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**Andrews University**

**School of Education**

**SELF-ESTEEM, PERSONAL CONTROL, OPTIMISM, EXTRAVERSION,  
AND THE SUBJECTIVE WELL-BEING OF MIDWESTERN  
UNIVERSITY FACULTY**

**A Dissertation**

**Presented in Partial Fulfillment**

**of the Requirements for the Degree**

**Doctor of Philosophy**

**by**

**Shawn Lee Zimmerman**

**July 1999**

**UMI Number: 9937630**

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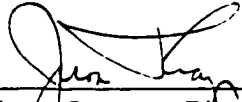
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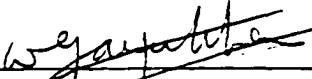
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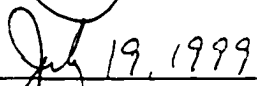
  
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**ABSTRACT**

**SELF-ESTEEM, PERSONAL CONTROL, OPTIMISM, EXTRAVERSION,  
AND THE SUBJECTIVE WELL-BEING OF MIDWESTERN  
UNIVERSITY FACULTY**

by

**Shawn Lee Zimmerman**

**Chair: Elsie Jackson**



## ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

Andrews University

School of Education

Title: SELF-ESTEEM, PERSONAL CONTROL, OPTIMISM, EXTRAVERSION,  
AND THE SUBJECTIVE WELL-BEING OF MIDWESTERN UNIVERSITY  
FACULTY

Name of researcher: Shawn Lee Zimmerman

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Date completed: July 1999

### Problem and Purpose

Although recent summaries of subjective well-being have illuminated four primary covariants, little research has been done that addresses the interaction and combined effects of these variables, limiting the development of theory and practice, especially in the population of university faculty. This research sought to address the interaction of self-esteem, personal control, optimism, and extraversion when measured together, and how they combine in relation to subjective well-being in a sample of Midwestern university faculty.

## Methodology

A total of 233 surveys was collected from two Midwestern university faculty populations. These surveys measured self-esteem, personal control, optimism, extraversion, subjective well-being, and several demographics. Each of these variables was analyzed using multiple regression in regard to the measure of subjective well-being.

## Findings

Subjective well-being correlated significantly with self-esteem, a sense of personal control, and optimism, but not extraversion when measured individually. When measured together, self-esteem, a sense of personal control, and optimism were significantly correlated with subjective well-being, whereas extraversion was not significantly correlated multivariately. Each of the variables self-esteem, personal control, optimism, and extraversion showed significant intercorrelations. When marital satisfaction and level of instruction were added to form a model in addition to the primary variables, just under 50% of the subjective well-being variance was accounted for among married faculty members. Adding marital status and instructional level to the primary variables accounted for 36% of subjective well-being variance.

## Conclusions

Univariately, self-esteem, optimism, and personal control shared significant variance with subjective well-being. Multivariately, marital satisfaction and self-esteem shared the largest relative variance with subjective well-being. Optimism, personal control, and instructing at only one level also shared significant variance with subjective well-being multivariately. Although extraversion has shown substantial correlations with

subjective well-being in other studies, it appears to be suspect in this research and may be population specific. The moderate intercorrelations between the variables show that the variables self-esteem, optimism, personal control, and extraversion do not additively relate to subjective well-being.

**To Jesus  
the author of abundant life.  
To my wife Joylin,  
the love that cheers happiness.  
And to Amber Rose,  
a child of the King.**

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## CHAPTER I

### INTRODUCTION

To experience a child's smile blossom into laughter as she or he is gobbled up in a laughing, hugging, tickling embrace is a picture of happiness. It portrays an experience which has been sought ever since Eve, the first woman created by God, reached for the experience she thought would bring more happiness. Through the ages mankind has reached in various directions and tried a plethora of methods designed to obtain the fruit of happiness. And today, like those who went before us, we seek this fruit--this seeming illusion.

In the media it may be perceived that happiness is reserved for the rich, the young, maybe even certain ethnic groups, and surely only those who buy certain products. However, research has shown that happiness does not depend upon place of residence, culture, education, age, gender, the status of one's parents, or even wealth (Myers, 1992, p. 86; Myers & Diener, 1995). Levels of happiness have been shown to be comparable for women and men, the rich as well as those barely able to meet their needs, the well educated and the uneducated, the old and the young, and individuals regardless of residence or cultural identity. The answer to the question of happiness lies beyond superficial artifacts and unchangeable demographics.

Researchers use the term Subjective Well-Being (SWB) to conceptualize happiness



(Andrews & Robinson, 1991, pp. 61-114; Diener, 1984, 1994). Although many researchers use subjective well-being and happiness interchangeably, for the purposes of this study the term happiness is considered only an element of subjective well-being. The concept of subjective well-being is equated to the overall happiness and life satisfaction of an individual, most often according to his or her subjective report. Diener's 1994 review of subjective well-being suggests that in addition to positive affect and life satisfaction, negative or unpleasant affect is important when measuring subjective well-being. Finally then, current researchers suggest that subjective well-being is an individual's evaluation of life cognitively (life satisfaction) and affectively (reduced negative affect and preponderance of positive affect; Diener & Diener, 1996; Myers & Diener, 1995).

The term subjective well-being also reduces the personal projective artifacts that accompany the term happiness. Yet, perhaps one of the most valuable aspects of the term subjective well-being is its focus on each individual's personal judgment rather than a focus on judgments made by the researcher (Diener, 1984). Some individuals are satisfied with their life because they feel healthy and they are busy utilizing their creative talents, while others are much less satisfied with life because they place higher value on free time and measures of past accomplishments. The measure of happiness and life satisfaction is relative to the subjective interests of each individual. Because measuring a large number of individual interests would be vastly cumbersome and time-consuming, evaluations of subjective well-being are most valuable when they are global measures of an individual's overall evaluation of life rather than measures of specific domains (Diener, Emmons, Larsen, & Griffin, 1985).

Based on media and general literature it is often believed that most individuals tend

to experience a low or poor sense of subjective well-being. However, consistent research since the 1960s shows that most people report a positive level of subjective well-being (Diener & Diener, 1996). Recently, Diener and Diener (1995) have cited many studies suggesting high levels of happiness. One study cited by Diener and Diener (1995) found that 68% of individuals reported positive emotions, while another study found that individuals reported more positive than negative affect 80% of the time. Another study (Diener & Diener, 1995) found that 52% of those surveyed enjoy predominantly positive affect, 29% experience mixed or neutral affect, and 19% endure dominantly negative affect. However, for those individuals not reporting positive subjective well-being, life can be grim. Self-defeating behaviors including isolation, addictions, sexual or physical abuse, self-mutilation, and even suicide become options to relieve the painful void of subjective well-being. It is for the relief of this pain that mankind continues its search for the factors that produce positive subjective well-being.

Recently, research on subjective well-being has established a number of positive psychological attitudes that consistently correlate with measures of subjective well-being (Lightsey, 1996; Myers, 1992; & Myers & Diener, 1995). These attitudes include: a positive self-esteem, a sense of personal control, an optimistic perception, and an extroverted interpersonal style. Self-esteem has shown correlations with subjective well-being cross-culturally (Diener & Diener, 1995), through specific physiologic responses and health behaviors (O'Leary, 1992), and as a stress buffer (Lightsey, 1996). Personal control is correlated with physical health (Shapiro, Schwartz, & Astin, 1996), with greater average happiness, and it is important to subjective well-being (Larson, 1989). Optimism has been found to be associated with positive "postsurgical quality of life" and faster

physical recovery (Scheier et al., 1989), “recovery from coronary artery bypass surgery,” and other positive health outcomes (Scheier & Carver, 1987, p. 177). Longitudinal data have supported the findings that earlier pessimistic tendencies appear to be a health risk later in life (Peterson, Seligman, & Vaillant, 1988). Finally, extraversion is consistently correlated with subjective well-being (Pavot, Diener, & Fujita, 1990) and has been found to have a direct impact on happiness (Costa & McCrae, 1980). These findings have been substantiated in the United States and corroborated in other countries as well (Lu & Shih, 1997). Half of this correlation between extraversion and subjective well-being has been explained by greater social activities of extraverts (Argyle & Lu, 1990a). Beyond the consistent research findings concerning the relationship between these variables and subjective well-being, what makes this research even more interesting is the common sense value of these variables and the fact that they have been studied unidimensionally for decades.

#### Statement of the Problem

In the literature there are consistent findings regarding the positive relationships between the concept of subjective well-being and each of the variables self-esteem, personal control, optimism, and extraversion (Lightsey, 1996; Myers, 1992). However, there appears to be no research to date that has illuminated the interrelatedness of all four, and very few studies where three of these variables are assessed together. Lightsey reports that less than one-fourth of psychological resource studies use multiple psychological resources, which limits the development of theory and practice (1996, p. 696).

The problem is that without analyzing these variables together in one study it is impossible to understand how they relate to each other, and how they relate to subjective well-being while in combination. The primary knowledge this research sought to acquire concerns the interaction of these four variables when they are measured together, and how they best combine in relation to subjective well-being.

Finally, the research that has been done on subjective well-being has addressed multiple populations, with 49% of all studies focusing on college students (Lightsey, 1996, p. 695). However, there are no data addressing the subjective well-being of university faculty. The college years are a time of growth and impressionability, and students often develop mentor relationships with faculty. Thus, a faculty member's subjective well-being not only impacts themselves, their families, and their work relations, it is likely to directly affect student's subjective well-being as well.

#### Purpose of the Study

The purpose of this study was to observe the relationships between prevalent psychological attitudes and subjective well-being, and to observe the interrelationships among the psychological attitudes themselves. This was done through the following self-report questionnaires. Negative affect and positive affect were measured by the Short Happiness and Affect Research Protocol (SHARP; Stones, Kozma, Hirdes, & Gold, 1996), a version of the Memorial University of Newfoundland Scale of Happiness (MUNSH; Kozma & Stones, 1980). Added to this affect measure, the cognitive life satisfaction aspect of subjective well-being was measured by the Satisfaction With Life Scale (SWLS; Diener et al., 1985). The Self-Esteem Scale measured self-esteem

(Rosenberg, 1965). The internality scale of the Internality, Powerful Others, Chance Scales was used to measure personal control (Levenson, 1981). The Life Orientation Test (LOT) was used to measure optimism (Scheier & Carver, 1985). And the short form of the extraversion scale of the Eysenck Personality Questionnaire (EPQ) measured extraversion (Eysenck, Eysenck, & Barrett, 1985).

### Research Questions

When the variables subjective well-being, self-esteem, personal control, optimism, and extraversion are measured together, the following questions emerge:

1. Is there a significant positive correlation between subjective well-being and self-esteem among university faculty?
2. Is there a significant positive correlation between subjective well-being and personal control among university faculty?
3. Is there a significant positive correlation between subjective well-being and optimism among university faculty?
4. Is there a significant positive correlation between subjective well-being and extraversion among university faculty?
5. What combination of the variables self-esteem, personal control, optimism, and extraversion correlates most positively with subjective well-being variance among university faculty?
6. To what magnitude do the variables self-esteem, personal control, optimism, and extraversion correlate with each other?

### Significance of the Study

Mental and physical health and/or happiness are of primary importance to anyone who is lacking them. Although some research has shown a universal resilience toward happiness, even a small percentage of unhappy people in the United States, such as 10%, accounts for a massive 25 million unhappy people and must be addressed (Diener & Diener, 1996). This study is important as it will expand our understanding of how and to what extent psychological attitudes relate to subjective well-being.

This research addresses vital issues that have not been adequately covered in the current subjective well-being literature. For example, further studies need to be conducted concerning the interrelationships between vastly researched psychological attitudes and the combined impact of these variables working together. In order to apply the practical knowledge of subjective well-being and psychological attitudes that relate to subjective well-being, one must understand how these attitudes work together. This research may also assist the development of further research on subjective well-being, which may influence the development of theories and practices that promote health and happiness.

Myers and Diener believe that “by asking who is happy, and why, we can help people rethink their priorities and better understand how to build a world that enhances human well-being” (1995, p. 17). The results of poor subjective well-being not only affect the individual, but they affect his or her family and their development, the individual’s career and career relationships, as well as many other relationships. The development of this area will enable therapists and helping professionals to better understand subjective well-being attitudes that lead to health and happiness and how to provide for their clients. For example, by being aware of psychological attitudes and how they relate to subjective

well-being, therapists can better ascertain the need for addressing these attitudes in therapy, better understand client difficulties with subjective well-being, and develop treatment plans that will have positive impacts on subjective well-being.

#### Delimitations of the Study

Although the current literature suggests that diverse populations tend to have similar subjective well-being dynamics, this study is generalizable only to faculty who work in Midwestern university settings. The individuals addressed are all university instructors with a consistent college educational background, and a large percentage have also obtained a graduate degree. These individuals are often of middle-class social and economic status.

#### Limitations of the Study

This research was limited to assessing the relationship that subjective well-being has with the most prominent variables currently believed to be associated with subjective well-being as measured in a university faculty population.

#### Assumptions

The following assumptions were made for the purpose of this study:

1. That each individual was able to read and understand the instructions of each instrument and was skilled enough to respond appropriately.
2. That each individual provided valid and reliable responses.
3. That the results of each instrument reflected the psychological attitude that the instrument conceptually portrayed for each individual.

### Definition of Terms

The terms used in this study are defined as follows:

Extraversion: As conceptualized by H. J. Eysenck, is based upon the theory that introverts are generally overaroused and seeking less arousal, while extraverts are underaroused and seeking greater arousal. The term extraversion has largely become equated with the tendency for an individual to greatly prefer interacting with others in an external social way, as opposed to a preference to reduce such exposure.

Happiness: Increased positive affect. Higher scores on positive affect measures and lower scores on negative affect measures are assumed to indicate higher levels of happiness, whereas lower scores on positive affect measures and higher scores on negative affect measures are assumed to indicate lower levels of happiness. Diener (1994) explains that both positive and negative measures of affect are necessary when measuring the happiness component of subjective well-being.

Optimism: An individual's tendency of positive expectations for her or his future, according to Scheier, Carver, and Bridges (1994), rather than the expectation of the world to yield negative experiences.

Personal control: One's feeling or experience of often having the ability to choose or influence one's own life. Often this concept is referred to as an internal locus of control as conceptualized by Rotter (1966).

Self-esteem: Derived primarily from Rosenberg's (1965) definition. It refers to a positive or negative attitude toward self. High self-esteem represents an individual's feeling that she or he is "good enough." The individual respects her or himself. She or he does not necessarily think she or he is better than others, but surely does not feel lower



than others either. Low self-esteem suggests a lack of self-respect, a feeling of self-contempt, and self-dissatisfaction.

Subjective Well-being: An individual's experience of overall happiness and life satisfaction. It contains both positive and negative affect, and life satisfaction components as conceptualized by Diener's 1994 review of subjective well-being research. Although subjective well-being is most often used in recent literature, other terms such as General Well-Being (GWB) and simply well-being have been used by researchers to measure overall happiness and life satisfaction.

### Organization of Study

This study is organized into five chapters. Chapter 1 consists of the introduction, statement of the problem, purpose of the study, the research questions, significance of the study, delimitations and limitations of the study, assumptions, definitions of terms, and organization of study.

Chapter 2 presents a survey of the literature pertaining to subjective well-being, subjective well-being instruments, self-esteem, personal control, optimism, and extraversion. Studies addressing multiple combinations of these variables are also discussed.

Chapter 3 explains the procedures for selecting the sample, the methodology in data collection, the instrumentation, the null hypotheses, and the statistical analysis.

Chapter 4 presents the data, analysis, and an interpretation of the findings.

A discussion of the findings, conclusions, and recommendations are found in chapter 5.

## CHAPTER II

### REVIEW OF THE LITERATURE

#### Introduction

A search for a panacea that will provide everlasting happiness continues today as it has throughout history. In one venue, many diverse disciplines from religious philosophy to biochemical science claim that they have found the answer. In the media, commercials attempt to sell life satisfaction and happiness as a result of their products of beer, barley hull pillows, and even magnificent chopper machines. Similarly, for decades now psychological researchers have sought after a special combination of demographic variables and psychological attitudes that will best account for the attainment of happiness and life satisfaction.

The research focus of health and happiness over the last 4 decades is a shift from the previous abnormal psychology focus on depression, anxiety, neuroticism, schizophrenia, and hysteria. In fact, before the 1970s there were just over a dozen studies looking at what is now considered subjective well-being--"life satisfaction" and "happiness" (Andrews & Robinson, 1991). Then during the 1980s, 780 articles appeared annually which included the terms "well-being," "happiness," and "life satisfaction" (Myers & Diener, 1995). Recently, a Silver Platter Psychological Information Terms Search of "happiness or well-being" revealed just under 6,000 articles from January 1989 through

April 1998.

Although the empirical investigation of happiness and subjective well-being is relatively new, theories of happiness are not. Myers and Diener (1995) explain that the ancient Greek and Roman philosophers as well as Epicurean and Stoic philosophers believed that happiness was the result of wisdom and intelligence, and Aristotle equated happiness with virtue.

Much of the current research in this area has been addressed within the framework of Subjective Well-Being (SWB). Subjective well-being is a “pervasive sense that life is good” (Myers, 1992). While many well-being measures address “life is good” globally, others focus on more specific life domains such as one’s career, family, or income (Andrews & Robinson, 1991).

Within the subjective well-being research, a plethora of variables has been subjected to evaluation. Recently, Lightsey (1996), Myers (1992), and Myers and Diener (1995) have integrated and largely distilled the broad research in this area, substantiating a number of psychological attitudes that are consistently correlated with subjective well-being. As a result, four psychological attitudes that are strongly related to subjective well-being have been illuminated. These positive psychological attitudes include: a positive self-esteem, a sense of personal control, an optimistic perception, and an extraverted interpersonal style. Although the literature suggests that studies operationalizing multiple correlates of subjective well-being are needed (Lightsey, 1996), few studies have included multiple correlates. Additionally, very few studies have addressed these four consistent psychological attitudes in combination with each other. Only through studying the combined impact of multiple variables can the true impact of these variables be known.

The intention of this study is threefold: (1) to measure the correlation between subjective well-being and the variables self-esteem, personal control, optimism, and extraversion; (2) to measure the intercorrelations between the variables self-esteem, personal control, optimism, and extraversion; and (3), to find the combination of the variables self-esteem, personal control, optimism, and extraversion that accounts for the most subjective well-being variance.

This literature review is first concerned with the concept of subjective well-being, and subjective well-being measures. Studies involving self-esteem, personal control, optimism, extraversion, and multiple correlations between these are then discussed.

### Subjective Well-Being

For many years researchers claimed that the absence of psychiatric symptoms was all that was necessary to determine well-being; however, researchers now believe that positive mental health qualities must also be present to determine psychological well-being (Shek, 1992). Andrews and Robinson (1991) explain that subjective well-being is “happiness or satisfaction with life-as-a-whole or life in general” and that subjective well-being sums up the “quality of an individual’s life” (p. 69). The foremost published researcher on subjective well-being, Ed Diener, agrees as he explains that the primary elements when defining subjective well-being are an individual’s global assessment of satisfaction with life and positive affect (Diener, 1984). Diener’s 1984 review of subjective well-being literature concludes that researchers in this area are focused on “how and why people experience their lives in positive ways, including both cognitive judgments and affective reactions” (p. 542). In addition to positive affect and life satisfaction,

Diener's 1994 review of subjective well-being added the lack of negative or unpleasant affect as important when measuring subjective well-being. This negative component has been added because of the repeated finding that positive and negative affect are independent of each other over long periods of time, and inversely related during short periods of time (Diener & Emmons, 1985). Furthermore, these authors relate that positive and negative affect tend to correlate with different external variables including extraversion and neuroticism, respectively. In summary, present researchers suggest that subjective well-being, often referred to as happiness, is an individual's evaluation of life cognitively (life satisfaction) and affectively (reduced negative affect and preponderance of positive affect; Diener & Diener, 1996; Myers & Diener, 1995).

As early as 1967, Wilson's review of happiness research suggested that men and women who tended to be extraverted, optimistic, and able to maintain a high self-esteem were happier. However, these variables were only a few of the plethora of variables Wilson's review found to be highly related to happiness. Many of the variables he named, including intelligence, are now considered of little value in predicting subjective well-being, especially many of the demographic variables including age and wealth. In 1967, Wilson agreed with a researcher of the 1930s that theories of "the happy life" really have not advanced beyond the level Greek philosophers had reached in their time.

Since Wilson's 1967 review of happiness research, many other insightful studies have reviewed the subjective well-being literature. These include Andrews and Robinson (1991), Diener (1984, 1994), Myers (1992), and others mentioned by Diener (1994, p. 105; George & Bearon, 1980; Larsen, Diener, & Emmons, 1985; McKennell, 1974; Nydegger, 1977; Veenhoven, 1984). Additionally, several researchers have thoroughly

reviewed the correlates of subjective well-being (Andrews & Withey, 1976; Diener & Larsen, 1993; Veenhoven, 1984). Subjective well-being is clearly believed to be an important concept by many researchers and has undergone aggressive study and review.

### Subjective Well-Being Measures

Although no one happiness or subjective well-being measure has become favored or generally used (Argyle & Lu, 1990b), subjective well-being measures repeatedly appear psychometrically sound. Methods such as using beepers to randomly alert subjects to record their subjective well-being, significant-other reports, and other non-self-report measures of subjective well-being methods result in very similar results to simple self-reported, global subjective well-being measures (Diener & Diener, 1996). Even happiness measures taking less than 1 minute have been found to give valid and reliable measures of happiness, and assessments of emotional, social, and mental health functioning have been found to correlate with self-esteem, personal control, optimism, extraversion, and lack of health problems (Fordyce, 1988). Happiness scales also tend to have relatively high intercorrelations (Costa & McCrae, 1980).

Myers cites Diener, Sandvik, Pavot, and Gallagher (1991) as reporting research that social desirability and current mood do not invalidate subjective well-being measures (Myers & Diener, 1995). Diener and Diener (1996) also found that positive well-being found in one-time self-report measures are not due to measurement artifacts.

Subjective well-being measures also appear stable because a good predictor of later well-being is a measure of past well-being (Myers, 1992, p. 106). Some authors have found that both well-being and distress tend to be moderately stable, and even more so

when major life changes are minimal (Stedman, 1996), while others state that well-being is stable regardless of unfortunate events (Myers, 1992, p. 106). A 60-year longitudinal study cited by Myers (1992, p. 106) found emotions to be stable as cheerful teenagers became cheerful adults. Another longitudinal study (Costa, McCrae, & Zonderman, 1987) found enduring personal dispositions yielding considerable stability in well-being responses over a period of 10 years. In fact, past well-being predicted future happiness better than life circumstances including: marital status or changes in marital status, gender, race, age, work, or residence. The concept of subjective well-being has shown temporal stability of "0.5 to 0.6 over a six year period," and an average 6-month reliability of 0.69 (Diener, 1994, p. 109). These reliabilities are based upon self-report and informant reports, leading Diener (1994) to conclude that well-being has long-term stabilities. Diener (1994) also shows that various subjective well-being measures converge, showing validity and reliability. Furthermore, Diener (1994) cites evidence that levels of happiness and subjective well-being seem to have a set point where short-term (daily) measures may show fluctuations while long-term (month-long) measurements show consistency. Although Headey and Wearing (1989) disagree, suggesting that subjective well-being is not as stable as others believe, they too found moderate levels of stability in measures of life satisfaction (0.57), positive affect (0.55), and negative affect (0.62).

Myers and Diener (1995), citing Headey and Wearing (1992) and Sandvik, Diener, and Seidlitz (1993), reveal that subjective well-being can predict other indicators of psychological well-being. Stedman (1996) found that an individual's responses to surveys concerning their happiness, well-being, and life satisfaction are more predictive of health and well-being than are life circumstances or estimates made by doctors or psychologists.

A meta-analysis by Okun and Stock (1987) shows that subjective well-being correlated 0.38 with adjustment, -0.33 with neuroticism, 0.33 with work satisfaction, and 0.29 with family satisfaction. Subjective well-being measures also show adequate reliability (Mean=0.80), multiple-item scales having higher reliabilities (Mean=0.87) than single-item scales (Mean=0.66), while test-retest reliabilities were 0.69 for single-item versus 0.74 for multi-item scales. This study also found that measures of subjective well-being tend to be correlated 0.52 with each other. Okun and Stock (1987) concluded:

We judge the level of reliability for subjective well-being measures to be adequate. The test-retest and internal consistency reliability estimates suggest that measures of subjective well-being are relatively stable and homogeneous. Correlations involving different measures of subjective well-being were sufficiently high in magnitude that we conclude they share common variance. That subjective well-being measures covaried in a predictable manner with theoretically related scales, such as neuroticism, provides further evidence for their construct validity. Nonetheless, the mean correlation (0.49) between happiness and life satisfaction measures was slightly higher than the mean (0.45) correlation between different measures of happiness. (pp. 489-490)

Some researchers (Stedman, 1996) suggest that research done with a large number of variables and subjects tends to account for between 60 and 65% of well-being variance. Within this, less than 10% of the variance is accounted for by demographics and objective circumstances. These authors suggest that satisfaction with life predicts 50% of well-being variance. Costa et al. (1987) found that the variables age, race, sex, income, education, and marital status taken together accounted for only 4 to 6% of subjective well-being measures in a sample of almost 5,000 individuals over a 7-to-12-year time period. This same study found that individual differences measured during the first administration accounted for up to 25% of the variance in scores. When individual life changes were measured against individuals lacking such change, little difference was



found. Test-retest correlations for well-being scores between individuals who had major life changes as compared with those who did not have those changes are as follows: changes in marital status 0.45 versus 0.49; changes in employment status 0.50 versus 0.47; and residence changes were 0.48 versus 0.49. These authors concluded that it appears that well-being measures can modestly predict future well-being over time intervals as long as 12 years regardless of changes in such important variables as marital status, employment status, and residence, and regardless of gender, race, age, income, and education.

Many other sources have cited the low or non-existent relationships between subjective well-being and demographic variables including: gender, age, education, income, marital status, and race (Costa et al., 1987; Myers, 1992; Myers & Diener, 1995; Stedman, 1996). When computed together, seldom do these variables account for more than 10% of subjective well-being variance (Andrews & Robinson, 1991). However small, researchers have suggested that the most valuable demographics to subjective well-being tend to be wealth, marriage, and social support. Health and physical attractiveness have also shown small correlations with subjective well-being (Diener, 1994). Myers and Diener (1995) relate that no specific life stage has been found to correlate with happiness; however, there does seem to be a positive correlation between individualistic cultures over collectivist cultures in relation to happiness. Diener and Diener (1995) found significant differences between nations and concluded that predictors of happiness are likely to be varied between nations. Brickman, Coates, and Janoff-Bulman (1978) report that even paraplegics and lottery winners adapted quickly, showing little difference from average happiness and well-being levels. However, Headey and Wearing (1989) warn that when

considering the small sample size of the Brickman et al. study, this study shows that adaptation reduces the impact of negative life events rather than showing that adaptation results in rapid, non-detectable impacts.

Contrary to most research findings, relationships, especially marital relationships, may impact subjective well-being more than previously thought. In a large ( $N=1207$ ) sample of married couples in Britain, Russell and Wells (1994) found the variable "quality of marriage" to account for about 45% of happiness variance for husbands, and 51% of happiness variance for wives. In addition to this unusual finding, 16 other predictors including "extraversion, neuroticism, health, education, employment, financial situation, satisfaction with housing, number of children, relationships with family and friends" (p. 317) added very little (3%-8%) to measured variance. According to these authors, the most powerful variable related to happiness is a close and personal relationship. These authors also cite studies that have found that individuals in good marriages are happier than those in bad marriages, and that the work of Arrindell, Meeuwesen, and Huysse (1991) also showed that satisfaction with life scores were largely affected by marital status but not by gender, social desirability, education, or age.

A study cited by Myers (1992, p. 149) showed that people who named five or more friends when asked the question "Looking over the past 6 months, who are the people with whom you discussed matters important to you?" were 60% more likely to feel "very happy" than those who could name no such person. In his review of the happiness literature, Wilson (1967) stated that the most "impressive single finding" in the happiness literature is the correlation between happiness and "successful involvement with people" (p. 304).

Diener (1994) showed that subjective well-being is not equatable with personality traits because (1) subjective well-being reacts to life changes and life events (p. 117) including clients in therapy (p. 113) and good and bad events or feeling ill (Headey & Wearing, 1992; Sandvik et al., 1993, cited in Myers & Diener, 1995), and (2) predictors of subjective well-being have low correlations with other predictors of subjective well-being measures. Examples of this divergent validity include the finding that although extraversion and neuroticism are both strong correlates of subjective well-being, extraversion has a correlation of 0.20 with positive affect, while neuroticism has a correlation of 0.38 with negative affect (p. 117).

Furthermore, personality variables have shown higher correlations with subjective well-being than demographics (Diener, 1994). Andrews and Robinson (1991) report that positive affect correlates with extraversion, social desires, optimism (Carver & Gains, 1987), and self-esteem (Diener & Emmons, 1985; Fordyce, 1988). They also claim that negative affect relates to neuroticism. Myers's (1992) integration of current literature explained that an individual's happiness is correlated with self-esteem, a sense of personal control, optimism, extraversion, being highly spiritual, and being able to name several friends.

Costa and McCrae (1980) and Headey and Wearing (1989) suggest that subjective well-being is personality dependent. However, Headey and Wearing (1989) state that the moderate variance accounted for by personality variables and the fact that demographics, social networks, and life events have some contribution to subjective well-being suggest that there are multiple factors beyond personality variables related to subjective well-being.

Costa et al. (1987) state that the stability of subjective well-being and close ties to well-known personality traits illuminate subjective well-being as more of sustained disposition rather than a measure of present mood. They found that changes in marital status, employment status, and residence did not affect subjective well-being over a 9-year period. However, Headey and Wearing (1989) cite many studies where life events seem to significantly impact subjective well-being. These authors found that personality traits “predispose people to experience moderately stable levels of favorable and adverse life events and moderately stable levels of SWB.” Furthermore, “life events influence SWB over and above the effects of personality” (p. 731).

In summary, subjective well-being is a measure of happiness and life satisfaction. Although it has been sought after for decades, even centuries, it appears to be substantially illusive. Although no one measure of subjective well-being has come to be used as a standard, a great many have been found valid, reliable, and interrelated with other measures of subjective well-being. Subjective well-being appears to be stable over time and is only minimally impacted by life experiences and demographics, although long-term personal relationships may have the greatest impact. Subjective well-being tends to correlate positively with adjustment, work and family satisfaction, extraversion, and sociability, and to correlate negatively with neuroticism.

### Self-esteem

Rosenberg has been a stable element in the development of the self-esteem concept since the 1960s. In his seminal book, Rosenberg (1965) stated that self-esteem is a “positive or negative attitude” toward the self. When considering the difference between

an individual who believes him or herself to be “very good” or “good enough,” Rosenberg’s scale measures an individual’s belief of being “good enough (pp. 30-31).” The individual with a high self-esteem score on Rosenberg’s scale respects himself and feels he is a person of worth, yet does not believe himself to be better than others. A person of low self-esteem simply does not respect herself, and is categorized by Rosenberg as self-rejecting, being dissatisfied with herself, and living a life of self-contempt.

Other recent authors (Demo, 1985) have viewed self-esteem as a general domain, dynamic attitude toward one’s self. Although overall self-esteem domains maintain similar levels, they vary as a result of role changes, interpersonal interactions, diverse experiences, and variable feelings. Reflecting this, individuals who have a high self-esteem (i.e., feel that they are “good enough” and respect themselves) may at certain times and during certain situations report higher or lower global self-esteem levels.

In trying to understand what forms self-esteem, Forsman and Johnson (1996) relate a study done in their laboratory where individuals were asked to articulate what elements of their life had strongly impacted their self-esteem for the good and for the bad. What this research found was that people reported a decrease in self-esteem “due to a perceived lack of love or appreciation (mostly within the family framework)” (p. 4) and they felt they had earned an increase in self-esteem from “their own accomplishments” (p. 4).

In attempting to understand the concept of self-esteem, Rosenberg (1965) began to validate the concept by having nurses fill out reports on patients regarding the patient’s level of self-esteem and apparent depression. He found that of highly depressed patients,

only 4% were thought to have high self-esteem, whereas 80% of the highly depressed patients were thought to have low self-esteem, clearly differentiating the polar differences between high and low self-esteem. In another study, Rosenberg (1965) found that, without exception, as the level of self-esteem increased, the number of psychosomatic symptoms decreased, further showing a linear relationship between self-esteem and symptomology. Then in the schoolroom, Rosenberg found that students with higher self-esteem were more likely to receive anonymous nominations for leadership, whereas lower self-esteem individuals were the most "socially invisible," tying social relationships to self-esteem.

Fleming and Courtney (1984) found that their own revision of the Janis-Field scale and the Rosenberg Self-Esteem Scale contains items focusing on self-worth, and they do not attempt to address adjustment constructs of happiness or anxiety. When correlating the Rosenberg Self-Esteem Scale with the Self-Rating subscales, the following correlations were significant beyond the 0.001 level: 0.78 with self-regard, 0.51 with social confidence, 0.35 with school abilities, 0.42 with physical appearance, and 0.35 with physical abilities. A total correlation between the self-rating full scale and the Self-Esteem Scale was 0.66. Fleming and Courtney (1984) also found all negative correlations between the Self-Esteem Scale and measures of anomie (-0.43), anxiety (-0.64), and depression (-0.59). Finally, these authors found that social confidence correlated less with social desirability (0.24) than it did with a person's experience level and age (0.30).

Similarly, Lorr and Wunderlich (1986) developed two scales: a Confidence scale measuring a sense of accomplishment, success in work, and ability to compete, and a pride in one's abilities; and a Popularity scale measuring one's belief that he is approved of by

others, looked up to and liked by others, and simply accepted. Using a sample of high-school boys, factor analysis verified these two factors. Popularity correlated 0.39 with Rosenberg's Self-Esteem Scale, and confidence correlated 0.65 with Rosenberg's Self-Esteem Scale.

However, there are also some warnings regarding the efficacy of the self-esteem concept. Although self-esteem is consistently a focal point in personality research, Demo (1985) states that the development and use of self-esteem measures have been shoddy. He explains that diverse definitions, a wide range of measurement procedures, and low correlations between instruments have led to the poor establishment of the self-esteem concept. Fleming and Courtney (1984) remind researchers that when a concept is defined in a very broad way, it becomes scientifically useless. To be useful, a construct must be differentiated clearly from other constructs. Forsman and Johnson (1996) cite some of the many and varied dichotomies thought to illuminate the self-esteem construct including: "genuine vs. defensive," "inner vs. outer," and "given vs. earned" (p. 2) to name a few. Furthermore, Burns (1977) makes it clear that the way one defines and develops the concept of self-esteem, differentiating it from similar measures of self-acceptance and self-concept, greatly impacts the results and nature of research concerning self-esteem.

O'Leary (1992) stated that self-efficacy addresses an individual's belief regarding her or his own abilities, and that these abilities can be separated into diverse specific behavioral domains. These ability self-perceptions are believed to impact behavior and emotional processes and help to form the foundation of social cognitive theory, which has definitively proven self-efficacy's influence in actual health outcomes. An example of two of these domains could be someone's domain-specific belief in her ability to write dynamic

and purposeful magazine articles, yet struggling with her inability to feel comfortable relating to others in one-on-one situations. In attempting to understand the woman's overall self-esteem composite, this individual's low interpersonal self-esteem or self-efficacy domain would be combined with her high career self-esteem domain.

In 1976, Shavelson, Hubner, and Stanton developed the hierarchical multifaceted model of self-esteem. This model sums domain-specific self-esteem elements such as emotional, social, physical, and academic self-concepts to form a global measure of self-esteem. After testing the multifaceted model with a sample of undergraduates, Fleming and Courtney (1984) concluded that the multifaceted model was "reasonable." They also believed this multifaceted model of self-esteem to be of value first for its multidimensional nature which is beneficial for many predictive situations, and second, for the utility of its global measure for other more general situations.

Taking a different direction, Forsman and Johnson (1996) worked to develop a scale, free from references to one's success or to other individuals' appraisals. They factor analyzed many of the most popular Self-Esteem Scales (525 items) developing a "Basic Self-Esteem" scale measuring a freedom of self-expression, assertiveness, and integrity, and an "Earning Self-Esteem" scale measuring a propensity to attempt to meet certain standards to earn a sense of self-esteem. Forsman and Johnson's (1996) basic self-esteem correlates 0.85 with Rosenberg's Self-Esteem Scale and 0.88 with Coopersmith's Self-Esteem Inventory, while the Earning Self-Esteem Scale did not significantly correlate with Rosenberg's Self-Esteem Scale or Coopersmith's Self-Esteem Inventory. This study suggests that these self-esteem measures tend to measure elements of self-assertion, expressiveness, feelings of security and being at ease with self and others, and experiences



of trusting, warm, and positive feelings toward others. They tend not to measure a sense of self-esteem that is conditional according to successes, that is interpersonally controlling, and that seeks to be perfect and win approval.

Concerning the consistency of various measures, Savin-Williams and Jaquish (1981) found that peer rating and behavioral rating measures of self-esteem were correlated 0.85 in one study and 0.33 in a second study. They also found a correlation of 0.72 between the Rosenberg and Learner self-esteem scores; however, the Rosenberg and Learner self-esteem scales did not correlate significantly with behavioral measures or peer-rating measures. Also, randomly sought beeper measures did not significantly correlate with peer ratings or behavioral ratings. These authors concluded that they favored behavioral measures of self-esteem over self-report measures because an observer's records may be more accurate and objective. One method they used to validate their behavioral measures was to ask the adolescent boys about self-esteem behaviors. The boys agreed that 18 of the 20 self-esteem behaviors used in the study were indeed indicative of high or low self-esteem.

Demo (1985) found that Rosenberg's Self-Esteem Scale and the Self-Esteem Inventory correlated 0.58 and 0.66 in two samples. Although the Self-Esteem Scale correlated only 0.32 with peer ratings of self-esteem, the Self-Esteem Inventory correlated with self-esteem measures including beeper ratings, peer ratings, and observer's Q-sort. For the two separate samples, a two-dimensional model of self-esteem was supported, and factor analysis confirmed the Self-Esteem Scale and the Self-Esteem Inventory as measures of experienced self-esteem. Additionally, Demo states that the interview also did well as a measure of experienced self-esteem, and may be underused in self-esteem

research. The validity of the Self-Esteem Scale, Self-Esteem Inventory, and the interview were supported, along with the inferred methods of peer rating, observer checklist, and the observer Q-sort. Of these, the observer Q-sort was the strongest measure of self-regard. The TAT and beeper measure did not intercorrelate with more than one measure of self-esteem indicating poor convergent validity.

In his review and synthesis of psychological resources, Lightsey (1996) stated that those who have high self-esteem think a higher proportion of positive thoughts about themselves even while stressed, which reduces negative moods and maintains positive moods (Smith & Petty, 1995). O'Leary's (1992) review of the self-perception literature found two avenues in which self-perceptions impact health. The first involves health-relevant behavior and a second involves stress-related physiological processes. Myriads of studies have shown self-perception to have health implications. Some of those reviewed by O'Leary include: smoking cessation, the development of healthy dietary and exercise behaviors, coping with severe and chronic illnesses, more speedy recovery from myocardial infarction, and treatments for alcohol abuse, bulimia, and weight reduction.

Scheier et al. (1994) studied over 4,000 undergraduates and found that self-esteem correlated 0.54 with optimism, and 0.58 with self-mastery. They also found negative correlations with depression (-0.54), number of symptoms (-0.26), and symptom intensity (-0.27). Diener and Diener (1995) found that self-esteem was correlated (0.47) with life satisfaction in almost every one of the 31 countries studied. This correlation was even higher in Western countries (0.53), and did contain gender differences (0.56 for men and 0.60 for women in the USA). Throughout this intercultural study, differences were found between countries, leading Diener and Diener to suggest that one cannot assume identical

self-esteem or subjective well-being relationships across countries. Additionally, although the constructs of self-esteem and life satisfaction were correlated in this study, the authors explain that they are discriminable constructs because the two concepts vary differently and switch positions between males and females, and among cultures.

Diener and Diener (1995) also found that self-esteem co-varied with family satisfaction (0.28), financial satisfaction (0.19), and friendship satisfaction (0.31). Using these co-variants as predictors of self-esteem, friendship satisfaction predicted the most variance (Beta=0.24), family satisfaction was second (Beta=0.19), and finally financial satisfaction was last (Beta=0.11). Friends, family, and finances were predictors of self-esteem for USA women and men, although their correlations were slightly different, 0.33, 0.30, 0.28 for women, 0.38, 0.38, 0.28 for men, respectively. The multiple *R* for the four variables self-esteem (Beta=0.32), satisfaction with family (Beta=0.15), friends (Beta=0.21), and finances (Beta=0.24) was 0.61. These authors compare this finding with Campbell's correlation of 0.55 between self-esteem and subjective well-being.

In 1992, Aspinwall and Taylor found that self-esteem and the desire for control impacted academic performance while being mediated by an increased motivation to succeed in college. When these authors controlled for college entrance exam scores, self-esteem and desire for control predicted an increase in motivation after 3 months of college, which then predicted higher grades 2 years later.

In summary, self-esteem is said to be a somewhat dynamic measure of thinking one's self "good enough" and respecting one's self. Self-esteem appears to share significant variance with subjective well-being concepts such as optimism, self-mastery, life satisfaction, and social confidence, and negatively correlates with depression, symptom

number and intensity, anxiety, and negative affect. Although some have voiced concerns about the breath of the self-esteem concept, it has been found to be valid and consistent with diverse measures and under various circumstances including peer ratings, observer's Q-sorts, self-reports, and interviews. Finally, as Fleming and Courtney (1984) also explain, addressing all topical issues in the vast self-esteem research is impossible. Other works not mentioned here but also referred for general consideration by Fleming and Courtney (1984) include Burns (1979), Rosenberg (1979), and Wells and Marwell (1976).

### Personal Control

Shapiro et al. (1996) published a thorough review, integration, and model-building article encapsulating empirical evidence concerning the personal control construct. They cite multiple sources claiming that one of the ubiquitous fears of the human race is the fear of losing control. And one of the most overwhelming needs of the human race is to gain control over one's own life.

Although having control is important, maintaining a perception or illusion of control may also assist one's subjective well-being and social functions (Taylor & Brown, 1988), and may be as valuable as truly having control (Shapiro et al., 1996). This finding opposes the long-held belief that mental health is the result of a solid grasp on reality (Shapiro et al., 1996). Yet, Taylor and Brown (1994) state that, typically, 95% of those surveyed reveal the phenomenon of seeing one's self less likely to fall prey to the same sad realities one foresees likely for others. Shapiro et al. (1996) cite sources that have found normal individuals to overestimate their ability to control situations, believe themselves able to gain control where control is impossible, and overestimate their skill level and

abilities while underestimating their vulnerability and the extent of the risks they are taking. Casino gambling is a remarkable example of this phenomenon. These authors also cite literature that shows that when faced with the inability to control something, individuals protect their illusion of control by attributing their inability to control to situational factors or temporary conditions.

In addition to actively controlling life circumstances and experiencing a positive illusion of control, other methods of conceptualizing a sense of control have been studied by researchers. Rotter (1966) conceptualized the internal-external control scale, measuring an individual's beliefs that he or she is largely in control of his or her life circumstances, or that he or she has little control over circumstances. Rotter's Internal-External locus of control instrument has been a preferred instrument for measuring these dimensions ever since its publication in 1966. In one study, Rotter's locus of control correlated -0.21 with positive affect, 0.39 with negative affect, and 0.33 with the Satisfaction With Life Scale (Emmons & Diener, 1985). Shapiro et al. (1996) state that the internal and external control expectancies have been found to be independent. Hanna Levenson (1981) challenged the unidimensional conceptualization of Rotter's scale by establishing the Internality, Powerful Others, and Chance scales. In this measure, the internality scale is similar to Rotter's internal scale in that it measures the extent to which an individual believes she or he has control over her or his life. The Powerful Others and Chance scales cleave the external dimension of Rotter's scale into a belief that one may think, act, and feel differently if one believes that powerful others (e.g., God, government, doctors) have control as opposed to believing that simple luck or chance determines outcomes. Similarly, Wallston, Wallston, and De Vellis (1978) developed their specific

health domain measure of Levenson's scale called the Multidimensional Health Locus of Control Scales.

Findley and Cooper (1983) found that internality beliefs are correlated with higher academic achievement at a small to medium level. Employing meta-analysis, these authors found that 193 studies found greater internality yielding greater achievement, 25 studies found the opposite, and 55 studies were unable to find a relationship between locus of control and academic achievement. In fact, when only considering positive results, 93% of reviewed studies found an internal locus of control link to academic achievement, with only first-through third-graders not supporting this finding.

Another method people use to gain a sense of control is through accepting circumstances they cannot change (Shapiro et al., 1996). This method is often conceptualized by methods of coping. Furthermore, two primary types of coping mechanisms have been illuminated. An avoidant coping style, intended to distance one's self from a given problem or stress, has predicted less successful adjustment to college. An active coping style, named for its focus on addressing problems or stressors directly, has predicted better adjustment to college (Aspinwall & Taylor, 1992).

Shapiro et al. (1996) found that gaining and being able to maintain a sense of control is of primary consideration in the physical and mental health of individuals. In fact they state that "there is increasing agreement among both clinicians and researchers that control is one of the most critical variables involved in an individual's psychological health and well-being" (p. 1214). They continue by stating that a foundation of psychotherapy is helping individuals understand the structuring elements of their lives, and to learn to control them via their thoughts, cognitions, beliefs, and emotions.

Shapiro et al. (1996) cite multiple studies demonstrating control as a primary structure in depression, adult children of alcoholic populations, anxiety and stress disorders, and eating disorders. Specific control profiles have been developed for individuals with depression, generalized anxiety, panic attacks, and borderline personality disorder. They also found that there may be a linear relationship between control and the immune functioning of animals as well as humans. Studies with cancer patients have found a correlation between a sense of control and later adaptation (Ell, Nishimoto, Morvay, Mantel, & Hamovitch, 1989), self-esteem (Lewis, 1982), and positive mood (Cunningham, Lockwood, & Cunningham, 1990). In nursinghomes where an internal sense of control was taught in the form of Transcendental Meditation, mindfulness, and relaxation techniques, individual life span was longer (Alexander, Langer, Newman, Chandler, & Davies, 1989). Using other nursinghomes, Rodin and Langer (1977) found that giving patients control over their external conditions, such as type and time of movies and meals, their life span also tended to increase. Larson (1989) found many theories that relate a sense of personal control to happiness and well-being, and other authors (Martin, Abramson, & Alloy, 1984) have related lack of personal control with psychiatric disorders and depression. Langer (1975) found that the illusion of personal control correlated significantly with well-being. Shapiro et al. (1996) list multiple studies where low perceived control and feelings of helplessness regarding a disease tended to correlate “powerfully” with disease recurrence and death. They summarize saying that the more control one feels, the better.

Shapiro et al.'s (1996) review, integration, and model-building article also contained some warnings. They found that some research has shown that too much belief

in one's own control of events, attempts to obtain social control and dominance, a very high need for control, and individuals given more control than they can handle have been found to have negative effects on well-being. Additionally, some specific control profiles have been established which differentiate between cardiovascular risk.

In a study of adults, older adults, and adolescents, Larson (1989) found very small magnitudes and negative correlations as high as  $-0.70$  between the daily experience of happiness and feeling in control of actions or situations. The reported control of actions mean for the week and an individual's mean happiness affect measures (cheerfulness, friendliness, and sociability) were correlated  $0.27$  to  $0.31$ . The author summarizes that on a moment-to-moment basis, feeling in control does not strongly relate to a positive affective state, with the weakest correlations (average correlations from  $0.10$  to  $0.20$ ) found at the immediate experience level. There is, however, a moderate to low correlation (in the  $0.20$  to  $0.40$  range) between the experience of high control and higher affect states over time between individuals.

Larson also found that ordinary experiences of discontrol do not affect one's sense of well-being for non-disturbed individuals. However, for experience-sampled anorexic young women, control of actions correlated  $0.59$  with affective state (Larson & Johnson, 1981). For bulimic patients, control of situations had average correlations of  $0.47$  with happiness,  $0.54$  with cheerfulness,  $0.50$  with friendliness, and  $0.38$  with sociability (Johnson & Larson, 1982). Finally, for depressed adolescent patients, correlations between control and affect ranged from  $0.5$  to  $0.6$  (Larson et al., 1985). Larson (1989) explains that troubled individuals seem to be impacted more heavily by experiences of discontrol, even short experiences of discontrol than non-patients do. Yet, patients and



non-patients consistently reporting lower levels of control also consistently report lower levels of positive affect. Also, long periods of discontrol seem to sum to increases in negative affect. Larson summarizes that troubled individuals' general and immediate control experience is strongly correlated with affect, and that it is likely that individuals coping with trauma, such as loss or contracting a disease, may resemble this profile. Individuals not experiencing trauma experience weaker correlations between control and affect.

Shapiro et al.'s 1996 model integrating control research to this point concluded that control seems to affect physiologic process and mental health via its biological and social interactions. They continue saying that "control as an independent variable causes sense of control as a dependent variable and is mediated by perceived control!" (p. 1223).

And finally, they explain that:

The quality of people's lives, the lives of those around them, and ultimately the well-being of the planet may, in large part, be determined by where and how people, as individuals and as a species, seek to gain and maintain a sense of control. (p. 1224)

In summary, the experience of personal control is a universal need and concern. There are many methods of obtaining an effective sense of personal control including actively controlling life circumstances, maintaining an illusion of control, and using coping mechanisms to accept discontrol or the powerful control of others. A favorite method of measuring the construct of personal control is through the continuum of internality versus externality. Rotter's (1966) and Levenson's (1981) scales have been preferred instruments for measuring personal control. Personal control has been found to correlate significantly with subjective well-being, happiness, and many psychological and physical

disorders. This correlation between personal control and psychological and physical health appears to be most robust when an individual is under duress.

### Optimism

Scheier et al. (1994) explain that optimists are individuals who “hold positive expectancies for their future” (p. 1063), while pessimists expect more negative futures. The *Life Orientation Test*, the most used measure of optimism (Lightsey, 1996), is said by Carver and Gaines (1987) to be a measure of “generalized expectancies of the occurrence of good versus bad outcomes in one’s life” (p. 451).

In their review of the empirical findings of optimism, Scheier and Carver (1992) explain that expectancies provide foundations for many theories of motivation. Individuals are largely influenced by their expectations concerning outcomes. These authors state that individuals who see outcomes as achievable persist toward their goal regardless of adversity, and tend to experience more positive emotions. However, individuals who perceive goals as unachievable tend to be thwarted by minimal adversity, often disengaging themselves against great adversity, and tend to experience more negative emotions. Regardless of the nature of the affect, the intensity of affect is determined by the importance or value of the goal.

Believing global expectancy toward positive or negative outcomes to be moderately stable over time, Scheier and Carver (1985) labeled positive expectancy “dispositional optimism.” Dispositional optimism has been found to have a strong genetic component (Tellegen et al., 1988), and many believe that it may develop from internal and external sources (Scheier & Carver, 1985).

Lightsey (1996) states that the Life Orientation Test has a factor made up of the negatively worded items and a second factor made up of the positively worded items. The negatively worded item factor tends to correlate with pessimism, neuroticism, and negative affect, while the positively worded item factor tends to correlate with extraversion and positive affect. Still, the Life Orientation Test has predicted psychological and physical symptoms even when neuroticism and extraversion were factored out.

Mroczek, Spiro, Aldwin, Ozer, and Bosse (1993) found only a -0.28 correlation between optimism and pessimism in males ages 41-86. Although reduced by two thirds, after controlling for extraversion and neuroticism, optimism continued to predict illness intensity and psychological symptoms. When neuroticism traits were controlled for, optimism still predicted health results (Scheier et al., 1989). Life satisfaction and depression have been correlated independently with optimism and pessimism (Plomin et al., 1992). Furthermore, 5 years after coronary bypass surgery, pessimists tended to have lower levels of subjective well-being than optimists (Scheier & Carver, 1992). Lightsey (1996) summarizes optimism's health impact by stating that optimism is highly correlated with physical and psychological health even when other variables, including neuroticism, self-mastery, and negative affect, are factored out.

In a landmark study on patients receiving coronary artery bypass surgery (Scheier et al., 1989), it was found that during and after surgery optimism strongly impacted physical well-being and recovery rate. Optimists were significantly less likely to have myocardial infarctions during surgery, or to have AST enzymes or Q-waves on their EKGs which indicate myocardial infarctions and damage from myocardial infarctions.

They had higher morale, walked faster after surgery, began physical exercise and vigorous exercise sooner, as well as recreational exercise and full-time work faster than pessimistic individuals. From chart reviews and also from staff ratings, optimists' recoveries were rated higher than pessimists, and they also returned to normal in various other domains faster. Optimists' had lower depression and hostility levels than pessimists presurgically, higher quality of life and happiness, and less hostility and depression postsurgically. The optimist also reported better support from family, friends, and better care from hospital personal. Optimism's direct effects averaged 0.34 on outcome variables, although effects ranged from 0.19 to 0.62. Optimism had both a direct effect (Beta=0.51) on quality of life, and an indirect effect (Beta=-0.33) on quality of life through dwelling on negative affect.

Peterson et al. (1988) found that pessimism predicted physical illness even after 3 decades using data from a 35-year-long longitudinal study. They found that pessimists made more doctor visits and had weaker immune functioning. Pessimists also had greater stressful life events, more unhealthy habits, and lower belief in their ability to change poor habits for the better. After controlling for beginning mental and physical health, age 25 measures of pessimism predicted poor physical health at age 45 (0.37), age 50 (0.18), age 55 (0.22), and age 60 (0.25).

Studies (Scheier & Carver, 1985, 1991) using students during finals week found that optimists reported fewer physical symptoms. Strack, Carver, and Blaney (1987) found that pessimism was associated with disengagement and giving up. During an alcohol treatment program, pessimists were more likely to return to alcohol than optimists were. Of course the ultimate disengagement and giving up is suicide. A 10-year study of

individuals who were suicidal found that pessimists were eventually more successful at suicide, while a measure of depression, Beck Depression Inventory, did not predict suicide (Strack et al., 1987).

Optimism was correlated inversely (8% of variance) with later dysphoria even after partialling out initial dysphoria in a study of pre/postpartum depression (Carver & Gaines, 1987). The correlation was strongest (27% of variance) for women who did not show initial depression, suggesting that optimism reduces the likelihood of developing depression symptomology. Correlations of -0.57 and -0.40 for women and men respectively have been found between the Life Orientation Test and the Beck Depression Inventory, and -0.58 and -0.35 for women and men between the Life Orientation Test and hopelessness (Beck, Weissman, Lester, & Trexler, 1974). Carver and Gaines (1987) found that optimism correlated -0.28 with the Beck Depression Inventory even after previous Beck Depression Inventory scores were controlled for. This pre/postpartum study found that pregnant optimists experienced less depression than pregnant pessimists.

Life satisfaction ( $R=0.33$ ), future life satisfaction ( $R=0.31$ ), and less negative mood ( $R=-0.55$ ) were correlated with higher levels of optimism in a bone marrow transplant sample (Curbow, Somerfield, Baker, Wingard, & Legro, 1993). Researchers using a sample of attorneys with a mean age of 40 found that optimism predicted general well-being measures (Sweetman, Munz, & Wheeler, 1993). Optimism also correlated 0.32 with adjustment to college (Aspinwall & Taylor, 1992), and is believed to be associated with positive affect and hopefulness (Carver & Gaines, 1987). Positive mood, higher levels of optimism, and active coping predicted higher levels of college adjustment, though only optimism had a direct effect (Aspinwall & Taylor, 1992).

Research with over 4,000 undergraduates (Scheier et al., 1994) found moderate correlations between the Life Orientation Test and self-esteem (0.54), self-mastery (0.55), “positive reinterpretation and growth” (0.47), trait anxiety (-0.59), neuroticism (-0.50), depression (-0.42), and number of symptoms (-0.21). Using a factor analysis, principle components extraction technique, two factors emerged, one for the negatively worded Life Orientation Test items and one for the positively worded items. Loadings were above 0.58 for each Life Orientation Test item, with an average of 0.69 with two data sets. A three-factor solution was also formed with one factor completely representing Life Orientation Test items with loadings from 0.49 to 0.74, with an average of 0.60. When self-esteem was controlled for, the correlation between optimism and depression was -0.18. Scheier et al. (1994) illuminated the conceptual relationship between self-esteem and optimism. Both concepts include an expectation that others will accept them, that they are not a failure, and the intrinsic relationship between self-worth and positive outcomes.

Because of some criticism of the Life Orientation Test, Scheier et al. (1994) reevaluated the Life Orientation Test. In the end, these authors dropped two problematic coping items and a negatively worded item, and added a positively worded item. Using over 2,000 undergraduates, the Life Orientation Test-Revised had item-scale correlations from 0.43 to 0.63 showing that the items are not redundant, yet they are related. Cronbach’s alpha was 0.78, with test-retest reliabilities of 0.68 ( $N=96$ ) for 4 months, 0.60 ( $N=96$ ) for 12 months, 0.56 ( $N=52$ ) for 24 months, and 0.79 ( $N=21$ ) for 28 months. The new Life Orientation Test-Revised correlated 0.95 with the original Life Orientation Test, 0.48 with the Self-Mastery Scale, 0.50 with Rosenberg’s Self-Esteem Scale, -0.53 with

the Trait Version of the State-Trait Anxiety Inventory,  $-0.43$  with the Guilford-Zimmerman Neuroticism scale, and  $-0.36$  with the neuroticism scale of the Eysenck Personality Questionnaire. Norms were established for the Life Orientation Test-Revised for college students (Mean=14.33,  $SD=4.28$ ,  $N=2,055$ ) and for bypass patients (Mean=15.16,  $SD=4.05$ ,  $N=159$ ). These authors found a one-factor solution and a two-factor solution with negative versus positive Life Orientation Test-Revised items.

In their empirical review, Scheier and Carver (1992) combined the Life Orientation Test items with multiple measures of neuroticism and trait anxiety. Optimism emerged as a clear factor and correlated  $0.80$  with the raw Life Orientation Test measure. Additionally, this optimism factor accounted for significant coping strategies, depression, and physical symptom report variance. These authors cite Aspinwall and Taylor's (1992) college life adaptation study which found that optimism was independent of desire for control, locus of control, and self-esteem, and that optimists used active coping. Scheier and Carver (1992) concluded that optimism positively correlates with "health-enhancing behaviors." They also found that optimists tend to cope with stress more effectively, and with less deleterious effects on their well-being. The authors continue by explaining that although optimists tend to view problems through rose-colored glasses, they also seem to confront the reality of problems. While pessimists engage in avoidant coping mechanisms and are more likely to give up, optimists tend to use methods of active coping to address problems directly.

Although optimism does have some direct relationships with variables, optimism generally works indirectly through coping mechanisms. Folkman and Lazarus (1980) found that optimism correlated negatively with distancing and denial styles of coping,

while correlating positively with positive reinterpretation, reality acceptance, and problem-focused coping methods. Carver, Scheier, and Weintraub (1989) also found a correlation between optimism and planned methods of dealing with stress, and active and problem-focused coping. On the other hand, these authors also found that pessimists used disengagement from goals and abuse of substances to further distance problems, and were more likely to give up when challenged with difficulty. Coping mechanisms have accounted for some of optimism's relation with future college adjustment (Aspinwall & Taylor, 1992), and the positive mood and quality of life of coronary bypass surgery patients (Scheier et al., 1989). Carver and Gaines (1987) concluded that optimism reduces the intensity of stressful events while pessimism tends to intensify the impact of stressful events.

In summary, optimism is a positive expectancy for one's future. This positive expectancy has been found to impact an individual's tenacity, illness intensity, psychological symptoms, physical recovery speed, as well as multiple other physical health measures. Optimism has also been related to life satisfaction, personal affect, and self-esteem. The Life Orientation Test is a one- or two-factor instrument that is most often used to measure dispositional optimism. The primary mode of operation of optimism may be through coping mechanisms. Scheier and Carver (1987) supply an ample history, theoretical comparison, and review of the optimism variable, including the positive impact of optimism on physical well-being.

### Extraversion

Since Carl Jung first used the terms introversion and extraversion, their meanings



have endured continual change (Gilliland, 1970). However, the name probably most identified with extraversion is H. J. Eysenck. Eysenck and Eysenck (1967) developed the extraversion/introversion scale based on the theory that the introvert's nervous system regularly maintains a high level of arousal and a lower sensory threshold. Theoretically, this accounts for the introvert's increased reactions to stimulation. Extraverts have a higher sensory threshold, and often seek stimulation to build upon their generally low level of arousal. To test this theory and the discriminate validity of his scales, Eysenck used the lemon test. The lemon test consisted of placing four drops of lemon juice on each subject's tongue for 20 seconds. Eysenck found that there was little or no increase in saliva for extreme extraverts, while extreme introverts produced almost a full gram of saliva. The extraversion subscale of the Eysenck Personality Inventory correlated 0.71 with the results of the lemon test. Furthermore, neuroticism did not significantly correlate with the extraversion scale or the lemon test establishing the unidimensional nature of the extraversion construct.

Clearly, Eysenck believed that extraverts are not stimulated easily, increasing their likelihood to seek extra stimulation, while introverts tend to be oversensitive to stimulation and so they tend to avoid stimulation when possible. Supporting this, Hotard, McFatter, McWhirter, and Stegall (1989), extrapolating from their research, suggested that neurotic extraverted individuals view arousal as attraction, and become manipulative as they attempt to increase arousal further. Neurotic introverts, on the other hand, view arousal as anxiety, and they become uncomfortable and try to escape arousal.

David G. Myers (1992) summarized research findings on extraversion and reported that extraverts are sociable, outgoing people, and that they report greater satisfaction with

life and happiness in repeated studies with American and British students, and with Australians. Myers relates literature comparing extraverts and introverts, finding that extraverts tend to have a higher tendency to have close friends, jobs, and to be married. They also were more involved with people, social activities, and enjoyed more affection. In line with this, Furnham (1981) and Emmons and Diener (1986a) have shown that extraverts are more active in physical and social activities. Emmons and Diener (1986a) also found that it is the sociability rather than the impulsiveness component of extraversion that relates to positive affect. Similarly, in a study by Argyle and Lu (1990b) utilizing a student sample, the Eysenck Personality Questionnaire extraversion subscale was divided by the mean to establish an introversion group ( $N=46$ ) and an extraversion group ( $N=80$ ). They found that extraverts enjoyed and took part in more social activities, and that introverts tended to withdraw from social situations, a behavior which then correlated negatively with happiness. Extraverts (Mean=40.3) were happier than introverts (Mean=29.9), and extraversion correlated ( $R=0.46$ ) with happiness. Withdrawing from participation in social situations correlated negatively ( $R=-0.36$ ) with extraversion, and negatively ( $R=-0.43$ ) with happiness. Extraversion also correlated with three social factors that also correlated with happiness. In this same study, extraversion predicted happiness ( $R=0.19$ ) while social participation also predicted happiness ( $R=0.39$ ), although the enjoyment of social activities did not independently predict happiness. However, the participation of extraverts accounted for as much as 11% of the extraversion correlation with happiness when extraversion was partialled out. In other words, social participation is clearly a component in the extraversion-happiness equation.

Researchers have found that extraversion is fairly consistent in associating with

positive well-being throughout the literature (Costa et al., 1987; Costa & McCrae, 1980; Emmons & Diener, 1985; Heady & Wearing, 1989; Pavot et al., 1990), and negative well-being has been associated with neuroticism (Costa et al., 1987; Emmons & Diener, 1985). An example of this includes undergraduate students sampled by Pavot et al. (1990). Random-moment mood reports, peer reports, self-report measures, and a structured interview found a significant relationship between extraversion and peer Satisfaction With Life Scores. They found only marginal evidence suggesting that additional social contact accounted for an increase in subjective well-being scores. Yet, concerning positive affect and affect balance, effects were found for both the type of situation and for extraversion, while for negative affect the effects involved the situation and neuroticism. From the multiple measures used in this study, the authors concluded that there is a substantial relationship between extraversion and subjective well-being. They found that individuals tend to report greater positive affect when in social situations, and greater negative affect when in solitary experiences. Pavot et al. (1990) also suggest that these findings mesh nicely with the theory that the greater subjective well-being for extraverts is appreciable to reward sensitivity, while less subjective well-being for neurotics is appreciable to greater sensitivity to punishment as Eysenck theorized.

Emmons and Diener (1986a) also sampled undergraduates using daily mood reports. They found that extraversion correlated significantly with positive affect (0.32 for study 1, and 0.34 for study 2), yet extraversion did not significantly correlate with negative affect. They also found that sociability correlated with positive affect (0.49 for study 1, and 0.44 for study 2). However it was the sociability element of extraversion that was correlating with positive affect ( $R=0.44$ ). High sociability increased one's likelihood

of positive affect while it did not account for negative affect. The Satisfaction With Life Scale correlated 0.40 with sociability in this study.

In a separate study using daily affect reports with female students, Emmons and Diener (1986b) again found that extraverts reported more joy ( $R=0.54$ ) than introverts in both social and alone situations. However, extraverts reported being more joyful when they were in social situations they had chosen when compared with imposed-alone situations, and neurotics were most unhappy when forced to participate in social interactions, as opposed to least unhappy when they chose to be alone. Hotard et al. (1989), employing college students, found that extraversion was a powerful predictor in all equations. Extraversion correlated 0.50 with subjective well-being, and a regression analysis of social relationships (acquaintances, friends, significant others) and extraversion accounted for 36.6% of subjective well-being variance.

Again in undergraduate samples, Argyle and Lu (1990b) and Pavot et al. (1990) found extraversion to have a positive relationship with happiness. Argyle and Lu (1990b) stated that extraversion is the strongest predictor and correlate of happiness, especially the sociability aspect of it. With a sample of students ages 20 to 21, these authors found a correlation of 0.48 between the Eysenck Personality Questionnaire extraversion subscale and the Oxford Happiness Inventory. Emmons and Diener (1985) used two samples of undergraduates and daily mood reports to find that the Eysenck Personality Inventory extraversion subscale correlated 0.31 and 0.32 with positive affect, -0.05 and -0.01 with negative affect, and 0.29 and 0.30 with the Satisfaction With Life Scale. The sociability portion of the Eysenck Personality Inventory was found to correlate 0.29 and 0.49 with positive affect, -0.08 and -0.10 with negative affect, and 0.34 and 0.40 with the

Satisfaction With Life Scale. These authors found correlations between the sociability subscale of the EASI-III and positive affect 0.44 and 0.49, negative affect -0.11 and 0.21, and the Satisfaction With Life Scale 0.55 and 0.30. Finally, extraversion on the 16 Personality Factors (16PF) correlated 0.55 and 0.28 with positive affect, -0.08 and 0.17 with negative affect, and 0.35 and 0.33 with the Satisfaction With Life Scale.

Drawing a Chinese sample of random community residents, Lu and Shih (1997) found a correlation of 0.35 between the Chinese versions of the Eysenck Personality Questionnaire and the Oxford Happiness Inventory. In this study, path analysis showed the relationship to be a direct one, not mediated by neuroticism, mental health, or social desirability, and with no demographics significantly relating to happiness.

A study by Brebner, Donaldson, Kirby, and Ward (1995) found somewhat similar results with another sample of student volunteers. They found that social scales did not contribute much to predicting happiness measures, but that extraversion (Beta=0.31) and neuroticism (Beta=0.60) did predict the Oxford Happiness Inventory ( $R=0.592$ ). Extraversion correlated 0.425 with the Oxford Happiness Inventory, 0.206 with the Life Orientation Test, and the Life Orientation Test correlated 0.622 with the Oxford Happiness Inventory. Brebner et al. (1995) concluded that basic personality structures underlie happiness tendencies.

Argyle and Lu (1990a) found a correlation of 0.35 between the Oxford Happiness Instrument and the Eysenck Personality Questionnaire extraversion subscale among adult panel subjects with a mean age of 37.6. These authors also found that extraverts were less socially anxious, more assertive in initiating social interactions and confronting other people than introverts were. Assertiveness did not predict the total happiness score, but

did predict the subscales Positive Cognition and Mental Alertness. Longitudinal regression analysis of extraversion did not predict happiness when initial happiness was factored out. A mediation effect of assertion was found between extraversion and happiness, reducing the extraversion-happiness correlation from 15% to 6%. They conclude that social competence is a cause of happiness and explains most of the effect of extraversion and neuroticism on happiness. In the same venue, a threefold study of White veterans (Costa & MacCrae, 1980) found that extraversion, from the Eysenck Personality Inventory extraversion subscale, correlated with Bradburn's (1969) Positive Affect Scale from 0.11 to 0.22 at various times measured, and they were able to predict positive affect 10 years later ( $R=0.27$ ). Because of the longitudinal nature of this study, the authors ruled out the possibility that the relationship between happiness and personality could result simply from temporary moods.

Although several of the studies listed included adult subjects, the majority of the findings correlating extraversion with subjective well-being have sampled college students. Russell and Wells (1994) suggest that the studies using undergraduate subjects may be confounding well-being findings. They cite the unusual situation undergraduates, especially freshmen, are in: having to establish themselves after leaving home; many may initially have few relationships; and very few are married. In this situation, these authors suggest that extraverts would surely have an advantage in developing close social relationships which would yield correlations between extraversion and well-being. They conclude that it is the close personal relationships, especially marriage, that seem to be the most important when correlating with happiness. Hotard et al. (1989) found that the relationship between extraversion and well-being is only found for neurotics and

individuals with poor social skills.

Russell and Wells (1994) suggest that adaption to circumstances may account for the relative unimportance of some happiness correlates such as extraversion in different samples. Support for this is found in a study by Bolger, DeLongis, Kessler, and Schilling (1989) where they found that peoples' moods were better the day after a stressful event than if the event never happened. Also, Headey and Wearing (1989) found that life events had an impact only if they were different from what an individual usually experienced. These authors claim that extraversion's correlation with happiness is atypical. Russell and Wells (1994) found that extraversion did not account for a sizable amount of happiness variance. They did find, however, that 45% of husband happiness variance and 51% of wife happiness variance was accounted for by the quality of his or her marriage. They conclude that it is the close personal relationships, especially marriage, that seem to be the most important when correlating variables with happiness. Russell and Wells stated that their final model of happiness "is almost complete," suggesting that only 3% of variance was left to account for. However, they admit and collude with Hotard et al. (1989) that although their model was additive, the reality is that happiness and subjective well-being factors are most likely both additive and interactive.

Costa and McCrae (1980) promote the model that extraversion, sociability, and social involvement predict positive affect, which then predicts subjective well-being. Additionally, neuroticism predicts negative affect, which also predicts subjective well-being. This model may also account for the similar levels of happiness of introverts and neurotic extraverts. This effect similarity may be due to the neurotic extravert's tendency to have extreme highs and lows, yielding an average subjective well-being, while the

introvert's infrequent experience of elation also yields an average subjective well-being. Although Costa and McCrae suggest that adjusted extraverts are "much happier," the correlation range of 1% to 7% is still small.

Utilizing college students, Hotard et al. (1989) employed two studies. In study 1 they found that for extraverted individuals social relationships predicted little subjective well-being, while for introverted individuals social relationships predicted much more subjective well-being. Introverts with many social relationships reported average subjective well-being, while introverts with less social relationships had much lower subjective well-being. In study 2 the authors replicated the findings of study 1, and also found interactions between extraversion, neuroticism, and subjective well-being. This reveals that these variables are non-additive. Additionally, only neurotic introverted subjects were found to have low subjective well-being. Extraverted, neurotic extraverted, and non-neurotic introverted individuals reported relatively high subjective well-being. When re-analyzing data collected from other researchers concerning measures of poor subjective well-being (depression), these authors found that introversion was associated only with greater depression for neurotic individuals.

Headey and Wearing (1989) studied a stratified probability longitudinal sample surveyed four times. This study showed only moderate stability as other panel studies have shown, indicating that subjective well-being change does occur. Extraversion was a very stable personality trait, yet life events impacting on subjective well-being were above personality impacts. For subjective and objective events, correlations were found from 0.43 to 0.52 for favorable life events, and 0.15 to 0.49 for adverse life events. For objective events, correlations were found from 0.32 to 0.37 for favorable life events, and



0.04 to 0.34 for unfavorable life events. These authors promote a dynamic equilibrium model that suggests a relatively stable subjective well-being, with unusually adverse events depressing subjective well-being, and unusually favorable events increasing subjective well-being. Age showed a positive impact on life satisfaction, but was more negatively related to both positive affect and negative affect. Headey and Wearing conclude that “young extraverted people who are open to feelings but who are not neurotic have what might be regarded as the most desirable pattern of events: many favorable events and not that many adverse events” (p. 735).

In summary, the concept of extraversion is based upon the theory that introverts tend to be continually stimulated and seek less stimulation, while extraverts are under-stimulated and often seek additional stimulation. Extraverts have been found to be more sociable and outgoing than introverts, which may account for their greater subjective well-being. Although some authors (Costa et al., 1987; Costa & McCrae, 1980; Emmons & Diener, 1985; Heady & Wearing, 1989; Myers, 1992; Pavot et al., 1990) clearly see extraversion as a predicting factor of subjective well-being, others (Russell & Wells, 1994; & Hotard et al., 1989) believe this relationship to be found only among the unique social needs of undergraduates and introverted neurotics. In any case, the sociability component of extraversion is likely to be the potent correlating factor associated with subjective well-being. Finally, the impact of extraversion on subjective well-being has been found to be low to moderate.

### Multiple Factor Studies

In his review of the personal resource literature, Lightsey (1996) found that 49%

of the studies reviewed were done on college students, and that even diverse samples have had similar results (p. 695). However, Lightsey's review found that only 22% of studies included multiple personal resources, which has had a limiting effect on theory development and practice according to Lightsey (p. 696). Because of this, he calls for studies containing multiple personal resources and multiple measures of those resources. Lightsey also found that psychological resources were highly intercorrelated, and that although they may function in collaboration at times (p. 702), they also tend to have distinct effects. He states that very little research has addressed these issues.

In a pre/postabortion study (Cozzarelli, 1993), self-esteem, personal control, and optimism had direct and indirect effects on immediate postabortion adjustment. These three resources worked primarily through an increased coping with abortion self-esteem, with self-esteem predicting immediate and 3-week mood and depression. Cozzarelli concluded that self-esteem, personal control, and optimism may be very similar coping resources. Lightsey (1996) states that self-esteem, unrealistic perceptions of personal control, and optimism are clearly linked to subjective well-being. Diener (1984) states that self-esteem, a sense of personal control, and sociability are strongly related to subjective well-being.

A study of college freshmen in 1992 (Aspinwall & Taylor) found that psychological attitudes accounted for 52% of college adjustment variance even after controlling for coping mechanisms and initial mood. The Self-Esteem Scale, Rotter's locus of control scale, and the Life Orientation Test were correlated with adjustment to college, academic performance, and motivation and health. However, only optimism had a direct positive effect on adjustment while controlling for mood, subsequent adjustment,

and coping. Higher levels of optimism and desire for control shared variance with active coping, which predicted greater college adjustment (p. 999). Self-esteem, personal control, and optimism predicted reduced levels of avoidant coping, and avoidant coping predicted poorer college adjustment (p. 999). Aspinwall and Taylor (1992) developed a significant paths model predicting college adjustment with two equations. The first (p. 996) model included the following: personal control ( $R=-0.15$ ), self-esteem ( $R=-0.12$ ), negative mood ( $R=0.30$ ), and optimism ( $R=-0.13$ ) correlated with avoidant coping, which then correlated ( $R=-0.20$ ) with college adjustment. Negative mood ( $R=0.16$ ), positive mood ( $R=0.26$ ), and optimism ( $R=0.19$ ) correlated with active coping, which then correlated ( $R=0.09$ ) with college adjustment. Optimism ( $R=0.32$ ) and positive mood ( $R=0.22$ ) correlated directly with college adjustment. Negative mood correlated directly ( $R=-0.16$ ) with health/symptoms. In the second equation (p. 997), self-esteem ( $R=0.22$ ), optimism ( $R=0.09$ ), and personal control ( $R=0.07$ ) correlated with motivation, which correlated ( $R=0.25$ ) with grade point average. Zero-order correlations were more impressive. Self-esteem correlated 0.51 with college adjustment, and 0.28 with health symptoms. Personal control correlated 0.23 with college adjustment, and 0.09 with health symptoms. And optimism correlated 0.50 with college adjustment, and 0.25 with health symptoms. Intercorrelations included: 0.67 between self-esteem and optimism, 0.28 between self-esteem and personal control, and 0.40 between personal control and optimism. They also found that positive mood was correlated -0.43 with negative mood, 0.50 with self-esteem, 0.56 with optimism, and 0.26 with personal control. Positive mood was correlated -0.62 with self-esteem, -0.56 with optimism, and -0.26 with personal control (p. 998). This study's finding, that only optimism had a direct effect and that

many effects were mediated through motivation and coping mechanisms, contrasts with other researchers' (Taylor & Brown, 1988) beliefs that self-esteem, personal control, and optimism have direct effects on well-being. In fact, in this study none of these variables had direct effects on health symptoms.

Nowack (1990) developed a 123-item stress and health risk instrument with a sample population of 466 management training workshops. The instrument appears to have three factors with the first factor including measures of global health practices, eating/nutrition, preventive hygiene, rest/sleep/relaxation, and exercise. This factor was named "behavioral health habits" by the author. The second factor was named "adaptive cognitive and behavioral resistance resources" and included intrusive positive thoughts, avoidance, problem-focused coping, cognitive hardiness, and social support. The author called the third factor "aversive cognitive and behavioral scales," and it included intrusive negative thoughts, type A behavior, and stress (p. 177). Psychological distress correlated 0.58 with cognitive hardiness, 0.71 with health habits, 0.75 with stress, and 0.78 with intrusive positive thoughts. Physical illness correlated 0.48 with health habits, 0.53 with stress, and 0.59 with avoidance. Psychological well-being correlated -0.47 with stress, 0.38 with health habits, 0.31 with eating/nutrition, 0.16 with exercise, 0.32 with sleep/relaxation, 0.22 with health hygiene, 0.46 with social support, -0.23 with type A behavior, 0.67 with cognitive hardiness, 0.51 with positive intrusive thoughts, -0.21 with negative intrusive thoughts, 0.44 with avoidance, and 0.41 with problem-focused coping. As can be seen, psychological well-being shares variance with many diverse areas of life, especially with thinking patterns, coping mechanisms, and less so with general health habits.

In Taylor and Brown's (1988) review of well-being literature, they found that "unrealistically positive self-evaluations, exaggerated perceptions of control or mastery, and unrealistic optimism--can serve a wide variety of cognitive, affective, and social functions" (p. 193). Using the literature, these authors refute the trend of psychological thought that the mentally healthy person is bound to hardcore reality, rather, the healthiest individuals tend to entertain positive illusions concerning their own self-evaluation, their perceptions of control, and their less-than-balanced optimism. These authors use the term illusion to describe the "enduring pattern of error, bias, or both that assumes a particular direction or shape" (p. 194).

Examples of these illusions include the finding that most individuals efficiently process and recall positive personality information, while having significantly more difficulty recalling negative personality information. Also, normal people, though fully aware of strengths, tend to forget their weakness. Taylor and Brown (1988) state that:

It appears to be not the well-adjusted individual but the individual who experiences subjective distress who is more likely to process self-relevant information in a relatively unbiased and balanced fashion. These findings are inconsistent with the notion that realistic and even-handed perceptions of self are characteristic of mental health. (p. 196)

Not only is self-esteem affected by personal illusions, Taylor and Brown (1988) also cite studies that show that individuals generally believe they have excessively more control over chance events than is clearly possible. Individuals tend to believe that their personal touch will give them greater control over dice rolling than if someone else rolls the dice. On the other hand, however, individuals who are depressed tend to be more accurate in their control beliefs than normals (p. 196). "Realistic perceptions of personal control thus appear to be more characteristic of individuals in a depressed affective state

than individuals in a non-depressed affective state” (Taylor & Brown, 1988, p. 196).

Similarly for optimism (Taylor & Brown, 1988), normal individuals appear to believe that their futures will be much brighter than everyone else’s. Because it is impossible for every person to be happier and more satisfied with life than every other person, optimism also appears to be illusionary. Once again, individuals who are depressed appear to be more accurate in their expectations for the future (p. 179). In fact, depression has been inversely correlated to the level a person denies, threatening yet universal feelings such as “Do you ever feel guilty?” (Roth & Ingram, 1985, cited in Taylor & Brown, 1988).

Freedman (1978, cited in Taylor & Brown, 1988) summed up these findings when he stated:

People who have high self-esteem and self-confidence, who report that they have a lot of control in their lives, and who believe that the future will bring them happiness are more likely than people who lack these perceptions to indicate they are happy at the present. (p. 199)

One of the possible functions of these illusions is that they may cause self-fulfilling prophecies, actually boosting an individual’s positive experience (p. 199). This may especially be seen in cases of adversity where only tenacious attempts by a believing heart will produce desired results. Where a depressed individual would be overwhelmed by the tough reality of circumstances, the buffer of optimistic expectations of self, control, and the world may make the difference between success and failure, or life and death. They may be more productive, caring, and happier than committed reality-based individuals (Taylor & Brown, 1988).

Optimism has been found to correlate 0.60 with self-mastery (self-control), and 0.64 with General Self Efficacy, one’s belief in their ability in specified areas (Lightsey,

1996), suggesting that these concepts are similar yet unique. Scheier and Carver (1985) explained that self-esteem and optimism are conceptually interrelated because of their shared positive expectations. These authors also explain that validation of the Life Orientation Test also shows this shared variance. In another study (Davis, Hanson, Edson, & Ziegler, 1992), optimism was correlated 0.55 with self-esteem, and negatively related to loneliness. Other researchers (Aspinwall & Taylor, 1992; Scheier et al., 1994) have found that optimism has had unique effects where self-esteem and control did not.

Emmons and Diener (1985) suggest that happier people are often extraverted (sociable), yet generally do not have higher self-esteem or less anxiety than less happy people. Moreover, less-happy people tend to be low in self-esteem, more pessimistic, and socially hypersensitive. These authors seem to believe that positive affect is related to interpersonal elements, while negative affect tends to correlate more with internal states including emotionality and anxiety. Life satisfaction, on the other hand, appears to include a mix of interpersonal elements (extraversion) and interpersonal states (self-esteem) (p. 94).

In summary, little research has been done concerning the intercorrelations of personal resources and the correlates of subjective well-being. However, it is believed (Lightsey, 1996) that at times these positive attitudes are additive, at other times they are interactive, and most often they are both additive and interactive. The literature suggests that the variables self-esteem, personal control, optimism, and extraversion are likely to directly and indirectly impact positive affect, negative affect, and satisfaction with life.

## CHAPTER III

### METHODOLOGY

#### Type of Research

This research utilized survey research design to explore the relationships between subjective well-being and self-esteem, personal control, optimism, and extraversion. The correlation matrix of a regression correlation analysis was used to explore the inter-relationships among self-esteem, personal control, optimism, and extraversion. Multiple regression was used to study the relationship between subjective well-being and each positive psychological attitude individually. A multiple regression correlation analysis was also used to determine the strongest model of the combination of these variables in relation to subjective well-being, and to establish their relative importance in the model.

#### Population and Sample

The target population of this study was the faculty of two Midwestern university settings. The first setting included Andrews University (AU), a moderate-size Christian university. The second setting included Indiana University of South Bend (IUSB), a moderate-size state university. These universities were chosen based upon diversity of setting, proximity, and each university's willingness to participate. The original planned target population also included one large Catholic university and one large state university, but they found it impossible to participate due to their time and resource constrictions.



The sample was established by surveying all graduate and undergraduate faculty at each university. Because faculty of all departments were included, a wide variety of disciplines were sampled.

Because the expected rate of returns for survey instruments has dropped to 50% or below, it is essential to double the sample size needed for statistical analysis. Tabachnick and Fidell (1996, p. 132) suggest that the two simple “rules of thumb” for finding the number of cases necessary for statistical analysis are:  $N > 50 + (8 \times [\text{number of independent variables}])$  for testing multiple correlations; and  $N > 104 + (\text{number of independent variables})$  for testing individual predictors. With four independent variables these equations suggested that the number of cases necessary ranged from 82 to 108. Tabachnick and Fidell (1996) also suggest that when one chooses to use Stepwise regression, 40 cases should be added for each independent variable, yielding 160 cases for four variables. In summary, Tabachnick and Fidell (1996) suggest that this research required between 82 and 160 complete responses. Assuming a return rate around 50%, a minimum of 320 faculty surveys was needed to be sent out. During the 1997-1998 school year, Andrews University reported having 312 faculty, while Indiana University of South Bend reported having 271 faculty. By surveying each member of both universities a total of 583 faculty were surveyed. The expected return rate was just under 300.

### Procedures

Permission was obtained from the Human Subjects Review Board, Office of Scholarly Research, Andrews University, as well as from the Faculty/Academic Affairs representative from each university (see Appendix A). The cover letter, the two-page

survey (see Appendix B), and the self-addressed envelope were delivered by inter-departmental mail to each faculty member of the two universities. This transpired during the month of May of the 1997-1998 school year. One week after the instrument was mailed, a Thank-you/Reminder postcard modeled after Totten (1996) was sent (see Appendix B). The surveys and the postcards were sent via each university's inter-departmental mail, and received via each university's inter-departmental mail.

The cover letter addressed the value of the study, an encouragement for each person to respond, the confidentiality of each response, and information on how to receive a synopsis of the results. The general results of this study were sent to those who sent their name and address to the address at the bottom of the cover letter. The cover letter, along with the two-page questionnaire and a self-addressed return envelope, was mailed in a 9-by-12-inch clasp envelope. To increase the return rate, the mailings were made toward the beginning of the week. The hope was that faculty members would be more receptive to the survey at the beginning of the work week than toward the end of a busy week. The cover letter and questionnaire were printed on high-quality blue "Astroparche" paper. It was hoped this high-quality paper would increase the return rate.

One week after the surveys were sent out, a postcard designed to thank those who had responded and encourage those who had not responded was sent. This postcard also explained that their response was required within 1 week, and that if they had lost their survey they could call the number given or E-mail a request for another. This postcard was also printed on blue "Astroparche" paper.

### Instrumentation

A battery of seven instruments or scales of instruments was utilized to study subjective well-being and the psychological attitudes related to it. The concept of subjective well-being was measured by combining an affective measure and a cognitive life-satisfaction measure. Negative affect and positive affect were measured by the Short Happiness and Affect Research Protocol (SHARP; Stones et al., 1996). Added to this affect measure, the cognitive life satisfaction aspect of subjective well-being was measured by the Satisfaction With Life Scale (SWLS; Diener et al., 1985). The Self-Esteem Scale measured self-esteem (Rosenberg, 1965). The internality scale of the Internality, Powerful Others, Chance Scales was used to measure personal control (Levenson, 1981). The Life Orientation Test (LOT) was used to measure optimism (Scheier & Carver, 1985). And the short form of the extraversion scale of the Eysenck Personality Questionnaire (EPQ-R) measured extraversion (Eysenck et al., 1985). The final measure gathered demographic information. Each of these self-report paper-and-pencil measures is described on the next few pages. The total time needed to complete the seven-measure battery was approximately 5 minutes.

Although the content of the instruments is exactly as it is published, several of the instrument's or scale's response sets were modified slightly. The Satisfaction With Life Scale was modified by changing the response range from the 1 through 7 scale to a range of -3 through +3, including 0 for the "Neither agree nor disagree" category which was modified to "Neutral." These modifications were made to maintain consistency throughout the survey and to serve as a clearer reference to the agree and disagree categories. Additionally, the "Disagree" and "Agree" categories were modified to

“Moderately disagree” and “Moderately agree” to increase clarity. Although most researchers employing the Self-Esteem Scale have used a 1 through 4 response scale, this research used a -2 through +2 scale to maintain consistency throughout the survey and to serve as a clearer reference to the agree and disagree categories. This study used only the Internality scale of the Internality, Powerful Others, and Chance Scales instrument. The only modification made to this scale was changing the “Somewhat disagree” and the “Somewhat agree” categories to “Moderately disagree” and “Moderately agree” to increase clarity and consistency. The Life Orientation Test originally contained four filler items that were removed for this study because of space limitations. The response range was also modified from 0 through 4, to -2 through +2, including 0 for neutral. This change was also made to maintain consistency throughout the survey and to serve as a clearer reference to the agree and disagree categories. Only the Extraversion subscale of the Eysenck Personality Questionnaire was used in this study. Finally, the Short Happiness and Affect Research Protocol response set was not modified.

#### Short Happiness and Affect Research Protocol

The Short Happiness and Affect Research Protocol (SHARP; Stones et al., 1996) was derived from the Memorial University of Newfoundland Scale of Happiness (MUNSH; Kozma & Stones, 1980). The SHARP retained three items for each of the four MUNSH scales. The four scales include: recent positive affect, recent negative affect, long-term positive experience, and long-term negative experience. The 12 self-report items are balanced in the positive, negative, short-term, and long-term or dispositional elements of affect. Each of these 12 items is measured with “yes” and “no” as the

available choices. The following is a review of the parent MUNSH instrument, with the validation of the SHARP instrument following that.

The MUNSH was originally developed by Kozma and Stones in 1980 primarily for use with geriatric populations. The authors used the Philadelphia Geriatric Center Morale Scale (PGC), Satisfaction Index-Z (LSI-Z), Affect Balance Scale (ABS), and 30 new items believed to measure “longer-term” positive and negative affect as possible instrument items. These were correlated with avowed happiness as measured by a series of 7-rung ladders measuring happiness from “very happy” to “great unhappiness.” The original procedure involved presenting the questions orally with a dichotomous “yes-no” format for present (at this moment in time) and past (over the last month) time periods. The oral and dichotomous format were used because pilot studies revealed reading difficulties in a minority of subjects. The original samples were from three populations, urban ( $n=104$ ), rural ( $n=100$ ), and institutional ( $n=97$ ) settings of elderly (65-95) from the Province of Newfoundland.

Correlations between avowed happiness and the MUNSH ranged from 0.71 to 0.74 for individual and total subject populations. Only questions correlating with two measures of avowed happiness above 0.28, with a significance level of 0.005, were retained. After removing three items for scale balance, there remained five positive affect questions, five negative affect questions, seven general positive experience questions, and seven general negative experience questions.

The MUNSH was able to predict avowed happiness as well as the combination of the PGC, ABS, LSI-Z, and the MUNSH together. While the alphas of these other instruments ranged from 0.495 to 0.775 independently, the MUNSH's alpha was 0.858.

The cross validation in a similarly constructed population with different subjects found correlations of 0.564 to 0.735 between avowed happiness and the MUNSH, and 0.616 for the total sample correlation. The Cronbach's Alpha was similar to the first study (0.853), and again the MUNSH was a superior predictor of avowed happiness as compared with the other measures mentioned. The test-retest reliabilities for 55 subjects randomly chosen from the two samples mentioned above for the institutional subjects was 0.70 for intervals ranging from 6 months to 1 year. Again, this measure was superior to the reliabilities of the other instruments which ranged from 0.27 to 0.57.

Stones et al. (1996) developed the SHARP instrument as a shorter version of the MUNSH, yet with similar psychometrics to its parent instrument. In content validity, criterion validity, internal consistency, and test-retest reliability, the SHARP showed superiority over several other "favorite" short measures of subjective well-being including: the Affect Balance Scale (ABS), Satisfaction With Life Scale (SWLS), Centre for Epidemiological Studies Depression Scale (CES-D), and single-item ratings of subjective well-being.

Stones et al. (1996) cite various studies that correlate the MUNSH with life satisfaction; morale indexes; short and long-term happiness ratings; psychopathology indexes; depression; observer ratings; behavioral ratings of affect; indexes of the Affect Intensity Measure; health; activity; activity limitations; and discrimination between institution and community residence. Utility has been established with all adult ages, and even between French- and English-speaking samples. Social desirability bias and acquiescence appears minimal. Content validity for the SHARP was maintained by selecting the three items from each scale with the highest correlations to content

categories.

The SHARP correlated with the MUNSH at 0.94 to 0.95. The SHARP correlated with the following validity criteria: immediate avowed happiness (0.63); past month avowed happiness (0.69); judges' ratings of happiness (0.59); judges' ratings of mood balance (0.30); positive affectivity (0.39); negative affectivity (-0.35); and affectivity balance (0.51). These correlations were also very similar for the MUNSH.

Reliability estimates for the SHARP were computed using data from a variety of research studies including two with college students. The total sample included 330 adults, ages 21 through 82, from residences in institutions and the community. Internal consistency ratings of the SHARP consistently obtain an alpha of 0.8 to 0.82. For 203 elderly subjects, test-retest reliability was computed as 0.52 for 18 months, and 0.42 for 48 months.

The factor structure of the SHARP showed a main factor accounting for 36% of the variance. This factor included positively weighted recent positive affect and long-term positive experiences, and negatively weighted recent negative affect and long-term negative experiences. Stones et al. (1996) report that all weights were above 0.45 except one weight of 0.33. A cluster analysis produced three main groups with significant differences. The lowest group was predicted by low scores on the positive subscales. The intermediate group had high scores for the positive affect subscale and both negative subscales. The highest group was predicted by low scores on both negative subscales and high scores on the long-term positive experience subscale.

The SHARP measure was chosen for use in this study for five primary reasons. First, this instrument measures avowed happiness with both a positive and negative scale.

Second, this short measure appears to be valid, reliable, and internally consistent when measuring avowed happiness. Third, although the original MUNSH instrument was created and normed with elderly subjects, the SHARP instrument appears equally valid and applicable to adult and college subjects in general. Fourth, this instrument has been shown to be superior to the Affect Balance Scale and other subjective well-being scales which have been used routinely in subjective well-being research. Finally, the SHARP is derived from a broad base of item possibilities from various instruments and is shown to out-perform other short-affect measures.

#### Satisfaction With Life Scale

The Satisfaction With Life Scale (SWLS) was developed by Diener et al. in 1985. The instrument is in line with the literature in its cognitive judgmental process orientation to a global life satisfaction measure. The scale began with 48 items related to satisfaction with life. Initial factor analysis found three factors: positive affect, negative affect, and life satisfaction. The authors removed the positive and negative affect items and any items loading on the life satisfaction factor with less than 0.60. Finally, five items that seemed to be similar to other remaining items were removed, leaving five SWLS items.

Each of the five items is measured with a 1 to 7 scale including strongly disagree, disagree, slightly disagree, neither agree nor disagree, slightly agree, agree, and strongly agree. This range produces scores from 5 (low satisfaction with life) to 35 (high satisfaction with life). For this research, however, the response scale ranged from -3 through +3, including 0 for the "Neither agree nor disagree" category, in order to maintain consistency throughout the survey and to serve as a clearer reference to the agree and



disagree categories. After data input, this -3 through +3 response range was re-coded to the standard 1-7 range for computation procedures. Additionally, the "Disagree" and "Agree" categories were modified to "Moderately Disagree" and "Moderately Agree," and the "Neither agree nor disagree" category was modified to "Neutral." These modifications were made to increase the clarity of the divisions of the scale and to increase similarities between instruments while maintaining the intended meaning.

Two samples of 176 and 163 undergraduates were used in the original development of the SWLS. The mean score on the first sample of undergraduates for the SWLS was 23.5 ( $SD=6.43$ ). A 2-month test-retest correlation for 76 of these students was 0.82, and alpha was 0.87. Factor loadings for the individual items were 0.84, 0.77, 0.83, 0.73, and 0.61. Total item correlations were 0.75, 0.69, 0.75, 0.67, and 0.57.

The SWLS showed no correlation (0.02) with the Marlowe-Crowne social desirability measure. When correlated with the SWLS, moderately strong correlations were found for all but one subjective well-being measure. These included Fordyce's (1988) happiness measures (0.57 and 0.62), Bradburn's (1969) Affect Balance Scale (-0.32 negative affect and 0.51 positive affect), Andrews and Withey's (1976) Delighted-Terrible Scale (0.62 and 0.68), as well as others reaching correlations as high as 0.75. Several personality measures also had moderately high correlations with the SWLS: self-esteem (0.54), symptom checklist (-0.41), and neuroticism (-0.48). Other personality measures were not so high: emotionality (-0.25), activity (0.08), sociability (0.20), and impulsivity (-0.03). The SWLS showed overlap and distinction from domain satisfaction levels with a correlation of 0.57.

Diener et al. (1985) also sampled 53 elderly persons with an average age of 75.

The mean for this sample was 25.8. In addition to the SWLS, a pair of interviewers interviewed each individual for 1 hour, then rated them on a global life satisfaction scale. The SWLS and these interview ratings correlated 0.43, while the interviewer's ratings correlated 0.73. The item-total correlations for this sample ranged from 0.61 to 0.81.

The SWLS was revalidated cross-culturally with 107 Dutch medical outpatient clinic participants ages 18 to 65. In this study, Arrindell et al. (1991) found many identical and nearly identical findings when compared with Diener et al. (1985). The mean score for this population was 23.63 ( $SD=7.01$ ). The internal consistency value was 0.87, and all item-total correlations were above 0.50. Age, gender, and education level were not correlated with SWLS. However, married individuals reported significantly more life satisfaction (25.22) than those who were unmarried (21.67) and those who were divorced or widowed (19.29).

In this revalidation study, anxiety (-0.54), depression (-0.55), cognitive-performance difficulties (-0.56), general psychological distress (-0.55), interpersonal sensitivity and paranoid ideation (-0.47), and satisfaction with health (0.48) were highly correlated with the SWLS. Overall, Arrindell et al. (1991) report that high scorers on the SWLS seem to be better adjusted. Lower scorers tended to have more difficulty with alcohol consumption, physical complaints, and more psychopathology.

This measure of life satisfaction was employed in this study for four primary reasons. First, the psychometric properties of this scale are very good, and much better than similar measures. Second, the SWLS is very succinct. Third, it is a measure of global rather than domain-specific life satisfaction. And finally, the SWLS has been shown to be valid with different age groups, cultures, and clinical settings.

### Subjective Well-Being

The variable subjective well-being resulted from the addition of the affective component and the life satisfaction component of subjective well-being. *T*-scores for the SHARP and the SWLS instruments were calculated, and then added to form the full subjective well-being measure.

### Self-Esteem Scale

Rosenberg's (1965) Self-Esteem Scale (SES) is the most popular measure of global self-esteem and the standard to which all other measures seek convergence (Blascovich & Tomaka, 1991, p. 120). Although it was originally created to be used with adolescents, it has been widely used with adults as well. Rosenberg (1965, p. 16) explains that the SES was created to be easy to administer, time efficient, maintain unidimensionality, and to have face validity. The ease of administration and economy of time requirements were met with the self-report nature of the SES and the short 10-item length of the SES. Although Rosenberg designed the original SES as a Guttman-type scale, most researchers have used a 4-point response format (strongly agree, agree, disagree, strongly disagree), while others have used 5- or 7-point scales (Blascovich & Tomaka, 1991, p. 120). This study employed the 4-point (strongly agree, agree, disagree, strongly disagree) response format, ranging from -2 through +2. The SES is considered to be unidimensional (Crandall, 1973, cited in Fleming & Courtney, 1984; Rosenberg, 1965) although several studies have identified two highly correlated factors, the additional factor reflecting the negatively worded questions (Blascovich & Tomaka, 1991).

Rosenburg (1965, p. 299) reports that 5,024 high-school juniors from 10 randomly

selected New York high schools were chosen as the original sample. The face validity of this measure is one of its greatest strengths. The SES correlated 0.72 with the Lerner Self-Esteem Scale, and 0.27 with adolescent peer ratings (Savin-Williams & Jaquish, 1981). The SES correlated 0.65 with confidence and 0.39 with popularity (Lorr & Wunderlich, 1986). The SES correlates 0.55 with the Coopersmith Self-Esteem Inventory and 0.32 with peer ratings of self-esteem (Demo, 1985). Fleming and Courtney (1984) found that the SES correlated with anxiety (-0.64), depression (-0.54), anomie (-0.43), general self-regard (0.78), social confidence (0.51), school abilities (0.35), and physical appearance (0.42; Blascovich & Tomaka, 1991). No significant correlations were found between SES and "grade point averages (0.10), locus of control (-0.04), Scholastic Aptitude Test verbal (-0.06) and quantitative (0.10)" (Reynolds, 1988, cited in Blascovich & Tomaka, 1991, p. 122).

For 28 subjects, Silber and Tippett (1965) found a test-retest correlation of 0.85 after 2 weeks (cited in Blascovich & Tomaka, 1991). A sample of first-year college students ( $n=259$ ) by Fleming and Courtney (1984) yielded an alpha of 0.88. This sample had a test-retest reliability of 0.82 with 39 students for a 1-week time period. In this study the SES correlated 0.78 with Self-Regard, 0.51 with Social Confidence, 0.35 with School Abilities, 0.42 with Physical Appearance, all beyond the 0.001 level.

The SES was chosen to be used in this research for four main reasons. First, it is a short, time-efficient measure of self-esteem. Second, it has strong face validity and reliability. Third, the SES has been used routinely for this type of research and has maintained its integrity over time. Fourth, the SES measures self-esteem as a continuum of self-acceptance, or favorable through unfavorable attitudes toward self.

### Internality, Powerful Others, and Chance Scales

The personal control variable was measured by the internality scale of the Internality, Powerful Others, and Chance Scales (IPCS; Levenson, 1981). The Internality (I) scale measures an individual's belief that he or she has personal control over life events. The Powerful Others (P) scale measures an individual's belief that others control life events. And the Chance (C) scale measures an individual's belief of how much an impact chance or fate has in determining control in one's life.

The IPCS was designed after J. B. Rotter's 1966 Internal-External scale (Lefcourt, 1991). The various improvements on Rotter's scale included: control was redefined as a multi-dimensional concept whose elements were not considered exclusive; items were presented in a Likert format making the three scales more statistically independent; items were phrased in a personal rather than general manner; items were worded more concretely; and social desirability elements were removed.

Each of the three scales in the IPCS contains 8 items which combine to form a 24-item measure. Likert categories include Strongly disagree, Somewhat disagree, Slightly disagree, Slightly agree, Somewhat agree, and Strongly agree, and range from -3 (strongly disagree) through +3 (strongly agree). However, the "Somewhat disagree" and the "Somewhat agree" categories were changed to "Moderately disagree" and "Moderately agree." This change was made to increase the clarity of the divisions of the scale, and to increase similarities between instruments while maintaining the intended meaning. A constant of 24 is added to the total of each scale to eliminate negative scores, with a total range of 0 to 48 for each of the three scales. A high score on any of the three scales is interpreted as a high expectation for that specific type of control by the respondent. Low

scores relate a low expectation of perceived impact of that specific type of control for the respondent. Although uncommon, it is possible for an individual to express all high or all low scores for each of the scales.

Levenson (1981) reports that internal consistency estimates are only moderately high, largely because of the broad representation of items. In a sample of 152 students, the Kuder-Richardson reliability was 0.64 for the Internality scale, which is reportably favorable when compared with Rotter's and other researchers' findings (Levenson, 1981). Levenson reports a similar result for other samples including adult (0.51) and hospitalized psychiatric (0.67). Spearman-Brown split-half reliabilities were 0.62 for the Internality scale. Test-retest reliability over 1 week ranged from 0.60 to 0.79, and 7-week findings were 0.66 for Internality.

Convergent validity results show that the P and C scales correlate with each other (0.41 to 0.60), whereas the I scale correlates with the P and C scales -0.25 and 0.19, respectively (Lefcourt, 1991). Rotter's I-E scale produced correlations of 0.25 with the P scale, and 0.56 with the C scale of the IPCS. Similar results have been found in other samples. Discriminant validity research has shown the IPCS and the Crowne-Marlowe Social Desirability scales to differentiate with correlations of 0.09, 0.04, and -0.10 in one study and 0.04, 0.11, and 0.08 in another study (Lefcourt, 1991). Levenson (1981) reports that, in a college sample, Rotter's I-E scale correlated -0.41 with the Internality scale. A multiple regression study using the IPCS to predict Rotter's I-E scale entered the C scale first with a correlation of 0.43, then added the I scale to bring the correlation to 0.53, while the P scale did not reach significance. Levenson (1981) also reported research that looked at the relationships between the California Personality Inventory (CPI), the

Sixteen Personality Factor Questionnaire (16PF), and the IPCS. The I scale consistently correlated positively with sociability, the C scale related negatively to well-being and responsibility and positively with guilt proneness, and the P scale correlated positively with suspiciousness.

Levenson (1981) cites her earlier work in factor analyzing the IPCS. Using undergraduates ( $n=329$ ) and then later a psychiatric sample, principle component factor analysis using Kaiser's Varimax method yielded seven factors accounting for 53% of the variance. The first three factors (P, I, and C) each contained only items that had been theoretically chosen for the respective scale. Because there were no overlaps between scales, there seems to be congruence between the theoretical development and the empirical emergence of these three scales. The IPCS has been used in a large number of studies and in a wide variety of sample populations (Lefcourt, 1991; Levenson, 1981).

The IPCS was chosen for use in this study for four primary reasons. First, the IPCS has shown very similar results for multiple populations. This increases the likelihood that the results from this faculty population would be comparable to previous studies. Second, when compared with other measures of personal control, the psychometric properties are similar, and the convergence of the theoretical formulation with empirical validation supports the independence of the three scales. Third, results from this internality scale can be compared to studies using the full multidimensional instrument. Fourth, this measure has been utilized often in the literature and with a large variety of diverse samples.

### Life Orientation Test

The variable optimism was measured by the 10-item revised Life Orientation Test (LOT-R), redeveloped by Michael Scheier, Charles Carver, and Michael Bridges (1994). The original LOT was developed by Scheier and Carver in 1985. The LOT was revised because of criticism it received concerning possible discriminant validity problems and the presence of two items that appeared to be measuring coping mechanisms (Scheier et al., 1994).

Scheier et al. (1994) revised the LOT by removing the two items containing coping-like cores, and added one positively worded item more in line with the expectancy measure of optimism. This revised LOT contains 10 items, 6 scoreable items and 4 filler items. To reduce the size of the instrument, this current research did not include the 4 filler items. Three items are scored in the positive direction and 3 items are scored in the negative direction requiring reverse scoring. Responses are sought on a 5-point scale including: 0-strongly disagree; 1-disagree; 2-neutral; 3-agree; and 4-strongly agree. The score range is from 0 to 24. For this research, however, the questionnaire ranged from -2 through +2, including 0 for neutral, in order to maintain consistency throughout the survey and to serve as a clearer reference to the agree and disagree categories. After data input, this response range was re-coded to the standard 0 through 4 range for computation procedures.

Convergent and discriminant validity was established using conceptually similar construct measures. Correlations with the LOT-R were as follows: 0.48 with the Self-Mastery Scale (Pearlin & Schooler, 1978); -0.53 with the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1974); 0.50 with the Self-Esteem Scale (Rosenberg,



1965); -0.43 with neuroticism as measured by the Guilford-Zimmerman Temperament Survey (Guilford, Zimmerman, & Guilford, 1976); and -0.36 with a 10-item version of the Neuroticism Scale of the Eysenck Personality Questionnaire (Eysenck, 1958; Goh, King, & King, 1982). Beck et al. (1974) found correlations between the LOT and the Beck Depression Inventory of -0.57 and -0.40 for women and men respectively, and correlations between the LOT and hopelessness of -0.58 and -0.35 for women and men respectively. Scheier et al.'s (1994) findings show relatively modest correlations with conceptually similar measures. Furthermore, this study also factor analyzed the LOT-R, finding one factor accounting for 48.1% of the variance, with a mean factor loading of 0.69 for each item. A factor analysis of all scales measured in the study also showed a single Optimism factor incorporating the items of the LOT-R. Finally, the LOT-R correlated 0.95 with the LOT, suggesting that the revised instrument is consistent with the original measure.

Cronbach's alpha was 0.78, showing internal consistency. Item-scale correlations ranged from 0.43 to 0.63, showing that the items are not repetitive, yet they are measuring a similar concept. Test-retest correlations were: 0.68 for 4 months; 0.60 for 12 months; 0.56 for 25 months; and 0.79 for 28 months. The norms (Scheier, Carver, & Bridges, 1994) for the LOT-R were established for two populations: college students and patients waiting for coronary artery bypass surgery with a mean age of 64.3. The bypass patients' mean score was 15.16, with a standard deviation of 4.05, while the college students' mean score was 14.33, with a standard deviation of 4.28. The original LOT means were somewhat higher however. In 1987 Carver and Gaines (p. 454) found the mean LOT score to be 31.05 ( $SD=5.62$ ) in a study of postpartum depression, and 30.57 ( $SD=5.52$ ) in

a sample of 983 college students.

There were four primary reasons for using the LOT-R in this research. First, the LOT has consistently been used in the literature for assessing optimism and pessimism. Second, the new revisions of the LOT-R make it a more sound instrument for this research and this research yields new normative data for the LOT-R. Third, this measure is concise, making it valuable in multi-measure research. Fourth, the reliability and discriminant validity of this instrument are acceptable.

### Eysenck Personality Questionnaire

The variable extraversion was measured by the 12-item extraversion scale of the short-scale Eysenck Personality Questionnaire Revised (EPQ-R). This instrument was published by H. J. Eysenck in 1975, and its psychoticism scale was revised in 1985. Although the EPQ-R includes 100 items measuring psychoticism, neuroticism, and extraversion, the short scale has only 48 items.

Eysenck also developed the Eysenck personality Inventory (EPI) in 1964. Both the EPQ and the EPI have been used extensively throughout the literature to measure extraversion. The EPQ-R was chosen for this research because Emmons and Diener (1986a, p.1214) report that the EPQ measures only the sociability component of extraversion, while the EPI also taps impulsivity (nonplanning and risk-taking). Argyle and Lu (1990b) also found this difference between the EPQ and EPI.

Eysenck's extraversion/introversion scale was developed based upon the theory that "introverts are habitually in a state of greater arousal than extraverts, and consequently they show lower sensory thresholds, and greater reactions to sensory

stimulation” (Eysenck & Eysenck, 1967, p. 384). Because of Eysenck’s lemon test, where four drops of lemon juice were placed on an individual’s tongue for 20 seconds, extraverts and introverts were discriminated by those who produced little or no increase in saliva (extreme extraverts) to those who produced almost 1 gram of saliva (extreme introverts), while the rest fell between these extremes (Eysenck & Eysenck, 1967). The Eysenck Personality Inventory extraversion subscale correlated 0.71 with results of the lemon test. Because no significant correlation was found for neuroticism from this test, the independence and unidimensional nature of extraversion was established. A study analyzing the psychometric properties of Cattell’s Sixteen Personality Factor Questionnaire (16PF) and the Eysenck Personality Questionnaire confirmed the usefulness of the extraversion scale of the EPQ, and found that it related to the 16PF’s outgoing, impulsive (happy-go-lucky), and bold (venturesome) subscales.

Validity of the extraversion scale has come from a variety of sources. Three undergraduate samples (Avia, Sanz, Sanchez-Bernardos, & Martinez-Arias, 1995) found correlations of 0.53, 0.61, and 0.74 between the Eysenck Personality Questionnaire extraversion scale and the Neuroticism Extraversion Openness Personality Inventory (NEO-PI) extraversion scale. These authors also found that the Marlowe-Crowne Social Desirability Scale did not significantly correlate with the EPQ-E scale. Furthermore, the NEO-PI extraversion scale and the EPQ extraversion scale defined a single extraversion factor. Saggino and Kline (1996), using high-school students, found that the extraversion scale of the EPQ correlated -0.723 with the Myers-Briggs Type Indicator (MBTI) extraversion-introversion scale.

According to Eysenck and Eysenck (1994), the alpha reliability coefficients for the

full extraversion scale during revision were 0.84 for males and 0.85 for females in a sample of 508 male and 873 female “students, teachers, and other willing and varied subjects,” with an average age range of  $25.43 \pm 12.89$  for males and  $26.79 \pm 13.23$  for females. Heaven and Shochet (1995) also found an alpha coefficient of 0.85 for the extraversion scale with a sample of students. The test-retest reliability for the extraversion full scale was 0.92. The same source states that the short-scale measure of extraversion had alpha reliabilities of 0.84 for males and females. The extraversion short and full scales had a correlation of 0.95. Because the longer version of the EPQ-R did not result in greater reliabilites and appears to measure the same construct, the short scale was chosen for this study.

The EPQ-R was chosen for use in this study for the following three reasons. First, the EPQ and the EPI have been used throughout the literature for the examination of extraversion. The EPQ was chosen over the EPI because this study intended to measure the sociability component rather than the impulsivity component of extraversion. Second, the reliability and validity of the EPQ-R are acceptable. Finally, the EPQ-R short scale is a succinct measure of only 12 items.

### Null Hypotheses and Statistical Analysis

The following null hypotheses stem from the research questions found in chapter 1:

1. There is no significant positive correlation between subjective well-being and self-esteem among university faculty.
2. There is no significant positive correlation between subjective well-being and

personal control among university faculty.

3. There is no significant positive correlation between subjective well-being and optimism among university faculty.

4. There is no significant positive correlation between subjective well-being and extraversion among university faculty.

5. There are no significant positive intercorrelations among the variables self-esteem, personal control, optimism, and extraversion among university faculty.

6. There is no significant positive correlation between subjective well-being and the combined variables self-esteem, personal control, optimism, and extraversion among university faculty.

These null hypotheses were analyzed as follows: hypotheses 1 through 5 were analyzed by zero-order correlation coefficients, and hypothesis 6 was analyzed using multiple regression analysis. For all hypothesis tests, alpha was set at 0.05.

## CHAPTER IV

### FINDINGS

#### Purpose

The purpose of this study was to observe the relationships between prevalent psychological attitudes and subjective well-being, and to observe the interrelationships among the psychological attitudes themselves. This was done through the following self-report questionnaires. Negative affect and positive affect were measured by the Short Happiness and Affect Research Protocol (SHARP; Stones et al., 1996), a version of the Memorial University of Newfoundland Scale of Happiness (MUNSH; Kozma & Stones, 1980). Added to this affect measure, the cognitive life satisfaction aspect of subjective well-being was measured by the Satisfaction With Life Scale (SWLS; Diener et al., 1985). The Self-Esteem Scale measured self-esteem (Rosenberg, 1965). The internality scale of the Internality, Powerful Others, Chance Scales (IPCS-I) was used to measure personal control (Levenson, 1981). The Life Orientation Test (LOT) was used to measure optimism (Scheier & Carver, 1985). And the short form of the extraversion scale of the Eysenck Personality Questionnaire Revised (EPQ-R) measured extraversion (Eysenck et al., 1985). This chapter presents the data, the analyses, and an interpretation of the findings.

### Description of the Setting

The target population of this study was the faculty of two Midwestern university settings. The first sample was taken from Andrews University, a moderately sized Christian university. Andrews University, located in Southwest Michigan, was founded by the Seventh-day Adventist church denomination. Andrews University's yearly enrollment is about 3,000, with a roughly even split between enrollment in undergraduate programs and graduate programs. The student body represents most if not all of the United States, and international students from over 100 diverse countries. Undergraduate programs run the full gamut including theology, business, computer science, art, engineering, nursing, and many more. Graduate programs include master's and/or doctoral programs in psychology, social work, architecture, speech pathology, theology, physical therapy, elementary education, and many more.

Of the 312 surveys sent to Andrews University faculty, 7 were returned unmarked, stating that the individual was no longer with the university due to retirement or simply having moved away. Faculty from Andrews University returned 145 surveys for a 47.5% return rate. One survey was removed from analysis because it was determined to be invalid due to 22 blank response items. Because scales were removed from analysis if two or more responses were left blank, one SHARP scale, one LOT-R scale, and two EPQR-E scales were omitted from the Andrews University faculty sample. No additional surveys were received from this sample after December 1998.

The second sample was taken from Indiana University of South Bend, a moderately sized state university. Indiana University of South Bend is located in Northern Indiana. The total number of students served at Indiana University of South Bend

includes about 4,650 undergraduates and 1,350 graduate students. It is a liberal arts university, offering a full range of undergraduate programs. Graduate programs include business, education, environmental affairs, arts, social work, library science, and many more. In regard to ethnic diversity, Indiana University of South Bend states that Caucasian students are a clear majority.

Of the 271 surveys sent to Indiana University of South Bend faculty, 89 were returned for a return rate of 32.8%. Because scales were removed from analysis if two or more responses were left blank, two EPQR-E scales and two SHARP scales were omitted from the Indiana University of South Bend faculty sample. No blank or clearly invalid surveys were returned from this sample. No additional surveys were received from this sample after December 1998.

The total return rate for both samples combined was 40.6%, with a total usable sample size of 233. Of this total sample of 233 seemingly valid returned surveys, one LOT-R scale, four EPQR-E scales, and three SHARP scales from six respondents were removed from analyses. Almost all of the eight removed scales were removed because respondents felt that they could not commit to the dichotomy of the question, choosing to write "maybe," "depends," "at times," "sometimes," or in one case simply omitting more than two items on a scale. No additional surveys were received from either sample after December 1998.

### Procedures

Permission was obtained from Andrews University and Indiana University South Bend (Appendix A) to sample all graduate and undergraduate faculty in all departments.



Each faculty member of both universities was sent a cover letter, a two-page survey, and a self-addressed envelope (Appendix B) in May of 1998. One week later, a Thank-you/Reminder postcard was sent (Appendix B). All surveys and postcards were mailed via each university's inter-departmental campus mail, and all responses were received by the same means. The resulting data file is located in Appendix C.

The cover letter addressed the value of the study, encouragement for each person to respond, the confidentiality of each response, and information on how to receive a synopsis of the results. The postcard was designed to thank those who had responded and encourage those who had not responded. To increase the return rate, the mailings were made toward the beginning of the week, and mailings were printed on high-quality paper.

Missing data were treated with specific guidelines. Only one full survey needed to be removed from analysis because validity was suspect due to 22 missing responses. All scales with more than two missing responses were discarded. Of the total sample of 233 seemingly valid returned surveys, one LOT-R scale, four EPQR-E scales, and three SHARP scales from six respondents were removed from analyses. Because almost all of the missing values on the EPQR-E were marked "sometimes" or another similar descriptor, EPQR-E scales missing one or two values were marked 0.5, the value squarely between the minimum and maximum possible value. This increased possible error by only  $\pm 0.5$  to  $\pm 1$  for the total EPQR-E score, while retaining all EPQR-E scales with less than three missing values. This left a total of 229 valid EPQR-E scales to be used in analyses after the four invalidated EPQR-E scales caused by more than two missing responses were removed. SHARP scales with less than three missing values were coded as specified by the authors of the SHARP: All missing values were scored 0. This allowed 230 SHARP

scales to be used in analyses, the missing three scales due to missing responses greater than two as explained above. Missing values for the LOT-R, SES, SWLS, and IPCS-I were left missing, causing an additional loss of four LOT-R scales, three SES's, three SWLS's, and one IPCS-I's. It was thought that losing so few scales in analyses would outweigh any error caused by approximating responses for these scales due to their small size. When added to the missing scales mentioned above, this left 228 LOT-R scales, 230 SES's, 230 SWLS's, and 232 IPCS-I's for analysis. The combination SWB measure, the added *T*-scores of the SHARP scale and the SWLS, led to a total of 227 Listwise Deletion useable SWB measures. When all the scales SWB, LOT-R, SES, SWLS, and IPCS-I were combined, a total of 217 full respondents met the criteria for analysis using Listwise Deletion. All analyses used Listwise Deletion and were run using SPSS Graduate Pack Standard Version V6.1.2, and many analyses were confirmed using BMDP V7.0.

### Demographics

Table 1 shows the gender, age, and ethnicity makeup of the total sample. Just over half of the respondents were male, with a total of 127 males and 105 females. Three percent of those responding to the survey were above 69 years of age and less than 3% were below 30 years of age. Just over 35% of the sample was between the ages of 50 and 59, and just over 31% were between the ages of 40 and 49. The rest of the respondents were between the age ranges of 30 and 39 (17.6%), and 60 and 69 (9.4%). Finally, 201 respondents marked Caucasian, 14 respondents marked African American, 10 respondents marked Asian, and 6 respondents marked Other. Very little, less than 1%, demographic data were left blank and marked missing. In summary, there are slightly more males than

**TABLE 1**  
**GENDER, AGE, AND ETHNICITY DEMOGRAPHICS**

	Total Responses	Total Percentages
<b>Gender</b>		
Male	127	54.5
Female	105	45.1
Missing	1	0.4
<b>Age</b>		
Below 30	6	2.6
30-39	41	17.6
40-49	73	31.3
50-59	83	35.6
60-69	22	9.4
Above 69	7	3.0
Missing	1	0.4
<b>Ethnicity</b>		
African American	14	6.0
Asian American	10	4.3
Caucasian	201	86.3
Other	6	2.6
Missing	2	0.9

female faculty members in the total sample, two-thirds of the sample is between the ages of 40 and 59, and the vast majority of the sample is Caucasian.

Table 2 contains the total responses and total percentages of marital status and marital satisfaction demographics. Just under 4% of respondents marked remarried and 78.5% were currently married for a total married population of just over 82%. Under 2% reported that they were widowed, less than 0.5% reported that they were separated, 6.4% reported that they were divorced, and just over 8% reported that they were single. Regarding marital satisfaction, 55.8% marked that they were very satisfied with their

**TABLE 2**  
**MARITAL DEMOGRAPHICS**

	Total Responses	Total Percentages
<b>Marital Status</b>		
Single	19	8.2
Married	183	78.5
Widowed	4	1.7
Separated	1	0.4
Divorced	15	6.4
Remarried	9	3.9
Missing	2	0.9
<b>Marital Satisfaction</b>		
Not Applicable	33	14.2
Very Satisfied	130	55.8
Satisfied	55	23.6
Dissatisfied	11	4.7
Very Dissatisfied	2	0.9
Missing	2	0.9

marriage, while just under 24% marked that they were simply satisfied with their marriage. Just under 5% marked that they were dissatisfied, and 0.9% marked that they were very dissatisfied with their marriage. Over 14% clarified that marital satisfaction was not applicable to them, and less than 1% of marital status or marital satisfaction measures were left blank. In summary, the vast majority of this sample of faculty members were married, over half were very satisfied with their marriages, and three-fourths were satisfied or very satisfied with their marriage.

The instructional level and university demographic total responses and total percentages are found in Table 3. Almost 48% of respondents instructed at the undergraduate level, 31.3% instructed at the graduate level, and just under 21% instructed

**TABLE 3**  
**INSTRUCTIONAL LEVEL AND UNIVERSITY DEMOGRAPHICS**

	Total Responses	Total Percentages
<b>Instructional Level</b>		
Undergraduate	111	47.6
Graduate	73	31.3
Both	48	20.6
Missing	1	0.4
<b>University</b>		
Andrews University	144	61.8
Indiana University of South Bend	89	38.2

at both the undergraduate and graduate levels. Over 60% of the total responses were received from Andrews University faculty while less than 40% of the total responses were received from Indiana University of South Bend. In summary, almost half of the university faculty sampled instructed at the undergraduate level alone, and 60% of the responses came from Andrews University faculty.

#### Subjective Well-Being

Although not addressed as a hypothesis, it was of interest as an additional analysis to explore the possibility that certain demographic variables may significantly share variance with subjective well-being. Table 4 shows the mean subjective well-being scores for each of the demographic variables and their significance levels. The number of respondents in each of the subjective well-being analyses is often slightly less than the total number in each category shown in the previous Tables 1, 2, and 3. This is because not all

TABLE 4

## DEMOGRAPHICS AND MEAN SUBJECTIVE WELL-BEING SCORES

Demographics	Number Of Respondents In Analysis	Mean Subjective Well-being	Test Statistic	Significance
<b>Gender</b>				
Male	125	99.53	$t = 0.41$	$p = 0.684$
Female	101	100.51		
<b>Age</b>				
Below 40	46	96.42	$F = 3.77$	$p = 0.012^*$
40-49	71	96.68		
50-59	83	102.54		
60 and Above	26	107.89		
<b>Ethnicity</b>				
African American	13	106.61	$F = 1.40$	$p = 0.243$
Asian American	10	97.15		
Caucasian	197	100.12		
Other	6	98.17		
<b>Marital Status</b>				
Single	39	92.94	$t = 2.76$	$p = 0.006^{**}$
Married	187	101.56		
<b>Marital Satisfaction</b>				
Single	33	93.55	$F = 21.85$	$p < 0.001^{***}$
Satisfied with marriage	181	103.06		
Dissatisfied with marriage	12	72.82		
<b>Instructional Level</b>				
Instructing undergraduate & graduate levels	46	95.29	$t = 2.05$	$p = 0.041^*$
Instructing at only one level	181	101.34		
<b>University</b>				
Andrews University	141	100.20	$t = 0.09$	$p = 0.926$
Indiana University of South Bend	86	99.97		

\*Significant at 0.05 level. \*\*Significant at 0.01 level. \*\*\*Significant at 0.001 level.

individuals in each category responded to all subjective well-being questions, yielding fewer respondents in many of the subjective well-being analyses. Additionally, the groupings of several of the demographic variables were restructured to accommodate a low number of responses for certain demographic categories. The variables that were regrouped included age, marital status, and marital satisfaction.

Because of the low number of responses in the “below 30” category and the “above 69” category, the age variable was regrouped as: “below 40” years-of-age ( $n=46$ ), ages “40 to 49” ( $n=71$ ), ages “50 to 59” ( $n=83$ ), and ages “60 and above” ( $n=26$ ). Using the one-way Analysis of Variance of SPSS, a significant difference among subjective well-being means was found among age groups [ $F(3,222)=3.77, p=0.0115$ ]. Using the Scheffé test with the significance level set at 0.05, the category “60 and above” was significantly different from the “below 40” and “40 to 49” age groups, and the “40 to 49” age group was significantly different from the “50 to 59” age group. When measured alone, subjective well-being means were significantly affected by age categories. Among the age categories, the highest mean subjective well-being was found among the “60 and above” age group ( $M=107$ ), the next highest mean subjective well-being was among the “50 to 59” age group ( $M=102$ ), and the “40 to 49” and “below 40” age groups both had the lowest mean subjective well-being ( $M=96$ ). Faculty members “age 60 or above” had significantly higher subjective well-being when compared with those in the age groups “below 40” or “40 to 49,” and the age group “50 to 59” had significantly higher subjective well-being than did the “40 to 49” age group.

Marital status had a statistically significant impact on subjective well-being scores. Although there were few responses to several of the categories of the variable marital

status, response patterns indicated two clearly identifiable groups, so the marital status variable was regrouped into the groups single and married. The single group ( $n=39$ ) included those who were single, widowed, separated, and divorced. The married group ( $n=187$ ) included those who were married and those who were remarried. An independent samples  $t$ -test found that the difference in means between the two groups was statistically significant [ $t(224)=2.76, p=0.006$ ]. The vast majority of the sample was married, and being married ( $M=102$ ) clearly was related to significantly greater subjective well-being than did being single ( $M=93$ ).

Marital satisfaction also had a statistically significant impact on subjective well-being scores. The marital satisfaction variable was regrouped into three groups. Because there were few individuals who were very dissatisfied with their marriage, the very dissatisfied and dissatisfied with marriage categories were grouped into one "dissatisfied with marriage" group ( $n=12$ ), the very satisfied and satisfied with marriage categories were grouped into one "satisfied with marriage" group ( $n=181$ ), and the remaining not applicable category was identified as "single" ( $n=33$ ). Using one-way Analysis of Variance, a significant difference was found among marital satisfaction groups [ $F(2,223)=21.851, p < 0.0001$ ]. Using the Scheffe' test with the significance level set at 0.05, all three categories were found to be significantly different from each other. When a faculty member was satisfied with his or her marriage, he or she had the greatest mean subjective well-being ( $M=103$ ), not being married had the next best mean subjective well-being ( $M=94$ ), and being dissatisfied with marriage had the poorest mean subjective well-being ( $M=73$ ).

Whether a faculty member instructed at just one level ( $n=181$ ) or he or she



instructed at both the undergraduate level and the graduate level ( $n=46$ ) had an impact on subjective well-being. An independent samples  $t$ -test found that the difference in means between the two groups was significant [ $t(225)=2.055, p=0.041$ ]. It was a statistically significant advantage to the faculty member's mean subjective well-being to instruct at one level only ( $M=101$ ), rather than at both the undergraduate and graduate levels ( $M=95$ ).

The gender, university sample, and ethnicity demographics were not related to subjective well-being. Using a  $t$ -test for independent samples, no difference was found between the mean subjective well-being of males ( $M=99$ ) and females ( $M=100$ ) [ $t(224)=0.41, p=0.684$ ]. Additionally, the independent samples  $t$ -test found that there was not a significant difference [ $t(225)=0.09, p=0.926$ ] between the mean subjective well-being scores of Andrews University faculty ( $M=100; n=141$ ) when measured against the mean subjective well-being scores of Indiana University of South Bend faculty ( $M=100; n=86$ ). Finally, the possible subjective well-being mean differences among ethnicity were not analyzed because 87% of respondents were Caucasian, and the other categories contained too few respondents to draw from. Gender, university sample, and ethnicity demographics did not share significant variance with subjective well-being.

In summary, univariately in terms of subjective well-being means it was significantly better for a faculty member to be "age 60 or above" rather than in the age groups "below 40" or "40 to 49," and significantly better to be in the age group "50 to 59" than in the "40 to 49" age group. The vast majority of the sample was married, and being married was clearly related to higher subjective well-being scores than was being single. In terms of subjective well-being, it was statistically best for faculty members who were satisfied with their marriage, second best for those who were single, and poorest for

faculty members who were dissatisfied with their marriage. Subjective well-being was significantly higher for faculty members who instructed at one level only, rather than at both the undergraduate and graduate levels. Finally, gender, university sample, and ethnicity demographics did not relate to subjective well-being in this study.

### Instrument Analysis

The results of the item analysis of each of the scales used in this study are found in Table 5. The Alpha levels for each of the seven scales reached 0.7403 or higher and each appears to be fully adequate for this study.

TABLE 5  
SCALE ITEM ANALYSIS

Scales Used	Number of Items	Number of Complete Responses	Range of Scores	Mean of Scores	Standard Deviation	Alpha Levels
EPQR-E	12	229	0 to 12	6.61	3.80	0.8782
IPC-I	8	232	14 to 48	34.31	6.58	0.7403
LOT-R	6	228	6 to 24	17.79	3.67	0.7647
SES	10	230	17 to 40	34.92	4.27	0.8513
SHARP	12	230	-6 to 6	4.18	2.20	0.7577
SWLS	5	230	8 to 35	27.39	5.97	0.8736
SWB*	2	227	33.5 to 121	100.12	17.97	0.7729

\* $T$ -Score of SHARP +  $T$ -Score of SWLS.

The Self-Esteem Scale had a mean of 34.92 ( $SD=4.27$ ). The internality scale of the Internality, Powerful Others, and Chance Scales had a mean of 34.31 ( $SD=6.58$ ) in this study. The Life Orientation Test had a scale mean of 17.79 ( $SD=3.67$ ). Scheier et al.

(1994) found somewhat lower means for a sample of college students ( $M=14.33$ ,  $SD=4.28$ ) and for patients waiting for coronary artery bypass surgery ( $M=15.16$ ,  $SD=4.05$ ). The extraversion scale of the Eysenck Personality Questionnaire had a mean of 6.61 ( $SD=3.80$ ) in this study.

The mean for SWLS among college students was 23.5 ( $SD=6.43$ ), for elderly persons the mean was 25.8, and for Dutch medical outpatients the mean was 23.63 ( $SD=7.01$ ; Diener et al., 1985). For this sample, the mean was somewhat higher ( $M=27.39$ ,  $SD=5.97$ ) for the SWLS. The full scale Short Happiness and Affect Research Protocol (SHARP) mean was 4.18 ( $SD=2.20$ ). The mean for the subjective well-being combination measure of SHARP and SWLS was 100.12 ( $SD=17.97$ ).

### Testing the Hypotheses

Because multiple regression analysis was intended to be used with these data, the data were required and found to meet the four following assumptions. First, the responses needed to be independent of each other. The responses are clearly independent of each other because all the variables were obtained from circumscribed independent instruments. Additionally, the Durbin-Watson test, a statistical measure of independence, had values close to 2 for each variable combination which indicates independence.

The second assumption was that for each value of the independent variable, the distribution of the dependent variable's values needed to be basically normal. This assumption was examined through Sunflower Scatter plots with a regression line, Stem and Leaf plots, and Normal Q-Q plots of the expected normal values plotted against the standardized observed values. Although these measures showed a negative skew

suggesting a ceiling effect, the data were within acceptable limits meeting this multiple regression assumption.

The third assumption was that the distribution of the dependent variable needed to be similar for all independent variable values. This assumption was examined through Sunflower Scatter plots with a regression line and Stem and Leaf plots. Although these measures also showed a negative skew suggesting a ceiling effect, the distribution of the dependent variable was similar enough for all independent variables to utilize regression analysis.

The fourth assumption was that the relationship between the independent and dependent variables needed to be basically linear. This assumption was examined through Sunflower Scatter plots with a regression line. Again, although these measures showed a negative skew suggesting a ceiling effect, the regression line of the Sunflower Scatter plots reasonably split the data points indicating that the relationship between the independent and dependent variables was within acceptable linear limits, and meeting this multiple regression assumption.

The following is an analysis of data for each null hypothesis. The first four hypotheses are dealt with together. Table 6 shows each of the correlations for null hypotheses 1 through 4, and the intercorrelations for hypothesis 5.

Null Hypothesis 1. There is no significant positive correlation between subjective well-being and self-esteem among university faculty.

Null Hypothesis 2. There is no significant positive correlation between subjective well-being and personal control among university faculty.

Null Hypothesis 3. There is no significant positive correlation between subjective

TABLE 6  
CORRELATIONS AND INTERCORRELATIONS

Variable	Subjective Well-being	Self-esteem	Personal Control	Optimism
Self-esteem	0.4870***			
Personal Control	0.3234***	0.3157***		
Optimism	0.4713***	0.6127***	0.4291***	
Extraversion	0.0858	0.2700***	0.2023**	0.3006***

**Note.** Pairwise deletion of missing data.

\*\*Significance level =  $p < 0.01$ . \*\*\*Significance level =  $p < 0.001$ .

well-being and optimism among university faculty.

**Null Hypothesis 4.** There is no significant positive correlation between subjective well-being and extraversion among university faculty.

Pearson's Bivariate correlation was used to test each of the null hypotheses 1 through 4. The correlation of 0.4870,  $p < 0.001$ , was found between subjective well-being and self-esteem, rejecting the null hypothesis ( $r^2=0.2372$ ). The correlation of 0.3234,  $p < 0.001$ , was found between subjective well-being and personal control rejecting the null hypothesis ( $r^2=0.1046$ ). The correlation of 0.4713,  $p < 0.001$ , was found between subjective well-being and optimism rejecting the null hypothesis ( $r^2=0.2221$ ). The correlation of 0.0858,  $p = 0.199$ , was found between subjective well-being and extraversion, which did not reject the null hypothesis ( $r^2=0.0074$ ).

In this sample of university faculty, a significant positive relationship was found between subjective well-being and self-esteem, a sense of personal control, and optimism.

In this sample of university faculty no significant relationship was found between

subjective well-being and extraversion when they were tested independent of other variables.

Null Hypothesis 5. There are no significant positive intercorrelations among the variables self-esteem, personal control, optimism, and extraversion among university faculty.

To test this hypothesis a Pearson's Bivariate correlation was used. The correlations between subjective well-being and independent variables and the intercorrelations between the independent variables are presented in Table 6. All variables were significantly correlated with all other variables, rejecting the null hypothesis. All intercorrelations were significant above the 0.001 level except for the personal control-extraversion intercorrelation which was significant above the 0.01 level. The variables self-esteem, personal control, optimism, and extraversion when measured among university faculty all showed positive relationships with each other.

Null Hypothesis 6. There is no significant positive correlation between subjective well-being and a combination of the variables self-esteem, personal control, optimism, and extraversion among university faculty.

It was found that various combinations of the variables self-esteem, personal control, optimism, and/or extraversion, when measured among university faculty, did relate positively to subjective well-being among university faculty. Stepwise multiple regression analysis with self-esteem, personal control, optimism, and extraversion was used to address this hypothesis. SPSS 6.1 first entered self-esteem into the equation with a correlation of 0.5036, accounting for 25.4% of subjective well-being variance,  $F(1,215) = 73.07, p < 0.0001$ . In the second step, SPSS entered optimism for a multiple correlation

of 0.5525. The self-esteem and optimism model then accounted for 30.5% of the subjective well-being variance,  $F(2,214) = 47.02, p < 0.0001$ , with a standardized Beta of 0.2858 for optimism and 0.3304 for self-esteem. The variable optimism added 6.5% to the variance accounted for by self-esteem. On the third step, SPSS entered personal control for a total correlation of 0.5644. This model accounted for 31.9% of the subjective well-being variance,  $F(3,213) = 33.19, p < 0.0001$ . This three factor model contained a standardized Beta of 0.1273 for personal control, 0.2401 for optimism, and 0.3179 for self-esteem. Adding personal control to the self-esteem and optimism model added 1.4% to the known subjective well-being variance. SPSS did not enter extraversion into the final model as the significance level for extraversion before entering it into the equation was 0.0575 (Beta=-0.1147), and the minimum significance level for entering was set at 0.05. Because there was a significant positive correlation between subjective well-being and a combination of the variables self-esteem, personal control, and optimism, null hypothesis 6 was rejected. The variables self-esteem, personal control, and optimism, their standardized Betas, and significance levels are found in Table 7. This final three-factor model contained standardized Betas of 0.1273 for personal control ( $p = 0.0429$ ), 0.2401 for optimism ( $p = 0.0015$ ), and 0.3179 for self-esteem ( $p < 0.0001$ ), and accounted for 31.9% of subjective well-being variance.

This finding was replicated using BMDP-9R "All possible subsets regression." This program found a significant  $R$ -square of 0.3186 ( $p < 0.0001$ ) when the variables self-esteem ( $t=4.45$ ), personal control ( $t=2.04$ ), and optimism ( $t=3.22$ ) were correlated as a group with subjective well-being. Again, the variable extraversion did not reach the 0.05 significance level to be included in the best combination of predictors. Clearly, the

**TABLE 7**  
**PRIMARY INDEPENDENT VARIABLES, STANDARDIZED**  
**BETAS, AND SIGNIFICANCE LEVELS**

Self-esteem	Optimism	Personal Control
0.3179***	0.2401**	0.1273*

Note.  $R^2 = 0.3179$ ,  $F(3,213) = 33.19$ ,  $p < 0.0001$ .

\* $p < 0.05$ . \*\* $p < 0.005$ . \*\*\* $p < 0.0001$ .

subjective well-being of Midwestern faculty is significantly impacted by the combination of a faculty member's self-esteem, optimistic outlook, and sense of personal control, though it is not significantly impacted by an extraverted personality style.

#### Best Model Analyses

An expectation of this research was that it would yield a combination of variables that would further develop an understanding of the subjective well-being among university faculty. Because several demographics were found to significantly correlate with subjective well-being, a full "best" model including all possible predictors was sought.

To assess all possible combinations, various multiple regression methods of exploring models including Stepwise, Entering, and Removing variables were explored to find a "best" model. Using Listwise Deletion of missing data, all independent variables were run in a Stepwise multiple regression with subjective well-being as the dependent variable using a significance level of 0.05. Several variables, including marital satisfaction, various age groupings, as well as combinations of marital status, were regrouped to explore possible significant correlations with subjective well-being. However, only the



groupings that were significantly correlated with subjective well-being while in combination with other variables are reported here.

The marital satisfaction variable was recoded into those who were satisfied and those who were dissatisfied with their marriage. Being satisfied with one's marriage was found to share positive significant subjective well-being variance while being measured in combination with other variables. The age variable was recoded into various categories; however, age categories were not found to be significant subjective well-being correlates while in combination with other variables. Marital status was recoded into a married group and into a group of those who were not currently married. Being married had a significant positive correlation with subjective well-being variance while in combination with other variables. Finally, the category of instructing at both the undergraduate and the graduate level was found to have a significant negative correlation with subjective well-being when measured with other variables.

Repeated Enter and Stepwise regression models were run, looking for consistently high and significant Beta values, and watching for fluctuations in these values that might suggest multicollinearity. No multicollinearity was found. After repeated multiple regression runs including Enter and Backward regression methods, seven variables were found to be significantly related in various combinations to subjective well-being. The BMDP-9R "all possible subsets regression" also identified the same seven variables in various combinations.

These seven variables include self-esteem, optimism, a sense of personal control, extraversion, instructing at both the undergraduate and graduate levels, marital status, and marital satisfaction. However, the variables marital status and marital satisfaction are not

mutually exclusive because being satisfied or dissatisfied with one's marriage clearly indicates that one is married. For this reason two "best" models have been identified. Best Model A includes marital satisfaction which indicates a married sample, and so the variable marital status is excluded. Best Model B does not include marital satisfaction, utilizing marital status to differentiate between married and single university faculty.

Best Model A, its standardized Betas, and significance levels are found in Table 8. This model was found to account for the most variance with all significant predictors, yielding a multiple correlation of 0.6896. Best Model A included six variables and accounted for 47.55% of subjective well-being variance [ $F(6, 177) = 26.75, p < 0.0001$ ]. The strongest component of this model was the university faculty member's marital satisfaction. When university faculty marked that they were satisfied or very satisfied with their marriage, a Beta of 0.3953 accounted for the most subjective well-being variance in this study when measured in combination with other variables, and also when measured alone as a single variable. The second strongest component of Best Model A was a faculty member's sense of self-esteem. The higher a university faculty member's self-esteem climbed, the higher his or her subjective well-being climbed (Beta 0.2740,  $p < 0.0001$ ) while in combination with other variables. Being more optimistic also correlated positively with the subjective well-being of university faculty members (Beta of 0.2224,  $p = 0.0016$ ). To a lesser extent, an increased sense of personal control (Beta 0.1592,  $p = 0.0089$ ), instructing either undergraduate or graduate level students but not both (Beta 0.1527,  $p = 0.0058$ ), and not being extraverted (Beta -0.1209,  $p = 0.0353$ ) also assisted in raising subjective well-being among university faculty. Best Model A can be summarized in stating that the subjective well-being of the faculty members in this university faculty

TABLE 8

**BEST MODEL A VARIABLES, STANDARDIZED  
BETAS, AND SIGNIFICANCE LEVELS**

Marital Satisfaction	Self-esteem	Optimism	Sense of Personal Control	Instructing Only at One Level	Extraversion
0.3953***	0.2740***	0.2224**	0.1592**	0.1527**	-0.1209*

Note. *R*square = 0.4755,  $F(6,177) = 26.75$ ,  $p < 0.0001$ .

\* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.0001$ .

sample is greatest among university faculty members who are satisfied or very satisfied with their marriage; have high levels of self-esteem, optimism, and personal control; instruct at either the undergraduate or graduate level but not both; while having introverted versus extraverted personality tendencies.

Best Model B, its standardized Betas, and significance levels are found in Table 9.

Best Model B is a slightly smaller model, including five of the seven variables identified above. Still, this model accounts for 35.95% of subjective well-being variance [ $F(5,211) = 23.69$ ,  $p < 0.0001$ ]. This model did not include marital satisfaction so that marital status

TABLE 9

**BEST MODEL B VARIABLES, STANDARDIZED  
BETAS, AND SIGNIFICANCE LEVELS**

Self-esteem	Optimism	Instructing Only at One Level	Marital Status	Sense of Personal Control
0.3248***	0.2144**	0.1576**	0.1416*	0.1367*

Note. *R*square 0.3595,  $F(5,211) = 23.69$ ,  $p < 0.0001$ .

\* $p < 0.05$ . \*\* $p < 0.005$ . \*\*\* $p < 0.0001$ .

could be used to contrast the effects of being married versus being single. Best Model B included self-esteem (Beta 0.3248,  $p < 0.0001$ ), optimism (Beta 0.2144,  $p = 0.0038$ ), instructing at only one level (Beta 0.1576,  $p = 0.0049$ ), marital status (Beta 0.1416,  $p = 0.0116$ ), and personal control (Beta 0.1367,  $p = 0.0270$ ). Extraversion did not reach the 0.05 significance level when it was included with the other variables in Best Model B, therefore it was excluded from this model. The multiple correlation is 0.5996. Best Model B can be summarized in saying that among this sample's currently married and single university faculty, subjective well-being was highest for those who had a high self-esteem, an optimistic disposition, instructed at only one level, were married, and had a sense of personal control.

#### Summary

The purpose of this study was to observe the relationships between prevalent psychological attitudes and subjective well-being, and to observe the interrelationships among the psychological attitudes themselves. This was done through the following self-report questionnaires: Negative affect and positive affect were measured by the Short Happiness and Affect Research Protocol (SHARP); cognitive life satisfaction was measured by the Satisfaction With Life Scale and added to the SHARP affect measure to form the subjective well-being variable; the Self-Esteem Scale measured self-esteem; the internality scale of the Internality, Powerful Others, Chance Scales was used to measure personal control; the Life Orientation Test was used to measure optimism; and the short form of the extraversion scale of the Eysenck Personality Questionnaire Revised measured extraversion. Faculty from Andrews University returned 145 surveys for a 47.5% return

rate. Of the 271 surveys sent to Indiana University of South Bend faculty, 89 were returned for a return rate of 32.8%. A total of 233 usable surveys were obtained with an overall return rate of 40.6%.

Regarding demographics, there were slightly more males than female faculty members in the total sample, two-thirds of the sample were between the ages of 40 and 59, and the vast majority of the sample were Caucasian. The vast majority of this sample of faculty members were married and three-fourths were satisfied or very satisfied with their marriage. Almost half of the university faculty sample instructed at the undergraduate level alone, and 62% of the responses came from Andrews University faculty.

In regard to subjective well-being univariately: gender, ethnicity, and university sample were not significantly related to subjective well-being when measured independently. However, there was a trend for mean subjective well-being scores to increase with age, and there were small non-significant differences in subjective well-being scores between individuals with different ethnic backgrounds. Marital status had a significant impact on mean subjective well-being scores, as being married had a positive impact on subjective well-being. Marital satisfaction also significantly impacted subjective well-being scores, as being satisfied or very satisfied with marriage had a significant positive impact on subjective well-being. Finally, instructing only one level, versus instructing at both undergraduate and graduate levels, was significantly related to subjective well-being.

As for the primary independent variables, multiple regression analysis and zero-order correlation coefficients showed that subjective well-being correlated significantly

with self-esteem, a sense of personal control, and optimism when measured individually in Midwestern faculty members. However, extraversion did not show a significant shared variance with subjective well-being when measured as a single variable.

The variables self-esteem, personal control, optimism, and extraversion showed significant intercorrelations. Most of these correlations were moderate, and none of these correlations suggested they were measuring identical concepts.

When measured together, each of the independent variables self-esteem, personal control, and optimism contributed significantly in predicting subjective well-being, while extraversion did not reach significance at the 0.05 level. An attempt to develop a model that best predicted subjective well-being yielded two models. Best Model A utilized marital satisfaction among married individuals, while Best Model B sought to contrast the difference between currently married and single individuals. Best Model A found that the subjective well-being of the faculty members in this university faculty sample is greatest among university faculty members who are satisfied or very satisfied with their marriage; have high levels of self-esteem, optimism, and personal control; instruct at either the undergraduate or graduate level but not both; while having introverted versus extraverted personality tendencies. Best Model B found that among this sample's currently married and single university faculty, subjective well-being was highest for those who had high self-esteem, an optimistic disposition, instructed at only one level, were married, and had a sense of personal control.

The overall and most consistent predictors of subjective well-being in this study were marital satisfaction among married respondents, and self-esteem, which was consistent in all analyses. Additionally, although extraversion was expected to be a major

predictor of subjective well-being, it did not significantly correlate with subjective well-being when measured alone or when measured among various variables including marital status. Extraversion did, however, show a significant negative relationship to subjective well-being when measured among married individuals.

## CHAPTER V

### FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

#### Introduction

This chapter serves to summarize this study's intent and findings, as well as to discuss the findings and implications for further research. The summary of the study's intent includes the study's problem, purpose, and methodology.

#### Summary

##### Problem

Although recent summaries of subjective well-being have illuminated four primary covariants (Lightsey, 1996; Myers, 1992), little research has been done that addresses the interaction and combined effects of these variables, limiting the development of theory and practice (Lightsey, 1996). Furthermore, no studies identified have addressed the subjective well-being of university faculty.

##### Purpose

This research sought to address the interaction of self-esteem, personal control, optimism, and extraversion when measured together, and how they combine in relation to subjective well-being in a sample of Midwestern university faculty.



## Methodology

This study employed a survey research design among faculty at Andrews University, a moderate-size Christian university, and Indiana University of South Bend, a moderate-size state university. After obtaining clearance from the Andrews University Human Subjects Review Board, and letters of authorization from both schools, all faculty from both graduate and undergraduate programs of both universities were surveyed through the inter-departmental mail system of each school.

The survey included a cover letter and a two-page instrument consisting of the following scales. The Short Happiness and Affect Research Protocol (SHARP) addressed positive and negative affect (Stones et al., 1996). The Satisfaction With Life Scale (SWLS) addressed life satisfaction (Diener et al., 1985). The Self-Esteem Scale (SES) measured self-esteem (Rosenberg, 1965). The internality scale of the Internality, Powerful Others, Chance (IPCS-I) instrument measured personal control (Levenson, 1981). The Life Orientation Test-Revised (LOT-R) measured optimism (Scheier & Carver, 1985). The extraversion scale of the Eysenck Personality Questionnaire Revised (EPQ-R) measured extraversion (Eysenck et al., 1985). And six additional questions developed by the author were used to address demographic information.

One week after sending out the surveys, a postcard was mailed thanking those who had returned surveys and reminding those who had not. A total of 233 usable surveys were returned, giving a total response rate of 40.6%. Although this response rate is not as high as has been expected in the past with general mail surveys, the seemingly readily accessible population of university faculty is often sampled by other researchers as well as by the administration of each school according to several faculty members. It is possible

that university faculty are oversurveyed, which may account for the less than 50% return rate among this population.

### Findings

Regarding demographics, there were slightly more male than female faculty members in the total sample, two-thirds of the sample were between the ages of 40 and 59, and the vast majority of the sample were Caucasian. The majority of this sample of faculty members were married, and three-fourths were satisfied or very satisfied with their marriage. Almost half of the university faculty sampled in this study instructed at the undergraduate level alone, 21% instructed at both the undergraduate and graduate levels, and 62% of the responses came from Andrews University faculty.

In regard to subjective well-being: gender, ethnicity, and university sample did not have any significant effects on mean subjective well-being when measured alone. Univariately in terms of subjective well-being means, it was significantly better for a faculty member to be "age 60 or above" rather than in the age groups "below 40" or "40 to 49," and significantly better to be in the age group "50 to 59" than in the "40 to 49" age group. The majority of the sample were married, and being married clearly shared significantly more variance with subjective well-being than did being single. In terms of subjective well-being, it was statistically best for faculty members who were satisfied with their marriage, second best for those who were single, and poorest for faculty members who were dissatisfied with their marriage. Subjective well-being was significantly higher for faculty members who instructed at one level only, rather than at both the undergraduate and graduate levels.

Multiple regression analysis and zero-order correlation coefficients showed that subjective well-being correlated significantly with self-esteem, a sense of personal control, and optimism when measured individually in Midwestern faculty members. However, extraversion did not show a significant shared variance with subjective well-being when measured as a single variable.

Each of the variables self-esteem, personal control, optimism, and extraversion showed significant intercorrelations. Most of these correlations were moderate, and none of these correlations suggested they were measuring identical concepts.

When measured together, each of the independent variables self-esteem, personal control, optimism, and extraversion contributed significantly in predicting subjective well-being. An attempt to develop a model that best predicted subjective well-being yielded two models. Best Model A utilized marital satisfaction among married individuals, while Best Model B sought to contrast the difference between currently married and single individuals. Best Model A found that the subjective well-being of the faculty members in this university faculty sample is greatest among university faculty members who are satisfied or very satisfied with their marriage; have high levels of self-esteem, optimism, and personal control; instruct at either the undergraduate or graduate level but not both; while having introverted versus extraverted personality tendencies. Best Model B found that among this sample's currently married and single university faculty, subjective well-being was highest for those who had a high self-esteem, an optimistic disposition, instructed at only one level, were married, and had a sense of personal control. Best Model A accounted for 47.55% of subjective well-being variance, while Best Model B accounted for 35.95%.

Although extraversion was expected to be a major predictor of subjective well-being, it did not significantly correlate with subjective well-being when measured alone. Additionally, although it was statistically significant, extraversion was not a powerful predictor when measured with other variables. The overall and most consistent best predictors of subjective well-being in this study were marital satisfaction and self-esteem levels. Other predictors including optimism, personal control, level of instruction, and being currently married shared significant variance and carried similar weight when measured with other predictors.

#### Research Question 1

Is there a significant positive correlation between subjective well-being and self-esteem among university faculty?

Self-esteem significantly accounted for 23.7% of subjective well-being variance when measured univariately. Clearly then, the null hypothesis related to this question, that there is no significant positive correlation between subjective well-being and self-esteem, was rejected as there is a significant positive correlation between subjective well-being and self-esteem among this sample of university faculty.

#### Research Question 2

Is there a significant positive correlation between subjective well-being and personal control among university faculty?

Personal control significantly accounted for 10.5% of subjective well-being variance when measured univariately. The null hypothesis related to this question, that there is no significant positive correlation between subjective well-being and personal

control, was rejected as a significant positive correlation was found between subjective well-being and personal control among this sample of university faculty.

### Research Question 3

Is there a significant positive correlation between subjective well-being and optimism among university faculty?

Optimism significantly accounted for 22.2% of subjective well-being variance when measured univariately. The null hypothesis related to this question, that there is no significant positive correlation between subjective well-being and optimism, was rejected as there is a significant positive correlation between subjective well-being and optimism among this sample of university faculty.

### Research Question 4

Is there a significant positive correlation between subjective well-being and extraversion among university faculty?

No significant correlation between extraversion and subjective well-being was found using zero-order correlations. The null hypothesis related to this question, that there is no significant positive correlation between subjective well-being and extraversion, was not rejected as there is no significant univariate positive correlation between subjective well-being and extraversion in this sample of university faculty.

### Research Question 5

To what magnitude do the variables self-esteem, personal control, optimism, and extraversion correlate with each other?

Significant correlations were found between each pair of the independent variables. Between self-esteem and personal control, a relatively moderate correlation among these variables was found with a shared variance of 0.3157 or 10.0% ( $p < 0.001$ ). The highest correlation of these variables was found between self-esteem and optimism, with a shared variance of 0.6127 or 37.5% ( $p < 0.001$ ). Regarding self-esteem and extraversion, a relatively low correlation among these variables was found, with a shared variance of 0.2700 or 7.3% ( $p < 0.001$ ). A relatively high correlation was found between personal control and optimism, with a shared variance of 0.4291 or 18.4% ( $p < 0.001$ ). The lowest correlation between these variables was found between personal control and extraversion, with a shared variance of 0.2023 or 4.1% ( $p < 0.01$ ). And finally, optimism and extraversion shared a moderately low correlation, sharing a variance of 0.3006 or 9.0% ( $p < 0.001$ ). The null hypothesis related to this question, that there is no significant positive correlation among the variables self-esteem, personal control, optimism, and extraversion, was rejected in this sample as all of these variables shared significant relationships.

#### Research Question 6

What combination of the variables self-esteem, personal control, optimism, and extraversion correlates most positively with subjective well-being variance among university faculty?

It was found that various combinations of the variables self-esteem, personal control, optimism, and/or extraversion, when measured among university faculty, did share positive relations with subjective well-being among university faculty. Stepwise multiple regression analysis with self-esteem, personal control, optimism, and extraversion

was used to address this research question. SPSS did not enter extraversion into the final model as the significance level for extraversion did not reach the minimum significance level of 0.05. A final three-factor model contained standardized Betas of 0.1273 for personal control ( $p = 0.0429$ ), 0.2401 for optimism ( $p = 0.0015$ ), and 0.3179 for self-esteem ( $p < 0.0001$ ), and accounted for 31.9% of subjective well-being variance. The null hypothesis related to this question, that there would not be a significant positive correlation between subjective well-being and a combination of the variables self-esteem, personal control, optimism, and extraversion, was rejected, as 32% of subjective well-being variance was accounted for by the combination of three of these independent variables.

#### Interpretations and Conclusions

The use of measures designed to be as short as possible seemed to be reliable according to the Alpha levels of the scales used. The similarity of some of the findings with previous research also supports the validity of each of the short scales.

This sample of Midwestern university faculty appears similar to other samples concerning the significant univariate relationships between subjective well-being and the independent variables self-esteem, personal control, and optimism. It was surprising that no significant univariate relationship was found between subjective well-being and extraversion as has been found consistently (Russell & Wells, 1994) in other samples, especially of undergraduate subjects (Argyle & Lu, 1990b; Pavot et al., 1990). Emmons and Diener (1985) found correlations of 0.35 and 0.33 between subjective well-being and extraversion, while Hotard et al. (1989) found a correlation of 0.50 between the two

variables.

However, this relatively surprising finding does agree with and support other authors' findings and beliefs concerning the relationship between subjective well-being and extraversion. Hotard et al. (1989) found an interaction between extraversion and neuroticism, and came to the conclusion that "low SWB tends to be characteristic mainly of neurotic introverted subjects. Neurotic extraverted subjects, along with non-neurotic introverted and extraverted subjects, all reported relatively high SWB" (p. 328). These same authors also found that the finding of lower subjective well-being among introverts was due to poor social relationships, and that introverts with better social relationships had the same relatively high subjective well-being of extraverts. Perhaps the faculty members in this sample tended to have a stable social network, ameliorating any social relation impact on introverted-neurotic individuals.

Other authors (Russell & Wells, 1994) have suggested that the relationship extraversion has shared with subjective well-being is largely due to the college student samples that have been used. College students, especially freshmen, are in a surreal experience where extraversion connects them to increased opportunities to get their needs met, especially social, on the uncharted campus of new adulthood. Perhaps this advantage is temporary because its effects last only as long as it takes for students to adjust to the responsibilities and newness of increased adulthood and campus life. Faculty, on the other hand, are at a point in life that is very different from college students. Faculty, more often, have an established social network, know their capabilities, and have an established identity. The findings of this university faculty sample would support this possibility as the experiences of adulthood, campus life, and social relationships are clearly less novel, or



have long since been adapted to by the time one becomes faculty. Another possibility is that the faculty of this sample have adapted to their personal level of arousal, and it no longer affects their subjective well-being as it might have in the past. In short, the lack of strong relations between extraversion and subjective well-being may likely be the result of university faculty members' social network, developmental stage, and relatively non-neurotic personality status.

The intercorrelations between the independent variables are in the moderate range, showing that the independent variables do not additively relate to subjective well-being. These intercorrelations make logical sense in their overlaps, and also clarify that these variables are not measuring identical concepts. These are important findings as the overlaps between these variables when measured together were previously unknown and will surely impact future comprehensive theories and applications of subjective well-being literature.

The greatest shared variance of 37.5% between self-esteem and optimism is interesting. It makes logical sense that being optimistic about one's self and life is similar to feeling and thinking good of one's self. It also suggests that these two variables may at times switch places in their prominence in other samples. The shared variance of 18.4% between optimism and personal control seems to be reflecting an overlap of feeling optimistic about life and one's ability to contribute to the living of life. The relatively high intercorrelation between optimism and the two variables personal control and self-esteem suggest that optimistic thinking is a major element in positive beliefs about one's self and one's ability to have an impact on one's world and life. Finally, the 10.0% shared variance between personal control and self-esteem suggests that feeling that one has some say in

life can increase one's experience of self-worth and/or one's feeling of self-worth can increase one's feeling that one has some say in life.

The relatively high variance overlap between the three independently significant variables, 10.0% (self-esteem-personal control), 18.4% (personal control-optimism), and 37.5% (optimism-self-esteem), makes their interdependence certain. The lower but significant variance overlaps between extraversion and self-esteem (7.3%), extraversion and personal control (4.1%), and extraversion and optimism (9.0%) seems to show two things. First, this finding shows that extraversion is clearly of a different nature than the other independent variables. Second, this finding seems to support theories of extraversion's circumstantial or indirect relationship to subjective well-being as related earlier.

Although little or no demographic information has significantly correlated with subjective well-being in previous studies, this sample did exhibit some demographic impact on subjective well-being. In this sample, currently being married versus being single did affect subjective well-being means. Additionally, most previous studies have not illuminated a marital satisfaction impact on subjective well-being. This sample showed a 15.6% account of subjective well-being variance by marital satisfaction when measured multivariately with self-esteem, optimism, personal control, instruction level, and extraversion. However, this sample's moderate correlation between marital satisfaction and subjective well-being has been shown in at least one other very large study (Russell & Wells, 1994). Russell and Wells (1994) found that the quality of marriage accounted for 45% of the happiness variance of husbands and 51% of the happiness variance of wives.

This marital satisfaction correlation, which turned out to share the largest amount

of variance with subjective well-being in the study among married individuals, is also logical. It has been found that specific life satisfaction domains when added together often make up much of the global life satisfaction levels or levels of subjective well-being variance (Andrews & Robinson, 1991). It is logical that marital satisfaction, being a specific life satisfaction domain, may make up a portion of subjective well-being.

It is obvious that the impact that level of instruction has on subjective well-being is clearly tied to the faculty member sample. The finding that instructing at both the undergraduate and graduate levels significantly correlates with lower subjective well-being means is interesting. This difference may be a form of work dissatisfaction, which would be another form of a specific life satisfaction domain. One could hypothesize that newly hired faculty, those with less say in their class assignments and who may be instructing both graduates and undergraduates, are less happy and satisfied with their work. This may reflect the similar impact personal control has on subjective well-being. On the other hand, perhaps this bi-level instructing impact on subjective well-being reflects an increased work load on an instructor, or the impact of adjusting to the difference in teaching strategies for undergraduate and graduate students.

Perhaps the significant relationship between the subjective well-being of university faculty members and age also has something to do with a work specific life domain satisfaction. It is possible that individuals who are working in a university setting beyond their 40s have settled in their career, and may tend to be tenured. Perhaps as a group, they have prepared for their classes often enough that minimal extra work is required, allowing them to focus on aspects of their career that they most enjoy. In this way, these individuals would be likely to gain more satisfaction from their work than would a

younger individual who is investing more energy into course planning and has less job security.

It is clear from these findings that self-esteem, personal control, and optimism do share significant variance with subjective well-being among Midwestern university faculty, both individually and in combination with each other. It is also clear that extraversion, although contributing a small amount of variance when combined with other independent variables such as marital satisfaction, does not significantly contribute when considered univariately in this sample.

Although this study was not intended to and cannot determine causality, it is apparent that the subjective well-being of married faculty members in this sample is greatest among university faculty members who are satisfied or very satisfied with their marriage; have high levels of self-esteem, optimism, and personal control; instruct at either the undergraduate or graduate level but not both; while having introverted versus extraverted personality tendencies. It is also apparent that among this sample's currently married and single university faculty, subjective well-being was highest for those who had a high self-esteem, an optimistic disposition, instructed at only one level, were married, and had a sense of personal control. According to this sample, identifying the factors marital satisfaction, self-esteem, optimism, personal control, instructional level, and extraversion can predict just under half of the variance of Midwestern university faculty members' subjective well-being among married individuals. Additionally, knowing the factors self-esteem, optimism, instructional level, marital status, and personal control can predict 36% of subjective well-being variance among faculty members.

### Recommendations for Further Study

Subjective well-being, as most areas of study, could benefit from a longitudinal study that could determine causality and the day-to-day impacts of the variables studied here. Although some longitudinal work has been done concerning the relationships of positive and negative affect, much of this has been done in the past with college students, and differences with other samples may yield additionally interesting findings. A useful longitudinal study could examine the impact of extraversion starting with college freshmen, and ending well into each individual's career. This type of study would also illuminate the hypothesized decreasing role extraversion plays in regard to subjective well-being.

Studying multiple variables while sampling multiple populations would clearly differentiate the impact of specified variables on specific populations. The subjective well-being literature has reached a point where it must study specialized areas so that it can accommodate diverse populations. No longer can global conclusions be drawn that suggest a likely similarity between populations. Diverse populations appear to require research studies specifically aimed at them.

Adding other variables to multi-variable studies of subjective well-being will also further develop our understanding of this field. A variable that seems especially valuable to subjective well-being in recent literature is neuroticism. Neuroticism has consistently provided unique subjective well-being variance (Brebner et al., 1995; Costa & McCrae, 1980). Especially important will be examining the extraversion-neuroticism interaction, and neuroticism's influence on the subjective well-being of non-college students.

Although neuroticism has shown interesting patterns in college student populations

(Brebner et al., 1995; Hotard et al., 1989), this study was unable to include a measure of neuroticism and this should be considered for future studies.

The relationship between extraversion and subjective well-being would clearly benefit from further research. Other aspects of this extraversion-subjective well-being relationship in need of study include the overlap between straight sociability measures and extraversion, and the impact of extraversion on diverse populations.

It would also be beneficial to develop studies that measure more domain-specific aspects of subjective well-being as they would deepen our understanding of subjective well-being and factors that affect it. These may include specific areas of marital satisfaction, career satisfaction, and specific domains of self-esteem such as interpersonal and self-care.

Finally, a treatment study measuring the subjective well-being of university faculty members, providing various programming, and then remeasuring subjective well-being would be valuable. Programming may include marital enrichment programs, self-esteem building workshops, utilizing methods of boosting optimism and experiences of personal control among faculty, providing single individuals with additional resources and opportunities to meet other single individuals, and making sure the instruction of undergraduate and graduate students is separate. Results of this study would clarify in a practical way the value and impact of this study and the practical implications of subjective well-being research. Additionally, measuring the subjective well-being of students and comparing them with faculty member subjective well-being, and changes in faculty subjective well-being, would clarify any transference of subjective well-being from faculty to students.

**APPENDIX A**  
**CONSENT FORMS**



**ANDREW**  
University

May 18, 1998

Shawn Zimmerman  
9231-1 4th Street  
Berrien Springs, MI 49103

Dear Shawn:

**RE: APPLICATION FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS**

HSRB Protocol #: 97-98 : 247      Application Type : Original      Dept : Ed & Couns Psyc - 0104  
Review Category : Exempt      Action Taken : Approved  
Protocol Title : *Self-esteem, Personal Control, Optimism, Extraversion and the Subjective Well-being of  
Mid-western University Faculty*

On behalf of the Human Subjects Review Board (HSRB) I want to advise you that your proposal has been reviewed and approved. You have been given clearance to proceed with your research plans.

All changes made to the study design and/or consent form after initiation of the project require prior approval from the HSRB before such changes are implemented. Feel free to contact our office if you have any questions.

The duration of the present approval is for one year. If your research is going to take more than one year, you must apply for an extension of your approval in order to be authorized to continue with this project.

Some proposal and research designs may be of such a nature that participation in the project may involve certain risks to human subjects. If your project is one of this nature and in the implementation of your project an incidence occurs which results in a research-related adverse reaction and/or physical injury, such an occurrence must be reported immediately in writing to the Human Subjects Review Board. Any project-related physical injury must also be reported immediately to the University physician, Dr. Loren Hamel, by calling (616) 473-2222.

We wish you success as you implement the research project as outlined in the approved protocol.

Sincerely,

Human Subjects Review Board  
c: Elsie Jackson



I authorize Shawn Zimmerman, a doctoral student of Andrews University, Department of Educational and Counseling Psychology, to use mail survey methodology to disseminate and collect survey instruments among undergraduate and graduate faculty during May of this year, 1998. I understand that this survey will measure subjective well-being and correlates of subjective well-being including: a personal sense of control, an optimistic outlook, an extraverted personality style, self-esteem, life satisfaction, and positive and negative affect.

Date: 4-29-98

Signature: Delmer Davis

University: Andrews University

Printed Name: Delmer I. Davis

Position or Title: Acting Vice President for Academic Administration  
Professor of English

May 6, 1998

OFFICE OF  
ACADEMIC AFFAIRS



To whom it may concern:

Shawn Zimmerman, a doctoral student in the Department of Educational and Counseling Psychology at Andrews University, Berrien Springs, Michigan, has received permission from this office and from our Mail Services department to distribute and collect a mail survey on our campus. Mr. Zimmerman will survey our full-time faculty members during May, 1998.

I understand that this survey will measure subjective well-being and correlates of subjective well-being including a personal sense of control, an optimistic outlook, an extroverted personality style, self-esteem, life satisfaction, and positive and negative affect.

I further understand that Mr. Zimmerman's research has received the approval of the Andrews University Human Subjects Review Board, contingent on receipt of this and similar permission letters from survey sites.

We are happy to cooperate with Andrews University through Mr. Zimmerman's project, and we wish him every success in completing his work.

Sincerely,

A handwritten signature in cursive script that reads "Ellen L. Maher".

Ellen L. Maher  
Acting Associate Vice Chancellor for Academic Affairs  
and Associate Professor of Sociology

cc: Shawn Zimmerman  
Richard Hubbard, IUSB Institutional Review Board  
Elonda Hamilton, Support Services

## **APPENDIX B**

### **SURVEY**

Department of Educational and Counseling Psychology  
Andrews University  
Berrien Springs, Michigan

Greetings Faculty Member!

As a faculty member, you know the struggles and joys inherent in the valuable work you do. However, little has been done to understand *your* experience. The enclosed instrument will focus on your attitudes, life satisfaction, and happiness.

Although this is a very quick survey, it contains six valid and reliable scales, and is being administered to other university settings. This research is anonymous and your participation is voluntary.

The results of this research may be beneficial: to you in understanding the well-being common to mid-western faculty, to administrators in selecting faculty resources, and to the faculty and well-being literature. This research will be published as a doctoral dissertation, with Dr. Elsie Jackson as chairperson.

I will personally send you the results of this important study by early Fall, 1998 if you send your name and address to the address below. In order to reach this Fall deadline, I need you to please complete this survey and place it in inter-departmental mail today or schedule a time later this week.

Thank-you in advance for choosing to participate in this quick and easy survey! After completing the survey, simply seal it in the envelope provided and place it in inter-departmental mail.

THANK-YOU,

Shawn Zimmerman

In care of: Dr. Elsie Jackson  
Educational and Counseling Psychology  
Andrews University  
Berrien Springs, MI 49104

There are no right or wrong answers, and no trick questions. Work quickly and do not think too long about the exact meaning of the questions. Please remember to answer each question.

If you: **Strongly disagree circle -3; Moderately disagree circle -2; Slightly disagree circle -1; feel Neutral circle 0; Slightly agree circle +1; Moderately agree circle +2; Strongly Agree circle +3.** Various sections may have slightly different options, choose from the options available in each section. If you find that the options available for answering the questions do not adequately reflect your own opinion, use the one that is closest to the way you feel.

	Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
1. In most ways my life is close to my ideal.	-3	-2	-1	0	-1	-2	-3
2. The conditions of my life are excellent.	-3	-2	-1	0	-1	-2	-3
3. I am satisfied with my life.	-3	-2	-1	0	-1	-2	-3
4. So far I have gotten the important things I want in life.	-3	-2	-1	0	-1	-2	-3
5. If I could live my life over, I would change almost nothing.	-3	-2	-1	0	-1	-2	-3

	Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree
1. Whether or not I get to be a leader depends mostly on my ability.	-3	-2	-1	-1	-2	-3
2. Whether or not I get into a car accident depends mostly on how good a driver I am.	-3	-2	-1	-1	+2	+3
3. When I make plans, I am almost certain to make them work.	-3	-2	-1	-1	-2	-3
4. How many friends I have depends on how nice a person I am.	-3	-2	-1	-1	-2	-3
5. I can pretty much determine what will happen in my life.	-3	-2	-1	-1	-2	-3
6. I am usually able to protect my personal interests.	-3	-2	-1	-1	-2	-3
7. When I get what I want, it's usually because I worked hard for it.	-3	-2	-1	-1	-2	-3
8. My life is determined by my own actions.	-3	-2	-1	-1	-2	-3

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

(Please turn over ⇌)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. In uncertain times, I usually expect the best.	-2	-1	0	+1	+2
2. If something can go wrong for me, it will.	-2	-1	0	+1	+2
3. I'm always optimistic about my future.	-2	-1	0	+1	+2
4. I hardly ever expect things to go my way.	-2	-1	0	+1	+2
5. I rarely count on good things happening to me.	-2	-1	0	+1	+2
6. Overall, I expect more good things to happen to me than bad.	-2	-1	0	+1	+2

**Place an X next to the best answer.**

- Are you a talkative person?  Yes  No
- Are you rather lively?  Yes  No
- Do you enjoy meeting new people?  Yes  No
- Can you usually let yourself go and enjoy yourself at lively party?  Yes  No
- Do you usually take the initiative in making new friends?  Yes  No
- Can you easily get some life into a rather dull party?  Yes  No
- Do you tend to keep in the background on social occasions?  Yes  No
- Do you like mixing with people?  Yes  No
- Do you like plenty of bustle and excitement around you?  Yes  No
- Are you mostly quiet when you are with other people?  Yes  No
- Do other people think of you as being very lively?  Yes  No
- Can you get a party going?  Yes  No

**During the past month have you felt . . .**

- In high spirits?  Yes  No
- Particularly content with your life?  Yes  No
- Depressed or very unhappy?  Yes  No
- Flustered because you didn't know what was expected of you?  Yes  No
- Bitter about the way your life has turned out?  Yes  No
- Generally satisfied with the way your life has turned out?  Yes  No

**The next questions have to do with life experiences.**

- I am just as happy as when I was younger.  Yes  No
- As I look back on my life, I am fairly well satisfied.  Yes  No
- Things are getting worse as I get older.  Yes  No
- Little things bother me more this year.  Yes  No
- Life is hard for me most of the time.  Yes  No
- I am satisfied with my life today.  Yes  No

**The following is to determine how people of different backgrounds respond to this questionnaire.**

- Gender:  Female  Male
- Faculty:  Undergraduate Faculty  Graduate Faculty
- Age range:  Below 30  30-39  40-49  50-59  60-69  Above 69
- Ethnic origin:  African American  American Indian  Asian  Caucasian  Other
- Marital status:  Single  Married  Widowed  Separated  Divorced  Remarried
- Marital satisfaction:  N.A.  Very satisfied  Satisfied  Dissatisfied  Very dissatisfied

## Thank-you/reminder Post Card

Greetings Faculty Member!

First, I want to thank you for participating in this well-being study if you have done so. Second, if you have not taken a moment to complete your short survey, I would like to encourage you to do so this week so that your valuable input can be included. If you need another survey, please call me at (616) 473-3144, or e-mail me at "shawnz@andrews.edu", and I will rush you a new copy.

Thank-you,

Shawn Zimmerman

## **APPENDIX C**

### **DATA**



101 +3+3+2+3-1 +2+1+2+1+1-1+2+1 +2+2-2+2-1+1+1-1-1-1  
-2-1-2-2-2+1 111119219212 112121111221 1244221  
102 +2+2+2+2+2 -3+1+2-2+1+2+2+1 +2+2-2+2-2+1+2-1-2-2  
+0+0-1-1-1+2 221121122111 112221112221 2344221  
103 +3+2+2+2+1 +1+2+2+2+3+2+2+2 +1+1-1+1-1+1+1-1-2  
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104 -1-2-2-1+1 +2-1+1+2-1+1+2+2 +2+2-2+1-2+1-1+1+1-1  
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105 +3+2+3+2+3 +1+2+2-2+2+2+2+1 +2+2-2+1-2+2+2-2-2-2  
+1-1+1-2-2+1 2111222112121 112221112221 2144221  
106 +2+0+0+0-3 -2-3-1+3+3+1+2+3 +2+2-2+1-1+1+1+1+2+2  
-1-2+0+0+1+2 111111212211 221212221222 2231241  
107 +3+3+3+3-1 +3+3+3+3+1-2+3+1 +1+1-2+1-1+1+1-1-2-2  
-1+0+0+0-1-1 111111211211 112221112221 1164111  
108 +1+3+2+2+1 +2+1+2+1+1+2+2+3 +2+2-2+2-2+2+1-2-1-1  
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110 +2+3+3+3+2 +1-1+1-1+2+2+2+1 +2+2-2+1-2+2+2-2-2-2  
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112 +3+3+2+2+2 +3+3+3+3+3+3+3 +2+2-2+1-2+2+2-2-2-2  
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113 +2+3+2+3-2 +1+2+2+2+2+2+1+2 +2+2-2+2-2+1-1-1+1+1  
-1-1+1-1-2+2 112212222112 111221112221 2234221  
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115 -2-1-3+1-3 +2+1-1-2-2+1+1-1 -1+1+1+1-1-1-1-1-1-1  
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116 +2+2+3+3+2 +3+1+2+2+2+1+2+1 +2+2-2+2-2+2+2-2-1-1  
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118 -1+1-1-2-2 -2+2-2-1+2+1+2-2 +2+2-2+2-2+2+1-2-2-2  
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120 +2+2+3+3+3 +3+2+2+2+2+2+2+2 +2+2-2+2-1+2+2-2-2-2  
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123 +2+2+1+1-1 +2+1+3+2+2+1+3+2 +1+1-2+1-1+1-1+1+1-1  
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125 +2+2+2+2-1 +1+1+2+1+2+2+2+1 +2+2-2+1-2+2+2-2-2-2  
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 133 +2+2+1+2-3 -2+2-1+2+2-2-1+1 +1+1-2+1-2+2+1-1+1+1  
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 -1-1-1-1-1+1 222222122122 112221112221 2134221  
 155 +2+2+2+2-1 +1-1+1+2-1+1+1+2 +1+1-1+1-1+1+1-1-2  
 +0+1+0+0+0+0 212222122122 112121212221 1134111  
 156 +1+2+2-1-1 +2+2+1+2+1+1+2+2 +2+2-2+2-2+2+2-2-2-2  
 +1-2+1-2-2+2 111111212111 112121112221 1134511  
 157 +3+2+3+3+2 +2+2+2+3+2+2+2+2 +2+2-2+1-2+2+2-2-2-2  
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 158 +2+2+2+2-2 +2+1+2+2+2+2+2+2 +2+2-2+2-2+2+1+1+1-1  
 -1+0+1+0+0+0 211212112212 111121112221 2234221  
 159 +3+3+3+3+3 +2+2+2+2+2+2+2+2 +1+1-2+1-2+2+2-2-2-2  
 +1-1+1-2-2+2 221112122122 112221112221 1264321  
 160 +2+3+2+2+2 +3+1+2+3+1+2+1+2 +2+2+1+1-2+2+2+2+2+1  
 +0+1+1+0+1+2 111121212211 112221112221 2154231  
 161 +3+3+3+3+3 +2+2+2+2+2+2+2+2 +1+1-2+1-2+2+2-2+1-2  
 +1-1+1-1-1+1 111111211111 112221112221 2234221  
 162 +3+2+3+3+3 +2+1+2+3+1+2+2+1 +2+2-2+1-2+2+2-2-2-2  
 +2-2+1-2-2+2 221112121222 112221112221 2144221  
 163 -2-2-2+2-1 +1+1+2+1+2+2+3+2 +2+2-1+1-2+1+1-1+1-2  
 +1-1+1-2-2+2 111111212111 111211112211 1224111  
 164 +2+2+1+1+0 -2+1+1-1+1+2-1+1 +2+2-1+2-1+1+1-1-1-2  
 -1-1+0+0-1+1 212222122122 121121112211 1114221  
 165 +3+3+3+3-3 +2+3+1+1+3+2+2+3 +2+2-2+2-2+2+2-2-2-2  
 +1-1+2-2-2+1 111111211211 112221112221 2244221  
 166 -2-3-2-1-3 -1-1-2-1-1-1+1+2 +2+2+1+2-2+1-1-1+1+1  
 +0+0-1-2-2+2 111111211211 121211211112 2334241  
 167 -2+1-1-1-1 -1-2+1-2-1+1+2+2 +1+2-1+1-1-1+1+1+1  
 -1-1-1-1+1 111112211212 111122112221 2334241  
 168 +3+2+2+3+2 +3+3+2+2+2+3+2+3 +2+2-2+1-2+2-2-1-1-2  
 +0-1+1-1-2+1 111111211211 112221212221 1224221  
 169 +1+1+2+2+1 +2+1+3+1-1+1+1+1 +2+2-2+2-1+2+2-2-1-2  
 +1-1+1-2-2+2 11212221222 112221112221 1244511  
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 +1-2+1-1-2+2 111111211211 112221112121 2144221  
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 +2+1+2-1-1+1 111112112111 112221112121 2115221  
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 +1-2+1-2-2+2 111111212211 112221112221 1341511  
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 +1-2+1-2-2+2 111212122111 112221112121 2154221  
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 +2-2+1-2-2+2 111111212211 112221112121 2131221  
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 -1+0+1-1-2+2 111222111122 112221112121 1234621  
 176 +2+3+3+3+2 +2-3+1+1-1+1-1+1 +2+2-2+1-2+1+1-1-2-2  
 -2+0+0-1-1+1 121122112222 112221212221 1124221  
 177 +2+2+2+2+0 +3-1+2+3+3+3+3+3 +2+2-2+2-2+2+2-2-2-2  
 +2-2+2-2-2-2 111111219211 119221112221 1244221  
 178 +2+1+2+2-1 +1-1+2+3+1+2+2+2 +2+1-1+1-2+2+2-2-2-2  
 +0+0+1-1-1+1 221122212122 112221212221 2231221

179 -2-3+3+3+0 +3-2+2+2-2-3+2+2 +2+2-2+2-2+2+2-2-2-2  
+0+0+2-2-2+2 111211212211 122222112121 2254221  
180 +2+1+2+2+2 +2+1+2-1-1+1+1+2 +2+2-2+1-2+1+1-1-2-2  
+1-1+1-1-1+1 211222122111 112221112121 2324231  
181 +2+2+2+2+2 -1+2+2+2+2+1+2+2 +2+2-2+2-2+2+2-2+1-2  
+2+0+2-2-2+2 111122111122 222211112221 2334231  
182 +3+2+3+2+2 +2+1+2+1+3+2+1+2 +2+2-2+2-2+2+1-1-2-2  
+0+1+2+0-1+2 121212192221 112221112221 2361231  
183 +1+1+2+2+3 +3+1+2+3+2+2+3+2 +2+2-2+2-2+1+1-1+2+2  
-1-1+0-1-1+1 111221211211 112221112221 1334511  
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+0-1+1-2-2+2 111121212211 112221112221 2154221  
185 -1-2-1+1+1 +1+2+1-1-2-1-1+1 +2+2-2+2-1+1-1+1-1-2  
-1+1-1+1+1+1 221112112121 221221211212 1344221  
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+0-1-1-1-1+1 212212122222 212221112221 1114221  
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+1-1+1-1-1+1 211121219211 112121112921 1144221  
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+1-2+1-1-1+2 221222112221 121121211121 1344311  
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+0-1+0-1+0+1 122222222221 221122112221 2134621  
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+0-1+1-2-2+2 222212112122 122221112221 2264231  
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+1-1+1-1-1+2 111111211211 112221112221 1131221  
192 +2+2+2+2+2 +1+2+2+2+2+2+2+2 +2+2-2+2+2+2+2-2-2-2  
+2-2+2-2-2+2 221122122122 112221112221 2134221  
193 +2+0+2+0-1 +1-1+1-2+1+1+3+1 +1+1-2+1-2+1+1-2-2-2  
+1-1+1-2-2+2 111111211211 112221212221 1141231  
194 +2+2+3+3-2 +2+2+3+2+2+2+2+2 +2+2-2+2-2+2+2-2-2-2  
+2-2+1-2-2+2 111112212212 112221122121 1134221  
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+1+0+1+0-1+1 222222122122 112221112221 2124221  
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+1-2+2-2-1+2 111111212211 112221112221 2244221  
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+1-2+1-1-2+2 211112112222 112221122221 2154221  
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+1-2+2-2-2+2 111111212211 112221112221 2234221  
199 +3+3+3+3+1 +2+2+3+3-3+3+3-3 +2+2-2+2-2+2+2+1+2+2  
+2-2+2-2-2+2 111121212211 112221112221 2233221  
200 +1+2+2+3+2 -2+2+1-2-2-1+2-2 +1+2-2+2-2+1+1+1+1+1  
-1-1-1-1-2+1 221222112122 112221112221 2224221  
201 +2+2+2+2-1 +2+2+2+1-3-1+1-1 +1+1-1+1-2+1-1-1-2-2  
-1+0+1+1+1+0 222222122122 212221112221 2144231  
202 +1+1+1+2-3 +1+1+2+1-2-1+1+1 +1+1-2+1-2+1+1-2-1+1  
-1-1+0-1+0+1 111121212211 122121112121 2134221  
203 -2-3-3-1-3 -2-3-1-3+1+2+2+2 +2+2+1-1-1+1+1+1-1-2  
+0-1-1+0-1+1 211222221221 221121222122 1114221  
204 +3+2+3+3+3 +1+2+2+1+1+1+1+1 +2+2-1-1-2+1+1+1+1-2  
+1-1+1-1-1+1 121912111222 112221112221 1244221

205 -1-1-1-2-3 -1+1+2-1-1+2+2+1 +2+2-2+2-2+2-1+9-1-1  
 +2-1-1-1-1+2 211211112121 221222212122 2235411  
 206 +2+2+3+2-2 -1+1+2+2+2+2+2 +2+2-2+1-2+2-2-2-2  
 +9-2+1-2-1+2 111212112121 912221112221 2344221  
 207 +2+2-1-2-2 +2+2+2+2+1+2+1 +1+2-2+2-2+1+1-1-2  
 +0+0-1-1-1+1 222222112122 112221212222 2144221  
 208 +2+3+3+2+2 +3+2+2+2+2+3+2 +2+2-2+1-2+2-2-2-2  
 +1-2+2-2-2+2 111122212221 212221112121 1244111  
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 +0-1+1-1-2+1 211112122211 112121912221 2154231  
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 +2+0-1-1-2+2 221111212221 111221112221 2234221  
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 +1+0+1+0+1+1 222212121122 222221211111 1134231  
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 +1-2+1-2-2+2 221212121121 112221112221 2244221  
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 +1+1+1-1-1+1 111212122112 121211112221 2134241  
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 +1-2+1-2-2+1 111221212211 112221112222 1244221  
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 -1-1+1+1-2+1 111222112122 112221112221 2234221  
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 +2-1+2-2-1+2 112211222211 111221212221 1234231  
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 +1-1+1-2-2+2 111112112121 112221222221 1234621  
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 +0-2+1-2-2+1 221212112121 112221112221 1254221  
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 +1-1+1-1-1+1 121122121122 112221112121 2234231  
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 +1-1+1-1-1+1 121212112211 112221112221 1124222  
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 +0-1-1-1+1+9 221222122122 212121112221 2144232  
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 +1-2+1-1+0+1 221122112122 112221112221 2134222  
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 +0-1+0-2-1+1 111221111211 112121112221 1934232

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 -1-1-1+0+1+0 222222122112 222221112221 1124112  
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 +0-1+1-1-1+1 299111292292 912921112221 2154222  
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 +1-1+1-1-1+2 111221122211 112221112121 1134222  
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 -1-1-1-1-1+1 111212122212 112221212112 1334512  
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 +0-1+0-1-1+1 111112212222 121122122221 1124512  
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## VITA

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Andrews University, Berrien Springs, MI
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#### CERTIFICATIONS AND PROFESSIONAL MEMBERSHIPS

The National Board for Certified Counselors - Certification # 39639  
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#### PROFESSIONAL EXPERIENCE

##### **Pre-doctoral Intern**

Counseling & Testing Center, Northern Arizona University: 8/98 - 8/99

##### **Instructor - Academic Support**

Educational and Counseling Psychology, Andrews University: 9/97 - 6/98

##### **Psychometrician and Consultant**

University Center for Assessment and Learning, Berrien Springs, MI: 9/97 - 6/98

##### **Doctoral Practicum Therapist**

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##### **Supervision of Counselors**

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Counseling & Psychological Services Center, Andrews University: 9/95 - 8/96

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Riverwood Center Community Mental Health Service, Niles, MI: 6/94 - 3/95

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Counseling & Psychological Services Center, Andrews University: 1/94 - 6/94

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Educational & Counseling Psychology, Andrews University: 4/94 - 8/94

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Emergency Shelter, Benton Harbor, MI: 4/92 - 6/93

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Undergraduate Psychology Department, Andrews University: 9/91 - 4/92