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**Life Orientation and Life Satisfaction:
An Exploration of a Homeostatic Model
of Subjective Wellbeing**

**A thesis presented in partial fulfilment of the
requirements for the degree of**

**Master of Science
in
Psychology**

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Rachel Helen Findlay

2005

Dedicated

with optimism about the future

to my brother

David R. J. Findlay

and all who struggle

with mental illness

Abstract

The main purpose of the current study was to explore the relationship between life orientation (optimism-pessimism) and life satisfaction. Cummins' (e.g. 1998) homeostatic model of subjective wellbeing was used as the basis for this exploration. The model was proposed to account for the fact that population life satisfaction within Western countries is repeatedly found to fall within the range 75 ± 2.5 percent of the scale maximum score (%SMS). The theory proposes that optimism is involved in the regulation and maintenance of subjective wellbeing. Two other variables, self-esteem and control, are thought to be involved in the regulatory system, however optimism was explored in light of the limited research into the connection between this variable and life satisfaction. According to the homeostatic theory, extreme adverse life events can disrupt the homeostatic system, causing a temporary decline in subjective wellbeing. The sample consisted of 200 adults from the general population of New Zealand. These were volunteers recruited within shopping centres in the Auckland area. Participants were administered a questionnaire consisting of two scales; the Life Orientation Test-Revised (LOT-R) and the Personal Wellbeing Index (PWI). The LOT-R is a measure of dispositional optimism-pessimism, and the PWI is a measure of life satisfaction. Additionally, the questionnaire consisted of a section designed to elicit basic demographic information, as well as details pertaining to recent experiences of significant life events. The most notable findings were as follows: After controlling for the effects of student and outlier data, the average level of life satisfaction for the current sample was 71.01 %SMS; life orientation accounted for 42 % of the variance in life satisfaction; and the experience of significant negative life events caused a decrease in mean life satisfaction. It is concluded that, overall, the findings provide support for the homeostatic model. Further research is needed to clarify the nature of the relationship between life orientation and life satisfaction. Suggestions for future research, and implications for mental health, are discussed.

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Introduction

In everyday life we are often made aware of a general societal belief that being positive can have beneficial effects on our future and wellbeing. This is often portrayed through simple comments from significant others, such as “if you think you can, you will”. The concepts of optimism and pessimism have a considerable history, both in folk wisdom, and in early attempts to classify people based on their personality qualities (Carver & Scheier, 2001). However, it is only recently that we have seen the growing body of research evidence linking optimism with beneficial health and wellbeing outcomes (Wrosch & Scheier, 2003).

This research aimed to explore some of the factors that may affect an individual’s sense of personal wellbeing, in particular the interaction between perceived personal wellbeing and dispositional optimism-pessimism. It also aimed to examine a theory whereby optimism is believed to be involved in the control and regulation of our perceived wellbeing.

Defining and Measuring Optimism and Pessimism

The concepts of optimism and pessimism are commonly defined by simply stating the opposing expectations of optimists and pessimists. More specifically, optimists expect that good things will come for them in the future, whereas pessimists expect the future to bring bad things (Carver & Scheier, 2003; Chang, 2001). Chang (2001) points out that many researchers

agree on this simplistic definition of optimism and pessimism, however there is less agreement concerning approaches for measuring and studying these variables. The way in which psychological variables are assessed usually rests on the theoretical framework they are derived from. For this reason, even minor theoretical differences can lead to considerable differences in terms of their operationalisation (Chang, 2001).

Two distinct approaches have been identified with regard to studying life orientation, otherwise known as optimism and pessimism. The first approach involves the examination of attributional styles, in other words, looking at the way a person interprets prior events that have occurred (Peterson & Seligman, 1984; Seligman, 1991). According to these authors, an individual's style in terms of explaining the cause of negative events can vary across three different dimensions. The causal explanation can be either global or specific, stable or unstable, and internal or external (Peterson & Seligman, 1984). If the causal explanation is global then it may impact on a number of outcomes, whereas if it is specific it only relates to the event that occurred. Stable explanations relate to causes that can persist over time, whereas unstable explanations refer to transient causes. Internal explanations refer to causes that relate to the person, whereas external explanations involve the situation or circumstances (Peterson & Seligman, 1984). For optimists in the attributional style approach, negative events are explained in terms of more time-limited causes that are external to the self and have narrow effects. Quite opposite to this would be an attributional style whereby negative events are explained in terms of causes that are global,

stable, and internal. “The defining characteristic of pessimists is that they tend to believe bad events will last a long time, will undermine everything they do, and are their own fault.” (Seligman, 1991, p. 4). The types of events that lend themselves to this latter category of explanations are those that are most often related to psychological distress, depression being the most common resulting psychological disorder (Peterson & Seligman, 1984; Seligman, 1991).

The second approach with regard to studying life orientation views optimism as a relatively stable expectation of good outcomes, this being a generalised expectation that positive outcomes will be apparent across significant life domains (Scheier & Carver, 1985). Pessimists, on the other hand, expect that things will not go their way and have a tendency to anticipate negative outcomes (Scheier & Carver, 1985). Wrosch and Scheier (2003) state that the most important part of this approach is in regard to stability, such that across various situations, and over time, the optimism and pessimism is maintained. This gives rise to the term *dispositional* optimism, in that it is a disposition or general tendency to maintain the positive expectations over numerous life domains (Wrosch & Scheier, 2003).

Scheier and Carver’s (1985) model of dispositional optimism-pessimism is a very popular model of the second approach and is often referred to in the literature (Chang, 1998). These authors believe that generalised expectancies (as opposed to situation-specific expectancies) make up an important part of personality (Scheier & Carver, 1985, 1993). They argue that these

expectations can impact on the way in which people approach certain problems or cope with the difficulties that life brings. More specifically, optimists appear to accept the challenges in their lives more rapidly, and to find more productive ways to cope actively with them. Pessimists are more likely to give up trying to attain their goals, or to show disengagement. It is argued that as a result, the subjective wellbeing of these two groups differs when faced with varying forms of hardship (Carver & Scheier, 2003). Elaboration of these points appears later in this chapter. Scheier, Carver, and Bridges (1994) developed a commonly used measure of dispositional optimism called the Life Orientation Test–Revised, or LOT-R. This instrument was included in the questionnaire used for this study, and will be described in more detail in the Method chapter.

There has been considerable research interest into the concepts of optimism and pessimism in the past decade, particularly through the areas of personality and social psychology (Chang, 1998). Of particular interest is the fact that there has been a considerable amount of research demonstrating the beneficial effects of dispositional optimism on health and wellbeing (Wrosch & Scheier, 2003). In order to appreciate fully the relationship between optimism and wellbeing, it is important to understand the ways in which wellbeing is defined and measured in the literature.

Quality of Life, Wellbeing, and Life Satisfaction – Definitions and Measurement

The Australian Centre on Quality of Life (ACQOL), lead by Professor Robert Cummins, points out that numerous different disciplines use the construct known as “quality of life” (Cummins, 2004). They state that different disciplines each have their own way of describing the relevant information defining their respective interest areas. For this reason, a concept such as quality of life emerges in different forms which are biased towards the particular disciplinary context involved (Cummins, 2004).

ACQOL (Cummins, 2004) state that quality of life is becoming a central concept to the discipline of psychology, and is beginning to be viewed as a useful variable in terms of the judgement of psychological intervention outcomes and efficacy. Furthermore, it is an appealing construct in the sense that it counterbalances the dominant deficit focus of psychology, with a positive orientation (Cummins, 2004). To this end, it is only in recent years that there has been an increasing concern among psychologists with “the positive end of the psychological well-being spectrum” (Lucas, Diener, & Suh, 1996, p. 616). Lucas and colleagues (1996) state that researchers have started to explore the antecedents and consequences of positive wellbeing indicators – including self-esteem, happiness, and optimism – rather than concentrating solely on the antecedents of disorders, for example anxiety or depression.

The considerable variation in the way the phrase “quality of life” is used has meant that the way in which this term should be conceptualised and defined is a major issue (Power, 2003). One of the main distinctions is between quality of life considered to be health-related, and that which is considered to be non-health-related (Power, 2003; Spilker, 1996). Power (2003, p. 428) and Spilker (1996, p. 1) both refer to a broad and well-known health-related definition which originated from the World Health Organization (1948), describing it as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” Power (2003) states that, because the term wellbeing was included in this popular definition, some researchers (e.g. Dupuy, 1984) have maintained a narrow focus by considering that psychological wellbeing (as obtained via self-report measures) is the only important aspect of quality of life. Power (2003) argues that wellbeing should be viewed as the narrower term, such that although it is an important part of quality of life, there are other aspects that should be considered.

Schneider and Davidson (2003) indicated that occasionally wellbeing and quality of life are defined in a similar way, referring to a definition taken from Meyers, Gage, & Hendricks (2000). Meyers and colleagues (2000) state that “Quality of life refers to the capacities to engage in and derive satisfaction from socially and psychologically meaningful thought and behaviour” (p. 1225). Furthermore, Frisch and colleagues (2003) conclude that, in psychology, quality of life and life satisfaction are normally regarded as the same thing. Lucas and colleagues (1996) refer to a definition of life

satisfaction taken from Pavot, Diener, Colvin and Sandvik (1991). In this definition, life satisfaction is considered a “global evaluation by the person of his or her life” (Pavot et al., 1991, p. 150). Lucas and colleagues (1996) state that this definition suggests that an individual, when evaluating their life satisfaction, looks at the concrete aspects of their life, weighs up the pros and cons, and reaches an overall satisfaction judgement. There is a presumption that this judgement’s global nature means that the evaluation is relatively stable and not entirely dependent on the individual’s affective state at that particular time (Lucas et al., 1996).

The Australian Centre on Quality of Life has adopted the following generic quality of life definitions: “Quality of life is both objective and subjective. Each of these two axes comprises several domains which, together, define the total construct. Objective domains are measured through culturally relevant indices of objective well-being. Subjective domains are measured through questions of satisfaction.” (Cummins, 2004, Introduction).

The definition of wellbeing that has been adopted by the editors (Bornstein, Davidson, Keyes, & Moore, 2003) of *Well-being: Positive Development Across the Life Course* is as follows:

“Well-being is a state of successful performance throughout the life course integrating physical, cognitive, and social-emotional function that results in productive activities deemed significant by one’s cultural community, fulfilling social relationships, and the ability to transcend

moderate psychosocial and environmental problems. Well-being also has a subjective dimension in the sense of satisfaction associated with fulfilling one's potential" (p. 14).

The term wellbeing requires further clarification in order for the concept of subjective wellbeing to be sufficiently understood. Moore and Keyes (2003) state that it is necessary to define wellbeing broadly. They argue that it consists of a number of domains such as physical health, mental health, behavioural functioning, and cognitive functioning. These domains include social engagement with the community, positive thought processes, and positive health behaviours such as resistance training and restorative sleep (Moore & Keyes, 2003).

According to Moore and Keyes (2003), investigating wellbeing has long been a focus of social science. Health and wellbeing was looked at in most research as symbolising an absence of mental disorder or physical disease, at least until approximately forty years ago when some major developments in the study of wellbeing took place (Moore & Keyes, 2003). These authors describe three major developments: Firstly, after World War II there was a period of humanism through which conceptual and methodological tools arose to examine the way in which people view their quality of life. Secondly, there was a move towards studying successful aging and gerontology, leading to further positive human development conceptions.

Thirdly, health and stress research matured and began to include models whereby an individual's *perception* of their coping strategies and stress were examined (Moore & Keyes, 2003).

Moore and Keyes (2003) and Keyes and Waterman (2003) state that in the past forty years scholars have been operationalising a variety of subjective wellbeing facets. "Defined as an individual's perception and evaluation of the quality of their own lives, subjective well-being consists of a variety of criteria against which individuals judge their own lives." (Moore & Keyes, 2003, p. 6). Keyes and Waterman (2003) state that "Subjective well-being reflects individuals' perceptions and evaluations of their own lives in terms of their affective states and their psychological and social functioning, all being critical dimensions of mental health." (p. 478).

After reviewing the literature, Keyes and Waterman (2003) conclude that there are three domains that comprise subjective wellbeing. These domains are psychological wellbeing, emotional wellbeing, and social wellbeing (Keyes & Waterman, 2003). Emotional wellbeing refers to whether individuals feel good about their lives, including feeling happy and satisfied with life, and over time experiencing more emotions that are regarded as positive as opposed to negative (Moore & Keyes, 2003). The other two domains relate to *functioning* well, in contrast to *feeling* good (Keyes & Waterman, 2003; Moore & Keyes, 2003). Keyes and Waterman (2003) state that psychological wellbeing consists of a variety of dimensions, all of which contribute to mental health. These include having a sense of purpose in life,

self-acceptance, a sense of personal growth, positive relations with other people, autonomy, and environmental mastery (Keyes & Waterman, 2003; Moore & Keyes, 2003). In terms of social wellbeing, Keyes and Waterman (2003) refer to an earlier work by Keyes (1998) whereby he proposed that there are five societal dimensions on which people make evaluations of their functioning; namely, social acceptance, social actualisation, social coherence, social contribution, and social integration.

Because there are various definitions as to what quality of life is, it is not surprising that this affects the way it is assessed (Wrosch & Scheier, 2003). Cummins (1996a) identified over 100 different instruments used to measure quality of life, with numerous different ways of defining and measuring this variable. It has been argued that quality of life can be related to both objective indicators such as life conditions, and to subjective indicators such as life satisfaction (Wrosch & Scheier, 2003). Traditionally quality of life in society has been measured using objective indicators, in particular through the measurement of wealth by economists, the Gross Domestic Product (GDP) being a commonly used tool (Cummins, Eckersley, Pallant, Van Vugt, & Misajon, 2003). It was believed that economics was the most relevant discipline concerning quality of life issues because of the apparent direct and simple relationship between quality of life and income (Wilson, 1972).

Cummins and colleagues (2003) point out that, while there are obvious benefits to a high GDP, measuring wealth alone using economic tools such as the GDP fails to account for the variance found with regard to population wellbeing within Western nations. They stated that this finding gave rise to the development of more sophisticated economic indices, as well as the addition of other population measures into these indices. Despite these improvements, however, the numerous objective social indicators were still unable to determine how people actually felt about their life (Cummins et al., 2003). Cummins and colleagues (2003) stated that subjective indicators soon became the focus of some interesting research.

Subjective indicators, such as self-report measures of life satisfaction, are able to tell us how people actually feel about their lives, and hence their perceived wellbeing. Psychologically, it is how people feel that is important, and feelings of wellbeing are not always tightly coupled to economic realities. For example, Dickson and Littrell (2003) found that there was no relationship in their study between life satisfaction and actual income. They argue that this suggests life satisfaction may be considerably more dependent on psychological and social aspects as opposed to material aspects. They did, however, find a significant association between life satisfaction and a subjective measure of income referred to as “perceived ability to provide for family needs” (p. 228). In this sense, an individual who is considerably more efficient in using their income to meet family goals may have a higher level of life satisfaction than another individual with greater income, but less ability to stretch their income to meet needs (Dickson & Littrell, 2003).

This is not to say that there is no association between wellbeing and money, despite the common phrase of ‘money doesn’t buy happiness’ (Keyes & Waterman, 2003; Myers, 2000). Keyes and Waterman (2003) state that the association takes the form of a strong ecological correlation between wellbeing and national economic growth. However, in terms of personal income, the individual correlation between this variable and happiness measures is shown to be fairly small (Haring, Stock, & Okun, 1984; Keyes & Waterman, 2003). Diener, Sandvik, Seidlitz, and Diener (1993) showed that the association between subjective wellbeing and income is stronger when income levels are lower. Diener, Suh, Lucas and Smith (1999) state that this relationship may be the result of financial resources benefiting the ability to meet basic needs, for example, shelter, health care, and nutrition. They state that when these basic needs have been met, “the processes of adaptation may take over and then the findings become more complex.” (Diener et al., 1999, p. 289). In line with this, Myers (2000) concludes that “Happiness tends to be lower among the very poor. Once comfortable, however, more money provides diminishing returns on happiness.” (p. 59). Finally, Cummins (2000b) also found a stronger relationship between personal income and subjective wellbeing for people in low income groups. He concluded that “money buys happiness to the extent that external resources permit optimal functioning of the SWB [subjective wellbeing] homeostatic system.” (p. 133).

An extensive review of the vast array of quality of life conceptualisations is beyond the scope of this particular study. As discussed above, Schneider and Davidson (2003), and Frisch and colleagues (2003), have referred in their own way to the similarity in the use of terms such as quality of life, wellbeing, and life satisfaction. In line with this, the terms quality of life, wellbeing, and life satisfaction will be used interchangeably for this project. This is merely for pragmatic reasons, and is not intended to deny the importance of the subtle conceptual differences that may exist. It should be noted, however, that the term life satisfaction will only be used as reference to a subjective aspect of quality of life. Unless otherwise specified (for example, *subjective* wellbeing; *perceived* quality of life), the remaining two terms will be used in a generic manner.

Overall, in line with the nature of this research, the measurement of subjective indicators (as opposed to objective indicators) would appear most relevant. A measure of subjective wellbeing called the Personal Wellbeing Index (PWI) was employed in this study, with justification for the use of this particular instrument appearing in the Method chapter. Life satisfaction scores from the PWI were used to explore the relationship between optimism and subjective wellbeing.

The Relationship between Optimism and Subjective Wellbeing

The measurement of subjective wellbeing is gaining increasing recognition due to its utility in both psychological and physical health contexts. In addition, as pointed out earlier, there is a growing body of research evidence

linking optimism with beneficial health and wellbeing outcomes. For example, research has found links between outcome expectancies and objective quality of life indicators, including mortality (Schulz, Bookwala, Knapp, Scheier, & Williamson, 1996) and good health (Scheier et al., 1999). More specifically, Schulz and colleagues (1996) found that a pessimistic life orientation is a significant mortality risk factor for cancer patients aged between 30 and 59 years. Scheier and colleagues (1999) concluded from their research that “Optimism predicts a lower rate of rehospitalization after coronary artery bypass graft surgery. Fostering positive expectations may promote better recovery.” (p. 829).

Despite these positive developments, only a limited amount of research exploring the relationship between optimism and *subjective* wellbeing has been carried out to date. Nonetheless, there are studies that have confirmed both longitudinal and cross-sectional associations between these two variables (Khoo & Bishop, 1996; Scheier et al., 1989). Khoo and Bishop (1996) found that optimism directly predicted positive wellbeing in a sample of 126 Singaporeans. They also found that optimism predicted positive wellbeing indirectly via the effects it had on stress. In an earlier study to that previously mentioned, Scheier and colleagues (1989) found that dispositional optimism had a positive effect on patient responses towards and recovery from coronary artery bypass surgery, in addition to a strong positive effect on their perceived quality of life (which was measured six months after surgery).

In consideration of the consistent strong influence of optimism on quality of life, it would appear important to examine the way in which optimism operates (Wrosch & Scheier, 2003). Wrosch and Scheier (2003) point out that there have been many studies that have found differences between optimists and pessimists with respect to the coping strategies they use. In other words, they differ in terms of how they manage challenging situations. Indeed, the research findings of Khoo and Bishop (1996) provided support for this contention, in particular optimists were more likely than pessimists to use support and active coping.

Bridges (2003) referred to the work of Lazarus and Folkman (1984), who articulated a commonly used distinction between different coping styles, namely *problem-focused coping* and *emotion-focused coping*. “Problem-focused coping involves actions designed to alter a situation to make it less stressful. Emotion-focused coping involves the use of cognitive or behavioural strategies to help the individual manage distress produced by a problematic situation.” (Bridges, 2003, p. 157). Bridges (2003) also discussed the work of Ebata and Moos (1991), who have identified that coping has two dimensions, namely *approach* and *avoidance*. The cognitions and behaviours of approach coping are such that they maintain focus on the problematic situation, whereas the cognitions and behaviours of avoidance are intended to avoid focusing on the problematic situation (Bridges, 2003). Wrosch and Scheier (2003) argue that pessimists have a tendency to try to escape adversity somehow and push it away, as opposed to

optimists who are more likely to continue exerting effort regardless of the presence of adversity. These authors conclude that, overall, the findings from numerous studies suggest that the coping strategies used by optimists are more problem-focused than those strategies used by pessimists (Wrosch & Scheier, 2003). Furthermore, if they are not able to use a problem-focused strategy for whatever reason, optimists tend to change towards using coping strategies that are emotion-focused and adaptive, for example positive reframing (viewing things in a positive light), acceptance, and using humour (Wrosch & Scheier, 2003).

The research of Khoo and Bishop (1996), however, showed that the relationship between perceived wellbeing and optimism was not mediated by the use of coping tactics. These authors concluded that “these findings suggest that optimism predicts positive well-being directly, and at the same time reduces the experience of stress” (Khoo & Bishop, 1996, p. 29). Cummins (e.g. 1998) proposed a different way in which optimism affects subjective wellbeing. A discussion of his homeostatic theory serves a basis for describing this theoretical link between these two variables of interest.

The Homeostatic Theory of Subjective Wellbeing

In 1995 Robert Cummins (Cummins et al., 2003) reviewed a large number of studies and established that when subjective wellbeing is measured using population surveys in Western nations, the mean value can be expected to be within the range of 70 – 80 percent of the scale maximum score (%SMS). Cummins sought to provide an explanation for this narrow and stable range

of values. He proposed a “Theory of Subjective Wellbeing Homeostasis” (Cummins, 1998; Cummins et al., 2003; Cummins, Gullone, & Lau, 2002; Cummins & Nistico, 2002).

According to this theory, we each encompass psychological devices that work to control and maintain our subjective wellbeing, and it is under the rein of personality that these devices operate. “The homeostatic system is responsible for the maintenance of satisfaction with the abstract self at a level that provides a generalised level of wellbeing and motivation for living.” (Cummins et al., 2003, p. 184). In other words, this theory posits that life satisfaction is, for adaptive reasons, held at a comfortable level under homeostatic control (Cummins et al., 2003). An individual’s adaptive capacity refers to the process by which they respond and adjust to their environment, including social and physical circumstances (Reitzes, 2003). Dejours (1987) states that “if living beings are submitted repeatedly or permanently to stressful conditions, structural and functional adaptations take place” (p. 14). A theoretical explanation regarding the psychological devices thought to be involved in the regulation of our subjective wellbeing appears below. The term homeostasis is used to describe the regulation of a living organism’s internal environment, such that some aspect of it remains within pre-defined limits (Hardy, 1983). Such a system implies the existence of regulatory mechanisms. The actual word itself was derived from two Greek words – ‘homeo’ meaning ‘similar’, and ‘stasis’ which means ‘standing’ (Hardy, 1983).

As a basis for further discussion of Cummins' theory it will be useful to consider the essential components of a homeostatic system (or regulatory system). Hardy (1983) states that, firstly, there must be a means by which changes in the system variable (or regulated variable) can be monitored, otherwise known as detector mechanisms (or input). Secondly, there needs to be a component that is able to interpret and integrate the input information so that corrective responses can be made (Hardy, 1983). Lastly, correctional/effector mechanisms (output) are required for counteracting the identified changes in the system variable to return it to within acceptable limits (Hardy, 1983).

Let us now consider a common example outlining these three components of a regulatory system. It should be noted that it has been referred to as a regulatory system (as opposed to a homeostatic system) because this example involves machinery as opposed to a living organism (as implied by the above definition of 'homeostasis'). In this case, the system variable is air temperature and the detector mechanism is a thermostat. The thermostat has a temperature setting, and when the air temperature falls below its set-point, a signal is sent to an electric heater (correctional mechanism). The heater switches on to create heat until such time as the temperature set-point is reached, when the heater then switches off and the cycle begins again.

Cummins and Nistico (2002) provided a theoretical explanation as to what psychological devices are involved in the regulation of our subjective wellbeing, and how these devices work. They proposed that positive

cognitive biases (PCBs) are responsible for controlling wellbeing homeostasis. In particular they mention positive biases relating to self-satisfaction, and point out that within the literature (e.g. Campbell, 1981; Argle & Lu, 1990; Diener & Diener, 1995b; as cited in Cummins & Nistico, 2002) “satisfaction with the self is the strongest predictor of subjective quality of life found to date” (p. 43). They argue that self-satisfaction can be broken down into three constituent parts, namely self-esteem (a feeling of value or worth), control (a sense that we are able to change our environment in line with our own wishes), and lastly optimism towards the future. Cummins and Nistico (2002) refer to the literature whereby these three parts of the self have been found to have a predictive association with life satisfaction (e.g. Boschen, 1996; King et al., 1998; Kwan et al., 1997; Lucas et al., 1996; Raphael et al., 1996; Van Nieuwenhuizen et al., 1997; Christensen et al., 1998; Decker & Schultz, 1985; Fuhrer et al., 1992; Morris & Jones, 1989; Nieves et al., 1991; Palmore & Luikert, 1972; Schulz & Decker, 1985; Headey et al., 1984).

In line with the focus of the current research, it would appear important for the reader to understand how Cummins and Nistico (2002) have defined PCBs of optimism. According to these authors, this category of PCBs refers to “a set of unrealistic, positive beliefs regarding oneself in the future. It involves a world where good things are more likely to happen to oneself than to hypothetical others” (p. 55).

One would assume that this theoretical explanation points to subjective wellbeing as being the system variable, and the PCBs as being the correctional mechanism of this homeostatic system. There appears to be no mention in Cummins and Nistico's (2002) paper as to what constitutes the detector mechanism in this system. In addition, these authors state that "The fact that cognitive biases are found to exist at moderately high levels in normal populations also suggests that they are mechanisms under homeostatic regulation." (p. 60). This would suggest that the PCBs are the system variable in addition to being the correctional mechanism, conflicting with the common understanding of a homeostatic system as outlined above.

Cummins and Nistico (2002) discuss the possibility that assumptive schemata may be involved in the homeostatic regulation of PCBs. Janoff-Bulman (1989) characterised assumptive schemata, summarised effectively by Cummins and Nistico (2002, p. 60) as "abstracted knowledge structures which serve as pre-existing theories for anticipating the future and interpreting new information." Cummins and Nistico (2002) point out that there is evidence suggesting that even assumptive schemata appear to be biased towards the positive. This suggestion that assumptive schemata may be involved in the homeostatic regulation of PCBs indicates that assumptive schemata are the correctional mechanism and PCBs are again regarded as the system variable. If this is the case, one may assume that PCBs do not explain the mechanisms of subjective wellbeing homeostasis in this theory. In a homeostatic system, a set-point of the system variable is maintained automatically by virtue of the correctional mechanism's action, which

proceeds upon the information provided by the detector mechanism. In the Cummins and Nistico (2002) paper, the correctional mechanism and the system variable are confounded, and the detector mechanism is not mentioned.

These authors further state that PCBs “are quite robust and resist a literal cognitive link with objective reality in order to serve their primary purpose. This is to homeostatically maintain life satisfaction within the moderately high bandwidth associated with optimal psychological functioning.” (Cummins & Nistico, 2002, p. 63). Again, there is confusion here as to whether PCBs are the correctional mechanism behind life satisfaction, or whether they are what is being maintained (the system variable). Additionally, this statement implies that life events should not be particularly correlated with optimism, and that life satisfaction should be maintained regardless of the particular life circumstances. These authors do, however, argue that if major adverse life events cannot be assimilated into the positively biased framework, then this may lead to the assumptive schemata becoming more negative, thereby causing a decrease in life satisfaction (Cummins & Nistico, 2002). This phenomenon is referred to by Cummins (e.g. 2000a; 2003; Cummins et al., 2003) as homeostatic defeat, and will be discussed in more detail later. Furthermore, despite this theoretical explanation as to the psychological devices operating on our subjective wellbeing, Cummins and Nistico (2002) also point out that the character of these devices remains uncertain.

The Present Study

Rationale for the present study.

Despite the growing body of research evidence linking optimism with beneficial health and wellbeing outcomes, the scientific investigation of the association between optimism and subjective wellbeing is still very much in its infancy. Cummins and Nistico (2002) referred to only three studies (Christensen, Parris Stephens, & Townsend, 1998; Headey, Holmström, & Wearing, 1984; Lucas et al., 1996) examining the association between life satisfaction and optimism, and indicated that despite the likelihood of there being other research containing relevant data, these were the only such studies the authors were familiar with.

Of these three studies, only one of them (Headey et al., 1984) explored this connection using a sample from the general population, obtaining a correlation of .23 between life satisfaction and optimism. Headey and colleagues (1984) conducted research examining the validity of quality of life measures for use in dynamic analysis, as these measures had previously been shown to be relatively valid and reliable when used for static analysis. They set out to determine whether the measures were sensitive enough to reveal changes in satisfaction and wellbeing following favourable or adverse life events. They also aimed to investigate whether any changes in satisfaction with *specific* life domains produce changes in the overall sense of wellbeing (Headey et al., 1984). They concluded that “we have found strong, predictable, consistent relationships between changes in satisfaction with particular domains of life and changes in the general sense of well-

being. We have also found some statistically significant relationships between life events and measures of well-being” (Headey et al., 1984, p. 221).

Christensen and colleagues (1998) conducted research using 296 adult daughters who were caregivers for an impaired parent. In addition to their caregiving role, these participants were also married, were mothers with children at home, and were employed (Christensen et al., 1998). The study examined the relationship between wellbeing and perceived competence and control (or mastery), within the four roles outlined above. Relevant to the current study was their finding whereby “All relationships between mastery and well-being in our study were found independent of women’s household income and their tendencies to expect positive or negative outcomes from life in general” (Christensen et al., 1998, p. 168). Christensen and colleagues (1998) controlled for dispositional optimism-pessimism in their analyses on the basis of the plausibility that this trait-like form of optimism could confound the links between wellbeing and mastery. They stated that this consideration was based on previous research (Marshall & Lang, 1990) demonstrating a strong relationship between dispositional optimism and a global sense of mastery, in addition to research (Bromberger & Matthews, 1996; Scheier & Carver, 1992) showing prospective links between dispositional optimism and psychological and physical health (Christensen et al., 1998).

Lucas and colleagues (1996) conducted research using a sample of college students to examine the discriminant validity and convergent validity of wellbeing concepts. They argued the possibility that optimism and subjective wellbeing constructs may be confounded, despite the theoretical distinction between them. In other words, the underlying predisposition reflected by life satisfaction and optimism may be the same, therefore these authors felt it was necessary for direct empirical testing to address whether these two constructs could be discriminable from each other. They found that optimism is, in fact, discriminable from life satisfaction (Lucas et al., 1996). They also conducted other analyses less relevant to the current study, showing the discriminability between (a) life satisfaction and negative and positive affect, (b) positive affect and negative affect, (c) life satisfaction and self-esteem, and (d) optimism and “trait measures of negative affect” (Lucas et al., 1996, p. 616).

Research examining the relationship between optimism and subjective wellbeing using a New Zealand sample appears non-existent. Furthermore, the researcher is unaware of any published research into normative levels of subjective wellbeing within a sample of the general population of New Zealand. The significance of the potential information that may be obtained through this type of exploration is considerable. Personal wellbeing affects each and every one of us, and the health and wellbeing benefits of being optimistic are clear, despite the limited amount of research into this area.

By gaining an understanding of the processes by which life satisfaction is maintained, and the processes by which optimism affects subjective wellbeing, we may provide more useful services, not only in clinical settings but in everyday settings including the workplace. We may begin to focus more readily on prevention of mental illness, for example through providing education around useful coping strategies in the face of adversity. Lopez and Snyder (2003), in their Preface, refer to a question posed by an educational psychologist, Donald Clifton, almost 50 years ago – “What would happen if we studied what is right with people?” (p. xv). Lopez and Snyder (2003) conclude that in order to answer this question we need to “*measure* what is right with people” (p. xv). This research aimed to do just that, whilst addressing some of the issues outlined above.

The research goals.

The present study has three main aims:

The first aim is to determine whether support for the homeostatic model of subjective wellbeing can be found using a sample of the general adult population of New Zealand. In line with the model, the mean value of the life satisfaction scores from this sample is expected to be within the range of 70 – 80 percent of the scale maximum score (%SMS).

The second aim is to explore the relationship between life satisfaction and life orientation in this sample. The average life satisfaction data of optimists will be compared with the average life satisfaction data of pessimists, to

determine if there are any significant differences between these two groups with regard to their subjective wellbeing.

The third aim is to determine whether there is support for the assertion that recently experiencing a significant negative life event can cause temporary homeostatic failure (Cummins, 2000a, 2003; Cummins et al., 2003). The average life satisfaction data of participants who indicated they had recently experienced a significant negative life event, will be compared with the average life satisfaction data of those who had no significant life event, and with those who had recently experienced a significant positive life event. It is likely that there would be individual differences in terms of the types of events considered to be significant, however it is important to note that the focus was on whether the participant perceived the event as significant, and hence responded likewise. This is based on an assumption that the individual's perception of the event's significance is more relevant than the perception of any other person, with respect to the possible effect on the individual's level of subjective personal wellbeing.

Whilst these three goals constitute the main aims of this research, further exploratory analysis will take place to determine if other significant associations can be found. For example, comparisons will be made on life satisfaction and life orientation data based on demographic information, including gender, age group, income, and whether or not the participant is a student. The following Method chapter will outline these points in greater detail.

Method

Participants

The sample consisted of 200 volunteers from the general adult (aged over 18) population of New Zealand. They were recruited either outside or within busy public centres, including shopping malls and a supermarket within Auckland, New Zealand. More specifically, the venues included Lynnmall Shopping Centre, Westfield WestCity (three occasions), Three Kings Foodtown (two occasions), and Westfield St Lukes. Letters were sent (see Appendix A) and permission was obtained from the relevant mall managers prior to attending the respective venue. Contact was made with the managers of other shopping centres in the Auckland area, however data collection did not proceed at these venues because appropriate consent was not obtained. The research was approved by the Massey University, Albany Campus, Human Ethics Committee (MUAHEC 04/025) prior to initiating the data collection (see Appendix B).

The use of different locations for the data collection, in addition to attendance at these venues on different days, and at various times of the day, was employed in order to provide a broad sample of the general population. More specifically, it was hoped that this method would facilitate access to individuals of various age groups, employment situations, socio-economic groups, and backgrounds (including single people in addition to families). In light of the focus of the study, it was deemed important to gain a representative sample of the general population.

The participants were recruited and completed the questionnaire after having brief details of the study explained to them and an information sheet provided (see Appendix C). Consent was obtained verbally, and information was not collected with regard to the identity of the participants.

Materials

Given the focus of the study on the association between life satisfaction and life orientation, it was necessary to obtain both a measure of subjective wellbeing, and an indication of where the respondent was positioned on the optimism-pessimism continuum. Participants were administered a questionnaire consisting of two scales, one scale measuring life satisfaction (the Personal Wellbeing Index; PWI) and the other scale measuring levels of dispositional optimism and pessimism (the Life Orientation Test–Revised; LOT-R). It was also important to obtain information on demographic factors that might affect these variables, therefore an additional section was included in the questionnaire to elicit this information. Copies of the complete questionnaire employed in the study are to be found in Appendix E. A description of the instruments appears below.

Subjective wellbeing.

Cummins recommended the PWI for the measurement of subjective wellbeing (R.A. Cummins, 21 February 2004, personal communication). He mentioned that it is used in the Australian Unity Wellbeing Index surveys, and also by the Australian-based International Wellbeing Group. This

recommendation formed the basis of the decision to include this scale. This is because Cummins' homeostatic theory forms part of the investigation and was based on data, some of which were gathered using this instrument.

The PWI consists of seven items that ask respondents how satisfied they are with different areas of their lives (e.g. "How satisfied are you with your personal relationships?"). The items are answered on an 11-point scale (0 – 10), anchored by "completely dissatisfied" and "completely satisfied," with the middle of the scale (5) labelled "mixed". The overall PWI score is obtained by adding up the seven domain scores, although, if desirable, each domain can be analysed separately. Cummins (2003) stated that an 11-point Likert scale was chosen for this instrument in line with methodological concerns. He argues that because life satisfaction produces a negatively skewed distribution of scores, many people feel confined to choosing scale points that lie on the positive side of the neutral point. This essentially limits their options to half of the scale that is presented. Cummins (2003) discusses the likelihood that because of this, and the issue of scale sensitivity, the scale should have five or seven points on either side of the neutral point. This leads to the conclusion that it is best to measure subjective wellbeing with a bi-directional Likert scale that has at least 11 points from which to choose (Cummins, 2003).

For both the LOT-R and the PWI, the Likert scale was displayed in a manner that was intended to promote the perception of equal intervals between response categories. That is, although ordinal scales were used, the visual

display of the scales (see Appendix E) was designed in the hope that they would promote as close to interval scale responses as possible. It is acknowledged, however, that this cannot be ascertained with any certainty since the measured variables are subjective quantities.

Life orientation.

The LOT-R was developed by Scheier, Carver, and Bridges (1994). Chang (2001) states that it is “based on Scheier and Carver’s (1985) definition of optimism and pessimism as reflecting generalized positive and negative outcome expectancies, respectively” (p. 6), as discussed in the Introduction. This instrument was chosen based on its popularity in the research literature, its availability, and the fact that it measures *dispositional* optimism-pessimism as opposed to attributional styles. Furthermore, it was recommended by Cummins (R.A. Cummins, 10 March 2004, personal communication) who stated that it has become the standard measure of optimism.

The LOT-R contains six items that assess the respondent’s expectations in terms of how favourable they view their future outcomes to be. Three of the items are worded positively and the other three are worded negatively (e.g. “I’m always optimistic about my future,” “If something can go wrong for me, it will”). Typically, the negatively worded item scores are reversed and then added to the positively worded item scores to obtain a summary score (Chang, 2001), as was the case in this study. The scale also contains four filler items that are not scored (e.g. “I enjoy my friends a lot”).

Although the authors of the LOT-R use a 5-point Likert scale for this instrument, an 11-point scale was used in this research to maintain consistency between the two scales used. There are possible implications with regard to changing the scale dimension of the LOT-R. In terms of making reliable discrimination between choice-points on a continuum, the capacity that people have is limited (Cummins, 2003). Although the capacity varies at an individual level (depending on the competence of the individual), the capacity on a general population level is considered to be around 5 to 7 choice-points (Cummins, 2003). As previously discussed, the PWI produces a negatively skewed distribution of scores. Therefore, scales with 10 or 11 choice-points are “probably entering the lower-end of people’s discriminative capacity.” (Cummins, 2003, p. 248). The LOT-R, however, does not produce a negatively skewed distribution of scores, therefore one may argue that 5 to 7 choice-points would be more appropriate for this scale. On the other hand, it is possible that increasing the number of choice-points has increased the sensitivity of the scale, with little effect on the discriminative capacity of the participants, however this cannot be determined without further research.

Overall, maintaining consistency between the two scales was the primary objective considered in this study. It would appear to make sense to have the same number of choice-points available for both scales when exploring the relationship between the two dimensions. The scales ranged from “completely (negative anchor)” to “completely (positive anchor)” in each

case, and it seems reasonable to assume that there is a mental impression of the distance between those extremes that applies irrespective of the continuum explored (life satisfaction or life orientation). It was considered that having the same response scale, and the same physical (i.e. on paper) representation of the continuum in each case, makes it more likely that a comparison of an individual's position on each of these will be meaningful. Individuals may differ from one another in how they express themselves on such scales, but given the comparability arranged in the study, they are at least likely to be consistent in their responses on the two scales. That is, in essence, using the same number of choice-points for both scales is likely to promote responses from each individual that are consistent across the scales, so that when the group of respondents is considered as a whole, it is possible to legitimately explore the relationships between responses on one scale and responses on the other.

It should be noted that the LOT-R provides a distribution of scores that is continuous as opposed to discrete (Wrosch & Scheier, 2003), and in general is considered to be a unidimensional measurement instrument (Chang, 2001). That is, it does not dichotomise individuals as alternatively optimists or pessimists (Wrosch & Scheier, 2003). Wrosch and Scheier (2003) and Carver and Scheier (2003) point out that optimists and pessimists are often referred to as if they are distinct groups of people, however this only really amounts to linguistic convenience, because there is no empirical justification for placing people in these distinct categories. In most cases when the LOT-R is used for research, a continuous distribution of scores is created but with

optimists and pessimists being compared as though from different groups (Wrosch & Scheier, 2003). Aspinwall, Richter, and Hoffman (2001), in their research, defined optimists as those participants whose scores on optimism-pessimism measurement instruments were equal to or greater than one standard deviation above the sample mean. Similarly, they defined pessimists as those participants whose scores were equal to or greater than one standard deviation in the opposite direction, below the sample mean. The majority of the research these authors described utilised the Life Orientation Test (LOT) to assess optimism levels (Aspinwall et al., 2001). The LOT differs from the LOT-R in that two items from the original LOT were left out of the revised version, as they did not focus on expectancies as explicitly as the remaining items (Carver & Scheier, 2003). The current study will follow the statistically logical method used by Aspinwall and colleagues (2001), of categorising these two groups.

Demographics and significant life events.

The third section of the questionnaire consisted of items devised to collect basic demographic information from each participant. This included questions on gender, age group, number of people in household, and household income. The gender question was included to allow exploration into the question of whether or not males and females differ in their levels of subjective wellbeing. Likewise, the question on age group was included to allow exploration of the possible effects of age on subjective wellbeing. Due to the apparent relationship between quality of life and income, as discussed in the Introduction chapter, 'household income' and 'number of people in

household' questions were included. These questions allow exploration of the average income per person in the respondent's household, and the possible connection this may have with his or her level of subjective wellbeing. Furthermore, these demographic questions allow the researcher to loosely determine whether or not a broad sample of the general population was obtained during the data collection process.

The demographic section of the questionnaire also contained a question to determine if the participant had recently experienced any significant life event, and if so further questions regarding the nature and timeline of the event. The latter questioning was deemed necessary based on Cummins' (e.g. 2000a; 2003; Cummins et al., 2003) discussions of homeostatic defeat. According to his homeostatic model, "A sufficiently adverse environment can defeat the homeostatic system and, when this occurs, the level of subjective wellbeing falls below its homeostatic range." (Cummins et al., 2003, p. 163). Subjective wellbeing homeostasis can be defeated by "chronic objective conditions that impose a burden that is too strong to allow for adaptation." (Cummins, 2000a, p. 62). Cummins (2003) argues that when this occurs, the life satisfaction of the particular individual is temporarily under the control of the external forces (objective life circumstances) that lead to the homeostatic defeat, rather than being controlled by the internal homeostatic mechanism. Such an event could cause the individual's responses to fall outside of the expectations of the homeostatic model. Further support for the inclusion of this questioning stems from Cummins and colleagues' (2003) findings, whereby those who recently experienced a

significant negative life event showed levels of subjective wellbeing at the low end of the normal range, and those who had recently experienced a significant event that was positive showed an increase in their level of subjective wellbeing. There does not appear to be any guidelines within the literature as to the time-frame that should be regarded as 'recent' in this context. It is likely that there would be a considerable degree of variability with regard to the length of time significant events can take their effect on subjective wellbeing. This hypothesised variability would relate to both individual differences, in addition to the context and nature of the event itself. In the current study, the PWI data from the different time-frames included in the questionnaire will be examined prior to any other analyses involving significant life events.

Lastly, this third section of the questionnaire included an additional question to determine if respondents were students studying at least half time. The inclusion of this question was based on Cummins'(2003) findings whereby students, for various reasons (including age, education level, and background), are not considered to be representative of their respective general populations. Cummins (2003) analysed student life satisfaction data and found clear differences between their levels of life satisfaction and those of the general population. More specifically, their life satisfaction was lower and their data were more homogenous (Cummins, 2003). Cummins (2003) states that the homogeneity of their data is likely the result of their common educational status and age-range. However, he indicated that their lower levels of life satisfaction was a fairly surprising finding, based on four points:

They have a certain degree of societal status as tertiary students; on average they are from backgrounds that are more privileged in comparison to others in their population; they have clear goals; and they are not burdened with the responsibilities that later life will bring (Cummins, 2003).

Cummins (2003) gave some speculative reasons as to why students have lower life satisfaction, stating that it “could include delayed transition to autonomous adulthood” (p. 250). He points out that, in general, students are financially poor, and during their academic lives have a significant degree of imposed control placed on them. He elaborates by referring to examples of literature (Rapley & Hopgood, 1997; Nieves et al., 1991) that have found autonomy and personal control to be “powerful determinants of perceived well-being” (Cummins, 2003, p. 250), drawing to a speculative conclusion that the lower life satisfaction of students may be the result of lower perceived control. In summary, Cummins (2003) states that the findings suggest that data from students may be biased and more homogenous in comparison with general population data, and hence the analysis of this data should be interpreted cautiously.

Counterbalancing.

It should be noted that two versions of this questionnaire were created, with 100 copies of each version being completed. The only difference between the two versions was the order in which the LOT-R and PWI were presented. In other words, in Version 1 the first section consisted of the PWI and the second section consisted of the LOT-R. In Version 2 this order was reversed.

The two orders were used to minimise the possibility of the order of scale presentation affecting participant responses. It is possible that a respondent may have positive (or negative) responses to the first scale presented, which may affect their attitude towards the second set of questions. It was unknown whether the influence of this might be greater for one scale rather than the other, hence the counterbalancing method described was employed.

Procedure

Prior to beginning the data collection, the questionnaire was piloted on four individuals. This established the approximate time necessary for a participant to complete the questionnaire, in addition to confirming that the instructions were comprehensible.

There were areas within each shopping centre premises that the researcher and respective mall manager agreed upon as the appropriate location for data collection. A table was set up within this area and the data collection was carried out with the researcher sitting at the table. A sign was attached to the table giving a brief overview for prospective volunteers as to the nature of the study (see Appendix D). Potential participants were acknowledged by the researcher via eye contact and subsequently invited to participate in the study. Occasionally it was necessary for the researcher to clarify with the potential participant that they were over the age of 18 prior to beginning the process.

Participants were provided with, and encouraged to read, the Information Sheet (refer to Appendix C) prior to filling out the questionnaire. They were also encouraged by the researcher to ask questions at any time should they be uncertain or concerned about any aspect of the questionnaire or the process involved. Finally, following completion they were thanked for their participation. Contact details for the researcher were provided on the Information Sheet, allowing participants to request a summary of the findings upon completion of the study, however the researcher did not receive such a request. The Results chapter below outlines the analysis procedures that followed this aforementioned data collection phase.

Results

Overview of the Analyses

The responses from the 200 completed questionnaires were entered into a statistical analysis computer program, SPSS (Statistical Product and Service Solutions) for Windows, version 11.0 (2002). Negatively worded items of the LOT-R were reverse scored at the time of data entry. Table 1 displays the demographic details of the sample obtained.

Table 1

Demographic Statistics of the Obtained Sample

<i>N</i> = 200	<i>n</i>	%
Gender		
Male	96	48.0
Female	104	52.0
Age Group		
18-24 years	23	11.5
25-34 years	48	24.0
35-44 years	55	27.5
45-54 years	31	15.5
55-64 years	25	12.5
65 years or over	18	9.0

(table continues)

<i>N</i> = 200	<i>n</i>	%
People in Household		
1	29	14.5
2	49	24.5
3	43	21.5
4	35	17.5
5	24	12.0
6	16	8.0
7	1	0.5
8 or more	1	0.5
Missing	2	1.0
Combined Household Income		
Less than \$25,000	23	11.5
\$25,000 - \$39,999	32	16.0
\$40,000 - \$54,999	32	16.0
\$55,000 - \$69,999	31	15.5
\$70,000 - \$84,999	22	11.0
\$85,000 - \$99,999	13	6.5
\$100,000 or more	41	20.5
Missing	6	3.0
Student (at least half time)		
Yes	29	14.5
No	166	83.0
Missing	5	2.5

In terms of significant life events, a large proportion of the sample (64 %) reported having such an experience. These were divided fairly evenly into those whose event made them happier than usual (30 %), and those whose event made them sadder than usual (34 %). Cummins and colleagues (2003), in their survey, used a similar type of question and discovered similar proportions (71 % reported an event, 36 % felt happier, 35 % felt sadder).

The sums of the scores for the seven domains of the Personal Wellbeing Index (PWI) were converted into their percentage of the scale maximum score (%SMS) prior to conducting the analyses. This conversion has no effect on the results of the statistical tests, but facilitates comparison with the results of other studies.

A preliminary descriptive analysis was conducted using SPSS to examine the PWI and LOT-R scores for outliers and data entry errors. SPSS identified five outlier cases for the PWI, therefore the PWI scores of these cases were deleted. SPSS identifies outliers as scores lying between 1.5 and 3.0 times the interquartile range. One of these five cases was also identified as being an outlier LOT-R score, therefore this LOT-R score was also deleted. Only one of these five outlier cases was identified as being a student studying at least half time.

Following removal of outliers, preliminary analyses were carried out to determine if there were any significant differences between the life satisfaction data of students and the life satisfaction data of the remaining

participants. It was considered important to explore this prior to conducting other analyses, based on earlier discussions about student data. Elaboration of these points appears later, although, in essence, the literature (e.g. Cummins, 2003) suggests that the life satisfaction of students is expected to be lower than that of non-students. The analysis revealed that the average level of life satisfaction for students ($n = 28$) was 68.16 %SMS, and for non-students ($n = 160$) was 71.01 %SMS. An independent-samples t -test showed that there was no significant difference between these two groups with regard to their average level of life satisfaction, $t(186) = 1.13$, $p = .260$.

Despite the above finding, the student data were removed from further analyses for three reasons. Firstly, as discussed previously, student data are not considered to be representative of the general population in the measurement of subjective wellbeing. According to Cummins (2003), part of the reason for this relates to the similar age range, education level, and background of students. Data were not collected with regard to the education level and background of the student participants in the current study. However, Figure 1 was created to observe whether different age groups contained different proportions of students. The graph displays the number of students studying at least half time, and number of non-students, for each age group.

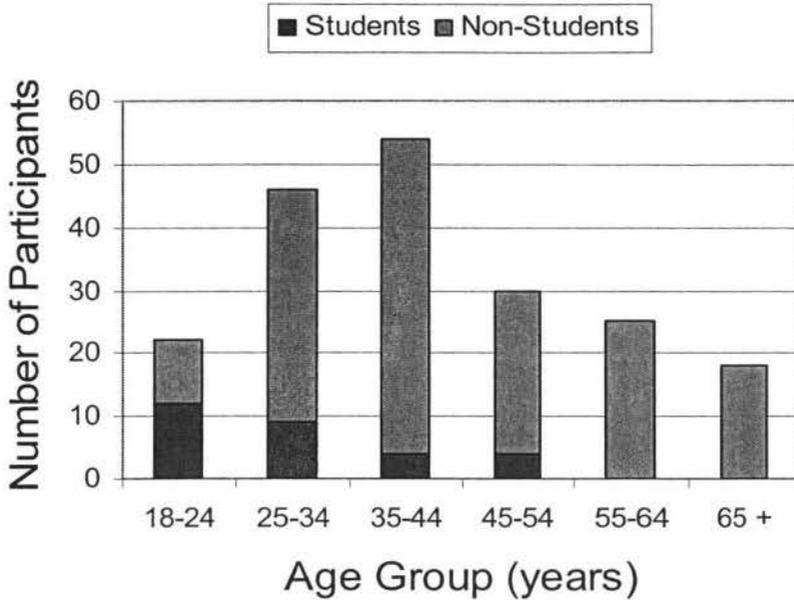


Figure 1. Number of participants in each age group as a function of whether or not they were students studying at least half time.

It can be seen that the greatest proportion of students are in the lower age groups, in line with Cummins' (2003) observations, and in line with what one may expect, intuitively. A Pearson's product-moment correlation coefficient was computed between age group and student status. Results revealed a significant relationship between these two variables, $r = .35$, $p = .000$ (1-tailed). Other implications from these observations appear in the Discussion.

The second reason why student data were removed from further analyses relates to their mean life satisfaction score. Despite the insignificant difference between student and non-student PWI means, as outlined above,

the mean PWI score of students (68.16 %SMS) was below the lower threshold of 70 %SMS assumed by the homeostatic model. This is in line with Cummins' (2003) observations.

Thirdly, although tests of normality revealed the LOT-R scores to be normally distributed using the entire sample of participants ($N = 196$, missing values excluded), the PWI scores did not approach normality until the student data had been removed and the scores of the remaining outliers ($n = 4$) deleted. In other words, normality was not achieved by removing the student data alone, nor by removing the relevant outlier scores alone. The normally distributed sample (students and outlier data removed; $N = 166$) was used for all remaining analyses. The reliability of both the PWI and the LOT-R were assessed for this sample, revealing acceptable Cronbach's alpha reliability coefficients of .80 and .72 respectively.

Initial Exploration of Life Satisfaction Predictors

As outlined previously, the data were gathered in order to explore the relationship between life orientation (as measured by the LOT-R) and life satisfaction (as measured by the PWI). In addition, the influence of demographic variables, as well as significant life events, on life satisfaction was of interest. The data were therefore submitted to an initial multiple regression with six predictors (sum of the six LOT-R responses, gender, age group, per-person average income band, no life event, negative life event) as the independent variables (IVs), and PWI scores (%SMS) as the dependent variable (DV). The categorical variables, gender and life event (negative,

positive, no event), were dummy coded for the analysis. The variables were entered simultaneously. The result of the analysis is displayed in Table 2. SPSS automatically removed 14 cases from the analysis due to missing values. A power analysis for the multiple regression was conducted using the computer program GPOWER (Faul & Erdfelder, 1992), revealing a desirable level of power (.96, $\alpha = .05$, $N = 152$). From the table it can be seen that the only predictor to contribute significantly to the variance in the PWI scores was life orientation, entered as the sum of LOT-R responses.

Table 2

*Summary of Simultaneous Regression Analysis for Variables
Predicting Life Satisfaction ($N = 152$) as Measured by the PWI*

Predictor Variable	<i>B</i>	<i>SE B</i>	β	<i>p</i>
Sum of 6 LOT-R responses	0.39	0.07	.42***	.00
Gender	1.48	1.16	.09	.20
Age group	0.73	0.40	.13	.07
Per-person average income band	0.78	0.56	.10	.16
No event	1.20	1.41	.07	.39
Negative event	-2.38	1.41	-.14	.09

Note. $R^2 = .283$; Adjusted $R^2 = .253$; $F(6, 145) = 9.54$

* $p < .05$. ** $p < .01$. *** $p < .001$.

It is clear that most of the variance in life satisfaction is accounted for by life orientation, that is, by an individual's score on the optimism-pessimism continuum, which accounted for 42 % of the variance. A Pearson's product-moment correlation coefficient was also computed to determine the relationship between scores on the LOT-R and scores on the PWI. A moderate positive correlation coefficient of .46 was obtained between the sum of the LOT-R scores and the sum of the PWI scores ($p < .01$).

Following these initial analyses, further exploration of the data was undertaken, with life satisfaction and life orientation considered separately. The life events and demographic variables, although not reaching the .05 criterion in the regression analysis, are examined in other ways below. The independent variables entered together into the regression were also examined individually because of an "important interpretative limitation of multiple regression when both subjective and objective variables are included. That is that the objective variables may change the strength of linkage between subjective variables, and such influences would not normally be statistically detected." (Cummins, 2000b, p. 135). In line with this, Cummins (2000a) proposed the principle that "The inter-correlation of QOL [quality of life] measures within either the objective (O vs. O) or subjective (S vs. S) dimension is higher than the inter-correlation of QOL measures between dimensions (O vs. S)." (p. 58). Additional justification, (based on the literature), for examining these variables separately is outlined prior to the relevant analyses.

For the analyses to follow, a criterion alpha level of $p < .05$ was adopted. Post hoc tests were necessary when, in comparing more than two groups of scores, a general linear model (GLM) univariate analysis of variance (ANOVA) revealed a significant between-subjects difference. When only three groups were compared, a Fisher's least significant difference (*LSD*) test was considered the appropriate choice, as other tests are known to be rather conservative. An exception to this occurred when age group was an independent variable. In this case, a Tukey's honestly significant difference (*HSD*) test was used because it deals with multiple pairwise comparisons, and a large number of pairs of means were tested. A notable disadvantage of the *LSD* test is that no attempt is made to adjust the observed significance level for multiple comparisons.

The Influence of Demographic Variables on PWI Data

When examined together with other factors in the overall regression analysis, gender did not appear to have an impact on life satisfaction for the current sample. However, Cummins and colleagues (2003), contrary to most previous research, found gender effects. In particular, the authors state that "females were 2.2 %SM more satisfied with life as a whole" (p. 175). Gender was examined separately to further assess whether or not there were any significant differences in life satisfaction for males and females.

The average life satisfaction scores of males and females were compared using an independent-samples *t*-test. The average level of life satisfaction of males ($n = 76$) was 70.34 %SMS, and the average level of life satisfaction of

females ($n = 84$) was 71.62 %SMS. These means were not statistically different, $t(158) = 0.68$, $p = .497$ (2-tailed). However, the Pearson's product-moment correlation coefficients between PWI scores and LOT-R scores appeared to be different based on gender, males, $r = .29$, $p = .011$; females, $r = .58$, $p = .000$. To determine if the difference between these two correlations was statistically significant, a Fisher's z -test was carried out, revealing that these two correlations were indeed significantly different, $z = 2.25$ (critical value ± 1.96 , 2-tailed). The possible reasons for this will be discussed later.

An analysis was conducted to examine whether the life satisfaction of those at the extremes of the personal income continuum differed. This appeared justified based on previously discussed literature indicating that the relationship between life satisfaction and personal income may be stronger for lower income groups (Cummins, 2000b; Diener et al., 1993; Diener et al., 1999; Myers, 2000). For this analysis, low level income participants were defined as those whose personal income bracket (household income bracket divided by the number of people in the household) was below one standard deviation from the mean income bracket. Likewise, the high level income participants were defined as those whose personal income bracket was above one standard deviation from the mean income bracket. The mean life satisfaction score for low income participants was 73.13 %SMS ($n = 16$), and for high income participants was 76.13 %SMS ($n = 24$). An independent-samples t -test established that these two means were not statistically different, $t(38) = 0.84$, $p = .408$.

Age group, ($p = .07$ in the regression), was explored separately in light of age-related differences found by Cummins and colleagues (2003). A GLM ANOVA revealed a significant main effect of age, $F(5,159) = 2.46$, $p = .036$, however a post hoc test (Tukey's *HSD*) did not find any significant differences in mean life satisfaction across groups. With respect to this non-significant outcome of the post hoc test, it should be remembered that Tukey's *HSD* is known to be a conservative test (Coolican, 1994). Figure 2, below, allows a visual comparison of the difference between age groups in terms of their life satisfaction. The trend evident in the graph suggests that, in general, life satisfaction appeared to increase with age.

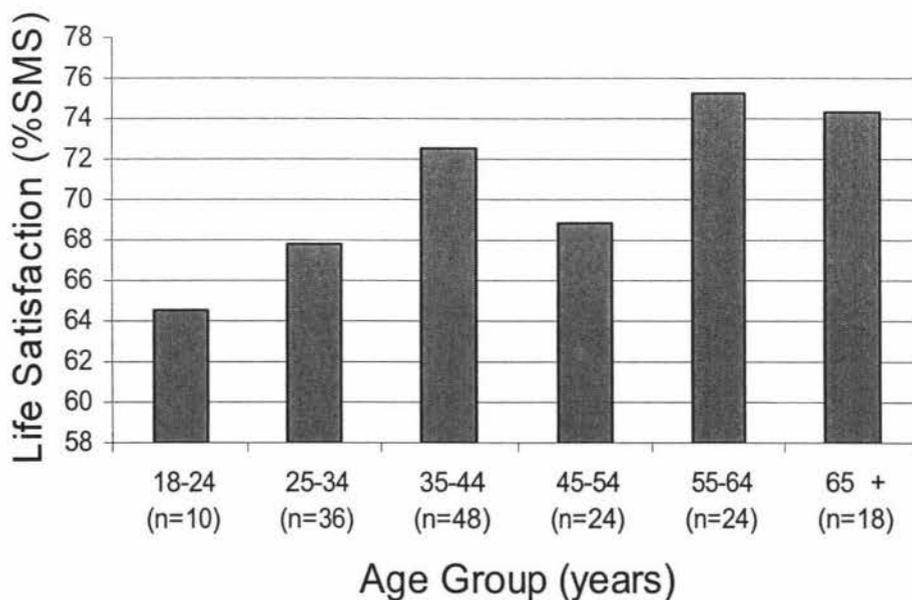


Figure 2. Life satisfaction measured with the PWI (%SMS) as a function of participant age group in years, showing sample size of each age group.

Although Figure 2 reveals a trend towards increasing PWI scores with increasing age, a possible exception occurred for the '45–54 years' age group, and this will be discussed later. A pure error test was undertaken to verify that a linear trend was a sufficient description of the pattern of the data. Using this approach, the null hypothesis that no additional nonlinear effect was required to characterise the trend in the data was accepted, $F(4, 154) = 1.19, p > .05$.

Further to previous analyses exploring the relationship between age group and mean life satisfaction, analyses were conducted to determine if age group had any influence on the separate domains of the PWI. This would provide a clearer picture as to what aspects of life satisfaction were most influenced by age. The seven domains of the PWI include satisfaction with: Standard of living; health; achievement in life; personal relationships; feeling safe; feeling part of the community; and future security. Figure 3 provides a visual display of the relevant mean scores of these domains for different age groups. Some of the domain labels have been abbreviated on the x-axis (i.e. 'feeling part of the community' is labelled as 'community'). The data points are joined for visual purposes only, to assist in the interpretation of the data.

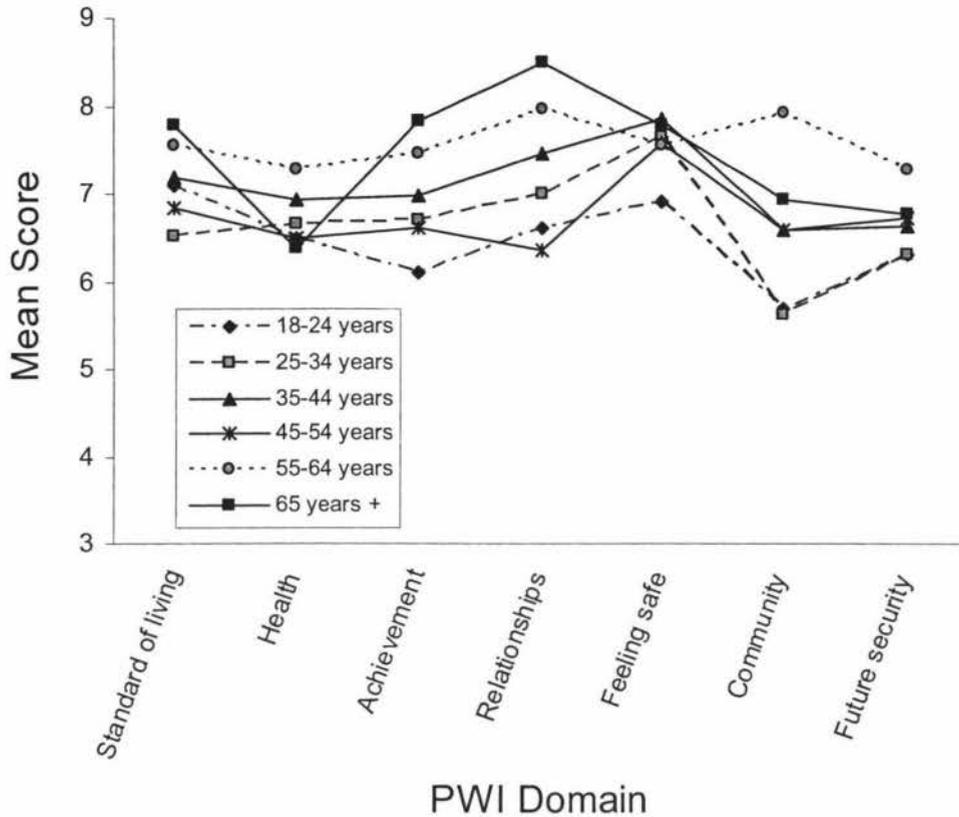


Figure 3. Mean score for each life satisfaction domain as measured using the PWI, and categorised based on the relevant age group.

From Figure 3 it would appear that some age groups display relatively stable levels of life satisfaction across the different domains, for example, the '55–64 years' age group. Other age groups display more variability among their mean scores of different PWI domains, as can be seen with the peaks and troughs in the '65 years or over' age group. The graph also shows that some life satisfaction domains, for example personal relationships and feeling part of the community, show greater variance between the mean scores for different age groups, when compared to other domains.

This observation was analysed formally via the use of a multivariate analysis of variance (MANOVA). The dependent variables were the mean scores of the seven different life satisfaction domains from the PWI. The independent variable was age group. The assumptions underlying MANOVA were tested and met. The data were scrutinised for homogeneity of variance using the Box *M* test, revealing a reported alpha of .001. Tabachnick and Fidell (1989) recommended .001 as the criterion for the conservative Box *M* test. As this was the value obtained in this case, the Levene's test results were scrutinised as well. From this, the obtained significance values for the life satisfaction domains ranged from .053 to .927, averaging .456. In light of this, homogeneity of variance was assumed. The overall MANOVA revealed a significant Wilks' lambda, $F(35.00, 641.84) = 1.45, p = .047$. The MANOVA revealed significant differences for three of the life satisfaction domains, specifically satisfaction with achievement in life, $F(5, 163) = 2.28, p = .049$, satisfaction with personal relationships, $F(5, 163) = 2.84, p = .017$, and satisfaction with feeling part of the community, $F(5, 163) = 4.11, p = .002$. Table 3 displays the mean scores of these three domains for each age group.

Table 3

Mean Scores Based on Age Group of Three Life Satisfaction Domains; Achievement in Life (A), Personal Relationships (R), and Feeling Part of the Community (C), as Measured with the PWI

Age Group	A	R	C
18-24 years	6.10	6.60	5.70
25-34 years	6.70	7.00	5.62
35-44 years	6.98	7.46	6.58
45-54 years	6.60	6.36	6.44
55-64 years	7.46	7.96	7.83
65 years or over	7.83	8.50	6.94

A post hoc test, Tukey's *HSD*, confirmed only two significant mean differences across the age groups. For the dependent variable 'personal relationships', the mean scores of the '45–54 years' and '65 years or over' age groups were significantly different ($p = .022$). For the dependent variable 'feeling part of the community', the mean scores of the '25–34 years' and '55–64 years' age groups were significantly different ($p = .001$). No significant differences were found for 'achievement in life'.

The Influence of Significant Life Events on PWI and LOT-R Data

The third aim of this research was to determine whether there is support for the assertion that recently experiencing a significant negative life event can

cause temporary homeostatic failure. The average life satisfaction score of participants who reported recently experiencing a significant negative life event (event that made them sadder than usual), was compared with the average life satisfaction score of those who reported no significant life event, and with those who reported a significant positive life event (event that made them happier than usual). Initial analyses involved determining whether the time frame in which the significant event occurred made any difference to average levels of life satisfaction. Table 4 displays the number of people reporting positive and negative significant life events within each time frame.

Table 4

Number of People Reporting Positive and Negative Significant Life Events within each Time Frame

Time Frame	Type of Significant Life Event	
	Positive <i>n</i>	Negative <i>n</i>
Less than 6 months	32	28
6 months to 1 year	6	10
1 to 2 years	5	8
Over 2 years	7	8

Due to small numbers in the cells corresponding to the three less recent time-frame brackets (6 months to 1 year, 1 to 2 years, over 2 years), these time-frames were not separated for analysis. Instead, the data of those whose event occurred less than six months ago were compared with the data of all those in the remaining time-frame brackets, for each respective life-event type (establishing more comparable numbers of participants in each category). Independent-samples *t*-tests were used to compare the means of those whose significant event occurred less than six months ago, with the means of those whose significant event occurred greater than six months ago, for both positive and negative events. The means and sample sizes are displayed in Table 5.

Table 5

Mean PWI Scores (%SMS) of Participants who Experienced Significant Life Events (either Positive or Negative Events) According to When the Event Occurred

Time Frame	Type of Significant Life Event	
	Positive (<i>n</i>)	Negative (<i>n</i>)
Less than 6 months ago	70.80 (32)	69.08 (28)
Over 6 months ago	74.05 (18)	65.82 (26)

An independent-samples *t*-test confirmed that the difference between the mean PWI score for those who had a positive significant event less than six months ago, and those whose positive event was greater than six months ago, was not significant, $t(48) = 0.92$, $p = .364$, (2-tailed). An independent-samples *t*-test confirmed that the difference between the mean PWI score for those who had a negative significant event less than six months ago, and those whose negative event was greater than six months ago, was also not significant, $t(52) = 0.93$, $p = .357$, (2-tailed). In view of these outcomes, and for reasons of sample size, the remaining analyses involving significant life events were conducted using all cases regardless of the time-frame in which the event occurred.

A GLM ANOVA was used to compare the mean PWI scores of those who experienced no significant life event, those who experienced a positive event, and those who experienced a negative event. Fairly comparable numbers of participants fell into each category. The ANOVA revealed a significant main effect of life event, $F(2, 158) = 4.13$, $p = .018$. Details are given in Table 6.

Table 6

Mean PWI Scores (%SMS) of Participants within each Category of Significant Life Events

Significant Life Event	<i>M</i>	<i>SD</i>	<i>n</i>
None	73.74	9.91	55
Positive	71.97	11.99	50
Negative	67.51	12.84	54

An *LSD* post hoc test established that the main effect was attributable to a significant difference ($p = .006$) between the mean life satisfaction score of those who had recently experienced a significant negative life event, and the mean life satisfaction score of those who had not experienced any recent significant life event. The mean life satisfaction score of those who had recently experienced a significant positive life event did not differ significantly from either of the remaining two groups. However, as might have been expected, their mean life satisfaction score tended to be higher ($p = .053$) than those who experienced a significant negative life event. No other significant associations were found between the groups.

The influence of significant life events on life satisfaction was also explored in a comparison between optimists and pessimists. The average life satisfaction (PWI) score of optimists was compared with the average life

satisfaction score of pessimists, based on life events. This exploration was inspired by Carver and Scheier's (2003) contention that the subjective wellbeing of these two groups differs when faced with varying forms of hardship, as stated in the Introduction. For the purposes of these comparisons, optimists were defined as those participants whose LOT-R score (sum of the six LOT-R items) was greater than one standard deviation (9.08) above the mean (40.39), therefore above 49.47. Pessimists were defined as those participants whose LOT-R score was greater than one standard deviation below the mean, therefore below 31.31. The PWI means of both groups (optimists and pessimists) were compared using independent-samples *t*-tests (2-tailed) for each type of significant life event, and for the entire sample. Table 7 displays the descriptive statistics and results of these *t*-tests.

Table 7

Mean PWI Scores and T-Test Results for Optimists and Pessimists, as a Function of the Type of Significant Life Event Experienced

Life Event	Mean PWI Score (%SMS)		<i>t</i> (<i>df</i>)	<i>p</i>
	Optimists (<i>n</i>)	Pessimists (<i>n</i>)		
Positive Event	79.29 (8)	67.35 (7)	2.57 (8.03)	.033
Negative Event	80.36 (8)	57.57 (10)	3.75 (16)	.002
None	83.81 (9)	64.60 (9)	4.41 (16)	.000
Total (Entire Sample)	81.26 (25)	62.64 (26)	6.15 (49)	.000

From looking at the probability column of Table 7, it can be seen that all of these *t*-test results were significant, indicating that the average life satisfaction scores of optimists and pessimists differ regardless of the influence of significant life events. From the ‘pessimists’ column of Table 7, the mean PWI scores across the different types of life events appear to differ, unlike those in the comparable ‘optimists’ column of the table. The difference between these mean scores was not formally analysed for the two groups, due to small sample sizes. Instead, the pattern evident across the three types of events, for both optimists and pessimists, will be discussed informally. To reiterate, it would appear from looking at the ‘optimists’

column that the mean PWI scores do not particularly vary based on life event. However, a different pattern emerges in the 'pessimists' column. The lowest mean score for pessimists (57.57 %SMS) related to participants who experienced a significant negative life event. The highest mean score for pessimists (67.35 %SMS) related to participants who experienced a significant positive life event. In between these two mean scores was the value for those participants who did not experience a significant life event (64.60 %SMS). This is the pattern one would expect according to Cummins' homeostatic model. Possible reasons for a different pattern emerging for pessimists in comparison to optimists will be undertaken later in the Discussion chapter.

The above analyses have all explored the influence of significant life events on life satisfaction (PWI data). The analysis to follow relates to the influence of life events on life orientation (LOT-R data). A GLM ANOVA was carried out to test the stability of life orientation (sum of the six LOT-R items) in the face of recent significant life events. Table 8 summarises the mean life orientation scores compared in the analysis.

Table 8

Mean LOT-R Scores under Different Categories of Significant Life Events

Significant Event	<i>M</i>	<i>SD</i>	<i>n</i>
None	40.07	9.89	56
Positive	41.37	8.50	51
Negative	39.77	8.90	57

The ANOVA revealed that the experience of significant life events had no effect on the life orientation of the participants, $F(2, 163) = 0.46$, $p = .633$. This outcome has implications for the definition of optimism-pessimism in this research, as will be discussed later.

To conclude the Results chapter, the outcomes of various analyses are summarised briefly below. The differences underlying some main effects from analyses of variance were not subsequently identified in post hoc tests, thus only the confirmed effects are listed in this summary.

Results Summary

- Student status and age group were correlated, such that a greater proportion of students were in the younger age groups as opposed to the older age groups.
- Life orientation (position on the optimism-pessimism continuum) accounted for 42 % of the variance in life satisfaction.
- Life orientation and life satisfaction were correlated ($r = .46$), and the correlation was significantly stronger for women ($r = .58$) than for men ($r = .29$).
- There was a trend for life satisfaction to increase linearly with increasing age.
- 45–54 year-olds were less satisfied with personal relationships than those 65 years old or over.
- 25–34 year-olds were less satisfied with feeling part of the community than 55–64 year-olds.
- Those experiencing a significant life event that made them sadder than usual had lower life satisfaction than those who did not experience any particular significant life event. Those experiencing a significant life event that made them happier than usual did not, however, have significantly greater life satisfaction.

- Irrespective of whether they experienced significant positive, negative, or no life events, those who scored high on optimism reported greater life satisfaction than those who scored high on pessimism.
- The tendency to be optimistic or pessimistic was independent of the experience of significant negative or positive life events.

Discussion

This study explored the relationship between life satisfaction and life orientation using a sample from the general adult population of New Zealand. In addition, the influence of demographic variables and significant life events on life satisfaction was explored. In evaluating the outcomes of this study, two areas of discussion are important. On the one hand, the implications of the findings for Cummins' homeostatic theory need to be explored, and on the other hand, more general explanations of some of the outcomes should be discussed. In these deliberations, it will be necessary to consider a number of explanations that will inevitably be speculative. These are intended to point the way to future research that might provide support for, or refute, particular possibilities.

The Average Level of Life Satisfaction

After controlling for the effects of student data and outliers, the average level of life satisfaction of a group of adults in Auckland, New Zealand, was within the range of 70 – 80 %SMS, thereby providing support for Cummins' homeostatic model of subjective wellbeing. However, the average life satisfaction score (71.01 %SMS) was very close to the lower boundary assumed by the model. Cummins (1998) refers to his own findings whereby, in general, the life satisfaction standard of Western nations could be expressed as 75 ± 2.5 percent of the maximum score obtainable on whichever measurement scale was used. Cummins (e.g. 2003) uses two standard

deviations to define the normative range of 70 – 80 %SMS for Western populations, however, “At a population level within Western nations, the average is 75 on a 0 – 100 scale.” (Cummins et al., 2003, p. 162). It would appear that in the current study the population average life satisfaction is slightly lower than that typically found in Western nations, despite being within the normative range. There are a couple of notable reasons why this may be the case.

Firstly, it is possible that the average level of life satisfaction of Auckland residents may not represent the true average level of life satisfaction of New Zealanders in general. Factors that might contribute to this include the greater population density of Auckland, current issues relating to traffic and transportation, employment opportunities, and the fact that Auckland is more multi-cultural in comparison to many other New Zealand cities. Cummins (1998) has found cultural differences in the normative levels of life satisfaction. In particular he states that individualist societies have a tendency to report higher levels of life satisfaction compared to collectivist societies. Part of this may relate to the nature of the measurement scales used, in that collectivist cultures may be less comfortable answering questions for which the wording is aimed specifically towards the individual respondent (Cummins, 1998).

Secondly, it was noticeable that people who appeared to be in a hurry to complete tasks within the respective shopping premises were less likely to participate in the research than those who appeared to be strolling casually

through or around the centre. It may be that those with a busier lifestyle have a slightly higher level of life satisfaction than those with a less purposeful lifestyle. Such a possibility may be in line with the definition of the subjective dimension of wellbeing adopted by Bornstein and colleagues (2003), as mentioned in the Introduction. To recap, this definition states that the subjective dimension of wellbeing relates to satisfaction with fulfilling one's potential, therefore one may postulate that those who are busier may have a greater sense that they are fulfilling their potential than those who are less busy. Busier people may be more satisfied because they have a greater sense of purpose in life. However, it is also possible that the reverse is true, in that busier people may be less satisfied with their lives due to increased stress levels. A hectic pace of life, especially due to work pressures, often leads to stress and a poor balance between work and other areas of life. From this, one may develop 'burnout', which could be assumed to decrease levels of life satisfaction. Further research would be needed to clarify these issues, in order for the discussion to move beyond a tentative nature.

Life Satisfaction of Optimists versus Pessimists

The second, and perhaps most pertinent, aim of the current study was to explore the relationship between life orientation and life satisfaction. Overall, the average life satisfaction level of optimists was above the upper threshold assumed by the homeostatic model, and for pessimists was below the lower threshold assumed by the homeostatic model. To facilitate comparisons in this study, optimists were defined as those participants whose LOT-R score was beyond one standard deviation above the mean, and

pessimists were defined as those participants whose LOT-R score was beyond one standard deviation below the mean. As outlined in the Introduction, Carver and Scheier (2003) argue that the subjective wellbeing of optimists and pessimists differs when faced with varying forms of hardship, due to the manner in which they cope with life's difficulties. By contrast, in the current study optimists were significantly more satisfied with their lives than pessimists, irrespective of the experience of significant negative or positive life events. Overall, a significant positive Pearson's correlation showed that, as might be expected, life satisfaction increased with increasing positive life orientation.

These findings provide support for Cummins and Nistico's (2002) contention that dispositional optimism is involved in the homeostatic regulation of subjective wellbeing. As previously discussed, Cummins and Nistico (2002) argue the possibility that the mechanisms involved in the regulation of subjective wellbeing include three positive cognitive biases (PCBs), which are components of self-satisfaction. They state that optimism is one of these PCBs, and therefore one would expect the current finding regarding the strong relationship between life satisfaction and life orientation. However, the nature of this relationship remains unclear. Cummins and Nistico (2002) point to the moderately high levels of PCBs in normal populations, and argue that this indicates PCBs may also be under homeostatic regulation, possibly via assumptive schemata. This argument creates confusion as to whether PCBs are indeed the correctional mechanism involved in the homeostatic maintenance of life satisfaction, or whether they are the system variable that

is maintained by assumptive schemata. Furthermore, as stated previously, there is no mention of what constitutes the detector mechanism in this theoretical system. Essentially, the strong relationship between life orientation and life satisfaction may be taken to conclude that optimism is, in fact, a correctional mechanism involved in the regulation of subjective wellbeing.

From the statistical standpoint, however, 'correlation does not imply causation', such that the direction of the relationship needs to be addressed. That is, the results do not provide us with information as to whether life orientation influences life satisfaction as theorised, or whether it is in fact life satisfaction that influences life orientation, or another variable that determines both. It could be argued that having a high level of life satisfaction may contribute to having more positive expectations for the future. However, if the construct measured by the LOT-R is indeed dispositional optimism as its authors have ultimately shown, then it is considered a personality quality, or trait-like construct. Therefore, theoretically, this construct should remain stable across life circumstances and should not vary greatly with them. Indeed, in the current study, life events did not appear to influence LOT-R scores. There does not appear to be any mention in the literature suggesting that life satisfaction should be considered a trait-like construct, and discussions of homeostatic defeat (Cummins, 2000a, 2003; Cummins et al., 2003) imply that it may vary across extreme life circumstances. It would seem intuitive to conclude that such a construct would not be able to maintain life orientation in such a stable

manner, and that it makes more sense to consider that life orientation influences life satisfaction rather than the other way around. Although, in addition, the possibility remains that another variable is actually responsible for the regulation of both life orientation and life satisfaction, in other words, a moderator or mediator variable. Further research into the constructs that are correlated with life satisfaction is needed before a clear picture will emerge as to the influence of optimism on life satisfaction.

The Impact of Significant Life Events on Life Satisfaction

The average life satisfaction score of participants who reported no significant life event was statistically different from the average life satisfaction score of those who recently experienced a significant negative life event. It was not, however, statistically different from those who had recently experienced a significant positive life event. In other words, negative life events caused a decrease in the mean level of life satisfaction, however positive life events did not cause an increase in the mean level of life satisfaction. Furthermore, the mean life satisfaction score of those who reported a negative event was below the lower threshold of 70 %SMS assumed by the homeostatic model. These findings provide support for the contention that significant negative life events can cause temporary homeostatic failure.

An interesting observation is that the average life satisfaction score of those who had no significant life event was slightly higher than the average life satisfaction score of those who recently experienced a significant positive life event. However, the difference between the means of these two groups was

not statistically significant, therefore it is likely that this counterintuitive outcome reflects random error. Nevertheless, the current study contrasts with Cummins and colleagues' (2003) finding that "people who had recently experienced a strong positive event evidenced a rise in wellbeing" (p. 159).

Another interesting trend was apparent among the comparisons between the time-frames within which the positive and negative life events occurred (refer to Table 5). Specifically, for participants whose positive event occurred greater than six months ago, the average level of life satisfaction tended to be higher than for those whose positive event occurred less than six months ago. Similarly, for participants whose negative event occurred greater than six months ago, the average level of life satisfaction tended to be lower than for those whose negative event occurred less than six months ago. Again, it is noted that the differences between the means of these groups were not statistically significant. However, it appears worth noting that these tendencies were the exact opposite of expectations based on the homeostatic model. The model assumes that significant events can have a temporary effect on levels of life satisfaction, however over time this effect decreases due to adaptation, returning life satisfaction to the level it was at prior to the event. Therefore, for the positive event group, one would expect life satisfaction to be higher for the 'less than six months' time-frame as opposed to the 'greater than six months' time-frame. The reverse would be expected for the negative life-event group.

One possible reason for this trend may be related to the reporting of significant life events. When asked the question “Have you recently experienced a significant (or important) life event that made you noticeably happier or sadder than usual?”, it could be hypothesised that if one chooses to report a significant event occurring over six months ago, it is likely that this event was something quite memorable, and hence had a dramatic effect on the participant’s life. In hindsight, it may have been beneficial for the researcher to determine if the participant perceived the event as continuing to have its associated effect at the time of completing the questionnaire. Further to this, it may have also been beneficial to ask respondents to rate the strength of the associated effect on their current level of functioning.

As briefly discussed in the Results chapter, the average life satisfaction of optimists and pessimists appeared to show a different pattern across the three types of significant life events. More specifically, the mean life satisfaction scores of pessimists appeared to differ across life event categories, whereas the scores of optimists were relatively similar across life events. Although this was not analysed formally, the possible reasons for a different pattern emerging for these two groups will be discussed here.

Cummins and colleagues (2003) state that when homeostasis is restored for people who are experiencing homeostatic defeat, marked increases in their subjective wellbeing can occur. However, for people whose homeostatic system is functioning normally, variations in their life circumstances have little effect on their level of subjective wellbeing (Cummins et al., 2003).

The mean life satisfaction scores of pessimists across all types of life events were below 70 %SMS (refer to Table 7), indicating that homeostatic defeat was occurring for this group. For those pessimists who had recently experienced a positive life event, the mean score (67.35 %SMS) begins to approach the lower boundary of the proposed Western population normative life satisfaction range. Homeostatic defeat does not appear to be occurring for the optimists across any of the life event categories. Moreover, the mean scores of this group across life event types all lie around 80 %SMS, in line with Cummins (1998) discussions of a ceiling effect occurring at approximately this level. Overall, the explanations of these authors fit the patterns that have emerged for the two groups. However, the small sample sizes and consequent lack of formal analysis, in addition to the static nature of the research design, prevent strong conclusions from being formed.

Life Satisfaction Based on Demographic Variables

Myers (2000, p. 65) concludes that we now know that “Age, gender, and income (assuming people have enough to afford life’s necessities) give little clue to someone’s happiness”. In line with this conclusion, males and females did not differ in their average levels of life satisfaction in the current study. An interesting finding, however, was that the correlation between life satisfaction and life orientation was different based on gender, in that the relationship between these two variables was stronger for females than for males. The researcher is unaware of any theoretical explanation for this finding. It is possible that males and females differ in the way that they

report their reactions, such that different responses are produced on the questionnaires even though their internal experiences may be exactly the same.

Personal income (defined as combined household income divided by the number of people in the household) also did not appear to influence life satisfaction in the current sample. This finding would appear to be in line with the findings of Dickson and Littrell (2003), Haring, Stock, and Okun (1984), and Keyes and Waterman (2003), discussed in the Introduction. It also appears to support Myers' (2000) contention that income, beyond a basic level, is poorly connected to happiness. In the current study, the mean life satisfaction score of those with a low level of personal income was not significantly different from the mean life satisfaction score of those with a high level of personal income. At first glance, this appears at odds with the arguments of Diener and colleagues (1993; 1999), Myers (2000), and Cummins (2000b), who found life satisfaction to have a stronger association with income for those in the lower income brackets, possibly due to differences in the ability to meet basic needs. In this context, Cummins (2000b) discussed the possibility that this is due to wealthy people being less likely to suffer from homeostatic defeat, because they can buy the resources they need to combat environmental stressors. Other considerations, however, pertaining to these non-significant income-related findings, should be discussed.

Firstly, the small sample sizes ($n = 16$, $n = 24$) of the income groups compared in this study prevent a strong conclusion from being formed. Secondly, it is possible that those in the lower income brackets for this sample are able to sufficiently meet basic needs. It could be argued that the social welfare system of New Zealand is designed such that it does not allow poverty to seriously affect many people. Thirdly, it is plausible that the location of data collection, shopping venues, minimised access to people suffering severe financial hardship. The above considerations reflect conjecture, as it was not the intention of this study to explore this issue in depth, and the data of this study are unable to address it. Overall, it is concluded that there was no clear relationship between personal income and life satisfaction for this sample.

The analyses that were conducted to explore the relationship between age group and mean life satisfaction revealed non-significant results. However, there was a tendency for the average life satisfaction in this sample to increase with age (refer to Figure 2). The pure error test supported the existence of a linear trend for increasing life satisfaction with increasing age. The following are some speculative explanations for this observed pattern.

It is possible that this trend may be related to level of goal attainment. People who have been alive for longer are more likely to have accomplished certain life goals and achievements that they viewed as important. In this sense, the nature of their current goals may have changed somewhat to include a greater proportion of short-term goals that are more readily

attainable. It could be argued that those in the younger age groups have a greater number of concerns about their future, because they are unaware of what the future may bring. For example, they may be concerned with whether or not they will find a partner and get married, whether they will start a family, and whether they will be successful and wealthy. They may also be experiencing the stresses of buying property, not to mention the various steps they must take in order to reach their valued life goals. Essentially, those in the older age groups realise they have lived the majority of their lives, and hence experience less uncertainty about the future. They may also become more accepting of their inability to reach certain goals due to physical, health, or time constraints. They may feel more relaxed through possibly having fewer responsibilities towards other people. Retirement may bring about a slower pace of life, whereby there is time available to spend on more enjoyable or fulfilling tasks, such as socialising or maintaining the property, not to mention time to oneself. This argument may appear to contradict the previous discussion regarding the possibility of those with busier lifestyles having a higher level of life satisfaction. However, this may not be applicable to these older age groups if they are satisfied with their achievements in life, and accepting of any inevitable age-related lifestyle changes. In this sense, it is noted that there was a tendency for the older age groups surveyed here to express greater satisfaction with achievements, in comparison to younger age groups (refer to Table 3). Of course, this may also relate to the fact that they have had a longer time to achieve, and hence most likely more opportunities for achievement.

The decline in mean life satisfaction for participants in the '45–54 years' age group did not prevent a linear trend from providing an adequate description of the data. Nevertheless, this sudden drop in mean scores appears worthy of discussion, particularly in keeping with Cummins' homeostatic model, given that the mean life satisfaction score of this age group is considered to have breached the lower boundary of 70 %SMS. If we are to assume that this decline is an accurate reflection of life satisfaction for this age group, then we may question why this decrease occurred. From the exploration of the domain mean scores by age group, the 45–54 year-olds were shown to be less satisfied with personal relationships than those 65 years old or over. It is possible that people within the former age group, particularly at the lower-end of the range, are coping with the struggles of raising teenage children. It is likely that the relationship between the parent and child may be strained during this difficult period. Furthermore, in two-parent families, it could also create conflict between the parents, particularly if they disagree on their child-rearing strategies.

Additionally, it could be argued that the '45–54 years' age group reflects a period where many parents are witnessing their children leaving home to begin their independent lives, particularly those in the higher-end of the age group. Intuitively this would represent a transition period for parents. It is speculated that their life satisfaction may temporarily decrease during this period of transition as a result of having to adjust to a sense of loss associated with this type of event. Perhaps they begin to feel somewhat expendable in the sense that the nature of one of their major responsibilities and

relationships in life has suddenly changed. In two-parent families, the relationship between the parents may dwindle when children leave home, particularly if the child-rearing was the main common interest they shared. Furthermore, they may find it emotionally difficult witnessing their children struggling to 'get themselves on their feet', not to mention the possibility that this becomes a costly affair if they choose to support them financially. Others may argue that having all their children leave home would effectively increase their level of life satisfaction somewhat. The variability that may exist in this sense may be largely due to family dynamics, for example, a solo parent may have more difficulty adjusting to this transition due to not having a partner to share the experience with.

Finally, those in the '45–54 years' age group may be facing increased stress in relation to their careers. There are many possible factors that could impinge on their career-related stress, job security being a notable one. Although, if this was the case, one may expect their level of satisfaction with the 'future security' domain to be lower in comparison to other age groups, however this was not observed with this sample.

The two lowest age groups ('18–24 years' and '25–34 years') also evidenced mean life satisfaction scores below the lower threshold of 70 %SMS. This was regarded as worth noting, as it is generally considered that there is a higher incidence of psychological disorder among younger adults. Moreover,

the teenage suicide rate in New Zealand is known to be disturbingly high. The current study excluded participants under the age of 18, primarily because the scales were devised for use with adult samples.

In the current study, the examination of the PWI domain mean scores by age group revealed that 25–34 year-olds were less satisfied with feeling part of the community than 55–64 year-olds. According to Cummins (1996b), the ‘feeling part of the community’ domain is intended to include the following constructs: Job status; social class; education; community involvement; community integration; empowerment; self-esteem; and self-concept. The researcher is unaware of any theoretical explanation for this obtained age-related difference. Nevertheless, it is possible that those in the ‘25–34 years’ age group have reached an age where such things as job status and social class have become important to them, however they have not yet had as much time to sufficiently develop these areas of their life in line with their expectations and desires.

Significant Life Events and Life Orientation

The analyses suggested that the experience of significant life events had little effect on the life orientation of the participants. This indicates that the life orientation of the current study’s sample was stable across life circumstances, as would be expected if the LOT-R is indeed tapping into the construct it is designed to measure, namely dispositional optimism-pessimism. However, we cannot know for sure that the life orientation of this sample was stable, due to the static nature of the study. Nevertheless, at face value, the finding

appears to be in line with the contention of Cummins and Nistico (2002) that PCBs are fairly robust and resist a link with reality, thus enabling them to homeostatically regulate life satisfaction. In this way, a PCB of optimism would, as Cummins supposed, serve an adaptive function. If individuals maintain a positive outlook towards the future even in the face of adverse life events, this will ensure that they remain sufficiently satisfied with their lives to continue to work towards achieving their desired goals.

The Implications of Additional Analyses

The Pearson's product-moment correlation coefficient between age group and student status, in addition to the observations from Figure 1, support the findings of Cummins (2003), whereby part of the reason students are not considered to be representative of the general population lies with their age. There were more students in the lower age groups than in the higher age groups, as might be expected. Interestingly, however, those in the lower age groups had lower levels of life satisfaction, despite the student data having been removed. This indicates that, in other studies surveyed by Cummins (2003), age group may be one of the most important characteristics of students in terms of their lower level of life satisfaction. This statement is not intended to discount the conjecture of Cummins (2003), whereby lower perceived control may be responsible for the lower life satisfaction of students. Indeed, Christensen and colleagues (1998) found perceived competence and control to correlate with wellbeing, albeit in an adult daughter caregiver population, as opposed to general population. It may be, however, that lower perceived control occurs as a factor related to age, rather

than as a factor related to being a student. As mentioned earlier, a possible reason for the lower life satisfaction of younger people may be the uncertainty about what the future will bring. Perhaps this uncertainty impacts on perceived control, thereby effectively reducing the perception of life satisfaction. Further research would be needed to clarify this issue. Additional suggestions for further research appear below.

Suggestions for Further Research

Future researchers interested in exploring the normative level of life satisfaction of the New Zealand general population may wish to obtain samples from a wider variety of locations within the country. The current study is somewhat limited in the conclusions that can be drawn, because the entire sample was recruited within the Auckland area. A more representative sample will provide a more accurate description of the average life satisfaction level of New Zealand adults. Additionally, future researchers may wish to examine the normative level of life satisfaction of New Zealand teenagers. This may require the use of an appropriate scale for this age range.

It is clear from the current study that optimism accounts for a significant proportion of the variance in life satisfaction. The nature of the relationship between these two variables, however, is not entirely clear. Interested researchers may wish to explore this relationship in more depth. In addition, further research into other constructs that are thought to correlate with life satisfaction may allow a clearer picture to emerge as to the set of factors that

are important in maintaining a sense of wellbeing. Cummins and Nistico (2002) referred to two other PCBs, self-esteem and control, that they suggested may be involved in the regulation of subjective wellbeing. The current study focused solely on the influence of optimism, due to the relative shortage of research exploring the relationship between this particular variable and life satisfaction. Perhaps an exploration into the influence of these other two variables, simultaneously with the influence of optimism, will reveal some interesting interactions.

Implications for Mental Health

Cummins and Nistico (2002), in the context of their paper, reconceptualised mental health as subjective wellbeing. They argue that the literature provides support for the idea that PCBs for optimism, self-esteem, and control, are “essential to the homeostatic maintenance of subjective well-being within an optimal bandwidth.” (p. 63). They state that depression is associated with PCB activity falling below the optimum level (believed to be around 40 %SMS), and delusional thoughts are associated with activity occurring above the optimal bandwidth. There was no mention as to what level constitutes the upper boundary of the optimal bandwidth. Cummins (2000b) argues that depression is actually the bipolar opposite of subjective wellbeing. Therefore, in this sense, it is possible to view depression as an illness that emerges due to a loss of subjective wellbeing, since “the natural state for people is a positive SWB [subjective wellbeing] that is homeostatically maintained.” (p. 153). These ideas are summarised effectively by the following quote:

“The purpose of this cognitive homeostasis is surely to keep people feeling positive about themselves and their lives. This sense of positivity is an essential aspect of motivation and for the avoidance of dominance by the negative brain states that we recognise as depression, anxiety and stress.” (Cummins, 2000a, p. 62).

All of these arguments point to the clinical relevance and significance of gaining an understanding of life satisfaction and the possible factors that are involved in its maintenance. Depression and anxiety are two of the most common forms of mental illness in today’s society. The implications of these illnesses are vast, with their effects impacting at the level of the individual, family, and greater community. The majority of people in New Zealand will have experienced these common illnesses, either first- or second-hand. The suicide rate in New Zealand is considerable, and directly relates to illnesses such as depression. If depression is indeed the bipolar opposite of subjective wellbeing, then it is essential that we understand the ways in which subjective wellbeing is maintained.

Surely primary prevention is preferable to secondary prevention? However, to achieve effective primary prevention there needs to be further growth in the body of knowledge surrounding subjective wellbeing. The clear relationship found here between life orientation and life satisfaction raises some significant questions. The relationship suggests that if we are able to increase our optimism, we can increase our life satisfaction. However,

Wrosch and Scheier (2003) point to the stability of optimism and pessimism, stating that it is a disposition or general tendency to maintain the respective positive or negative expectations over numerous life domains. The notion of stability is supported by the finding in the current study that optimism and pessimism did not vary with different types of significant life events. One may assume, therefore, that it is very difficult to influence where one is positioned on the optimism-pessimism continuum. Nevertheless, this does not mean that it is necessarily impossible. Seligman (1991), an advocate of the attributional approach to optimism-pessimism, also subscribes to the stability of an individual's attributional style. In spite of this, he also discusses techniques that he claims have helped a large number of people to alter their lifelong pessimistic habits. "A pessimistic attitude may seem so deeply rooted as to be permanent. I have found, however, that pessimism is escapable. Pessimists can in fact learn to be optimists...by learning a new set of cognitive skills." (Seligman, 1991, p. 5). It would be interesting to understand the extent to which this may occur, as the possible implications this may have on life satisfaction would appear favourable.

Finally, the current body of opinion suggests that it is no longer acceptable for the importance of subjective social indicators to be ignored in population studies.

"The use of subjective measures as the basis for national indices of wellbeing has been generally resisted. Government instrumentalities responsible for generating such national indices still largely exclude such

measures despite strong evidence of their reliability and validity, and the fact that objective and subjective indicators generally show a very weak relationship to one another...Subjective social indicators have the scientific credibility to form such indices..." (Cummins et al., 2003, p. 167).

The Australian Unity Wellbeing Index (Cummins et al., 2003) was designed to measure both satisfaction with life in Australia, and the personal life satisfaction of the Australian population, with surveys planned at six-monthly intervals. The authors expressed the hope that not only would this allow the national wellbeing of Australia to be monitored, but that the data would be used to build upon the knowledge that had been gained thus far in this area. It is hoped – in the spirit of optimism – that in the not-too-distant future such advances will occur in New Zealand.

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Appendices

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[Researcher's address and contact details]

[Date]

[Address of shopping centre]

Dear *[Name of manager]*

I am writing to enquire about the possibility of setting up a small table within your shopping precinct, in order to gather participants for my Masters thesis research. My project aims to investigate a theory of wellbeing using participants from the general adult population. The questionnaire has a completion time of approximately ten minutes.

The questionnaire has been designed to be unobtrusive, and responses will be pooled, and not recorded under participants' names. In addition, I will only be recruiting volunteers, and will place no pressure on customers to take part.

I am aware that you may have restrictions with regard to the amount of time you can allow me to spend on your premises for this purpose. In addition, I realise there may be other rules or guidelines that I would need to adhere to. I will be respectful of all relevant policies, should you be willing to allow me this opportunity.

Thank you for your time and consideration of this matter. If you have any questions or would like to see a copy of the questionnaire, I am more than happy to oblige. My contact details are as above, or you may contact my thesis supervisor, Dr. Jennifer Stillman, at Massey University Albany, Private Bag 102-904, North Shore MSC, Auckland, email: J.A.Stillman@massey.ac.nz.

I look forward to hearing from you soon.

Yours faithfully

Rachel Findlay



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27 April 2004

Rachel Findlay
C/- Dr Jennifer Stillman
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Massey University
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Dear Rachel

HUMAN ETHICS APPROVAL APPLICATION – MUAHEC 04/025
“Examination of a homeostatic model of subjective wellbeing”

Thank you for your application. It has been fully considered, and approved by the Massey University, Albany Campus, Human Ethics Committee.

If you make any significant departure from the Application as approved then you should return this project to the Human Ethics Committee, Albany Campus, for further consideration and approval.

Approval is for three years. If this project has not been completed within three years from the date of this letter, a new application must be submitted at that time.

Yours sincerely

Associate-Professor Kerry Chamberlain
Chairperson,
Human Ethics Committee
Albany Campus

cc: Dr Jennifer Stillman
School of Psychology



An Examination of Personal Wellbeing

INFORMATION SHEET

My name is Rachel Findlay, I am a Masters student majoring in Psychology at Massey University, Albany. I am working with Dr. Jennifer Stillman on a research project examining a theory surrounding the wellbeing of members of the general population.

If you agree to take part in the study you will be asked to consider several statements and decide how much you agree that the statements apply to you. You will also be asked to rate how satisfied you are with several different areas of your life. Your participation will require approximately ten minutes of your time.

The information collected will be used for the research project and may be submitted for publication in an academic journal. You will be asked to complete a few questions to provide us with basic demographic information; however you should be aware that all data obtained will be merged with data from other individuals and analysed together for generalisations to be made. Your responses will remain completely anonymous. Data will be securely stored and disposed of by the researchers after a period of five years.

You have the right to decline the invitation to participate at any time, or to decline to answer any particular question. You may also ask questions about the study at any time. You have the opportunity to be given access to a summary of the project findings when the project is completed.

Please contact either Dr. Jennifer Stillman or myself if you have any further questions regarding this research.

Thank you for your participation.

Dr. Jennifer Stillman
Phone: 414 0800 Extn 9074

Rachel Findlay
[REDACTED]

This project has been reviewed and approved by the Massey University Human Ethics Committee, ALB Application 04/025. If you have any concerns about the conduct of this research, please contact Associate Professor Kerry Chamberlain, Chair, Massey University Campus Human Ethics Committee: Albany, telephone 09 414 0800 x9078, email humanethicsalb@massey.ac.nz.



Massey University

COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

Te Kura Pūkenga Tangata

WELLBEING...

A GRADUATE RESEARCH PROJECT

***We would greatly value
your opinion.***

INSTRUCTIONS:

There are three parts to this questionnaire. The first part involves making ratings on your level of satisfaction towards several different areas of your life. The second part will require you to consider several statements and decide how much you agree that these statements apply to yourself. The final section will ask you a few questions about yourself. You may take as long as you like to complete the questionnaire, however it is unlikely that it will take any longer than ten minutes to complete.

Please be as honest and accurate as you can throughout. Try not to let your response to one question/statement influence your responses to other questions/statements. There are no “correct” or “incorrect” answers. Answer according to your **own** feelings, rather than how you think “most people” would answer.

Please note that completing this questionnaire implies consent to participate.

PART ONE:

The following questions will ask how **satisfied you feel** with different aspects of your life. The scale will range from 0 – 10, with **0** indicating that you feel **completely dissatisfied**, **10** indicating that you feel **completely satisfied**, and the middle of the scale (**5**) indicating that you feel **neutral**.

1. How satisfied are you with your standard of living?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. How satisfied are you with your health?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. How satisfied are you with what you achieve in life?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. How satisfied are you with your personal relationships?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. How satisfied are you with how safe you feel?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. How satisfied are you with feeling part of your community?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. How satisfied are you with your future security?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART TWO:

For the following statements please indicate the **extent to which you agree** that the statement **applies to yourself**. Again the scale will range from 0 – 10, with **0** indicating that you **disagree completely**, **10** indicating that you **agree completely**, and **5** indicating that you feel **neutral** (eg. “I neither agree nor disagree”).

Remember to be as honest and accurate as you can, try not to let your response to one statement influence your responses to other statements, and answer according to your own feelings.

1. In uncertain times, I usually expect the best.

Disagree Completely							Neutral		Agree Completely		
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>											

2. It's easy for me to relax.

Disagree Completely							Neutral		Agree Completely		
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>											

3. If something can go wrong for me, it will.

Disagree Completely							Neutral		Agree Completely		
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>											

4. I'm always optimistic about my future.

Disagree Completely							Neutral		Agree Completely		
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>											

5. I enjoy my friends a lot.

Disagree Completely					Neutral						Agree Completely
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>											

6. It's important for me to keep busy.

Disagree Completely					Neutral						Agree Completely
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>											

7. I hardly ever expect things to go my way.

Disagree Completely					Neutral						Agree Completely
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>											

8. I don't get upset too easily.

Disagree Completely					Neutral						Agree Completely
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>											

9. I rarely count on good things happening to me.

Disagree Completely					Neutral						Agree Completely
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>											

10. Overall, I expect more good things to happen to me than bad.

Disagree Completely					Neutral						Agree Completely
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>											

PART THREE:

Now finally a few questions which describe you, so we know we have sampled a wide cross-section of people. Any information you give us remains **strictly confidential**, and **anonymous**.

Please circle the number that applies to you.

What is your gender?

Male ----- 1
 Female ----- 2

Which of these age groups do you fall into?

18 to 24 years ----- 1
 25 to 34 years ----- 2
 35 to 44 years ----- 3
 45 to 54 years ----- 4
 55 to 64 years ----- 5
 65 years or over ----- 6

Including yourself, how many people normally live in your household?

1 2 3 4 5 6 7 8 or more

Into which of these groups does the **combined** gross income of **all the people** in your household fall into?

Less than \$25,000 ----- 1
 \$25,000 to \$39,999 ----- 2
 \$40,000 to \$54,999 ----- 3
 \$55,000 to \$69,999 ----- 4
 \$70,000 to \$84,999 ----- 5
 \$85,000 to \$99,999 ----- 6
 \$100,000 or more ----- 7

Are you a student studying at least half time?

Yes ----- 1
No ----- 2

Have you recently experienced a significant (or important) life event that made you noticeably happier or sadder than usual?

Yes ----- 1 (please answer the final three questions)
No ----- 2 (congratulations you have reached the end of the questionnaire)

If so, did this event make you....

Happier than usual ----- 1
Sadder than usual ----- 2

How long ago did this event occur?

Less than six months ----- 1
Between six months and one year ----- 2
Between one and two years ----- 3
Over two years ago ----- 4

Was this event related to your...

Health ----- 1
Finances ----- 2
Employment ----- 3
Personal relationships ----- 4
Family ----- 5

Thank you, your participation is greatly appreciated.

INSTRUCTIONS:

There are three parts to this questionnaire. The first part requires you to consider several statements and decide how much you agree that these statements apply to yourself. The second part involves making ratings on your level of satisfaction towards several different areas of your life. The final section will ask you a few questions about yourself. You may take as long as you like to complete the questionnaire, however it is unlikely that it will take any longer than ten minutes to complete.

Please be as honest and accurate as you can throughout. Try not to let your response to one question/statement influence your responses to other questions/statements. There are no “correct” or “incorrect” answers. Answer according to your **own** feelings, rather than how you think “most people” would answer.

Please note that completing this questionnaire implies consent to participate.

PART ONE:

For the following statements please indicate the **extent to which you agree** that the statement **applies to yourself**. The scale will range from 0 – 10, with **0** indicating that you **disagree completely**, **10** indicating that you **agree completely**, and **5** indicating that you feel **neutral** (eg. “I neither agree nor disagree”).

1. In uncertain times, I usually expect the best.

Disagree Completely					Neutral						Agree Completely
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>											

2. It's easy for me to relax.

Disagree Completely					Neutral						Agree Completely
0	1	2	3	4	5	6	7	8	9	10	
<input type="checkbox"/>											

3. If something can go wrong for me, it will.

Disagree Completely		Neutral						Agree Completely		
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>										

4. I'm always optimistic about my future.

Disagree Completely		Neutral						Agree Completely		
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>										

5. I enjoy my friends a lot.

Disagree Completely		Neutral						Agree Completely		
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>										

6. It's important for me to keep busy.

Disagree Completely		Neutral						Agree Completely		
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>										

7. I hardly ever expect things to go my way.

Disagree Completely		Neutral						Agree Completely		
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>										

8. I don't get upset too easily.

Disagree Completely		Neutral						Agree Completely		
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>										

9. I rarely count on good things happening to me.

Disagree Completely					Neutral					Agree Completely
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>										

10. Overall, I expect more good things to happen to me than bad.

Disagree Completely					Neutral					Agree Completely
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>										

PART TWO:

The following questions will ask how **satisfied you feel** with different aspects of your life. Again the scale will range from 0 – 10, with **0** indicating that you feel **completely dissatisfied**, **10** indicating that you feel **completely satisfied**, and the middle of the scale (**5**) indicating that you feel **neutral**.

Remember to be as honest and accurate as you can, try not to let your response to one question influence your responses to other questions, and answer according to your own feelings.

1. How satisfied are you with your standard of living?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. How satisfied are you with your health?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. How satisfied are you with what you achieve in life?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. How satisfied are you with your personal relationships?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. How satisfied are you with how safe you feel?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. How satisfied are you with feeling part of your community?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. How satisfied are you with your future security?

Completely Dissatisfied					Mixed					Completely Satisfied
0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART THREE:

Now finally a few questions which describe you, so we know we have sampled a wide cross-section of people. Any information you give us remains **strictly confidential**, and **anonymous**.

Please circle the number that applies to you.

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 \$25,000 to \$39,999 ----- 2
 \$40,000 to \$54,999 ----- 3
 \$55,000 to \$69,999 ----- 4
 \$70,000 to \$84,999 ----- 5
 \$85,000 to \$99,999 ----- 6
 \$100,000 or more ----- 7

Are you a student studying at least half time?

Yes ----- 1
No ----- 2

Have you recently experienced a significant (or important) life event that made you noticeably happier or sadder than usual?

Yes ----- 1 (please answer the final three questions)
No ----- 2 (congratulations you have reached the end of the questionnaire)

If so, did this event make you...

Happier than usual ----- 1
Sadder than usual ----- 2

How long ago did this event occur?

Less than six months ----- 1
Between six months and one year ----- 2
Between one and two years ----- 3
Over two years ago ----- 4

Was this event related to your...

Health ----- 1
Finances ----- 2
Employment ----- 3
Personal relationships ----- 4
Family ----- 5

Thank you, your participation is greatly appreciated.