficit in mild clinical depression compared to a control sample reported in the literature, followed by Purpose in Life and Positive Relations with Others. Yet depressed patients scored within the normal range in Autonomy and Personal Growth (Nierenberg *et al.*, 2010). Similarly, in a clinically depressed sample, Edmonson (2012) found the greatest significant deficits in Environmental Mastery and Self-Acceptance with the other four dimensions showing non-significant differences with a comparable control group. Environmental Mastery and Self-Acceptance have also been found to show the most deficit in clinical anxiety (Fava, Mangelli, & Ruini, 2001).

The variations in self-reported PWB that have been shown to occur in clinical settings have also been described in the non-clinical literature. Ryff and Keyes (1995) found Self-Acceptance and Environmental Mastery to be moderately negatively correlated with depression with weaker associations found for the other four PWB dimensions. Other studies have found Environmental Mastery, Purpose in Life and Self-Acceptance to be strongly negatively correlated with levels of depression and anxiety in community samples, with the other three dimensions showing weaker or non-significant correlations (Rafanelli *et al.*, 2000; Ruini *et al.*, 2003b; Ryff, 1989). In a sample of patients in remission from a mood or anxiety disorder, Environmental Mastery showed strong negative associations with anxiety and depression, whilst the remaining dimensions were not significantly correlated (Rafanelli *et al.*, 2000). In a study comparing remitted patients with panic disorder to a control group, significant

impairments were seen in Environmental Mastery, Personal Growth, Purpose in Life and Self-Acceptance (Fava *et al.*, 2001b).

The repeated findings in the clinical and non-clinical literature provide robust evidence for Environmental Mastery and Self-Acceptance to be highly implicated in low well-being and for Autonomy to be less indicated in distress. However, the remaining dimensions show less consistent findings. Furthermore, findings of Liu, Shono & Kitamura (2009) do not support these trends since all six dimensions were found to be moderately negatively correlated with non-clinical levels of anxiety and depression. In addition, depression scores were predicted by Environmental Mastery, Self-Acceptance and Positive Relations with Others while anxiety scores were predicted by all six dimensions, with the exception of Purpose in Life. The authors suggested that findings from general population studies may be less conclusive, possibly because anxiety and depression are not as pronounced as in clinical samples. However, the findings should be interpreted with caution because the SPWB was reduced from a 6-point to a 2-point Likert Scale likely losing important information about participant well-being. Other research methods including the use of different measures of anxiety and depression and cross sectional designs have limited studies investigating the relationship between self-reported well-being and distress (Gallagher, Lopez & Preacher, 2009).

The only longitudinal study to investigate causal patterns found that in a sample of 5566 adults, participants with low self-reported PWB scores were over twice as likely to suffer from depression ten years later (Wood & Joseph, 2010). Along with the

findings that elements of PWB are correlated to anxiety and depression, these results suggest that people who are low in PWB may be at risk of developing these disorders. On this basis, interventions to enhance PWB according to Ryff's (1989) model are rapidly being developed in both preventative and treatment settings and have come to be called Well-being Therapy (Fava & Ruini, 2003). Studies that have tested Well-being Therapy in controlled trials alone (Fava, Rafanelli, Cazzaro, Conti, & Grandi; 1998) and against Cognitive Behavioural Therapy (Fava *et al.*, 2004) have illustrated its efficacy in increasing PWB and decreasing distress. Studies have begun to examine the effectiveness of Well-being Therapy for adolescents in school settings. Particular emphasis is given to improving the six dimensions through discussion and activities such as writing down positive characteristics about oneself (Self-Acceptance) and others and complimenting schoolmates on their positive qualities (Positive Relations with Others). As well as psychoeducation in PWB, students are taught to identify goals in the six dimensions and strategies to meet them (Ruini & Fava, 2012). After such an intervention, a pilot study found an increase in PWB and a decrease in symptoms of anxiety and low mood (Ruini *et al.*, 2006). Another study compared a Well-being therapy group to an attention-placebo group, and found that participants in the Well-being Therapy group had significantly higher levels of Personal Growth post intervention as well as lower levels of anxiety and somatic symptoms (Ruini *et al.*, 2009). A Randomised Controlled Trial involving 227 students also found that Personal Growth levels were significantly higher and anxiety levels were lower post intervention (Ottolini *et al.*, 2012). Tomba *et al.* (2010) found that Well-Being Therapy was more effective at enhancing PWB levels and reducing anxiety levels than an anxiety management intervention. These findings support the efficacy of this approach to facilitating PWB and increasing resilience in school

settings. They also give further evidence for the importance of engendering positive aspects in life in addition to alleviating negative aspects which may be implicated in protecting people from affective disorders (Seligman, Rachid & Parks, 2006). Increasingly, a focus on promoting strengths is being used in mainstream clinical practice, alongside cognitive behavioural techniques (Duckworth, Steen & Seligman, 2005).

### **Gaps In The Well-Being Literature**

Despite the increasing influence of positive psychology on clinical practice, some questions remain unanswered. It is not clear how the absence of particular facets of positive well-being is related to lower mood and higher anxiety levels. Mixed results in community and remission samples and inconsistent findings for Personal Growth, Positive Relations with Others and Purpose in Life illustrate that more research linking anxiety and depression with the six dimension profile of PWB is needed. Furthermore, no studies have investigated these links in adolescence, a time in which individuals endure complex life transitions and choices, including planning education or occupation, forming a self-concept, achieving independence from parents and deciding on a path towards meaningful living. Knowledge of specific PWB impairments in young people with sub-clinical levels of psychological distress may help to develop specific preventative interventions. Achieving high levels in the six PWB dimensions during this optimal developmental process seems pertinent. Promoting optimal functioning may yield lasting personal changes which act as protective factors against stress and future adversities (Ryff & Singer, 2006). The

present study aims to develop a greater understanding of PWB in adolescents, since early intervention is likely to have a lasting impact on preventing psychological disturbance over the life course.

### **The Present Study**

The present study consisted of two main aims reflecting the gaps in the future thinking and well-being literature discussed above. Firstly, the study aimed to understand more about *anticipated* well-being in young people, specifically how the positive and negative events adolescents anticipate in the future are seen as being implicated in various aspects of their well-being. In other words the study asked: why is it important for adolescents to have things to look forward to? And why is it disadvantageous for adolescents to have things not looked forward to? Studies have shown that expectations of the future are a key element in young people's well-being but none have discovered what impact thinking about future events is perceived to have on anticipated well-being. The present study will build on Edmonson's (2012) findings in adults and explore the perceived impact that anticipated future events have on the six dimensions of PWB in adolescents. Within this aim, the study will examine whether positive and negative events are perceived to differ in their well-being effects and whether levels of anxiety and depression have an effect on the perceived impact that adolescents anticipate events to have upon the dimensions of PWB. The study will provide a simple content analysis of the positive and negative events anticipated for a better understanding of the interpretation of results.

Secondly, the study aimed to clarify the relationship between self-reported PWB and distress in a non-clinical sample of adolescents. Previous research has considered the relationship between PWB and mental health difficulties such as depression and anxiety in clinical and non-clinical samples, but none have investigated this relationship in young people, and few have specifically looked at which PWB dimensions are more or less implicated in distress.

Participants were recruited from the sixth form of two Secondary Schools in North London. They were invited to take part in class groups of seven to twenty in research sessions which lasted one hour. Participants completed a task which elicited events they were and were not looking forward to in the future as well as their thoughts about what was good or bad about those events. Participants' responses were then coded for which of the six dimensions of PWB they most closely related to. Participants also completed a demographic questionnaire, the Revised Child Anxiety and Depression Scale (RCADS-25; Muris, Meesters, & Schouten, 2002), and the 54 item version of the PWB scale (Ryff, 1989).

**In summary, the first aim of the study has the following four research questions:**

1. Which of the six dimensions of PWB are seen as being impacted on by the events that adolescents anticipate in the future?
2. Do positive and negative events differ in their anticipated well-being effects?

3. What types of positive and negative events do adolescents anticipate in the future?
4. Will participants with higher levels of distress differ from those with lower levels of distress in which PWB dimensions they see as being impacted on by the positive and negative future events they anticipate in the future?

**The second aim of the study has one research question:**

5. Will participants with higher levels of distress (higher anxiety or depression) score significantly lower on all six dimensions of self-reported PWB?

## **Chapter 2. Method**

### **Ethical Approval**

The study received ethical approval by the Royal Holloway, University of London Research Ethics Committee in August 2013 (Appendix A).

### **Participants**

Sixth form students were recruited from two secondary schools in North London. Participants met the inclusion criteria if they were in Year 12 or 13 and were therefore in the age range from 16 to 18 years. Eighty eight participants took part in the present study (37 males, 51 females) and the mean age was 16.56 years ( $SD = 0.74$  years). Further participant demographics are reported in Chapter 3.

### **Power Calculation**

Due to the absence of any other evidence, a medium effect size was expected for all analyses. An a priori power analysis indicated that for multiple regression with depression or anxiety scores as dependent variables and self-reported PWB dimensions (Autonomy, Environmental Mastery, Personal Growth, Purpose in Life, Positive Relations and Self-Acceptance) as independent variables, 85 participants were required in order to have 80% power for detecting a medium sized effect when employing the traditional .05 criterion of statistical significance (Cohen, 1988).

### **Design**

A cross-sectional between-subjects design was used in the present study. All participants were administered a semi-structured interview to elicit events that they



were anticipating in the future and the meaning of these events. All participants were also administered self-report questionnaires measuring anxiety, depression and psychological well-being (PWB). A mixed model design was used to examine the differences in the six dimensions of PWB.

## **Measures**

**Demographic data.** A questionnaire was constructed to gather information about participants' gender, age, ethnicity, level of education and parental occupation (Appendix B).

### **Future thinking.**

*Eliciting events anticipated in the future.* An adaptation of the Future Thinking Task (FTT; MacLeod, Rose & Williams, 1993) was used to elicit events that participants were anticipating over three time periods: the next week, the next year and the next 5-10 years. The standard FTT has been used in previous clinical and non-clinical studies (e.g., MacLeod & Byrne, 1996; MacLeod & Conway, 2007). Distinct from the standard FTT, where participants are asked to name as many events as possible in a given time limit, the present adaptation based on Edmonson (2012) asked participants to think of two events in each time period. They were asked to think of events or experiences that they thought would definitely happen, or were at least quite likely to happen. Participants were asked to think of positive events they were anticipating (ones they were looking forward to or will enjoy) and negative events they were anticipating (ones they were not looking forward to or were dreading). Thus participants thought of a total of six positive future events and six

negative future events. The order of the conditions was counterbalanced so that half of the participants were asked to think of positive events first and half were asked to think of negative events first. However, participants were always presented with the time periods in the order of week, year, 5-10 years as is standard in the FTT.

*Eliciting the meaning of events anticipated in the future.* For each positive anticipated event, participants were instructed: “Think carefully about what it would mean to you if this event was to happen. Think about why this event matters to you. Write down one thing that would be good about it”. Following this they were then asked to “Write down another thing that would be good about it” and finally to “write down a third thing that would be good about it.” Thus, for each positive anticipated event, three reasons why it was significant were elicited. For each negative anticipated event, participants were instructed: “Think carefully about what it would mean to you if this event was to happen. Think about why this event matters to you. Write down one thing that would be bad about it” They were then asked to “write down another thing that would be bad about it” and finally to “write down a third thing that would be bad about it.” Thus, for each negative anticipated event, three reasons why it was significant were elicited. For positive events there were therefore 18 reasons given for why they would be good (2 events in each of the 3 time periods = 6 x 3 reasons for each of those events) and similarly 18 reasons given for why negative events would be bad (See Appendix C for an example of the Participant Response Form and Appendix D for the Researcher Prompt Schedule).

*Coding participant responses.* Based upon Edmonson (2012), the responses that participants gave about why their future events mattered to them were coded according to which of the six PWB dimensions they most closely related to. For example, “it will help me to get into a good University” was coded as Personal Growth, “I will get to spend time with my friends” was coded as Positive Relations with Others and “I don’t want to disappoint my teachers” was coded as Autonomy. Codes were assigned to responses following Ryff and Keyes’ (1995) definitions of each of the six well-being dimensions as shown in Table 1. It is important to note that the words used by Ryff and Keyes (1995) to describe the dimensions do not necessarily relate to the everyday way of using them. For example, a person high in Autonomy is defined as someone who can think for themselves without being influenced by others or worried about how others may judge them, and does not refer to how a layperson may use the word “autonomy”. Obviously, for negative events the coding of the event typically related to a lack of the PWB dimension whereas for positive events the coding related to the presence of it. In addition, responses mentioning affect were given an Affect code. For example, “I will feel scared” was coded as Negative Affect and “it will make me happy” was coded as Positive Affect. Responses were allocated a PWB code and an Affect code if necessary. For example “During my exams I will feel under pressure and scared that I might fail” was coded as Environmental Mastery and Negative Affect. Effectively, responses were allocated only a PWB code, only an Affect code, or both a PWB and Affect code. Coding categories are described in Table 1 with examples of participant responses for each. See also Appendix E for further examples.

Table 1. Definitions of Theory-Guided Dimensions of Well-Being (taken from Ryff & Keyes, 1995, p.1072)

<p><b>Autonomy</b></p> <p><b><u>High scorer:</u></b> Is self-determining and independent; able to resist social pressures to think and act in certain ways; regulates behaviour from within; evaluates self by personal standards.</p> <p>e.g. “I will achieve more than was expected of me” “I don’t care what my teachers think of me”</p> <p><b><u>Low scorer:</u></b> Is concerned about the expectations and evaluations of others; relies on judgments of others to make important decisions; conforms to social pressures to think and act in certain ways.</p> <p>e.g. “People will judge me for not doing what they’re doing” “I want people to see me as normal”</p>
<p><b>Environmental Mastery</b></p> <p><b><u>High scorer:</u></b> Has a sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; able to choose or create contexts suitable to personal needs and values.</p> <p>e.g. “I will be able to support myself financially” “I will be away from my parents so will be able to have more freedom and do what I choose”</p> <p><b><u>Low scorer:</u></b> Has difficulty managing everyday affairs; feels unable to change or improve surrounding context; is unaware of surrounding opportunities; lacks sense of control over external world.</p> <p>e.g. “It will restrict what I am able to do” “I am worried I will fail my A Level exams”</p>
<p><b>Personal Growth</b></p> <p><b><u>High scorer:</u></b> Has a feeling of continued development; sees self as growing and expanding; is open to new experiences; has sense of realising his or her potential; sees improvement in self and behaviour over time; is changing in ways that reflect more self-knowledge and effectiveness.</p> <p>e.g. “If I achieve good grades I can go to the University I want and will gain more responsibility” “I will get to see new cultures and new places”</p>

**Low scorer:** Has a sense of personal stagnation; lacks sense of improvement or expansion over time; feels bored and uninterested with life; feels unable to develop new attitudes or behaviours.

e.g. “If I fail my assignment, I will be kicked off the course”  
“I won’t be able to further my career”

### **Purpose in Life**

**High scorer:** Has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living.

e.g. “I will reach my goal of being a physiotherapist”  
“I’ll be closer to having a family”

**Low scorer:** Lacks a sense of meaning in life; has few goals or aims, lacks sense of direction; does not see purpose of past life; has no outlook or beliefs that give life meaning.

e.g. “I have no idea what I want to do in the future”  
“I will lose direction and fail to reach my goals”

### **Positive Relations with Others**

**High scorer:** Has warm, satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy, affection, and intimacy; understands give and take of human relationships.

e.g. “I’m excited to throw her a birthday party because she will enjoy it and we will all have fun”  
“I can tell my friend anything which is why we are so close”

**Low scorer:** Has few close, trusting relationships with others; finds it difficult to be warm, open, and concerned about others; is isolated and frustrated in interpersonal relationships; not willing to make compromises to sustain important ties with others.

e.g. “I will only have myself to rely on which will be lonely”  
“My support structure will be less”

### **Self-Acceptance**

**High scorer:** Possesses a positive attitude toward the self; acknowledges and accepts multiple aspects of self, including good and bad qualities; feels positive about past life.

e.g. “I will be more confident in my own skin”  
“I will be proud of myself for achieving good grades”

**Low scorer:** Feels dissatisfied with self; is disappointed with what has occurred with past life; is troubled about certain personal qualities; wishes to be different than what he or she is.

e.g. “All my hard work will be wasted”  
“I doubt myself that I can do well”

A total of 3168 responses were coded by the researcher (36 items for each participant). To ensure that the understanding of the link between responses and codes were consistent with the meaning of the codes (i.e., were valid), a number of examples, especially difficult examples were discussed with the supervisor (AM) who has a long working knowledge and familiarity with the PWB model and measures. A random sample of 20% of the data (612 responses) were then coded by a second blind rater to enable the level of inter-rater agreement to be calculated. The second rater had previously been taught the coding strategy by the researcher and had trialled it on a selection of responses. The agreement between the two raters was significant (Cohen’s Kappa = .83,  $p < .001$ ) indicating a high level of agreement.

Separate from the PWB and Affect codes, the content of the 12 future events that participants anticipated were coded in a second scheme for a better understanding of the interpretation of results. The events that were elicited from participants to use as prompts for the consequence (good and bad) responses were coded according to topics that previous research has suggested as relevant to adolescents future thinking (education, social life, family and romantic relationships, gaining independence, leisure activities, health, home life, occupation and money; Cross & Markus, 1991; Nurmi, 1992; Zimmer-Gembeck & Collins, 2003). For example, responses coded as

Gaining Independence were “more responsibility” and “having to sort everything out by myself”. Two other topics were prevalent in adolescents’ responses and were therefore added as further categories. These were Travel (e.g., “going travelling”) mentioned as an event participants were looking forward to, and Weather (e.g., “snowing in winter”) mentioned as an event participants were not looking forward to. Further examples of responses for each content code are shown in Appendix F.

A random sample of 20% of the data (204 events) were then coded by a second rater to enable the level of inter-rater agreement to be calculated. The agreement between the two raters was significant (Cohen’s Kappa = .88,  $p < .001$ ) indicating a high level of agreement.

**Anxiety and depression.** The shortened 25 item version of the Revised Children’s Anxiety and Depression Scale (RCADS-25; Muris *et al.*, 2002) was used to measure symptoms of DSM-defined anxiety and depression (Appendix G). Items are rated and scored on a four point scale of ‘never’ (0), ‘sometimes’ (1), ‘often’ (2), ‘always’ (3), thus higher scores indicate greater anxiety and/or depression symptom severity. Five sub-scales assess symptoms of generalised anxiety disorder (e.g., “I worry about what is going to happen”), separation anxiety disorder (e.g., “I worry about being away from my parents”), social phobia (e.g., “I feel afraid if I have to talk in front of the class”), panic disorder (e.g., “My heart suddenly starts to beat too quickly for no reason”) and major depressive disorder (e.g., “I feel sad or empty”). Only the data for generalised anxiety and depression was used for determining links with self-reported PWB so that results could be compared to previous research. The

RCADS-25 is comparable to the full length version in terms of reliability, internal consistency, test–retest stability, and it has good convergent and divergent validity (Muris *et al.*, 2002). Scores in the present sample showed good internal consistency, with a Cronbach’s  $\alpha$  of .70 for the depression subscale and .80 for the generalised anxiety subscale.

**Self-reported psychological well-being.** The 54 item version of the self-report Psychological Well-being Scales was used in the present study (Ryff, 1989; Appendix H). Each dimension of PWB is assessed with nine positive or negative statements: Self-Acceptance (e.g., “I like most aspects of my personality”), Positive Relations with Others (e.g., “I know that I can trust my friends, and they know they can trust me”), Autonomy (e.g., “I often change my mind about decisions if my friends or family disagree”), Environmental Mastery (e.g., “I often feel overwhelmed by my responsibilities”), Purpose in Life (e.g., “I don’t have a good sense of what it is I’m trying to accomplish in life”), and Personal Growth (e.g., “I am not interested in activities that will expand my horizons”). Participants rate their agreement with an item on a six point scale from strongly disagree (1) to strongly agree (6). Scores for negatively worded items are reversed before any subsequent analysis, thus a score from 9 to 45 is calculated for each dimension, with higher scores indicating higher levels of psychological well-being. The 18-item version was not used due to its psychometric inconsistencies in assessing all six dimensions of PWB (Abbot *et al.*, 2006). The longer 84-item version was not used due to research session time constraints. The 54-item version has been shown to have adequate internal consistency of subscales ( $\alpha = 0.65 - 0.83$ ; Van Dierendonck, 2004). Full question wording of the 54 items is shown in Appendix H. In the present sample, Cronbach’s  $\alpha$



was .75 for Autonomy, .82 for Environmental Mastery, .74 for Personal Growth, .76 for Purpose in Life, .81 for Positive Relations with Others and .88 for Self-Acceptance.

## **Recruitment**

**Research site recruitment.** Two Headteachers agreed to the research taking place with their sixth form students. Meetings were set up in both schools, attended by the Headteacher, head of sixth form and the researcher to discuss the protocol. It was agreed that parental consent would not be required as participants were 16 years old and above, however, a letter was sent out to parents informing them of the study and offering them an option to opt their teenager out (Appendix I).

**Participant recruitment.** In both schools, the researcher presented the study to all sixth form pupils in assembly and gave out posters (Appendix J) to invite them to take part. The presentation introduced the researcher and the role of a clinical psychologist, outlined the study aims and protocol, explained confidentiality and anonymity and informed them how they would be approached to take part. In school 1, students were approached to take part during lessons. In school 2 they were approached to take part in their sixth form common room.

**Ethical considerations.** It was discussed with the senior staff that it would not be possible to trace responses back to individuals due to anonymous testing in a group format. It was agreed that participants would be directed to their head of year if taking

part in the research made them feel lower or more worried than usual and that they would be informed of a number to contact for further information during debrief.

### **Piloting**

Prior to data collection, the research session was piloted on five professionals aged 26 to 30 to estimate the time it would take in a group setting and the coherence of the oral instructions for the future thinking task. The pilot illustrated minor sentences in the instructions where wording needed to be clearer and these were changed accordingly.

### **Procedure**

Data were collected between October 2013 and February 2014. In School 1, four classes were identified as available to take part in the research by the Head of Sixth Form. Pupils in these classes were approached during a teaching slot and invited to take part in the study as a group. In School 2, students volunteered to take part in small groups during their free periods. As an incentive, participants were given raffle tickets and entered into a prize draw to win Amazon vouchers at the end of data collection. The research sessions lasted 45 minutes to an hour. A short talk which reiterated what was said in assembly was given and participants were given time to read the information sheet (Appendix K). Participants were given the opportunity to ask questions and were informed that they could withdraw from the research at any point, without giving a reason and that this would not affect their education. Two pupils in the class groups did not wish to take part and got on with other work. Participants were asked to read and sign the consent form (Appendix L).

Participants were given paginated assessment packs containing the measures and were told to write their answers down without conferring. They were first asked to complete the demographic questionnaire. A semi-structured interview was then administered to take the groups through the future-thinking task. Instructions were read aloud:

*“I am going to ask you to think about positive events that might happen to you in the future, in other words, things you will enjoy. These should be events that you think will definitely happen or are at least quite likely to happen. Write down two positive events that you are looking forward to in the next week.”*

Participants were instructed not to turn over the page until told to do so. Time was given for everyone to finish writing their answers before the researcher moved on to the next question. This process was repeated, with participants being asked to provide two events they were looking forward to in the next year and then 5-10 years. Participants were then instructed to think about the same three time periods again, but this time thinking of negative events:

*“Write down two things you are not looking forward to or dreading in the next week/year/5-10 years”*

Participants were then asked to go back over each event they had written down and think about why it mattered to them:

*“I would like you to look back at the first event you wrote down under number one. I would like you to think carefully about what it would mean to you if this event was to happen. In Box 1 beside the letter (a) I would like you to write down one thing that would be good about it.”*

Following responses, participants were then asked:

*“In Box 1 beside the letter (b) I would like you to write down another thing that would be good about it” then: “In Box 1 beside the letter (c) I would like you to write down another thing that would be good about it.”*

The same prompts were given to go back over the remaining events they had written down in the positive and negative conditions. For each event they were asked to write down three things that would be good or bad about them respectively. Half of the participants were presented with the negative conditions first to counterbalance the data. Finally participants were asked to complete the RCADS-25 measure and the Psychological well-being measure.

## **Chapter 3. Results**

### **Chapter Overview**

This chapter is divided into five sections:

1. Data entry
2. Data screening
3. Participant demographics
4. Analyses of the future-thinking measures: Research Questions 1, 2, 3 and 4
5. Analyses of the link between distress and self-reported PWB: Research Question 5

### **1. Data Entry**

A score was given for the number of times each of the six PWB dimensions and Affect were judged to be present in participant responses about what was good/bad about each of the six positive and six negative FTT items. This was calculated by summing the codes for each of the six dimensions, and the Affect codes, in the positive and negative conditions separately. This resulted in seven total scores for the positive events (6 PWB and one Affect score) and seven total scores for the negative events (6 PWB and one Affect score). These scores indicated the number of times that each of the six dimensions and Affect were judged as being present in the responses given about what would be good and bad about events happening in the future.

The three time periods were collapsed rather than being looked at separately due to having elicited only two events for each time period which may not have provided enough data to reliably draw conclusions about the differences between time periods. Furthermore, the non-normality of the data meant that analysis was undertaken with

non-parametric tests which meant that it was not possible to examine interaction effects. Since previous research has not indicated that the number of events anticipated in the future is significantly different across time (e.g., MacLeod & Byrne, 1996; MacLeod *et al.*, 1993; MacLeod, Tata, Kentish, & Jacobsen, 1997), and in the present study there were no predictions about the effect of time period on PWB, the three time periods were used as a convenient way of eliciting events anticipated across a range of time frames in the future.

## **2. Data Screening**

The accuracy of data entry and missing values was checked prior to data analysis. All 22 variables analysed were also checked for normality. The distribution of scores on each variable was deemed to be significantly non-normal when the Z score for skew and kurtosis was more than 2.58 (Field, 2005).

For positive events, Self-Acceptance was significantly positively skewed ( $z = 12.63$ ) and showed significant kurtosis ( $z = 5.41$ ). Significant positive skew was also found for Autonomy ( $z = 4.87$ ), Personal Growth ( $z = 2.73$ ), Purpose in Life ( $z = 4.49$ ) and Affect ( $z = 2.61$ ). For negative events, Self-Acceptance was significantly positively skewed ( $z = 7.37$ ) and showed significant kurtosis ( $z = 2.65$ ). Significant positive skew was also found for Autonomy ( $z = 5.43$ ), Personal Growth ( $z = 5.45$ ), Purpose in Life ( $z = 6.97$ ) and Positive Relations with Others ( $z = 4.24$ ).

Seventy-one percent of the distributions of the future thinking variables were significantly not normal. There was a high frequency of scores of zero for several of

the future thinking variables, most notably for Autonomy and Self-Acceptance, which meant that variables could not be transformed to normal distributions. Therefore, non-parametric tests were used to analyse the data. The high occurrence of zeros indicated that themes of Autonomy and Self-Acceptance were seen as rarely impacting on well-being when adolescents think about the future.

Depression scores were significantly positively skewed ( $z = 2.69$ ,  $p < 0.01$ ) but within acceptable bounds for kurtosis. A square root transformation was carried out on depression scores, which resulted in them being normally distributed ( $z = -1.19$ ,  $p > 0.01$ ). The boxplots of scores for Generalized Anxiety Disorder and Self-Acceptance suggested that two individuals were extreme scorers. However, neither score fell further than three standard deviations from the mean, indicating that no true outliers existed in the self-report scales of depression, anxiety and PWB.

### **3. Participant Demographics**

**Gender and age.** The sample consisted of 37 males and 51 females ( $n=88$ ) ranging in age from 16 to 18 years (mean age = 16.56,  $SD = 0.74$  years). Age frequency is shown in Table 2.

**Ethnicity.** Participants were representative of 14 out of the 16 categories of ethnicity. The breakdown by ethnic group is shown in Table 3 and indicates that the sample was predominantly White British.

Table 2. Participant Age

<b>Age</b>	<b>Frequency</b>	<b>Percentage</b>
16	52	59.1
17	23	26.1
18	13	14.8
Total	88	100

Table 3. Participant Ethnicity

<b>Ethnicity</b>	<b>Frequency</b>	<b>Percentage</b>
White British	46	52.3
White Irish	1	1.1
Other White Background	6	6.8
Black Caribbean	2	2.3
Black African	8	9.1
Asian Bangladeshi	1	1.1
Asian Pakistani	1	1.1
Other Asian Background	5	5.7
Mixed White and Black Caribbean	3	3.4
Mixed White and Black African	3	3.4
Mixed White and Asian	3	3.4
Other Mixed Background	6	6.8
Chinese	2	2.3
Other Ethnic Group	1	1.1
Total	88	100



**Social economic status.** Data regarding mother and father occupation was collected as a marker of participant Social Economic Status. Occupations were coded into one of ten categories based on the National Statistics Socio-Economic Classification system (NS-SEC, 2010). The parent who fell into the highest category is reported. Table 4 shows that the majority of the sample came from families regarded as ‘middle’ in socioeconomic background.

Table 4. Participant Social Economic Status

<b>Occupation</b>	<b>Frequency</b>	<b>Percentage</b>
Higher Managerial and Administrative Occupations (e.g. chief executive, production manager)	7	8
Higher Professional Occupations (e.g. barrister, doctor)	20	22.7
Lower Managerial or Professional Occupations (e.g. nurse, teacher, journalist)	26	29.5
Intermediate Occupations (e.g. fireman, photographer)	6	6.8
Self-employers and Own Account Workers (e.g. builder, hairdresser)	10	11.4
Lower Supervisory, Crafts or related Occupations (e.g. train driver, electrician)	3	3.4
Semi Routine Occupations (e.g. postman, care assistant)	4	4.5
Routine Occupations (e.g. refuse collector, waitress)	3	3.4
Unemployed	3	3.4
Unknown	6	6.8
Total	88	100

**Depression and anxiety levels.** Total anxiety and depression scores (RCADS total scores) ranged from 6 to 52 ( $M = 23.73$ ,  $SD = 11.22$ ). Generalised anxiety scores ranged from 0 to 14 ( $M = 5.49$ ,  $SD = 3.15$ ). Depression scores ranged from 0 to 12 ( $M = 5.20$ ,  $SD = 2.67$ ). Information about the severity of the sample's anxiety and depression is not included because the RCADS-25 was designed for research purposes, thus does not distinguish between clinical and non-clinical levels of anxiety and depression. The spread of anxiety and depression scores are shown in Figure 1.

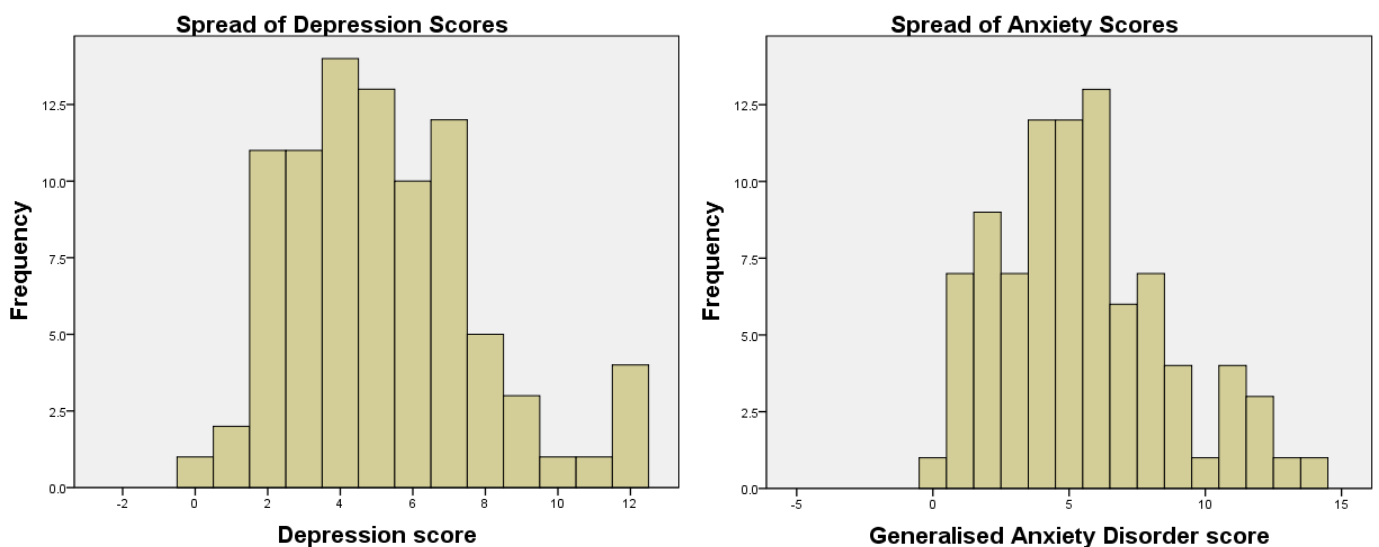


Figure 1. Spread of depression and anxiety scores

#### 4. Analyses of the Future Thinking Data

**Research Question 1: To what extent are the six dimensions of PWB seen as being impacted upon by the events adolescents anticipate in the future?**

Two Friedman's tests were conducted, one for each condition (positive and negative) to examine the extent to which the six dimensions were seen as being impacted on when adolescents anticipated future events. Means and standard deviations are reported in Table 5. These represent the mean number of times each dimension and

Affect was judged to be present overall in participant responses about what would be good about the six positive future events and bad about the six negative future events. For example, the theme of Personal Growth was coded as being present 2.83 times among the 18 responses participants gave for what they thought would be good about the six positive events they anticipated in the future.

Table 5. Means and Standard Deviations for PWB dimensions and Affect seen as being impacted upon when adolescents anticipate future events

	Dimension	Mean (SD)
Positive Events	Autonomy	0.43 (0.66)
	Environmental Mastery	4.98 (2.45)
	Personal Growth	2.83 (1.64)
	Purpose in Life	1.35 (1.45)
	Positive Relations with Others	4.02 (2.13)
	Self-Acceptance	0.44 (0.92)
	Affect	4.95 (2.30)
Negative Events	Autonomy	0.82 (0.97)
	Environmental Mastery	7.92 (3.48)
	Personal Growth	1.69 (1.64)
	Purpose in Life	1.06 (1.38)
	Positive Relations with Others	1.88 (1.81)
	Self-Acceptance	0.90 (1.34)
	Affect	4.77 (2.16)

Friedman’s test showed that there was a significant difference between the frequency with which the PWB dimensions were mentioned in both the positive and negative conditions ( $p < .001$ ).

**Positive anticipated events.** Wilcoxon tests were calculated to examine where the differences lay between the PWB dimensions in the positive condition. A Bonferroni correction was applied to ensure Type I error was not increased due to multiple comparisons and the resulting significance value was .002. Significant differences were found between each dimension with all of the other dimensions, with the exception of Autonomy compared with Self-Acceptance and Environmental Mastery compared with Positive Relations with Others where no significant differences emerged. See Table 6 for comparisons.

Table 6. Wilcoxon comparisons between each PWB dimension with each of the other five dimensions when eliciting positive events

	Autonomy	Environmental Mastery	Personal Growth	Purpose in Life	Positive Relations	Self- Acceptance
Autonomy	-					
Environmental Mastery	<.001	-				
Personal Growth	<.001	<.001	-			
Purpose in Life	<.001	<.001	<.001	-		
Positive Relations	<.001	.038	<.001	<.001	-	
Self- Acceptance	1.00	<.001	<.001	<.001	<.001	-

Figure 2 shows the scores for each of the PWB dimensions, and also illustrates the separate score for Affect for simplicity. Environmental Mastery and Positive Relations with Others were mentioned significantly more than the other PWB dimensions, indicating that positive future events were seen as having a particularly beneficial impact on them. Personal Growth was mentioned significantly more than Purpose in Life, Autonomy and Self-Acceptance, indicating that this dimension was also seen as relevant. Autonomy and Self-Acceptance were mentioned significantly less compared with the other four dimensions, signifying that these are least salient when adolescents talk about what will be good about future positive events. Affect was also coded as present, with a similar frequency as Environmental Mastery. It was not possible to analyse the difference in frequency between Affect and each of the six PWB dimensions because Affect was a different coding scheme that could be present on all responses, either on its own or alongside one of the dimensions and therefore the two coding schemes were not directly comparable.

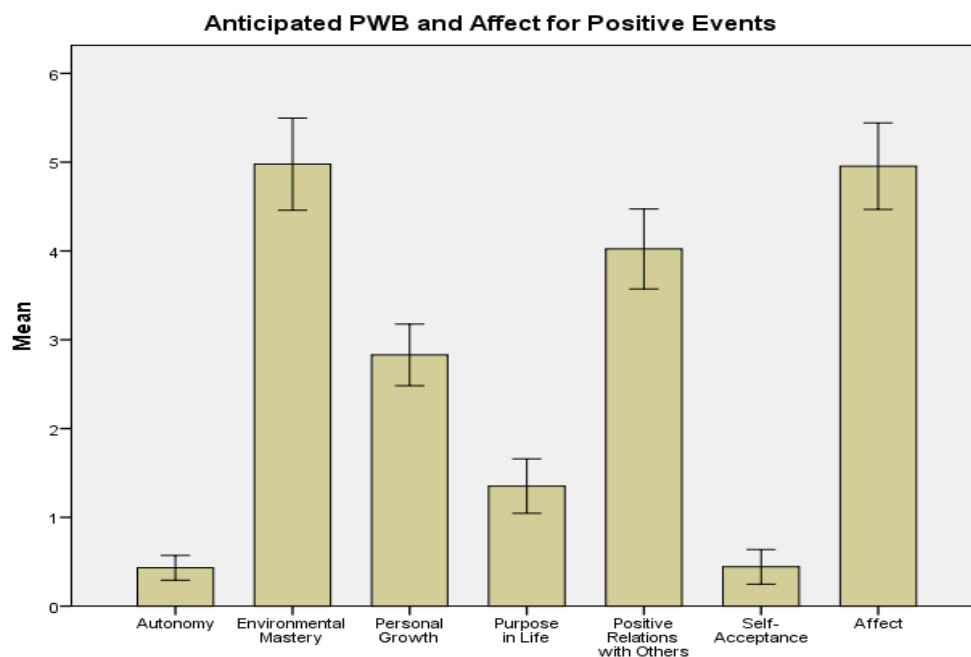


Figure 2. Number of times PWB dimensions and Affect were coded as being present when anticipating what is good about future positive events.

**Negative anticipated events.** Wilcoxon tests were also calculated to examine where the differences lay between the PWB dimensions in the negative condition and a Bonferroni correction was applied. Comparisons are shown in Table 7.

Table 7. Wilcoxon comparisons between each PWB dimension with each of the other five dimensions when eliciting negative events

	Autonomy	Environmental Mastery	Personal Growth	Purpose in Life	Positive Relations	Self- Acceptance
Autonomy	-					
Environmental Mastery	<.001	-				
Personal Growth	<.001	<.001	-			
Purpose in Life	.218	<.001	<.001	-		
Positive Relations	<.001	<.001	.328	.001	-	
Self- Acceptance	.810	<.001	<.001	.544	<.001	-

Figure 3 illustrates that Environmental Mastery was mentioned significantly more than the other five PWB dimensions, indicating that this is seen as being impacted on the most when adolescents anticipate negative events in the future. Positive Relations with Others and Personal Growth were mentioned significantly more than the remaining three dimensions suggesting these are also seen as relevant. Autonomy, Purpose in Life and Self-Acceptance were rarely mentioned when adolescents talked about what would be bad about negative future events. The separate score for Affect

is also shown on Figure 3 alongside the PWB dimensions for simplicity which highlights that Affect was also seen as being an important factor when adolescents think about negative future events.

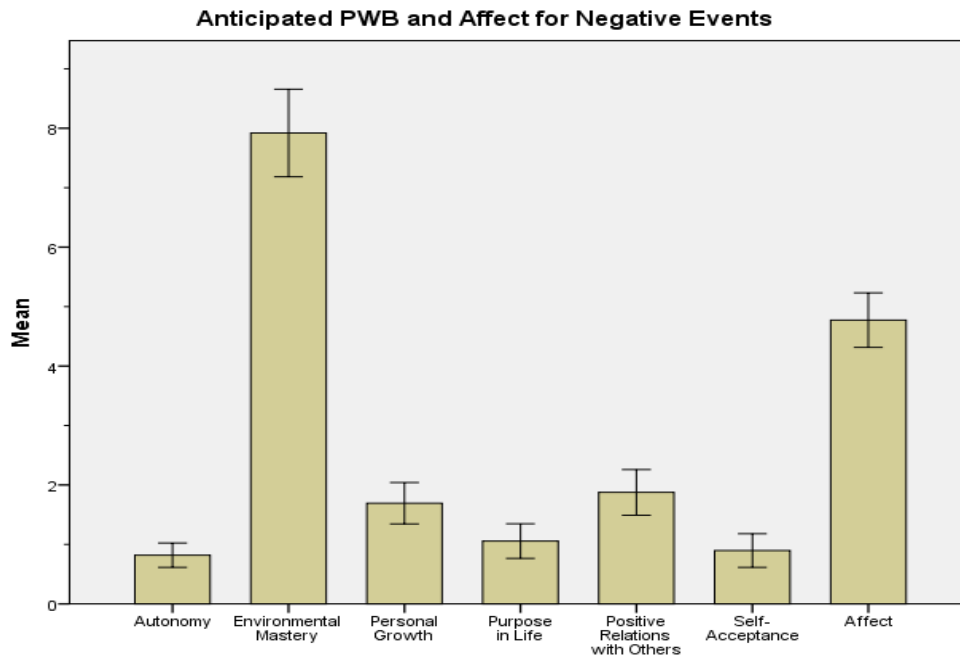


Figure 3. Number of times PWB dimensions and Affect were coded as being present when anticipating what is bad about future negative events.

**Research Question 2: Do positive and negative events differ in their anticipated well-being effects?**

Wilcoxon tests between the positive and negative condition were calculated for each dimension and for Affect to see whether the pattern of impact on the dimensions of PWB and Affect was different between positive and negative future events. With seven comparisons, a Bonferroni correction resulted in a significance value of .007. There was a significant difference between the positive and negative conditions in the number of responses that mentioned Environmental Mastery ( $p < .001$ ), Personal Growth ( $p < .001$ ), Positive Relations with Others ( $p < .001$ ) and Self-Acceptance

( $p=.003$ ). Environmental Mastery and Self-Acceptance were significantly more salient when adolescents discussed the consequences of negative events (Environmental Mastery:  $M = 7.92$ ,  $SD = 3.48$ ; Self-Acceptance:  $M = .90$ ,  $SD = 1.34$ ) than when they discussed the consequences of positive events (Environmental Mastery:  $M = 4.98$ ,  $SD = 2.45$ ; Self-Acceptance:  $M = .44$ ,  $SD = .92$ ). Personal Growth and Positive Relations with Others were significantly more salient when adolescents discussed the consequences of positive events (Personal Growth:  $M = 2.83$ ,  $SD = 1.64$ ; Positive Relations:  $M = 4.02$ ,  $SD = 2.13$ ) than when they discussed the consequences of negative events (Personal Growth:  $M = 1.69$ ,  $SD = 1.64$ ; Positive Relations:  $M = 1.88$ ,  $SD = 1.81$ ). The difference in responses involving Autonomy between the positive and negative conditions was approaching significance ( $p=.007$ ). Responses involving Purpose in Life ( $p=.046$ ) and Affect ( $p=.553$ ) did not differ significantly between positive and negative future events.

### **Summary of Analyses for Research Questions 1 and 2**

Environmental Mastery was the most salient dimension present when participants discussed the consequences of both positive and negative events, especially for the negative condition. Positive Relations with Others was also salient, followed by Personal Growth, especially for positive events whereas Autonomy and Self-Acceptance were seen as being impacted upon the least. Environmental Mastery and Self-Acceptance were more salient for negative events, whereas Personal Growth and Positive Relations with Others were more salient for positive events.



### **Research Question 3: What types of positive and negative events do adolescents anticipate in the future?**

Although not a main focus of the study, a descriptive analysis of the content of the future events is reported to give a clearer idea of the kinds of events that people produced that they were looking forward to or not looking forward to. Knowledge of the events anticipated allows for a better understanding of how the future thinking data was interpreted. The frequency of events elicited in each time period for both positive and negative events are presented in Figures 4 and 5. The future events evoked by participants were varied and formed a rather representative sample of the different kinds of events that characterise adolescent life: school work, revision and exams, going to University, parties or leisure activities, interactions with relatives and friends, starting a career and earning money, deaths, illnesses, romantic episodes, and so forth.

In the next week, participants mostly anticipated positive events concerning social life and leisure time. In the next year, there was a greater spread with participants anticipating positive events in the realms of education, family relationships and travel in addition to social life and leisure time. In the next 5-10 years, participants anticipated more positive education and occupation events and experiences of travel and gaining independence.

There was a stark contrast between what negative events participants expected to happen in different future time periods. In the next week and year, participants anticipated almost entirely negative events concerning education, for example school

work, revision and exams. In the next 5-10 years, participants anticipated that negative experiences would continue to concern education at University, but in addition would involve worries about independence and responsibility, occupation and money.

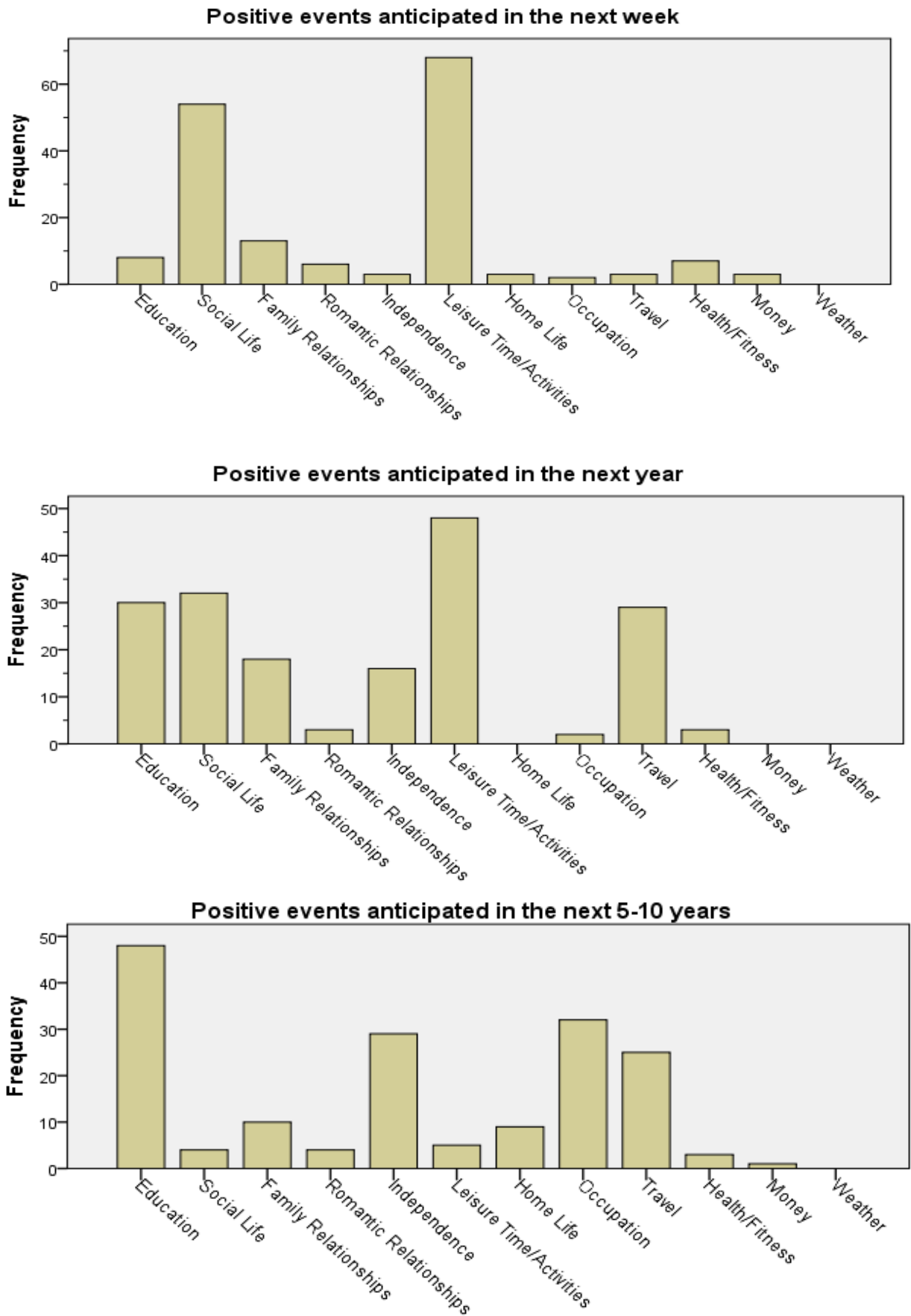


Figure 4. Types of positive events elicited for the three time periods

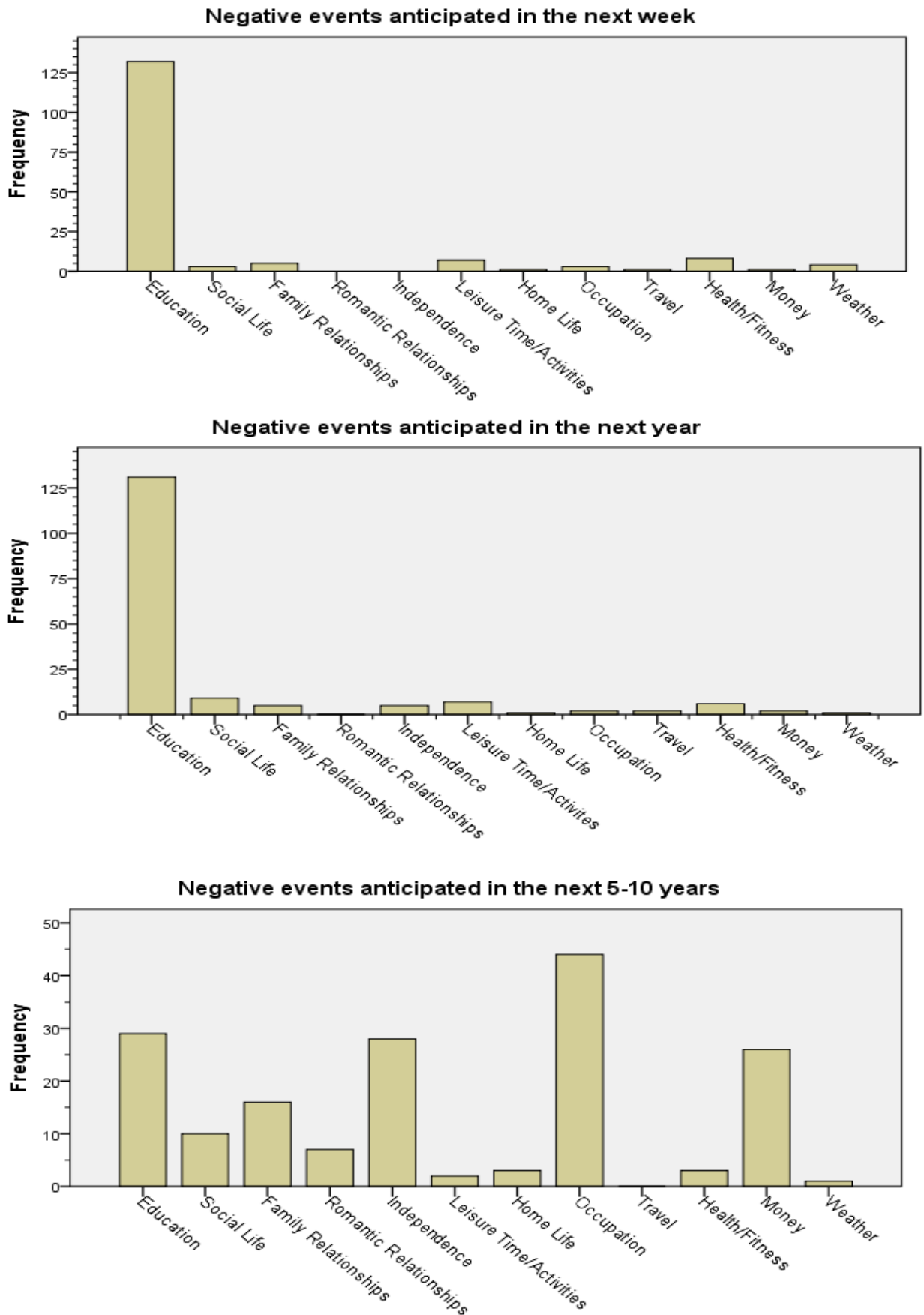


Figure 5. Types of negative events elicited for the three time periods

**Research Question 4: Will participants with higher levels of distress differ from those with lower levels of distress in which PWB dimensions they see as being impacted upon when they anticipate positive and negative future events?**

On the RCADS measure participants' total scores ranged from 6 to 52 ( $M = 23.73$ ,  $SD = 11.22$ ). Due to high overlap between scores of anxiety and depression (over 70%), a total score was used in the analysis. If anxiety and depression had been analysed separately, this would have been a repetition with largely the same people in both the low (overlap of 38 participants) and high groups (overlap of 26 participants). Therefore, participants were split into groups of low distress (RCADS scores of 20 or below,  $n = 44$ ) and high distress (RCADS scores above 20,  $n = 44$ ) so that it would be possible to examine differences in responses on the future-thinking task between groups. Examination of frequencies showed that 50% of participants scored 20 or below on the RCADS and so groups were split accordingly. There was no significant difference in age between the high distress group ( $M = 16.68$ ,  $SD = .80$ ) and low distress group ( $M = 16.43$ ,  $SD = .66$ ,  $t(86) = -1.60$ ,  $p = .114$ ). Groups were also matched for ethnicity ( $\chi^2(4) = 6.29$ ,  $p = .178$ ), educational level ( $\chi^2(11) = 9.25$ ,  $p = .599$ ) and social economic status ( $\chi^2(8) = 8.72$ ,  $p = .366$ ). There was a significant difference in gender between the groups ( $\chi^2(1) = 10.49$ ,  $p = .002$ ). There were fewer males and more females than expected in the high distress group (males = 11, females = 33) and more males and less females than expected in the low distress group (males = 26, females = 18). These differences were to be expected since adolescent girls have been repeatedly found to show increased vulnerability to anxious and depressive symptoms (Cyranowski, Frank, Young, & Shear, 2000; Hankin & Abramson, 2001). Descriptive statistics highlighting the number of times PWB dimensions were judged

to be present in participants responses in the high and low distress groups are shown in Tables 8 and 9.

Table 8. Means and Standard deviations of the frequency of PWB dimensions judged to be present when anticipating positive future events

	Low distress Mean (SD)	High distress Mean (SD)
Autonomy	.48 (.70)	.39 (.62)
Environmental Mastery	5.09 (2.54)	4.86 (2.38)
Personal Growth	2.70 (1.91)	2.95 (1.31)
Purpose in Life	1.30 (1.53)	1.41 (1.37)
Positive Relations	3.89 (2.05)	4.16 (2.22)
Self-Acceptance	.48 (1.11)	.41 (.69)
Affect	4.80 (1.86)	5.11 (2.68)

Table 9. Means and Standard deviations of the frequency of PWB dimensions judged to be present when anticipating negative future events

	Low distress Mean (SD)	High distress Mean (SD)
Autonomy	.73 (1.00)	.91 (.94)
Environmental Mastery	8.32 (3.55)	7.52 (3.40)
Personal Growth	1.52 (1.58)	1.86 (1.71)
Purpose in Life	.91 (1.22)	1.20 (1.52)
Positive Relations	1.34 (1.55)	2.41 (1.91)
Self-Acceptance	.66 (1.26)	1.14 (1.39)
Affect	4.43 (1.96)	5.11 (2.32)

Mann-Whitney tests were conducted, comparing groups on each dimension of PWB and Affect in the positive and negative conditions. A Bonferroni correction was applied to reduce the likelihood of chance significant effects (Type I error) from multiple comparisons. Thus, only the differences that were significant at a  $p < .007$  level (instead of the conventional  $p < .05$ ) were considered significant, although those significant at  $p < .05$  are also noted.

**Positive anticipated events.** For positive events, there were no significant differences between the high and low distress groups on any of the six PWB dimensions. (Autonomy  $U = 913.00$ ,  $p = .583$ , Environmental Mastery  $U = 919.50$ ,  $p = .683$ , Personal Growth  $U = 815.50$ ,  $p = .194$ , Purpose in Life  $U = 874.00$ ,  $p = .415$ , Positive Relations with Others  $U = 900.00$ ,  $p = .566$ , Self-Acceptance  $U = 934.00$ ,  $p = .717$ ). There was also no significant difference between high and low distress groups in how much responses mentioned Affect ( $U = 943.50$ ,  $p = .836$ ). These findings indicate that participants with lower levels of distress did not see their PWB or mood as being impacted on any differently to participants with higher levels distress when anticipating positive future events.

**Negative anticipated events.** For negative events, there was a significant difference between the high and low distress groups for Positive Relations with Others ( $U = 619.50$ ,  $p = .003$ ). Participants with higher distress levels mentioned Positive Relations with Others more ( $M = 2.41$ ,  $sd = 1.91$ ) than those with lower distress levels ( $M = 1.34$ ,  $sd = 1.55$ ). These findings indicate that when describing what is bad about things not looked forward to, responses involving Positive Relations with Others are mentioned more for higher anxiety and depression scorers

than for lower anxiety and depression scorers. There were no significant differences between the groups for how frequently the remaining PWB dimensions or Affect were mentioned (Autonomy  $U = 829.50$ ,  $p = .212$ , Environmental Mastery  $U = 834.50$ ,  $p = .263$ , Personal Growth  $U = 841.00$ ,  $p = .276$ , Purpose in Life  $U = 878.50$ ,  $p = .426$ , Self-Acceptance  $U = 751.00$ ,  $p = .046$ , Affect  $U = 830.00$ ,  $p = .245$ ). It is worth noting that although Self-Acceptance was not significant after a Bonferroni correction, it fell within conventional significance levels ( $.007 < p < .05$ ). Taken as indicative of a difference, the high distress group ( $M = 1.14$ ,  $sd = 1.39$ ) gave responses involving Self-Acceptance more than the low distress group ( $M = 0.66$ ,  $sd = 1.26$ ) signifying that Self-Acceptance was seen as being impacted upon by negative events more by participants with higher anxiety and depression levels.

#### **Summary of Analyses for Research Question 4**

For positive events, there were no significant differences between low and high anxiety and depression groups in the frequency with which responses were judged to include the six dimensions of PWB or Affect. For negative events, after a Bonferroni correction participants with higher distress levels gave responses involving Positive Relationships with Others more than participants with lower distress levels. This indicates that higher anxious and depressed individuals were more concerned with the impact that negative events will have on their relationships than lower anxious and depressed individuals. No other differences were found in the negative condition between low and high depression and anxiety groups in the frequency with which responses mentioned the remaining PWB dimensions or Affect.



## 5. Analyses of the link between distress and self-reported PWB

### **Research Question 5: Will participants with higher levels of distress (higher anxiety or depression) score lower on all six dimensions of self-reported PWB?**

The problem of overlapping scores in Research Question 4 leading to the use of a combined anxiety and depression score was not relevant to Research Question 5 which lent itself well to examining the relationships between self-reported PWB with depression and anxiety separately allowing for comparison with previous research. Descriptive statistics for scores on the RCADS subscales of depression and generalised anxiety and the measure of self-reported PWB are reported in Table 10.

Table 10. Means, standard deviations and ranges of RCADS subscales and PWB self-report measure

	Mean Score (SD)	Minimum	Maximum
RCADS Depression subscale	5.20 (2.67)	0	12
RCADS Generalised Anxiety subscale	5.49 (3.15)	0	14
Autonomy	35.10 (6.77)	18	49
Environmental Mastery	35.27 (7.66)	18	53
Personal Growth	39.35 (6.34)	20	54
Purpose in Life	38.18 (7.12)	19	53
Positive Relations	39.05 (8.08)	22	54
Self Acceptance	34.87 (9.23)	10	52

Before investigating the relationship between distress and self-reported PWB, it was necessary to examine whether anxiety and depression were related. Depression scores and generalised anxiety scores were significantly positively correlated ( $r(86) = .54$ ,  $p < .001$ ), indicating that higher levels of depression were associated with higher levels of anxiety.

Correlations were also conducted between the dimensions of PWB with each other to establish inter-relationships among the six dimensions (see Table 11). The strongest correlation was between Environmental Mastery and Self-Acceptance ( $r(86) = .78$ ,  $p < .001$ ).

Table 11. Correlations between the six dimensions of PWB

	Autonomy	Environmental Mastery	Personal Growth	Purpose in Life	Positive Relations	Self-Acceptance
Autonomy	-					
Environmental Mastery	.28 $p = .008$	-				
Personal Growth	.51 $p < .001$	.55 $p < .001$	-			
Purpose in Life	.25 $p = .017$	.68 $p < .001$	.65 $P < .001$	-		
Positive Relations	.28 $p = .007$	.53 $p < .001$	.41 $p < .001$	.46 $p = .001$	-	
Self-Acceptance	.45 $p < .001$	.78 $p < .001$	.67 $p < .001$	.74 $p = .001$	.58 $p < .001$	-

Correlations were conducted to examine the relationships between scores on the depression and generalised anxiety subscales of the RCADS and scores on the self-reported Scales of PWB. The RCADS depression subscale was significantly negatively correlated with all of the self-reported PWB dimensions, with the exception of Autonomy. This indicates that higher levels of Environmental Mastery, Personal Growth, Purpose in Life, Positive Relations and Self-Acceptance are associated with lower depression. The RCADS generalised anxiety subscale also showed significant negative correlations with all of the dimensions of self-reported PWB. Thus, higher levels of all six dimensions are associated with lower anxiety. Pearsons correlations and significance values are reported in Table 12.

Table 12. Correlations between depression and anxiety with the six dimensions of self-reported PWB

	Autonomy	Environmental Mastery	Personal Growth	Purpose in Life	Positive Relations	Self Acceptance
<b>RCADS</b>						
Depression subscale	-.18 p = .100	-.60 p <.001	-.41 p <.001	-.52 p <.001	-.53 p <.001	-.64 p <.001
<b>RCADS</b>						
Generalised Anxiety subscale	-.35 p = .001	-.63 p <.001	-.38 p <.001	-.49 p <.001	-.32 p = .003	-.67 p <.001

Depression showed strong negative correlations with Environmental Mastery and Self-Acceptance, and moderate negative correlations with Personal Growth, Purpose

in Life and Positive Relations with Others. Anxiety showed strong negative correlations with Environmental Mastery and Self-Acceptance, moderate negative correlations with Purpose in Life and weak negative correlations with Autonomy, Personal Growth and Positive Relations with Others.

Regression analyses between the six self-reported PWB dimensions and depression and anxiety were conducted so that each direct relationship could be examined whilst controlling for the other variables. A standard multiple regression was performed with depression scores as the dependent variable and self-reported PWB dimensions (Autonomy, Environmental Mastery, Personal Growth, Purpose in Life, Positive Relations and Self-Acceptance) as independent variables. These independent variables accounted for a significant amount of variance in the depression scores ( $R^2 = .48$ , adjusted  $R^2 = .44$ ;  $F(6,80) = 12.16$ ,  $p < .001$ ). The partial regression coefficients showed that Self-Acceptance had a significant unique contribution to depression scores ( $B = -.03$ ,  $Beta = -.43$ ,  $t(80) = 2.59$ ,  $p = .012$ ). Positive Relations with Others also showed a significant unique contribution to depression scores ( $B = -.02$ ,  $Beta = -.22$ ,  $t(80) = 2.16$ ,  $p = .034$ ). The other four dimensions were not independently associated with depression (Autonomy  $t(80) = 1.44$ ,  $p = .153$ ; Environmental Mastery  $t(80) = 1.21$ ,  $p = .231$ ; Personal Growth  $t(80) = .25$ ,  $p = .802$ ; Purpose in Life  $t(80) = .41$ ,  $p = .682$ ).

A standard multiple regression was performed with anxiety scores as the dependent variable and self-reported PWB dimensions (Autonomy, Environmental Mastery, Personal Growth, Purpose in Life, Positive Relations and Self-Acceptance) as

independent variables. These independent variables accounted for a significant amount of variance in the anxiety scores ( $R^2 = .51$ , adjusted  $R^2 = .48$ ;  $F(6,80) = 14.09$ ,  $p = <.001$ ). The partial regression coefficients showed that Self-Acceptance had a significant unique contribution to anxiety scores ( $B = -.19$ ,  $Beta = -.54$ ,  $t(80) = 3.41$ ,  $p = .001$ ). Environmental Mastery also showed a significant unique contribution to anxiety scores ( $B = -.14$ ,  $Beta = -.34$ ,  $t(80) = 2.60$ ,  $p = .011$ ). The other four PWB dimensions were not independently associated with anxiety (Autonomy  $t(80) = 1.54$ ,  $p = .127$ ; Personal Growth  $t(80) = 1.56$ ,  $p = .122$ ; Purpose in Life  $t(80) = .08$ ,  $p = .933$ ; Positive Relations  $t(80) = 1.56$ ,  $p = .123$ ).

### **Summary of Analyses for Research Question 5**

Anxiety and depression showed different relationships with self-reported PWB. Higher levels of depression were significantly associated with lower PWB scores on all dimensions with the exception of Autonomy. Self-Acceptance and Positive Relations with Others showed significant unique contributions to depression scores. Higher levels of anxiety were significantly associated with lower scores on all six PWB dimensions. Higher levels of anxiety were most strongly associated with lower levels of Environmental Mastery and Self-Acceptance.

## Chapter 4. Discussion

### Summary of Results

The future thinking data showed that adolescents perceived the six PWB dimensions to be impacted upon by future events to varying degrees. Anticipated positive events were seen to impact most greatly upon Environmental Mastery, followed by Positive Relations with Others and then Personal Growth. Anticipated negative events were also seen to impact upon Environmental Mastery more than the other PWB dimensions. Responses involving Autonomy and Self-Acceptance were rarely present, yet Affect was seen as being an important factor when adolescents thought about the consequences of positive and negative future events. There was a different pattern of impact on the dimensions of PWB between positive and negative future events. Responses involving Environmental Mastery and Self-Acceptance were more salient for negative events, whereas responses involving Personal Growth and Positive Relations with Others were more salient for positive events. Adolescents mentioned themes of Autonomy and Purpose in Life a similar amount in the positive and negative conditions. The frequency of PWB dimensions present in adolescents' responses was broadly similar between those with high and low levels of anxiety and depression. There were no significant differences between the high and low distress groups on the PWB dimensions seen as being affected by future positive events. However, for negative events, participants with higher distress levels gave significantly more responses involving Positive Relations with Others than participants with lower distress levels. In other words, the high distress group were more concerned about the detrimental effects of negative future events to their interpersonal relationships.

The self-report data showed that the relationship between PWB and depression was different to the relationship between PWB and anxiety in adolescents. Higher levels of depression were significantly associated with lower PWB scores on all dimensions with the exception of Autonomy. Participants with higher levels of anxiety scored significantly lower on self-reported levels of all six PWB dimensions. Once all other variables were controlled for, higher levels of depression were most strongly related to lower levels of Self-Acceptance and Positive Relations with others, yet higher levels of anxiety were most strongly associated with lower levels of Self-Acceptance and Environmental Mastery.

## **Discussion of the Future Thinking Findings**

### **Anticipated Impact of Future Events on Adolescent Psychological Well-being**

Research Question 1 asked whether adolescents would see the six dimensions of PWB as being impacted upon to varying degrees when anticipating events in the future. The findings showed that adolescents anticipated that future events would impact upon the six dimensions of their psychological well-being to different extents. Adolescents anticipated that Environmental Mastery would be more affected than the other five dimensions by both positive and negative future events. Prevalent among responses coded as Environmental Mastery were themes of gaining control and independence from rules and boundaries, such as those set by parents and school. Such responses were in the positive condition (e.g., “I will be able to choose how I live my life,” “I will be able to study a subject I’ve chosen,” “I will have the freedom to do things which I am not allowed to do now”) and in the negative condition (e.g., “I’m too young to look after myself,” “I don’t want to gain more responsibility,” “I will have

to support myself financially”). Since gaining independence is a major developmental task of late adolescence (Zimmer-Gembeck & Collins, 2003) it is not surprising that participants anticipated that it would be highly impacted upon. Other responses coded as Environmental Mastery included themes of feeling out of control, especially with schoolwork (e.g., “I might do badly or fail my exams,” “I will have to revise so I will have less time to do fun things,” “I will be tired from working hard and unable to concentrate in school”). It seems understandable that adolescents’ anticipated that Environmental Mastery would be affected in this way, especially in a school setting. In fact, it is possible that responses may have focused more on school related themes because the research was conducted in this context.

The findings showed that Positive Relations with Others was also salient, followed by Personal Growth, especially when participants discussed the consequences of positive events. Examples of responses coded as Positive Relations with Others in the positive condition were “I will get to meet new people,” “spending time with friends and having fun together” and “my parents will be proud of me”. Answers tended to focus on shared enjoyment (e.g., “we will go to festivals together and watch bands,” “we can dance together at her party,” “I’m going on holiday with my friends”) rather than on personal qualities that may attract oneself to certain individuals. Examples of responses coded as Personal Growth in the positive condition were “It will help me get into a good University,” “I will see new places and experience new things” and “I’ll be ready to challenge myself further”. It is understandable that young people at this stage of life have a strong sense of continued development at the cusp of finishing their school education and entering into work, travel or further study. Future events



were rarely seen to impact upon Autonomy or Self-Acceptance. Adolescents' responses frequently referred to the hedonic consequences of future events, which were coded as Affect, for example "I'm having a party to celebrate my birthday," "I will get a tan," "it will be fun."

One possible explanation for this pattern of findings is that adolescents are more concerned about having fun, feeling in control of their environment and maintaining close relationships in their future lives than they are about accepting themselves, having a sense of purpose or being influenced by others opinions. This supports previous research that has found family relationships, education, personal happiness and leisure activities to be experiences that young adults most hope for in the future (Nurmi, 1991). It also supports previous research that has found interpersonal relationships, above all friendship, to be particularly relevant during adolescence for positive psychological functioning (Cheng & Furnham, 2002; Ryff & Singer, 2000). Another suggestion is that the dimensions perceived to be less impacted upon by adolescents future thinking may develop later on as a result of already having established a feeling of control over one's environment. Similar to Maslow's (1943) hierarchy of needs, creating a stable and fulfilling environment in the future may then make way for a stronger sense of Autonomy, Self-Acceptance and Purpose in Life.

The results may be attributable to the idea that responses involving Environmental Mastery and Positive Relations with Others appeared to focus more on everyday activities such as earning money, getting a job or going out with friends. In contrast to responses involving Autonomy, Self-Acceptance or Purpose in Life which would

seem to focus on more reflective themes such as thinking about oneself in relation to others or thinking about the meaning of one's life and what direction it is going in. It is possible that adolescents may not think of such abstract themes without being specifically asked, thus the future thinking measure was not sensitive enough to elicit responses involving such reflection. It is also possible that this type of abstract thinking is more a focus of psychology and philosophy rather than what concerns young people in their everyday lives. This criticism of the Scales of PWB has been raised previously by Diener, Sapyta & Su (1998) who stated that it lets experts define well-being, rather than allowing people to explain what makes their life good. Furthermore, responses involving how confident one feels in their own opinions or how confident one feels compared to others may not be issues that participants feel safe enough to share.

This pattern of results is similar to previous research in depressed adults that found Environmental Mastery and Positive Relations with Others to be impacted upon the most and Autonomy and Self-Acceptance to be impacted upon the least by positive and negative future events (Edmonson, 2012). However, distinct from the present findings, Edmonson (2012) found Positive Relations with Others to be significantly more salient than Environmental Mastery when adult controls discussed the consequences of positive future events. A possible explanation for this difference is that, as discussed above, adolescents are likely to be preoccupied with issues relating to Environmental Mastery which adults are not concerned with, for example, gaining independence and control over authority (Zimmer-Gembeck & Collins, 2003) and school-related concerns. Previous studies comparing different age groups have shown

that future thinking reflects the developmental tasks, opportunities, and role transitions of an individual's particular life stage (Cross & Markus, 1991; Nurmi, 1992). In addition, the findings that responses most frequently involved the themes of control, independence and interpersonal relationships is particularly in line with Self-Determination Theory (Ryan & Deci, 2000) which posits that all individuals have three inherent universal needs: Competence (the desire to control outcomes and experience mastery), Relatedness (the desire to interact, be connected to, and experience caring for others) and Autonomy (the desire to be causal agents of one's own life). The authors argue that if these innate needs are satisfied, they will motivate behaviour and enable optimal functioning and growth.

### **The Difference Between Positive and Negative Events in Their Anticipated impact on Psychological Well-Being**

Research Question 2 asked whether there would be a difference between positive and negative events in their anticipated well-being effects. The study found that the pattern of impact on the dimensions of PWB was different between positive and negative future events. Environmental Mastery and Self-Acceptance were significantly more salient when adolescents discussed what would be bad about negative events than when they discussed what would be good about positive events. Positive Relations with Others and Personal Growth were seen to be significantly more affected by positive events than by negative events. These findings support previous studies that have shown a distinction between positive and negative future thinking (e.g., MacLeod & Byrne, 1996; MacLeod *et al.*, 1997c; MacLeod & Salaminiou, 2001). The findings provide further evidence for the theory that positive

and negative aspects of experience may be two separate psychological systems rather than opposite ends of a single dimension (MacLeod & Moore, 2000). Furthermore, the pattern of impact on Environmental Mastery and Self-Acceptance was significantly different for both positive and negative future events. In contrast to research that has criticised Ryff's (1989) model of PWB for showing high correlations between these two dimensions (e.g., Kashdan *et al.*, 2008; Springer & Hauser, 2006), the present findings demonstrate that a degree of theoretical difference must exist between them.

### **The Content of Future Events**

Research Question 3 asked about the types of events that adolescents anticipate in the future to give a more complete understanding of what things are looked forward to and not looked forward to. The study found that the most frequent experience that adolescents anticipated in the future concerned education. Experiences relating to education were the most frequently looked forward to in the next 5-10 years, as well as being the most dreaded in the next week and next year. However, the types of education activities were different across time periods. For example, in the next week they concerned homework, lessons and coursework, in the next year they concerned exams, revision and results, and responses in the next 5-10 years category were almost exclusively about the prospect of going to University. The most frequent experience not looked forward to in the next 5-10 years was occupation. These findings support the conclusions of Nurmi (1991) who reviewed 28 studies involving the content of adolescents hopes, aims and expectations and found them to be most interested in their future education and occupation. They are also in agreement with a

review which examined the previous 16 years relevant literature and found the most common adolescent goals to relate to education and occupation (Massey *et al.*, 2008). It is important to note, however, that participants may have been referring to the social life or nightlife, or indeed the sense of independence when they referred to looking forward to University and not solely the academic aspects, so the code of ‘education’ may not reflect the true category of these responses. A key benefit of the present methodology is that asking about an event “why is it good/bad?” and coding the response enables a further level of understanding to be reached which taps the underlying well-being aspects of future thinking rather than only the content aspects (see Strengths of the Study, p. 98).

The study found that a frequent experience that adolescents were looking forward to in the next week and the next year was leisure time and the opportunity to pursue leisure activities, closely followed by social activities. Positive thinking in the near future seemed to concern more of the types of experiences which provide hedonic enjoyment and pleasure (e.g., playing football, clubbing), rest and relaxation (e.g., a lie in, time off from school) or interpersonal closeness (e.g., spending time with friends). This has been shown previously in a review which found the next most common topics that adolescents aimed for in the future, after education and occupation to be future family and marriage, leisure activities and the material aspects of life (Nurmi, 1991). However, since the content of events were not quantitatively analysed, it is not possible to make firm conclusions about the data.

## **The Difference Between Low and High Distress in the Anticipated Impact of Future Events on Psychological Well-Being**

Research Question 4 was concerned with investigating whether adolescents with higher levels of distress anticipated a different impact on the dimensions of PWB than those with lower levels of distress when thinking about the consequences of future events. The study found that the frequency of PWB dimensions present in adolescents' responses was broadly similar between those with high and low levels of anxiety and depression. The only difference was found in the negative condition, where adolescents in the high distress group expressed significantly more responses related to Positive Relations with Others than those in the low distress group. This indicated that participants with higher distress levels were concerned that negative events would have more of an impact on their interpersonal relationships. These findings give further evidence for the link between low states of well-being and disrupted future thinking.

The fact that there was a difference in the pattern of PWB between the groups in the negative condition, yet no differences found in the positive condition supports the only other study that has investigated future thinking in school-aged adolescents. Miles *et al.* (2004) also found negative thinking to be affected and positive thinking to be unaffected with higher distress levels. Specifically, the authors found that pupils with higher levels of anxiety and those with higher levels of depression predicted significantly more negative events, yet no fewer positive events, in the future than a control group. The findings also partially support previous research in adults who are both anxious and depressed, since these individuals were shown to generate more

negative and fewer positive anticipated experiences than controls (MacLeod & Byrne, 1996). Other research has shown that adults with anxiety and adults with depression both think that negative events are more likely to happen to them, and positive events are less likely to happen to them, than controls (MacLeod *et al.*, 1997b).

The present results extend previous findings because they demonstrate that negative future thinking is more related to interpersonal relationships in individuals who are more distressed. Responses from the high distress group included worries about losing important relationships through death or moving away (e.g., “I couldn’t handle others in my family dying, it will affect my emotions massively”, “I will be full of grief”, “I will have to say goodbye”, “I’ll have no one to guide me”, “we will grow up and lose one another”, “being alone and the sadness that goes with it”, “not having someone I feel close to”, “I don’t want to lose my close friends”). Previous research has shown that the experience of loss derived from the ending of a key interpersonal relationship (break-up with a significant person, parent separation, death of a close individual) is a risk factor for depression in adolescence (Monroe, Rohde, Seeley & Lewinsohn, 1999). Early parental loss or parental divorce has also been shown to be associated with lower well-being (Maier & Lachman, 2000). It could therefore be suggested that there may also be a link between thinking about these experiences happening in the future and low states of well-being or depression. Responses in the high distress group also included worries about losing support, mostly from parents (e.g., “I’ll have no one to fall back on when I’m really tired”, “my support structure will be gone” “I won’t have my parents to rely on” “I won’t have support from mum as much” “I won’t have the same support system as school supplies”). This suggests that there

may be a relationship between perceived future social support and well-being. A previous study found that improved social skills combined with perceived social support predicted psychological adjustment and reduced perceptions of loneliness (Riggio, Watring, & Throckmorton, 1993). Furthermore, gaining independence from parents is a major developmental task of late adolescence (Zimmer-Gembeck & Collins, 2003). It is possible that adolescents with higher levels of anxiety and depression may feel less confident in their ability to face this challenge and therefore evaluate negative events based on losing supportive relationships rather than on gaining independence.

As well as responses relating to Positive Relations with Others being significantly less, the low distress group did not mention death and seemed to mention worries about losing relationships and support less. Consequences of negative events coded as Positive Relations with Others in the low distress group mainly included comments about having close family relationships and missing out on spending time with people (e.g., “I won’t be able to help out as much at home” “I’ll secretly really miss my family” “I’ve always been very close with my family” “my family will be disappointed if I don’t look after myself properly”, “I’ll miss going to family events” “I won’t be able to go out with family as no free time” “won’t be with my mates to talk about the football match” “miss out on spending time with friends”). It seems as if the evaluations of negative events are qualitatively as well as quantitatively different. However, these findings are descriptive and since no analysis was conducted to assess the data in this way, the conclusions are limited.



The study found that there was no difference between high and low distress groups in their expectations of how their PWB dimensions would be affected if positive events were to happen. This is in contradiction to studies in adults that have repeatedly shown that individuals with depression are impaired in their ability to generate positive future experiences compared to controls, but do not generate more negative future experiences (MacLeod & Byrne, 1996; MacLeod *et al.*, 1997c; MacLeod & Salaminiou, 2001). A number of explanations may help in understanding why no differences were found in the positive condition. A sample with mixed anxiety and depression is likely to demonstrate a different pattern of future thinking to a sample with only depression or only anxiety. As discussed above, a comorbid sample showed more similar results to the present findings (MacLeod & Byrne, 1996). It is also possible that lower levels of symptomatology in the general population may not affect anticipated PWB as strongly as it would in a population suffering from clinical levels of an affective disorder. However, Edmonson (2012) found no differences between a clinically depressed group and a control group in their pattern of PWB when they discussed the consequences of positive and negative future events. Another suggestion from Kagan, MacLeod and Pote (2004), is that mood disturbed adolescents may be partially protected from pessimism about the future compared to adults through having a more fixed, general script about the reasons why future events might happen. During feedback post research sessions, some participants stated that they found the study quite pessimistic, either because they had never thought about the negative things that might happen to them in the future before, or because they did not indulge in thinking in a negative way. It has been shown that representations of positive events are clearer, contain more sensory details and are associated with a greater subjective feeling of pre-experiencing than representations of negative events

(D'Argembeau & Van der Linden, 2004). The combination of being able to access future positive events more easily and having a general, fixed script about the consequences of future events may protect adolescents with higher distress from believing that their well-being will be affected by positive future events.

## **Discussion of the Self-Report Findings**

### **The Relationship Between Self-Reported Psychological Well-being and Distress**

Research Question 5 attempted to clarify the relationships between depression and self-reported PWB and anxiety and self-reported PWB in an adolescent community sample. Previous research in clinical and non-clinical adults has shown mixed results and no studies have examined these relationships in adolescents. The present study found Environmental Mastery and Self-Acceptance to be strongly negatively correlated with depression, and Personal Growth, Purpose in Life and Positive Relations with Others to be moderately negatively correlated with depression. These findings support previous literature that has found clinical populations with depression and remission samples to show the greatest impairments in Environmental Mastery and Self-Acceptance compared to controls (Edmonson, 2012; Nierenberg *et al.*, 2010). Some non-clinical studies have also found either or both of these dimensions to show the strongest correlations with depression (Rafanelli *et al.*, 2000; Ruini *et al.*, 2003b; Ryff, 1989; Ryff & Keyes, 1995). In the present study, Autonomy was the only dimension found not to be associated with depression. This also supports previous studies which found no differences in Autonomy scores between clinically depressed samples and controls (Edmonson, 2012; Nierenberg *et al.*, 2010).

Compared to previous studies, PWB in the present sample seems to be more strongly linked to higher levels of depression. For example, Liu *et al.* (2009) found moderate negative correlations between all PWB dimensions and depression, however, the Pearson's *r* values were in a lower range (*r* values between -.22 and -.43) than in the present study (*r* values between -.41 and -.64). Ryff and Keyes (1995) also found only moderate relationships between depression and Environmental Mastery and Self-Acceptance and weak relationships between depression and the other four dimensions (*r* values between -.14 and -.41). Edmonson (2012) found no significant correlations between depression and any of the PWB dimensions in a control group and in a sample with moderate to severe depression found only Positive Growth to be significantly correlated with depression scores. It may be that these links are more pronounced in late adolescence because the transition to adulthood represents a critical developmental period associated with increased vulnerability to depressive symptoms (Cyranowski *et al.*, 2000; Hankin & Abramson, 2001) alongside the experience of multiple triggers for low well-being. For example, rising pressures of school work and exams, negotiating the challenge of autonomy versus dependence, moving away from home for the first time, having to leave friends behind and make new friends, forming one's sense of self and identity (Erikson, 1968), deciding one's future career. However, these studies have all used different measures of depression which may explain the different patterns of results.

Once all other variables were controlled for, the present study showed that Environmental Mastery no longer had a significant relationship with depression. Positive Relations with Others and Self-Acceptance were the only dimensions to

show a unique contribution to levels of depression. Examination of the inter-correlations between the six PWB dimensions shows that Environmental Mastery had a high correlation with Self-Acceptance (r value of .78) suggesting that the strong correlation between Environmental Mastery and depression may be caused by the overlap with Self-Acceptance. This was the highest correlation between any of the dimensions of PWB in the present study. Previous researchers have criticised the scales of PWB due to the substantial overlap between these two dimensions (Springer & Hauser, 2006), suggesting that they may not demonstrate distinct elements of positive psychological functioning. Accordingly, studies that have reported significant correlations between Environmental Mastery and depression without controlling for the variance caused by other dimensions should be interpreted with caution.

The finding that Positive Relations with Others showed a significant unique relationship to depression goes against previous studies in adult samples that have found weak correlations (Ruini *et al.*, 2003b; Ryff, 1989). According to Ryff (1989), individuals who score highly on the Positive Relations with Others subscale have satisfying, trusting relationships, are capable of empathy, affection and intimacy and are concerned about the welfare of others. They may agree with items such as “I know that I can trust my friends and they know they can trust me” and “I enjoy personal and mutual conversations with family members or friends”. Individuals who score lowly on this subscale are isolated, have few close relationships and find trusting and compromising with people difficult. They may agree with items such as “I often feel lonely because I have few close friends with whom to share my concerns” and “I don’t experience many warm and trusting relationships with others”. Findings from

the present study therefore suggest that adolescents with higher levels of depression are more likely to feel alone and dissatisfied or frustrated with their interpersonal circumstances. Previous research has indicated strong associations between depressive symptoms and perceived interpersonal stress among adolescents, particularly in girls (e.g., Hankin & Abramson, 2001). Common interpersonal experiences in the late adolescent developmental stage may include separation from parents, exploration of authority in relationship to parents, seeking independence from parental boundaries, initial experiences of death of relatives or friends, peer pressure or feeling less popular or different among peers and struggling to negotiate the development of romantic relationships (Mufson, Weissman, Moreau, & Garfinkel, 1999). The link found in the present study suggests that adolescents with higher depression levels may be struggling to negotiate these developmental interpersonal challenges.

The present study found Environmental Mastery and Self-Acceptance to show strong negative correlations with anxiety, Purpose in Life to show a moderate negative correlation with anxiety and Autonomy, Personal Growth and Positive Relations with Others to show weak negative correlations with anxiety. Environmental Mastery and Self-Acceptance continued to show unique negative relationships with anxiety after all other variables were controlled for. These findings support Fava *et al.* (2001a) who found Environmental Mastery and Self-Acceptance to be most highly correlated with anxiety in a clinical sample. They also support non-clinical studies that have found high negative correlations between these two dimensions and anxiety levels (Ruini *et al.*, 2003b; Ryff, 1989). Ryff (1989) proposed that an individual high in

Environmental Mastery has a sense of competence in managing the environment, the ability to control multiple external activities and is able to choose contexts suitable to personal needs and values. They may agree with items on the SPWB such as “I am good at managing the many responsibilities of my daily life” and “In general I feel I am in charge of the situation in which I live”. An individual low in Environmental Mastery has difficulty managing everyday affairs, is unable to make use of surrounding opportunities and lacks a sense of control over the external world. They may agree with such items as “The demands of everyday life often get me down” and “I often feel overwhelmed by my responsibilities”. Findings from the present study therefore suggest that adolescents with higher levels of anxiety feel out of control with their daily activities and unable to manage their life satisfactorily. The feeling of being out of control may relate to the developmental stage of late adolescence, when individuals are faced with either unwanted increased independence or restriction from independence. It may also relate to heavy amounts of pressure at school from the demands of preparing for A Level exams. However, as discussed above, the high overlap of Environmental Mastery with Self-Acceptance indicates that results should be interpreted with caution.

Out of all the PWB dimensions, Self-Acceptance has shown the strongest relationships with both depression and anxiety. According to Ryff (1989) individuals high in Self-Acceptance possess a positive attitude towards themselves, are able to accept multiple aspects of themselves including good and bad qualities and feel positive about their past life. They might agree with items on the SPWB such as “I like most aspects of my personality” and “In general I feel confident and positive

about myself". Individuals low in Self-Acceptance feel dissatisfied with themselves, are disappointed with the past and troubled about personal qualities. They may agree with items such as "In many ways I feel disappointed about my achievements in life" and "My attitude about myself is probably not as positive as most people feel about themselves". The present findings suggest that adolescents with higher levels of anxiety and depression possess low self-regard and a negative attitude towards themselves. This has certainly been emphasised in Beck *et al.*'s (1979) cognitive theoretical account of depression which posits that a pessimistic view of oneself is part of the negative cognitive triad. Growing longitudinal evidence suggests that low self-esteem prospectively predicts depression (e.g., Orth, Robins, & Meier, 2009). Other studies have reported negative, medium to strong correlations between self-esteem and anxiety (e.g., Lee & Hankin, 2009). It is important to note that correlational data do not provide evidence of causal links so it is unclear whether low Positive Relations with Others and Self-Acceptance are a cause of depressive symptoms or the outcome of higher levels of depression. Similarly it is unclear whether a lack of Environmental Mastery and Self-Acceptance are a cause of anxious symptoms or the result of anxiety. However, a relationship does not mean there has to be some sort of causality and it may be that low Self-Acceptance is simply a component of depression and anxiety. Furthermore, anxiety and depression were also moderately correlated in the present sample which makes it difficult to distinguish the unique relationship of each condition with PWB dimensions.

## **Implications of the Present Study**

The findings that there are specific PWB impairments related to distress in a community sample have important clinical implications. They demonstrate that Ryff's (1989) conceptual model is of considerable clinical value since it may provide insight and direction regarding the factors that influence the occurrence of mental health difficulties. For example, the unique contribution of Self-Acceptance and Positive Relations with Others to depression scores in adolescents suggests that low possession of self-regard and quality relations may be vulnerability factors for depression. In addition, the findings that Environmental Mastery and Self-Acceptance showed a unique contribution to anxiety scores suggests that those who have difficulty managing everyday affairs and who are low in self-regard may be vulnerable to anxiety. These findings are consistent with ideas from leading PWB theorists who posit that the absence of certain facets of well-being may create conditions of vulnerability to negative future outcomes (Ryff & Singer, 2008). In line with positive psychology, they give further grounds for focusing on enhancing well-being and departing from the traditional symptom focussed approach of clinical psychology. The findings provide further evidence that Ryff's (1989) model has the potential to be used as a therapeutic intervention to promote PWB and resilience in both clinical and non-clinical populations.

**Clinical interventions.** Promoting well-being may help people to recover from clinical disorders by contributing to the alleviation of difficulties and enhancing personal strengths. Previous studies have helped clients to identify goals in all six PWB dimensions and strategies to meet them (Fava & Ruini, 2003; Ruini & Fava,



2012). However, the strong associations found in the present study point to developing psychotherapeutic interventions in adolescents that focus on three dimensions in particular: building positive interpersonal relationships, restoring a sense of control over one's environment and promoting a positive attitude towards oneself. Well-being therapy also has the potential to be used alongside other interventions, such as Cognitive Behavioural Therapy to enhance the therapeutic effect. Research combining Well-being therapy with CBT has indicated that it is effective at alleviating symptoms and reducing relapse rates in clinical populations (Fava, Ruini, & Rafanelli, 2005). Furthermore, the findings suggest that measures of psychological well-being could be used in mental health assessments, helping clinicians to identify particular deficits in their clients.

**School interventions.** Findings from the present study not only have implications for developing interventions in clinical settings, but also for developing preventative strategies in the community. Promoting positive functioning and building individual strengths in developmental settings may prevent adolescents from developing anxiety or depression. The findings that the impacts anticipated by positive events were about Environmental Mastery and Positive Relations with Others, followed by Personal Growth suggest that enhancing the ability to look forward to things in adolescents will result in an increased sense of control over the environment, an increase in positive interpersonal relationships and an increased sense of developing skills and knowledge over time. Therefore, adolescents may be able to learn to enhance these dimensions of their future psychological well-being by being helped to identify goals in the near and distant future and by being taught to plan for future experiences effectively. For example they may be helped to plan

episodes that are specific, measurable, attainable, realistic and time-bound (Locke & Latham, 2006). The finding that participants in the high distress group were more concerned about negative future events having an impact on their relationships suggests that adolescents may be helped to avoid future states of low well-being by being helped to identify life goals related to maintaining close relationships with friends and family. Specifically they could be helped to improve their social skills, foster peer relationships, seek out support from family and plan positive future episodes effectively. They could also be helped to challenge their negative thoughts regarding a lack of future social support and isolation. Furthermore, strategies targeted at strengthening specific PWB dimensions and building individual strengths may help adolescents to achieve more optimal functioning in other areas such as academic achievement or health. Ruini *et al.* (2009) has shown Well-Being Therapy not only to improve Personal Growth and reduce distress, but to reduce somatisation. Promoting psychological well-being in young people may help them to flourish sooner in life, which may help to protect them from adversity as they continue through the lifespan.

### **Strengths of the Present Study**

The sample size was adequately large to be able to assume high statistical power for statistical analysis. Choosing a non-clinical healthy sixth form sample allowed an investigation of the relationship between future thinking and well-being without the possible confounding effects of other symptoms associated with anxiety and depression. It also allowed the identification of impaired PWB dimensions that might represent a vulnerability for, rather than a consequence of elevated affective states.

A major strength of the study is that, based on Edmonson (2012), it has added a new dimension to the measurement of future thinking by asking people to comment on what they think will be good or bad about future events. Rather than relying on simply eliciting the number of events anticipated as previous research has done, the current methodology allows for a greater understanding of why future events matter to individuals. The nature of the semi structured interview questions enabled participants to think of open-ended and personally relevant responses about why future events were important, whilst avoiding social desirability bias because answers were written down out of sight of the researcher. Prompting participants to think about what is good or bad about future events drills down to a further level of understanding about the underlying well-being aspects of future thinking. This advances previous research that has only tapped into a simple description of the content of adolescent future goals. Using a coding strategy to map adolescents' answers onto the six dimensions of psychological well-being allowed participants to speak freely about the consequences of future events without being constrained by pre-prescribed questionnaire items which may have interfered with their ideas. This methodology has enabled an examination of the perceived impact of future thinking on psychological well-being in adolescents for the first time, which has identified important differences with adult research. It is also one of the few studies to examine which self-reported PWB dimensions are more or less implicated in adolescent distress.

### **Limitations of the Present Study**

**Sample.** Participants recruited to the study were predominantly from middle-class, White British ethnic backgrounds which prevent the findings from being

generalised to adolescents from other cultures or socioeconomic statuses. A clear limitation of using a community sample is that it is uncertain whether the results would be found in clinical samples, so generalising the findings to populations with clinical anxiety and depression must be attempted with caution. Importantly, it is not possible to discern whether the current individuals with elevated levels of distress represent a resilient group or a group with increased risk for future psychological adversity.

**Measures.** The Revised Child Anxiety and Depression Scale was chosen because it fitted the age range of the inclusion criteria, having been found to be valid and reliable for youth between the ages of 8 and 18. The majority of scales measuring anxiety and depression in young people are only valid in adolescents up to the age of 17. However, since the RCADS-25 is not a diagnostic scale, the levels of anxiety and depression in the sample are not comparable to clinical levels and thus the generalisability of findings is restricted.

**Methodology.** A methodological limitation relates to conducting the research in a group setting. Since participants were instructed to write down their answers in the future thinking interview independently, responses were sometimes ambiguous. This meant that the codes given may not have reflected the true meaning of the individual's answer. For example, the response "disappointment" given as a consequence for the negative event 'getting a job' was interpreted that if the event was to happen the emotion of disappointment would be experienced, therefore, it was coded as Affect. However, the participant may have meant that he would be disappointed in himself, which would have scored a Self-Acceptance code, or he

could have meant that others would be disappointed in him which would have scored an Autonomy code, or he could have meant disappointment that he will not develop in his career which would have scored a Personal Growth code. Another example “I’ll be able to drive” may have referred to the idea that the individual was looking forward to the act of learning to drive, in which case it would have been coded Personal Growth. Or it may have been a reference to being old enough and therefore legally allowed to drive, in which case it would be Environmental Mastery. If the study was repeated, each participant could be recruited individually to take part in the task one on one so that if they did give an ambiguous answer, they could be prompted using the downward arrowing technique, for example “and what would that mean if you experienced disappointment?” However, overseeing responses in this way may increase the chances of social desirability bias. As discussed in the study strengths, using the adapted future thinking task in a semi-structured interview format has advanced the understanding of the effects of future thinking on well-being, however, there is still scope for improvement.

**Coding.** A difficulty with the coding involved determining which PWB dimension responses should be allocated to. Responses were coded according to Ryff’s (1989) verbatim descriptions of the six subscales, however, sometimes these fitted into more than one category. Most often this overlap was noticed between Personal Growth and Purpose in Life, for example “I would have achieved a goal”, “I want to study physiotherapy at University”, and “I’ll get a good job so my hard work will pay off”. Although the majority of factor analytic studies have confirmed the six factor structure, the lack of theoretical distinction between dimensions has been previously noted (e.g., Springer & Hauser, 2006). A high level of inter-rater

agreement indicated that the current coding scheme was reliable ( $\kappa = .88$ ), however, it is possible that both raters were assigning responses to categories in a consistent but inappropriate way. Future research using the same strategy could use a team of researchers with prior knowledge of PWB to discuss code allocations, which would ensure that the assigned codes were true reflections of each dimension.

The overlap of coding categories was also noticed between Environmental Mastery and Autonomy when participants' responses involved themes of gaining independence. For example, "I will have freedom to do what I want as not with parents" was interpreted as having 'a sense of mastery and competence in managing the environment; making use of surrounding opportunities' (Ryff & Keyes, 1995, p.1072). However, it could be argued that such a response could be interpreted as Autonomy because it refers to being 'self-determining and independent' (Ryff & Keyes, 1995, p.1072). Ryff (1989) defines Autonomy in a very specific way which is confusing because it is not how the word is used in everyday language or how other conceptualisations such as Self Determination Theory define it (Ryan & Deci, 2000). This is illustrated in SPWB items which refer to Autonomy as the ability to evaluate oneself according to personal rather than other people's standards: "I am not afraid to voice my opinions, even when they are in opposition to most people", "My decisions are not usually influenced by what everyone else is doing", "I judge myself by what I think is important, not by the values of what others think is important". The way responses involving independence were assigned to Environmental Mastery rather than Autonomy is aligned with Ryff's specific definitions. The finding that Autonomy was rarely coded as present in adolescents' future thinking responses is consistent

with the present findings that Autonomy was not related to anxiety or depression in the self-report data, as well as previous research that has found weak or no associations between self-reported Autonomy and affective states in clinical and non-clinical samples (Edmonson, 2012; Nierenberg *et al.*, 2010; Rafanelli *et al.*, 2000; Ruini *et al.*, 2003b).

**Median-split analysis.** Splitting the data into a high distress group and a low distress group for Research Question 4 allowed for a comparison of anticipated well-being scores. A median-split analysis was used due to the abnormal distribution of scores on the future thinking task which were too restricted for a continuous correlational analysis. One drawback with this method is that it lends itself to measurement error in that all scores above the median are considered equal, when logically, values in the middle are not likely to be the same as values at the end, and similar values in the middle may fall into either group. Another method could have been to take a binary approach to the PWB variables, which were more naturally binomial, and treat anxiety and depression as continuous variables, thus potentially increasing power.

**Mixed anxiety and depression.** Using participants combined scores of anxiety and depression in Research Question 4 meant that it was not possible to unravel the specific contribution of each condition on anticipated PWB. Previous research in adults has shown that individuals who are depressed show a different pattern of future thinking to those who are anxious. Depressed participants generate fewer positive future events than controls, but no more negative future events (e.g., MacLeod & Salaminiou, 2001) in contrast to anxious participants who generate more

negative future events than controls, but no fewer positive events (e.g., MacLeod *et al.*, 1997c). Drawing conclusions about whether the present results were consistent with previous findings was difficult because there was no pure anxiety or pure depressed group. It cannot be inferred why the impaired negative anticipation relating to Positive Relations with Others arose. The effect could have arisen because the mixed participants were anxious, or because they were depressed, or because they were both anxious and depressed. One way of extracting the differences between anxiety and depression would have been to conduct partial correlations. However, a high co-morbidity of anxiety and depression is a true reflection of psychopathology in the general population (Kessler *et al.*, 2010), and as a consequence the findings will have higher ecological validity.

**Multiple Analysis.** Multiple testing of variables increased the likelihood that an effect due to chance was found to be statistically significant (Type I error), however this risk was minimised by using Bonferroni corrections where necessary.

**Between group gender differences.** For research Question 4 the use of non-parametric tests was limiting because it was not possible to statistically control for unmatched gender between groups. There were fewer males and more females than expected in the high distress group and more males and fewer females than expected in the low distress group. Although this is consistent with previous research that has repeatedly found adolescent girls to show increased vulnerability to anxious and depressive symptoms (e.g., Hankin & Abramson, 2001), it is possible that the findings are due to an effect of gender. The sample size was too small to be able to analyse a



high and low group of males and a high and low group of females, which would also have led to high levels of duplicate testing which were aimed to be avoided.

**Reflections.** It is worth noting that participants may have given different answers depending on the time of year it was. For example, data collected in February may have been more related to participants feeling out of control (low Environmental Mastery) because they had just had their mock exams, were waiting for results, were closer to A levels and were waiting to find out if they had a conditional offer for the University they wanted. In contrast, data collected in October may have been more related to participants looking forward to Christmas and school holidays (high Environmental Mastery/Affect) and feeling less under pressure. Having said this, the temporal stability of self-reported psychological well-being has been shown in a non-clinical sample in a study by Ruini *et al.* (2003b). Their investigation of the relationship between PWB and anxiety and depression using Kellner's Symptom Questionnaire showed that findings were consistent a month later when all measurements were repeated. Further research is necessary to determine whether the relationship between PWB and future thinking changes over time.

### **Further Research**

Conducting the study across different settings is an important avenue for further research. Since the research was conducted whilst the participants were in school, it is possible that their answers reflected school-related themes more than they may have done if it was carried out in another context. It is likely that a priming mechanism may operate when thinking about the future which is similar to contextual dependent

memory when thinking about the past. Evidence indicates that mental simulations of future events rely on episodic memory (e.g., D'Argembeau & Van der Linden, 2004) and neuroimaging has highlighted a common neural network when people imagine future events and remember past events (Addis, Wong & Schacter, 2007). To test this hypothesis, it would be necessary to repeat the research in different community settings.

It is also important to investigate changes in distress, future thinking and psychological well-being over time. Longitudinal investigations of the components of PWB could contribute to a better understanding of whether positive psychology is successful at enhancing well-being over time and whether it has benefits for other life domains such as academic performance. Very few studies have adequately examined the extent to which individual levels of well-being can change over time, despite the widely held belief in clinical psychology that positive changes in mental health are achievable (Gallagher *et al.*, 2009). Given that a fundamental goal of strengthening well-being in adolescents is to teach skills and behaviours that can have a positive effect over the life course, more sophisticated methodological designs are needed to determine whether sustainable gains in PWB are possible. The cross-sectional and correlational nature of the present study meant that it was not possible to know whether impaired PWB is simply a consequence of anxiety and depression, or whether it is implicated in the aetiologies of these disorders. The only study to investigate longitudinal patterns found that the absence of positive well-being was a risk factor for depression ten years later (Wood & Joseph, 2010). Examining fluctuations over time may help to decipher whether the absence of positive well-

being can predict variance in clinical and non-clinical levels of depression and anxiety, which may help to establish the mechanisms by which Well-being Therapy can operate (Fava & Ruini, 2003).

Future research could also address the limitation that the Scales of PWB were not developed specifically for school-aged adolescents. Although they have been used in such samples previously, items were selected according to their relevance for an adolescent population (Ruini *et al.*, 2009). More research developing the questionnaire so that items reflect the developmental tasks and challenges of adolescence is needed. In addition, research could examine the same relationships investigated in the current study using a variety of methods to measure well-being, such as questionnaires designed specifically for this age group (e.g., The Adapted Oxford Happiness Inventory; Meleddu, Giucciardi, Scalas, & Fadda, 2012). Furthermore, further research could usefully look at the future thinking data elicited in the current study in relation to other definitions of eudaimonic well-being such as Self-Determination Theory (Ryan & Deci, 2000), or in relation to subjective well-being. As well as further examination of the link between well-being and future thinking, future research could investigate how other psychological variables as well as demographic, personality and environmental factors make a contribution to psychological well-being in adolescence.

It would be interesting for further research to examine the separate impact of anxiety and depression on the patterns of PWB when adolescents discuss the consequences of future events. It would then be easier to compare the findings to previous research that

has found different associations between anxiety and depression and positive and negative future thinking. This could be achieved using a distinct measure of anxiety and a distinct measure of depression, rather than a combined measure like the RCADS. It could also be achieved by using formally diagnosed clinical populations of adolescents, which would also solve the problem of generalisability of findings, although in doing so, the problem of co-morbid individuals is still likely to be encountered. Further research could also look at the relationship between self-reported levels of PWB and the frequency with which each PWB dimension was mentioned in the future thinking measure. For example, it may be interesting to know whether an individual who rates oneself high in Personal Growth on the SPWB would also mention themes of Personal Growth more when anticipating the consequences of future events, or whether they would mention them less, or whether there would be no relationship. However, there is no basis for hypothesising about this relationship and analysis would result in over 70 correlations.

Assessing the differences between the qualitative outcomes that people anticipate is a leap forward from previous studies which have only looked at the differences in the number of events that people anticipate or the likelihood of events happening. However, rather than quantifying responses into a limited set of categories (i.e., six dimensions of PWB), future research could usefully use qualitative methods to examine the differences between themes in the outcomes that people anticipate. This may prevent the limitation of losing information about well-being from participants' responses if it did not fall neatly into one of the six dimensions. The present study found that Positive Relations with Others was present in responses from high distress

participants significantly more than in responses from the low distress group. Future research could examine the further differences between responses to unravel exactly what aspects of interpersonal relationships are believed to be bad about negative future events. Since the study did not address the effect of actual life circumstances on the current variables, future research assessing perceptions of current events as well as future events may help to account for additional variance in future thinking.

## **Conclusions**

The present study aimed to understand how future events are seen as being implicated in various aspects of well-being and to clarify the relationship between self-reported PWB and distress in a non-clinical sample of adolescents. The findings suggest that it is important for adolescents to have things to look forward to because they are connected to dimensions of well-being, especially to their ability to successfully manage the demands of life and to their relationships with others. The findings also suggest that it is disadvantageous for adolescents to have things not looked forward to because they are especially connected to thoughts about not being able to master the demands of life. Previous research has shown differences in the patterns of future thinking between individuals with and without affective symptoms (e.g., Conaghan & Davidson, 2002; MacLeod *et al.*, 1997a). Investigating adolescents' perceptions of the consequences of future events has shown that future thinking is not only involved in emotional disturbance, but that it is an important component of psychological well-being. In contrast to previous studies, the present findings showed that adolescents with higher levels of anxiety and depression think that future events will affect them in a broadly similar way to adolescents with lower levels of anxiety and depression.

However, the finding that worries about interpersonal relationships were more implicated in distress reinforces the importance of negative cognitions about the future in adolescent anxiety and depression and infers a specific route for intervention. In line with previous findings (e.g., Fava *et al.*, 2001a), the dimensions of self-reported PWB most implicated in adolescent anxiety were Environmental Mastery and Self-Acceptance. However, the dimensions most associated with depression were Positive Relations with Others and Self-Acceptance, suggesting that each disorder has a somewhat distinct relationship to PWB. The findings give further evidence for the theory that psychological health is more than simply the absence of negative symptoms but also the presence of psychological well-being. As pioneered by positive psychology, future research must continue to investigate the factors that influence well-being, including the impact of future thinking, so that interventions that target PWB enhancement as well as symptom alleviation can be developed.

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## Appendices

### Appendix A. Ethical Approval

Psychology-Webmaster@rhul.ac.uk

Mon 05/08/2013 15:39

To: [nwjt094@rhul.ac.uk](mailto:nwjt094@rhul.ac.uk); Macleod, A;

Cc: [PSY-EthicsAdmin@rhul.ac.uk](mailto:PSY-EthicsAdmin@rhul.ac.uk); Leman, Patrick;

Application Details:

Applicant Name: Sasha Whaley

Application title: Exploration of the well-being value of anticipating future events in adolescence

Comments: Dear Sasha,

Thank you for submitting your application to the DEC. I have approved the application subject to amendment. This means that you do not need to respond to me, but I would like you to make the following change, (suggested by reviewer 1):

- Information and consent sheet must explicitly indicate that there is no requirement to take part and that participation is voluntary.

There is no need to resubmit once you have made this change. However, you are required to do so before you can begin data collection.

The reviewers gave some other feedback which I would like you to consider. I think some of it will certainly help tighten up your procedures. However, you are not required to complete this for

approval. But please note that department mobile phones are available for a period of time to avoid problems with using personal phone numbers for research purposes.

Good luck with your study!

Best wishes,

Patrick Leman

#### Reviewer 1 Comments

I think it might be appropriate to give the parents/guardians some sort of opt-out form that structures their withdrawal of the student from the research - I think a general invitation to contact the teacher might be a bit vague.

Other points:

- Typo of 'affect' where it should be 'effect' in the debrief form.
- Values of the amazon vouchers are incorrect in the debrief.
- Perhaps would be better to mention the maximum duration of the experiment in the parent letter and other info, rather than the lower limit of the estimated range (45mins...)
- I'm sure you've already considered this, but the flyer for the study has a mobile phone number and i was a little concerned that this might be the researcher's personal number. This is risky and i would consider using a lab mobile instead.

#### Reviewer 2 comments

In general this is an extremely thorough and carefully written ethics proposal. The only thing I was slightly unclear about was whether the Future Thinking task is administered in written form (i.e., respondents privately write down their responses) or whether it's administered interview-style by the experimenter. I assume the former, but in case it's the latter this could raise issues of confidentiality given that participants are tested in groups of their peers.



## Appendix B. Demographic Questionnaire

**Gender:**  male  female

**Age:**  16  17  18

**Year Group:**  Year 12  Year 13

### **Ethnicity:**

#### *White or White British*

- White British
- Irish
- Other White Background

#### *Black or Black British*

- Black Caribbean
- Black African
- Other Black Background

#### *Asian or Asian British*

- Indian
- Bangladeshi
- Pakistani
- Other Asian Background

#### *Mixed*

- White and Black Caribbean
- White and Black African
- White and Asian
- Other mixed background

#### *Chinese or other Ethnic group*

- Chinese
- Other ethnic group

### **Highest level of education achieved:**

None

GCSE's or equivalent  
(BTEC Levels 1&2, NVQ Levels 1&2)

How many A\*-C passes? \_\_\_\_\_

**Occupation of mother/guardian:** \_\_\_\_\_

**Occupation of father/guardian:** \_\_\_\_\_

**Appendix C. Participant Response Form**

*QUESTION 1* - Write down 2 positive events or experiences you are looking forward to in the next **week**:

1. ....
2. ....

<b>BOX 1</b>
(a) .....
.....
.....
(b) .....
.....
.....
(c) .....
.....

<b>BOX 2</b>
(a) .....
.....
.....
(b) .....
.....
.....
(c) .....
.....

**PLEASE DO NOT TURN OVER UNTIL I ASK YOU TO DO SO**

## **Appendix D. Researcher Prompt Schedule**

### **General Introduction**

*I am going to ask you to complete a number of questionnaires today. These are all about how you think and feel. In other words, there are no right or wrong answers. Some of the measures ask you to think about the future and things you are looking forward to and not looking forward to. Others ask about your moods and emotions. Please try to complete all the questionnaires. I will take you through each one and it is very important that you don't go on to the next part before I ask you to. At the bottom of some pages will be instructions to stop and wait until I ask you to go on to the next page so even if you are finished that page quickly please wait until I tell you to go on to the next page. Are there any questions?*

### **Introduce demographic measure**

*First I'm going to ask you to complete a questionnaire that has a few questions about yourself and your background. When you've completed this please turn over to page 2*

### **Introduce future-thinking task**

*Now I am going to ask you to think about things that might happen to you in the future. I will give you different time periods in the future, one at a time each on a separate page, and I'd like you to try to think of things that might happen to you in those time periods. These should be things that you think will definitely happen or are at least quite likely to happen. In each case you will be asked to think of two things and write them down in the spaces provided. On each page there will also be boxes underneath the space where you write your events down. Please ignore these boxes for now – we will come back to them. It is very important that you do not turn over the page until I ask you to do so. Are there any questions?*

#### **➤ Do the positive conditions**

*First I'm going to ask you to think of positive things in the future. So, I'd like you to try to think of things that you are looking forward to, in other words, things that you will enjoy.*

#### **➤ Do the negative conditions**

*Now I am going to ask you to think about those same time periods again but this time thinking of negative things – things that you are not looking forward to. Again, write 2 things on the lines provided and wait until I ask you to go on to the next page.*

### **Introduce consequences task**

*Now, I am going to ask you to go back over the things you have written down and think about why they matter to you. So, for the things you are looking forward to I am going to ask you to think about why you are looking forward to them, what it is that is good about them and for the things you are not looking forward to why you are not looking forward to them, what it is that is bad about them?*

*Please now go back to page 3, but please wait until I ask you to start. Don't start writing until I tell you to do so.*

➤ **Do consequences task**

*I would now like you to look back at what you wrote for QUESTION 1 - events you are looking forward to in the next week.*

*I would like you to look back at the first event you wrote down under number 1*

*I would like you to think carefully about what it would mean to you if this event was to happen.*

*In Box 1 beside the letter (a) I would like you to write down one thing that would be good about it.*

*In Box 1 beside the letter (b) I would like you to write down another thing that would be good about it*

*In Box 1 beside the letter (c) I would like you to write down another thing that would be good about it*

*Staying on page 3, I would now like you to look back at the second event you wrote down for QUESTION 1*

*I would like you to think carefully about what it would mean to you if this event was to happen.*

*In Box 2 please write down three things that would be good about it*

*Now please turn to page 4. I would like you to look back at what you wrote for QUESTION 2 – events you are looking forward to in the next year.*

*I would like you to look back at the first event you wrote down.*

*I would like you to think carefully about what it would mean to you if this event was to happen*

*In BOX 3 please write down three things that would be good about it.*

*Please do the same for the remaining positive events you wrote down and write your answers in the corresponding boxes.*

*I would now like you to look back at what you wrote for QUESTION 4 - events you are not looking forward to in the next week.*

*I would like you to look back at the first event you wrote down under number 7*

*I would like you to think carefully about what it would mean to you if this event was to happen.*

*In Box 7 beside I would like you to write down three things that would be bad about it.*

*Please do the same for the remaining negative events you wrote down and write your answers in the corresponding boxes.*

**Introduce mood and well-being questionnaires**

*Finally, I am going to give you two questionnaires to fill in. These are about your thoughts and feelings, there are no right answers. For the first questionnaire, put a circle around the word that shows how often each of these things happen to you. For the second questionnaire, circle the number that best describes your present agreement or disagreement with each statement.*

## Appendix E. Examples of Coded Responses

<b>Autonomy</b>	
<p><b><u>High scorer:</u></b> Is self-determining and independent; able to resist social pressures to think and act in certain ways; regulates behaviour from within; evaluates self by personal standards.</p>	<p>I will achieve more than what was expected of me            I can't blame anyone else if I do badly            I don't care what my teachers think            I'm the type of student the education system was not made for</p>
<p><b><u>Low scorer:</u></b> Is concerned about the expectations and evaluations of others; relies on judgments of others to make important decisions; conforms to social pressures to think and act in certain ways.</p>	<p>I'll have to spend a year with a teacher who thinks I'm incapable            I won't be able to achieve more than my relatives have            I want to prove that I am better than them            The disappointment for those who believe in me            I don't want to disappoint anyone            I don't want the teachers to be angry at me</p>
<b>Environmental Mastery</b>	
<p><b><u>High scorer:</u></b> Has a sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; able to choose or create contexts suitable to personal needs and values.</p>	<p>Being able to control what I do            Picking somewhere to live that I really like            I will have no worries of exams so no pressure            I'll be able to do things I would like to do independently            Will allow me to choose how I want to live my life            Gives extra time to catch up on school work            I won't have to wake up early            I will get to study a subject I have chosen and enjoy            Time to relax, re-charge my batteries and do what I want</p>
<p><b><u>Low scorer:</u></b> Has difficulty managing everyday affairs; feels unable to change or improve surrounding context; is unaware of surrounding opportunities; lacks sense of control over external world.</p>	<p>Having to survive on what I make            Having less free time to do things I enjoy            Pressure to be independent and have a good job            Having to revise is very restricting because I don't have the freedom to do what I want            Paying tax/bills means that I won't have money to do what I want            My parents will no longer sort things out for me            Makes me tired so I can't concentrate in school            Adds on more stress to all the other things I already have to do            I might fail my exams</p>

<b>Personal Growth</b>	
<p><b><u>High scorer:</u></b> Has a feeling of continued development; sees self as growing and expanding; is open to new experiences; has sense of realising his or her potential; sees improvement in self and behaviour over time; is changing in ways that reflect more self-knowledge and effectiveness.</p>	<p>Keeps me healthy and develops my fitness  Gives me the opportunity to experience and try new things  I will get to see lots of new places and new cultures  Achieving good grades will allow me to go to University  So I can volunteer at the hospital  To go further in my studies  I'll be able to get a provisional licence  I'll be older and feel grown up so will have more responsibility  My hard work/effort over the last year will pay off  My results will give an indication of what A2s I should take  I'll be ready to challenge myself further</p>
<p><b><u>Low scorer:</u></b> Has a sense of personal stagnation; lacks sense of improvement or expansion over time; feels bored and uninterested with life; feels unable to develop new attitudes or behaviours.</p>	<p>The possibility of getting kicked off the course  If I get bad results I won't be able to go to University  If my results aren't good then I will have to re-do the year  I have no idea what I'm interested in doing  I don't know if I'll be able to go to the University I want  I don't know what courses I want to do</p>
<b>Purpose in life</b>	
<p><b><u>High scorer:</u></b> Has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living.</p>	<p>I'll be closer to reaching my goal  My exam results will decide my future  Pressure on the fact that exams will decide my future  The idea of failing is awful because it will stop all my aspirations  It's my goal to become a neuroscientist  Exams decide your future  Valuable lessons set me in good stead for my future  I would be living my dream</p>
<p><b><u>Low scorer:</u></b> Lacks a sense of meaning in life; has few goals or aims, lacks sense of direction; does not see purpose of past life; has no outlook or beliefs that give life meaning.</p>	<p>Failing to reach my goal  Lack of direction  Might help me find out what career I want to do  I have no idea about what I want to do in life</p>

<b>Positive Relations with Others</b>	
<p><b><u>High scorer:</u></b> Has warm, satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy, affection, and intimacy; understands give and take of human relationships.</p>	<p>It's a chance to meet new people            Catching up with friends and socialising            My family are important to me, we are close            Being able to spend time with family I haven't seen for ages            I will have a companion no matter what            Being in a relationship will give me extra support and stability            We will continue to stay close if we keep in touch            Sharing experiences with friends            My parents will be proud of me</p>
<p><b><u>Low scorer:</u></b> Has few close, trusting relationships with others; finds it difficult to be warm, open, and concerned about others; is isolated and frustrated in interpersonal relationships; not willing to make compromises to sustain important ties with others.</p>	<p>Prevents me from seeing my friends            Not enough social time            My support structure will be partially gone            I won't be able to see my family and friends as often            I might lose contact with my friends            I will move away from the arguments            Reminder of my broken family            Being alone</p>
<b>Self-Acceptance</b>	
<p><b><u>High scorer:</u></b> Possesses a positive attitude toward the self; acknowledges and accepts multiple aspects of self, including good and bad qualities; feels positive about past life.</p>	<p>I can be who I am around my friends without being judged            It triggers my creative thinking            I will be proud of myself            I will have more confidence in my own skin</p>
<p><b><u>Low scorer:</u></b> Feels dissatisfied with self; is disappointed with what has occurred with past life; is troubled about certain personal qualities; wishes to be different than what he or she is.</p>	<p>The embarrassment of scoring lowly            I will have let myself down            I will be disappointed in myself            I will feel really stupid            I'm not very responsible – I can't cook or clean</p>

<b>Affect</b>	
<b>Positive Affect</b>	<p>Any response that mentioned a <u>positive emotion</u> or a lack of negative emotion: e.g. happy, excited, nothing to worry about</p> <p><u>Pleasures/Enjoyment:</u> Nice food to eat Get lots of nice presents It will be a fun experience, Fun to go on holiday and get a tan Get a lie-in, Get to see singers/bands I like, Watching TV series/movies It's entertaining, The hot weather, I can decorate my room so it's pretty, Celebrate my friend's birthday Going out dancing/clubbing</p>
<b>Negative Affect</b>	<p>Any response that mentioned a <u>negative emotion</u> e.g. sad, unhappy, miserable, frightened, boring</p> <p><u>Discomforts/Stressors:</u> Makes me stressed/it's stressful May not enjoy it I don't understand the lessons Uncertainty/confusion Lack of sleep</p>



## Appendix F. Examples of Codes for Events Anticipated

Education	Revision/Having to revise Exams/Exam results Homework/Coursework Going to University Graduating from University
Social Life	My friend's 18 <sup>th</sup> birthday event A party/rave/concert/club Going to Southbank with friends Summer festivals with friends
Family relationships	Christmas with family Going places with my sister Starting my own family
Romantic Relationships	Going for a meal with my girlfriend Seeing my girlfriend Not having a boyfriend
Gaining Independence	Moving out Getting a driving licence Having to look after/sort everything out/ rely on myself Greater responsibility Being grown up/officially an adult
Leisure Time/Activities	Day off school, Half-term, Summer/Christmas holidays Playing football/ballet class Playing Xbox Having a haircut Playing saxophone
Health or Fitness	Going to the gym Cycling for fitness Losing weight Maintaining a healthy lifestyle
Home Life	Getting my own house Moving house Being settled in my own home Decorating my room
Occupation	Having a full time job/Getting a full time job Looking for a career Researching for a job
Money	Having to pay bills Student loan/ tuition fees Paying taxes
Travel	Travelling Inter-railing Going on holiday abroad/ski holiday
Weather	Cold weather Snow/rain

**Appendix G. Revised Child and Anxiety and Depression Scale short version (RCADS-25)**

**Please put a circle around the word that shows how often each of these things happen to you. There are no right or wrong answers.**

- 1) I feel sad or empty.....Never Sometimes Often Always
- 2) I worry when I think I have done poorly at something.....Never Sometimes Often Always
- 3) I would feel afraid of being on my own at home.....Never Sometimes Often Always
- 4) Nothing is much fun anymore.....Never Sometimes Often Always
- 5) I feel scared when I have to take a test.....Never Sometimes Often Always
- 6) I worry about being away from my parents.....Never Sometimes Often Always
- 7) I worry that I will do badly at my school work.....Never Sometimes Often Always
- 8) I worry that something awful will happen to someone in my family.....Never Sometimes Often Always
- 9) I suddenly feel as if I can't breathe without reason.....Never Sometimes Often Always
- 10) I have problems with my appetite.....Never Sometimes Often Always
- 11) I feel scared if I have to sleep on my own.....Never Sometimes Often Always
- 12) I am tired a lot.....Never Sometimes Often Always
- 13) I worry that bad things will happen to me.....Never Sometimes Often Always
- 14) When I have a problem, my heart beats really fast.....Never Sometimes Often Always
- 15) I suddenly start to tremble and shake when there is for no reason for this.....Never Sometimes Often Always
- 16) I worry that something bad will happen to me.....Never Sometimes Often Always
- 17) When I have a problem, I feel shaky.....Never Sometimes Often Always
- 18) I worry about making mistakes.....Never Sometimes Often Always
- 19) am afraid of being in crowded places.....Never Sometimes Often Always
- 20) I worry about what is going to happen.....Never Sometimes Often Always
- 21) I think about death.....Never Sometimes Often Always
- 22) I feel afraid if I have to talk in front of the class.....Never Sometimes Often Always
- 23) My heart suddenly starts to beat too quickly for no reason...Never Sometimes Often Always
- 24) I feel like I don't want to move.....Never Sometimes Often Always
- 25) I feel scared if I had to stay away from home overnight.....Never Sometimes Often Always

## Appendix H. Self-Reported Psychological Well-Being Scale

The following set of questions deals with how you feel about yourself and your life.  
Please remember there are no right or wrong answers.

Please circle the number that best describes your present agreement or disagreement  
with each statement

<b>Circle the number that best describes your present agreement or disagreement with each statement</b>	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
1. Most people see me as loving and affectionate.	1	2	3	4	5	6
2. In general, I feel I am in charge of the situation in which I live.	1	2	3	4	5	6
3. I am not interested in activities that will expand my horizons.	1	2	3	4	5	6
4. When I look at the story of my life, I am pleased with how things have turned out.	1	2	3	4	5	6
5. Maintaining close relationships has been difficult and frustrating for me.	1	2	3	4	5	6
6. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.	1	2	3	4	5	6
7. The demands of everyday life often get me down.	1	2	3	4	5	6
8. I live life one day at a time and don't really think about the future.	1	2	3	4	5	6
9. In general, I feel confident and positive about myself.	1	2	3	4	5	6
10. I often feel lonely because I have few close friends with whom to share my concerns.	1	2	3	4	5	6

<b>Circle the number that best describes your present agreement or disagreement with each statement</b>	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
11. My decisions are not usually influenced by what everyone else is doing.	1	2	3	4	5	6
12. I do not fit very well with the people and the community around me.	1	2	3	4	5	6
13. I tend to focus on the present, because the future nearly always brings me problems.	1	2	3	4	5	6
14. I feel like many of the people I know have got more out of life than I have.	1	2	3	4	5	6
15. I enjoy personal and mutual conversations with family members or friends.	1	2	3	4	5	6
16. I tend to worry about what other people think of me.	1	2	3	4	5	6
17. I am quite good at managing the many responsibilities of my daily life.	1	2	3	4	5	6
18. I don't want to try new ways of doing things - my life is fine the way it was.	1	2	3	4	5	6
19. Being happy with myself is more important to me than having others approve of me.	1	2	3	4	5	6
20. I often feel overwhelmed by my responsibilities.	1	2	3	4	5	6
21. I think it was important to have new experiences that challenge how you think about yourself and the world.	1	2	3	4	5	6
22. My daily activities often seem trivial and unimportant to me.	1	2	3	4	5	6
23. I like most aspects of my personality.	1	2	3	4	5	6

<b>Circle the number that best describes your present agreement or disagreement with each statement</b>	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
24. I don't have many people who want to listen when I need to talk.	1	2	3	4	5	6
25. I tend to be influenced by people with strong opinions.	1	2	3	4	5	6
26. When I think about it, I haven't really improved much as a person over the years.	1	2	3	4	5	6
27. I don't have a good sense of what it is I'm trying to accomplish in life.	1	2	3	4	5	6
28. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.	1	2	3	4	5	6
29. I would generally do a good job of taking care of my personal finances and affairs.	1	2	3	4	5	6
30. I used to set goals for myself, but that now seems like a waste of time.	1	2	3	4	5	6
31. In many ways, I feel disappointed about my achievements in life.	1	2	3	4	5	6
32. It seems to me that most other people have more friends than I do.	1	2	3	4	5	6
33. I enjoy making plans for the future and working to make them a reality.	1	2	3	4	5	6
34. People describe me as a giving person, willing to share my time with others.	1	2	3	4	5	6
35. I have confidence in my opinions, even if they are contrary to the general consensus.	1	2	3	4	5	6

<b>Circle the number that best describes your present agreement or disagreement with each statement</b>	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
36. I am good at juggling my time so that I can fit everything in that needs to be done.	1	2	3	4	5	6
37. I have a sense that I have developed a lot as a person over time.	1	2	3	4	5	6
38. I am an active person in carrying out the plans I set for myself.	1	2	3	4	5	6
39. I don't experience many warm and trusting relationships with others.	1	2	3	4	5	6
40. It is difficult for me to voice my own opinions on controversial matters.	1	2	3	4	5	6
41. I don't enjoy being in new situations that require me to change my old familiar ways of doing things.	1	2	3	4	5	6
42. Some people wander aimlessly through life, but I am not one of them.	1	2	3	4	5	6
43. My attitude about myself is probably not as positive as most people feel about themselves.	1	2	3	4	5	6
44. I often change my mind about decisions if my friends or family disagree.	1	2	3	4	5	6
45. For me, life has been a continuous process of learning, changing, and growth.	1	2	3	4	5	6
46. I sometimes feel as if I've done all there is to do in life.	1	2	3	4	5	6
47. I know that I can trust my friends, and they know they can trust me.	1	2	3	4	5	6
48. The past had its ups and downs, but in general, I wouldn't want to change it.	1	2	3	4	5	6

<b>Circle the number that best describes your present agreement or disagreement with each statement</b>	<b>Strongly Disagree</b>	<b>Disagree Somewhat</b>	<b>Disagree Slightly</b>	<b>Agree Slightly</b>	<b>Agree Somewhat</b>	<b>Strongly Agree</b>
49. I have difficulty arranging my life in a way that is satisfying to me.	1	2	3	4	5	6
50. I gave up trying to make big improvements or changes in my life a long time ago.	1	2	3	4	5	6
51. If I compare myself to friends and acquaintances, it makes me feel good about who I was.	1	2	3	4	5	6
52. I judge myself by what I think is important, not by the values of what others think is important.	1	2	3	4	5	6
53. I am able to build a home and a lifestyle for myself that is much to my liking.	1	2	3	4	5	6
54. There is truth to the saying that you can't teach an old dog new tricks.	1	2	3	4	5	6

## **Appendix I. Parent Information Letter**

Dear Parent/Guardian,

I am writing to you to let you know that some research on adolescent well-being is being carried out at our school by Sasha Whaley, a doctoral student of Clinical Psychology at Royal Holloway, University of London.

She will be approaching all pupils aged 16 to 18 at school to ask them if they would like to participate in the research. Those who decide to take part will be asked to think of events they are looking forward to and are not looking forward to in the future. They will be asked to consider how these events may affect their well-being. They will then be asked to complete 3 questionnaires about them and their current mood and well-being.

The task will take place in class groups and will last approximately 45 minutes. Pupils' education will not be affected by the decision to take part. All information that is collected during the course of this research will be kept confidential. Your teenagers' responses on the questionnaires and their thoughts about the future will be anonymous and unable to be tracked back to them. Pupils invited to take part in the study will be allowed to withdraw at any time if they do not wish to continue.

Thinking about the future and how it impacts upon our psychological health during adolescence is of interest to Sasha because it will help further our understanding of what makes people happy. Knowing this can help us to find ways of helping young people achieve their optimal potential which may have a greater impact over their life course.

This study has been reviewed and approved by the Psychology Department internal ethical procedure at Royal Holloway, University of London. Mr X, the Head Teacher, has also given permission for this study to be carried out. Sasha has been checked and cleared by the Criminal Records Bureau.

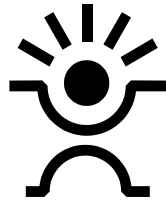
If you would like to discuss any aspect of the research, or you would not like your teenager to take part, then please contact Mr Y, the head of sixth form.

Thank you for taking the time to read this information.

Yours sincerely,

Mr Y  
Head of sixth form





Researching



# Psychological Well-being



Are you aged 16-18?

Can you spare 45 minutes to answer some questionnaires?



Please take part in my research

I would like to understand more about what makes adolescents feel happy

Chance to win **£50** or one of four **£25**  
Amazon Vouchers

**For more information contact:**

Sasha Whaley - Trainee Clinical Psychologist  
01784 414 012

[Sasha.Whaley.2011@live.rhul.ac.uk](mailto:Sasha.Whaley.2011@live.rhul.ac.uk)

Or ask your head of year

## Appendix K. Participant Information Sheet



**Department of Psychology**  
Royal Holloway, University of  
London, Egham  
Surrey TW20 0EX, UK

### Participant Information Sheet

#### Exploring psychological well-being in adolescents

##### Invitation to Participate

My name is Sasha Whaley and I am a doctoral student at Royal Holloway, University of London. I would like to invite you to participate in this postgraduate research project. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask if there is anything that is not clear or if you would like more information.

##### What is the purpose of the research?

This research will investigate your current levels of mood and psychological well-being. It will also ask you about events that you think will happen in the future to see if these contribute to your well-being. How thinking about the future impacts upon our psychological health during adolescence is of interest to me because it will help further our understanding of what makes people happy. Once we understand this, we can find ways of helping young people to achieve their optimal potential early which may have a greater impact over their life course.

##### Why have I been asked to participate?

You have been asked to participate because I am looking to understand well-being better in teenagers aged 16 to 18 years.

##### What will happen to me if I take part?

If you decide to take part I will come to your school to ask you to complete some questionnaires as a class group when you are in lessons. The research session will last for 45 minutes. I will ask you to think of events you are looking forward to and are not looking forward to in the future. I will ask you to consider how these events may affect your well-being. All your answers will be written down so none of your peers will know what you said. I will then ask you to complete 2 questionnaires about you and your current mood and well-being.

##### Do I have to take part?

Participation is voluntary so there is no requirement to take part. It is up to you to decide whether you would like to take part. If you do decide to take part you will be given this information sheet and asked to sign a consent form. If you decide to take part you are still free to withdraw from the research at any time without giving a reason.

### **What are the possible disadvantages or risks of taking part?**

There are no known disadvantages or risks to answering questionnaires about your mood and well-being or to thinking about future events and how they may contribute to your well-being. It is possible that thinking about events you are not looking forward to or thinking about your mood may make you more sad or worried than usual. If this does happen and you feel you would like help to manage these emotions please bring this to my attention. I will give information about sources of help at the end of the research session.

### **What are the possible benefits of taking part?**

There are no known specific benefits of taking part, however it is possible that thinking about events you are looking forward to may make you happier or more excited than usual. Thinking about future events may help you clarify what you want to do in the future and help you plan for it. All participants who take part will be entered into a prize draw to win one of five vouchers for Amazon at the cost of £50 and £25.

### **Will my responses to questions in this research be kept confidential?**

All information that is collected from you during the course of this research will be kept confidential. Your responses on the questionnaires and your thoughts about the future will be anonymous so what you write down will not be able to be tracked back to you.

### **What if something goes wrong?**

The study is simple and safe and I do not expect anyone to suffer any harm as a result of participating. If you are concerned about your mood during the research session you should make me aware so that we can discuss this with your head of year.

### **What will happen to the results of this research?**

The research will be written up as part of my thesis for my doctorate in Clinical Psychology. I also hope to write an article in an academic journal so that the findings can be spread throughout the professional community. Participants will not be identified in any report or publication.

### **Who is organising and funding the research?**

The research is organised by myself, Sasha Whaley, as part of my doctorate in clinical psychology at Royal Holloway University of London.

### **Who has reviewed the research?**

The research has been reviewed and approved by the Psychology Department internal ethical procedure at Royal Holloway University of London.

### **Where can I get more information?**

If you would like to discuss any aspect of the research, you can contact me on 01784 414 012 or by email (Sasha.Whaley.2011@live.rhul.ac.uk). You can also contact Professor Andy MacLeod by email (A.MacLeod@rhul.ac.uk).

## Appendix L. Consent Form



**Department of Psychology**

Royal Holloway, University of  
London, Egham  
Surrey TW20 0EX, UK

### Consent Form

#### Exploring psychological well-being in adolescents

You have been asked to participate in a study about adolescent well-being, which is being carried out by Sasha Whaley, trainee clinical psychologist. Participation is voluntary so there is no requirement to take part.

Have you (please circle yes or no):

- Read the information sheet about the study?                      yes                      no
- Had an opportunity to ask questions?                                      yes                      no
- Got satisfactory answers to your questions?                                      yes                      no
- Understood that you are free to withdraw from the study  
at any time, without giving a reason and without it affecting  
your education?                                      yes                      no
- Do you agree to take part in the study?                                      yes                      no

Signature: \_\_\_\_\_

Name in Capital letters: \_\_\_\_\_ Date: \_\_\_\_\_

NB: This consent form will be stored separately from the anonymous information you provide

As the researcher, I have explained the research fully to the participant and have answered their questions honestly and fully

Name of researcher: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix M. Debrief Sheet



**Department of Psychology**  
Royal Holloway, University of London  
Egham, Surrey, TW20 0EX, UK

### Debrief Sheet

Thank you for your time and for participating in this research. You will be entered into a prize draw to win one of five Amazon voucher prizes worth £50 and £25 which will be picked at random at the end of the research.

The research aims to explore the meaning of what adolescents think about in the future in terms of how it impacts upon their well-being. It also aims to investigate the relationship between mood and well-being. Understanding future-thinking in adolescence may have the greatest impact due to the lasting affect that better well-being will have over the life course.

If thinking about events you were not looking forward to or thinking about your mood has made you feel sadder or more worried than usual, please feel free to bring this to my attention or inform your form tutor or head of year. If you would like more information you can contact The Samaritans on 08457 90 90 90.

If you would like to know the research findings, please contact me by email at [sasha.whaley.2011@live.rhul.ac.uk](mailto:sasha.whaley.2011@live.rhul.ac.uk) and I will send you a summary of the results.

# Thank you!