#### ABSTRACT

# THE COMPARABILITY OF HAPPINESS AND LIFE SATISFACTION: A LIFE COURSE APPROACH

#### by Anthony Richard Bardo

The majority of the literature on subjective wellbeing uses happiness and life satisfaction interchangeably, yet there is little evidence beyond empirical correlation to suggest that these two constructs are interchangeable. This study examines the relationship between happiness and life satisfaction through an absolute and relative perspective, which suggests that the comparability of the two measures should decrease over the life course. The present study utilizes data on happiness and life satisfaction from the General Social Survey, 1973-1994. I conduct an ordinary least squares regression analysis that respectively interacts age and cohort with happiness. I find both age and cohort effects. The age effects show that the comparability of happiness and life satisfaction actually increases with age. However, the most surprising finding is that the comparability of happiness and life satisfaction is subject to cohort effects, specifically for those whom were of impressionable age during the Great Depression.

### THE COMPARABILITY OF HAPPINESS AND LIFE SATISFACTION:

#### A LIFE COURSE APPROACH

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# DEDICATION

I would like to dedicate this thesis to Scarlett, my fiancée. Her encouragement and dedication towards all of my academic pursuits is the foundation for this achievement. Her patience and support through this process contributed an immeasurable amount towards the completion of this thesis, and for that I cannot thank her enough. Her work ethic and enthusiasm for life has become a basis from which I attempt to emulate. And I want her to know that I am not just happy or satisfied to spend the rest of my life with her, but I am honored and blessed.

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#### Introduction

As happiness and life satisfaction research becomes increasingly popular across social science disciplines, specifically those concerned with aging, there is a greater need for research to examine how these most common measures of subjective wellbeing (SWB) are associated with aging. Happiness typically refers to a positive inner psychological state of mind that is subject to sudden changes in mood, and life satisfaction is generally referred to as the summation of evaluation regarding a person's life as a whole. By definition these two measures of SWB are conceptually different, but the vast majority of previous literature uses happiness and life satisfaction interchangeably.

SWB research, in general, is useful and important for a multitude of reasons. Andrews and Withey (1976) provide six products of value for examining measures of SWB, which still hold true today. The current study aims to satisfy these six products of value through examining the relationship between happiness and life satisfaction across the life course. Specifically, I will address the following question: Does the comparability of happiness and life satisfaction decrease over the life course?

The first product of value provided by Andrews and Withey (1976) states that there is value in obtaining baseline measures that we can compare to subsequent measures. Baseline measures of SWB are important, because they can act as a reference for researchers and policy makers to determine if a specific group's wellbeing is getting better or worse. The present study aims to generate a more established baseline measure for the comparability of happiness and life satisfaction. Previous research states that happiness and life satisfaction are typically correlated at about 0.57 (Lu, 1999), but this baseline correlation was established without concern for age, period, and/or cohort effects. Apparently, there is no previous literature that examines the correlation between happiness and life satisfaction through a life course perspective.

The second product states that there is value in knowing how SWB is distributed throughout society. Examining the distribution of SWB is important because it demonstrates how different groups feel. The current study provides a comprehensive literature review, which includes previous literature from psychology, sociology, and economics. Happiness and life satisfaction research is becoming increasingly popular across social science disciplines, but there is little communication between the three major disciplines of interest. Moreover, I integrate these literatures to provide information on the distribution of happiness and life satisfaction.

The third product states that there is value in understanding the structure and independence of specific measures of SWB. This product suggests that it is important for researchers and policy makers to know how life events may affect happiness and life satisfaction differently. The main objective of the present study is to examine the structure and independence of happiness and life satisfaction, which are the two most common measures of SWB. I utilize GSS data from 1972 to 1994 and ordinary least squares regression techniques to examine the comparability of happiness and life satisfaction across the life course. This analysis interacts age and cohort with happiness (regressed on life satisfaction), which allows for age effect and cohort effect distinctions.

The fourth product is that there is value in learning how people make judgments and evaluate their lives. It is important to know how the assessment of SWB measures differs from one perspective to another in order to utilize the best suited SWB measure for the particular task at hand. Here, I examine happiness and life satisfaction through an absolute and relative perspective, which is intended to better understand how people evaluate their lives. Previous happiness and life satisfaction literature outside of psychology is highly atheoretical, and this study adds new theoretically driven insights to the assessment of happiness and life satisfaction.

The fifth product states that there is value in knowing how people come to a conclusion about their feelings on life overall, which is important for understanding which aspects of life are more important to some groups than others. The current study's results demonstrate that while happiness may be a strong predictor of life satisfaction for most cohorts, there are some cohorts for whom happiness may not predict life satisfaction. Specifically this includes cohorts of impressionable age during the Great Depression. This new finding suggests that the interchangeability of happiness and life satisfaction should be approached more cautiously. Furthermore, it is a call for social science research to have more theoretically driven research when examining happiness and/or life satisfaction.

The sixth, and final, product of value is more general than the previous products, and encompasses the overall value of SWB research. It states that, "there is value in understanding the whole process of human evaluating. Most would agree that anything that can be done to improve the human lot that is reflected as felt improvement is a condition to be coveted. The appreciation of life's conditions would often seem to be as important as what those conditions actually are" (Andrews & Withey, 1976 Pg. 10). Better understanding SWB, and its associated measures, benefits society as whole by producing knowledge that can be utilized to increase wellbeing.

#### Conceptualizing Happiness and Life Satisfaction

Happiness and life satisfaction may appear to be straightforward concepts, but underlying conceptual issues associated with measures of SWB make them complex measures to define (George, 2006). This research is primarily concerned with the relationship between happiness and life satisfaction, but it is important to first address SWB, as happiness and life satisfaction are two of the most common measures of SWB.

SWB can be thought of as an overarching construct, encompassing happiness and life satisfaction, as well as a host of other measures. Previous literature has defined SWB as "a state of stable, global judgment of life quality and the degree to which people evaluate the overall quality of their lives positively" (Yang, 2008, Pg. 204; see also Diener, 1984). In its broadest sense, SWB relies on individuals to assess what is good in their lives. SWB possesses three necessary qualities: 1) subjectivity, 2) positive measures, and 3) global assessment (Diener, 1984). In this sense SWB is an assessment that is dependent on an individual's life experiences, includes positive measures not just an absence of negative measures, and pertains to all aspects of an individual's life.

# Happiness

It is common for different disciplines to define and construct measures consistent with their own theoretical and methodological practices, so it is not surprising that there are differences in the definition of happiness across psychology, economics, and sociology. Happiness is arguably the most complex measure to define within SWB research, which is evident by the lack of a thorough conceptualization of happiness throughout the existing literature. Understanding the conceptualization of happiness across disciplines is necessary in order to best interpret each disciplines happiness literature. Conceptualizing happiness is similar to conceptualizing other complex constructs such as pain. All people know what pain is, will experience it when slamming their finger in a door, and tend to avoid pain (Veenhoven, 2010). Yet the most common way to define pain in medical practice, a field that is extremely concerned with precision, is to rate the pain in reference from a bee sting to a train wreck.

Psychology, as a whole, is not in consensus concerning the conceptualization of happiness. However, it is generally agreed that happiness is a subjective, positive, and inner psychological state of mind (Veenhoven, 2010; Tsou & Liu, 2001; Lu, 1999; Diener, 1984). The most frequent psychological disagreement about the conceptualization of happiness concerns whether it is a measure of affect or cognition, or possibly both (Crooker & Near, 1998). In other words, is happiness a measure of emotion or thought, or both? In studies of happiness, the affective component generally refers to how one feels, and the cognitive component is the perceived difference between what one has and what one wants (Veenhoven, 2010).

Those who argue that happiness is a measure of affect do so by stating that happiness is subject to sudden changes in mood (Tsou & Liu, 2001). That is, if happiness is sensitive to mood, or behaves similarly to emotions, it is therefore a measure of affect. Those who believe that happiness is a measure of cognition argue that happiness is a "set point" that is constant over the life span (Crooker & Near, 1998). They argue if happiness is a "set point" then it is closely related to, or even determined by, biological factors.

Then there are those who argue that happiness is a mixture of both affect and cognition. They generally believe that happiness is subject to sudden changes in mood, but that it is brought back to the "set point" over a period of time (Veenhoven, 2010), thus leveling the variance of happiness measures in representative survey data and yielding a stable level of happiness for individuals over time (Veenhoven & Hagerty, 2006).

For the most part, economics concludes that happiness is both a measure of affect and cognition, but the discipline generally disagrees with the idea of a "set point" of happiness (Easterlin, 2002). Economics, as a field, is generally concerned with monetary issues. Therefore, economists typically tend to overlook the conceptual issues surrounding happiness. However, economists have studied happiness for a relatively long period of time, and appear to be comfortable making a decision in the psychological debate over the conceptualization of happiness. In general economists' believe that happiness is a measure of both affect and cognition, but this belief appears to be data and discipline-driven. This assessment is based on two arguments: 1) economics is almost atheoretical regarding happiness, and 2) economists would have no stake in happiness unless it was associated with monetary issues or other economic measures. Therefore, economists cannot believe that happiness has a "set point" because economic change would then have little to no impact on happiness outcomes.

Of the three disciplines of interest, the study of happiness has most recently gained popularity within the field of sociology. This is best demonstrated by the fact that studies of happiness have been absent from leading sociology journals until the contributions from Schnittker (2008) and Yang (2008) (Firebaugh & Schroeder, 2009). Sociology's more recent interest in happiness may help to explain why sociology in general has the least developed conceptualization of happiness. In fact, there is no conceptualization of happiness within the three studies of happiness in the leading sociology journals to date (Yang, 2008; Schnnittker, 2008; Firebaugh & Schroeder, 2009). Schnnittker (2008) and Firebaugh & Schroeder (2009) don't even provide a definition of happiness. Further, Yang (2008) only provides a definition for SWB, and states that "happiness is the measure of subjective well-being examined most frequently" (p. 204).

Why has sociology, as discipline in general, been so quiet regarding the conceptualization of happiness? First, most sociological researchers who examine happiness focus on the social trends and determinants of happiness. Therefore, they are focusing only on the specific measure for happiness utilized in their study. Second, sociologists may not feel qualified to explore the meaning of happiness, because they may believe this is the responsibility of psychologists or scholars trained in psychometrics. Finally, many sociologists may recognize the difficulty that psychologists have faced when trying to conceptualize happiness and are not satisfied

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with the available definitions; as such they find the established reliability and validity of happiness measures sufficient.

The most common method for measuring happiness across all three disciplines is the three option question on happiness. This was first introduced by the American Institute of Public Opinion (AIPO) poll in 1947, which read: In general, how happy would you say you are...? 'Very happy,' 'fairly happy,' or 'not happy at all.' In 1963 the National Opinion Research Center (NORC) introduced this variation (Which became standard in the GSS which started in 1972): Taking all together, how would you say thing are these days? Would you say that you are...? 'Very happy,' 'pretty happy,' or 'not too happy' (Veenhoven & Hagerty, 2006). This measure of happiness has received some criticism for its overly parsimonious nature, but its validity and reliability remain clear (Crooker & Near, 1998). Moreover, the three option question on happiness, like the happiness item in the GSS, is considered to be the most accurate measure of happiness to date (Yang, 2008).

#### Life Satisfaction

There is almost no disagreement surrounding the conceptualization of life satisfaction among sociology, psychology, and economics. Life satisfaction generally refers to the summation of evaluations regarding a person's life as a whole. For the most part there is consensus throughout the literature that measures of life satisfaction are cognitive (Crooker & Near, 1998). Life satisfaction is typically measured by at least one of these four instruments: 1) The worst-best possible life, 2) two option life satisfaction, 3) domain satisfaction, and 4) the Satisfaction With Life Scale (SWLS). These four established measurement strategies have been shown to have relatively high levels of reliability and validity (Veenhoven & Hagerty, 2006). However, there is some debate about which method of measurement best captures a person's evaluation regarding life as a whole.

The worst-best possible life question was introduced in 1959 and has been used in 19 surveys since (Veenhoven & Hagerty, 2006). It asks respondents to rate their present lives on an 11 point scale, from 0 (the worst possible life imagined) to 10 (their notions of

the best possible life). The advantages of this scale are that it allows for more variation in responses, and the question is focused on the present (Veenhoven & Hagerty, 2006).

Gallup polls have utilized a two option life satisfaction question since 1979 (Veenhoven & Hagerty, 2006). The two option item only allows respondents to choose from 'satisfied' or 'dissatisfied.' This parsimonious question allows respondents to easily select their answer, but allows for little examination of variation in responses. Furthermore, asking people to evaluate their lives is a complex task, which may require prompts to ensure the inclusion of specific areas of life that are of most concern to researchers and policy makers alike.

Domain satisfaction is one of the most commonly used measures of life satisfaction (Tsou & Lui, 2001). Domain satisfaction relates to the specific domains included in each respective scale, which can include places, things, activities, people, and Specific domains generally include place of residence, hobbies, family life, roles. friendships, and health (Andrews & Withey, 1976). A substantial amount of research has been conducted to investigate which life domains are most important to include, as well as establishing its validity and reliability as a measure of life satisfaction (Diener et al., 2000). Variations of domain satisfaction scales are sometimes used, usually for specific methodological reasoning. For example, work satisfaction is not typically included in domain satisfaction scales, as it has been found to be frequently associated with measures of affect. Furthermore, the health item is occasionally removed from the domain satisfaction scale due to issues of colinearity, typically when another health measure is included in a model as a major predictor. However, place of residence, hobbies, family life, friendships, and health appear to be the most commonly used domains.

Diener et al. (2000) state that different measures of life satisfaction might reflect different types of life satisfaction. Global measures such as the worst-best possible life and the two option life satisfaction scales are more associated with a person's disposition, where as domain satisfaction measures might reflect actual experiences. Prompting or providing specific domains that have been found to be most associated with a person's life as a whole may have a higher level of practical value. If specific domains are assessed, then researchers and policy makers can know upon which areas of life to focus their resources. In an attempt to blend the advantages of both types of measures, Diener, Emmons, Larsen and Griffin (1985) developed the Satisfaction With Life Scale (SWLS), which is a global scale intended to have a higher level of specificity than the two option and the domain satisfaction measures. The Satisfaction With Life Scale reads:

Bellow are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding. The 7-point scale is as follows: (1) strongly disagree, (2) disagree, (3) slightly agree, (4) neither agree nor disagree, (5) slightly agree, (6) agree, (7) strongly agree.

Questions are as follows:

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

The SWLS is not as global as the worst-best possible life and the two option life satisfaction, but not as specific as domain life satisfaction scales. It is mostly considered an alternative measure of life satisfaction, usually utilized within psychological research.

The worst-best possible life, two option life satisfaction, domain satisfaction, and the SWLS are all considered valid and reliable measures of life satisfaction (Diener et al., 2000). However, they might reflect different types of life satisfaction. The decision of which scale to use is primarily a methodological decision, based on their availability and the research question at hand. The worst-best possible life measure and the SWLS (created by psychologists) are best suited for psychological research, which is concerned with measuring a greater amount of psychological variance in responses. The two option method may be the best fit for demographic or large scale sociological research that tracks trends in life satisfaction, and for cross-cultural research that is concerned with the validity and reliability of more specific measures of life satisfaction that may be sensitive to cultural differences (Veenhoven & Hagerty, 2006). Domain life satisfaction is best used in research with practical implications, as it is better oriented toward addressing policy related issues.

#### Determinants of Happiness and Life Satisfaction

There is a large body of literature that discusses the distribution and inequality of happiness and life satisfaction between and within demographic groups, as well as the social and/or psychological determinants of happiness (Stevenson & Wolfers, 2008). Sociological literature is mostly concerned with the social determinants and distribution of happiness and life satisfaction, with little regard for the psychological aspects. Economic literature primarily addresses pecuniary issues associated with happiness and life satisfaction. Finally, psychological literature contains the broadest range of related topics including both psychological and social determinants of happiness and life satisfaction, but with little focus on inequality.

Gerontology, as a field, provides an optimal platform to integrate the happiness and life satisfaction literature from the three fields of interest, because gerontology is a discipline that incorporates aspects of psychology, economics, and sociology. The life course paradigm is closely linked to the field of gerontology, and is used in the present study to help examine and find gaps in the existing happiness and life satisfaction literature. The life course paradigm suggests that the assessment of happiness and/or life satisfaction may vary as one ages due to an increasing experience of life events. Furthermore, it also suggests that period and cohort effects may alter the assessments of happiness and life satisfaction over time.

The relationship between happiness and age has been found to be positive, negative, U-shaped, and constant (Yang, 2008). However, to date there is only one simultaneous assessment of age, period, and cohort effects on happiness, and none that assess life satisfaction (Yang, 2008). Yang's study finds that happiness increases five percent with every ten years of age, and that sex, race, and education gaps in happiness vary by age (Yang, 2008). She also finds substantial period and cohort effects on happiness. Period effects are explained by large scale economic changes, as well as changes in family structure over time (Yang, 2008). Cohort effects on happiness suggest that the Baby Boomer cohort is the least happy, most likely because of increased competition due to their relatively larger cohort population (Yang, 2008; Easterlin, 2001).

Despite uncovering new age-period-cohort findings Yang (2008) demonstrates many consistent results with previous literature concerning the relationship between happiness, gender, race, religion, health, education, work, and marital status.

Women have consistently been found to be happier than men (Aldous & Ganey, 1993, Stevenson & Wolfers, 2008). There is little sociological explanation for why women are, on average, happier than men. Most sociological literature on inequality suggests that women are underprivileged compared to men, and this would inherently suggest that men should be the happier of the two genders. However, women have been found to have lower levels of life satisfaction than men, and there are both sociological and psychological explanations for these phenomena (Forest, 1996). The first explanation is related to gendered reactions to life events, such as the death of a spouse or an "empty nest." Women are socially conditioned to be emotional nurturers, and men are socially conditioned to be tough supporters. Thus, in general, negative life events may be more detrimental for women's life satisfaction than men's (Forest, 1996). Moreover, psychological literature suggests that women score higher on measures of affect, which may explain women's higher levels of happiness (Fujita, Diener, & Sandvick, 1991).

There is little research on race in the U.S. that examines happiness and life satisfaction beyond white and Black disparities. Most previous literature suggests that whites are happier than Blacks, and that whites have higher levels of life satisfaction than blacks (Stevenson & Wolfers, 2008; Beatty & Tuch, 1997). There appears to be no psychological explanation for this racial inequality in the distribution of happiness and life satisfaction. Most previous literature finds that Blacks have lower life satisfaction and happiness due to negative effects associated with racial discrimination (Broman, 1997).

Religious affiliation and religiosity are two of the most commonly examined aspects of religion throughout happiness and life satisfaction literature. (Ferriss, 2002; Barkan & Greenwood, 2003). Unfortunately, most previous research in the U.S. only focuses on Christianity, and this has resulted in a gap in knowledge concerning the SWB of other religions. However, Christians have been found to be happier and more satisfied than non-Christians (where 'non-Christian' is typically a combination of multiple non-Christian religions), and religiosity has been found to be positively associated with happiness and life satisfaction (Stark & Maier, 2008; Barkan & Greenwood, 2003; Rowatt & Kirkpatrick, 2002). The causal link between religion, happiness, and life satisfaction has been debated, but most research finds that religion may have an effect on happiness and life satisfaction for reasons related to increased levels of social support (Stark & Maier, 2008; Rowatt & Kirkpatrick, 2002).

Health is associated with happiness and life satisfaction, such that adverse health conditions result in lower levels of happiness and life satisfaction (George, 2006). Greater adverse changes in health result in larger negative changes in happiness and life satisfaction, and have also been found to be associated with more long term consequences on happiness and life satisfaction (Easterlin, 2002). The long term effects of health on happiness are commonly used as an argument against the idea of "set point" happiness, but this evidence is derived from point-in-time studies comparing those who report having a disability with those considered non-disabled (Easterlin, 2002).

Education is positively associated with both happiness and life satisfaction (Easterlin, 2001; Michalos, 2008). Both the sociological and psychological literature recognize that education mostly has an indirect effect on happiness and life satisfaction. The psychological characteristics that are more commonly associated with individuals who seek or obtain higher education have largely been ignored by most sociological literature (Michalos, 2008). Michalos (2008) argues that higher levels of intellectual and emotional intelligence, which are positively associated with higher levels of affect, are the direct effects on happiness and life satisfaction commonly measured by level of education in social research.

Labor force status is mostly examined as a role or status that has an effect on happiness and life satisfaction in terms of working or not working. Individuals currently employed in the labor force are generally happier and more satisfied with life than those who are unemployed or retired (Stevenson & Wolfers, 2008). Temporary unemployment is more likely to have a stronger effect on happiness, where as retirement is more likely to have a stronger effect on life satisfaction (Easterlin, 2001). Temporary unemployment is probably more associated with happiness because of an immediate affect on measures of affect, and retirement is viewed more cognitively as a life stage. However, little research has examined how work may contribute to happiness and life satisfaction. Some research suggests that higher levels of autonomy and success within the work place contribute to higher levels of SWB (Schnittker, 2008).

Marital status is one of the most commonly addressed measures associated with happiness and life satisfaction and is one of the greatest determinants of happiness and life satisfaction (Easterlin, 2002). Married people are happier and more satisfied with life than those who are not married, including the never married and widows (Easterlin, 2002). Some literature suggests that the positive effects of marriage are declining (e.g., Wu & Hart, 2002), but Lee and Bulanda (2005) find that the effects of marriage on happiness are as strong as they have ever been. The effects of marital status on happiness and life satisfaction have both social and psychological explanations. The support associated with a stable marriage is believed to increase happiness and life satisfaction, and psychologists argue that individuals with better mental health are more likely to be married (Easterlin, 2002).

Income is one of the most controversial measures associated with happiness and life satisfaction. Economists generally argue that relative income is associated with happiness and life satisfaction (Easterlin, 2001), and other scholars argue that absolute income is associated with happiness and life satisfaction (Hagerty & Veenhoven, 2003). The relative income argument states that the effect of income on SWB is the result of a comparison of income to other individuals, and the majority of their research utilizes measures of happiness within a single national context (Easterlin, 2001). The absolute income argument states that increased income yields increased happiness and life satisfaction in a cross-national context (Hagerty & Veenhoven, 2003).

Trends of the effects of income on happiness and life satisfaction begin to provide a more telling story about the relationship between happiness and life satisfaction. Easterlin (2006) argues that increased wealth or income does not contribute to increased happiness, because national level happiness scores have remained constant over a period of economic growth. Veenhoven and Hagerty (2006) argue that the opposite is actually true, because average life satisfaction scores have increased over the same period. They state that national trends in life satisfaction have increased, while national happiness trends have remained constant, because of measurement errors in items on happiness (Veenhoven & Hagerty, 2006). Moreover, they argue that the disparity in happiness and life satisfaction trends must be due to measurement error on happiness items because scores on the Affect Balance Scale have gone up over these same years (Veenhoven & Hagerty, 2006). These disparities in happiness and life satisfaction trends suggest further investigation in the relationship between happiness and life satisfaction is needed.

### Interchangeability of Happiness and Life Satisfaction

The relationship between happiness and life satisfaction has a rich history. Previous literature finds the two measures share almost all of the same predictors, and happiness and life satisfaction have been found to be typically correlated at 0.57 (Lu, 1999). The vast majority of previous literature uses happiness and life satisfaction interchangeably on the grounds that they are strongly correlated. Almost no studies theoretically examine the comparability of happiness and life satisfaction. In fact, "there seems to be an acquiescence toward this convenient operational interchangeability of SWB terms and indicators because very few serious attempts have been made to delineate the intricate relationship between overall SWB and its various components" (Lu, 1999 pg 3).

Psychology is the only discipline that has attempted to distinguish happiness from life satisfaction, and its attempts have been unsuccessful thus far (see Crooker & Near, 1998). Economics has discovered some period differences between happiness and life satisfaction with regard to income, but these findings are argued to have no effect on the interchangeability of happiness and life satisfaction (Easterlin, 2006; Veenhoven & Hagerty, 2006). These period effects are consistent with the only simultaneous age/period/cohort analysis on happiness to date (Yang, 2008), and they suggest that a life course approach may be appropriate for untangling the complexities between happiness and life satisfaction. However, to date no such study exists, most likely because the economic findings on the disparities of happiness and life satisfaction are atheoretical and generally dismissed by psychologists, whereas sociologists have largely refrained from contributing to the conceptualization of the two measures.

#### A Life Course Theoretical Approach

If happiness and life satisfaction are empirically correlated but conceptually different measures of SWB (and therefore should not be used interchangeably), a life course theoretical approach may be the best approach to distinguish the two measures. The only previous research that attempts to distinguish happiness and life satisfaction, which did so by assessing their levels of affect and cognition, finds that happiness and life satisfaction may share more psychometric characteristics than previously anticipated (Crooker & Near, 1998).

The only substantial difference between happiness and life satisfaction has been found in economic investigations of happiness and life satisfaction trends, which suggest that the disparity is partially explained by differences in the absolute and relative assessment of income (Easterlin, 2006; Veenhoven & Hagerty, 2006). These two studies respectively find that happiness is associated with relative income and that life satisfaction is associated with absolute income (Easterlin, 2006; Veenhoven & Hagerty, 2006). In other words, money doesn't make you happier as long as you have as much as your neighbors, but money will increase your level of life satisfaction. These findings suggest that the intricate relationship between happiness and life satisfaction may be best explained by investigating the comparability between the two measures through an absolute and relative perspective grounded in a life course approach.

An absolute and relative perspective regarding the assessment of happiness and life satisfaction is developed and guided by the life course paradigm. This proposed theoretical application establishes several assumptions. Previous research finds that happiness is associated with a relative assessment of income, and life satisfaction is associated with an absolute assessment of income (Easterlin, 2006; Veenhoven & Hagerty 2006). It is a conceptual leap to link a relative and absolute economic assessment with the assessment of SWB measures. However, the present study appears to be the first to investigate the relationship between happiness and life satisfaction through a non-psychological perspective. Therefore, it is assumed that the assessment of happiness may be relative, and the assessment of life satisfaction may be absolute.

The conceptualization of happiness as a subjective, positive, and inner psychological state of mind that is subject to sudden changes in mood suggests a

relatively short temporal period over which an individual assesses his/her personal happiness. The conceptualization of life satisfaction as the summation of evaluations regarding a person's life as a whole suggests that an individual's assessment must span the past, present, and future. The relative and absolute perspective on income has similar assumptions concerning temporality. Relative utility, found to be associated with happiness, is focused on the present and how one compares them self to others around them. This suggests a relatively short temporal period over which a relative assessment is made as comparisons are generally made to those immediately close to the individual. Absolute utility, found to be associated with life satisfaction, is a more complex assessment concerned with maximizing utility over time, thus suggesting an assessment concerned with the entire life course (past, present, and future).

The argument that the absolute and relative perspective is bound by separate temporal periods of assessment is consistent with the developmental literature on how young people are concerned with the present and influenced by their peer groups (Schonert-Reichl, 1999), and with how older people are more concerned with maximizing their utility through their life experiences or a 'reflective dimension of wisdom' (Ardelt, 2009). Moreover, these findings suggest that there may be age differences in the assessment of happiness and life satisfaction.

If the assessment of happiness is a relative assessment and the assessment of life satisfaction is an absolute assessment, it is likely that the difference between happiness and life satisfaction is related to the life course, which shows that individuals accumulate a greater number of life circumstances over time. Furthermore, it is assumed that a greater number of life circumstances complicates the assessment of life satisfaction and not happiness. For example, Foster (1996) finds that individuals who experience a greater amount of negative life events have lower levels of life satisfaction, whereas their happiness scores remain relatively stable. Therefore, the complexity of assessing life satisfaction would be positively associated with age; whereas the assessment of happiness should remain relatively constant with age. Thus, differences in the relationship between happiness and life satisfaction should be explained, at least in part, by age effects.

### **Research Question**

Though previous research finds period effects in the disparity between happiness and life satisfaction, such as shifts in happiness and life satisfaction scores during times of economic change, a true age/period/cohort analysis has not been undertaken (Easterlin, 2006; Veenhoven & Hagerty, 2006). Psychology is primarily concerned with only age, sociology remains largely silent on this issue, and economics approaches are largely atheoretical. Differentiations between age, period, and cohort effects are difficult to make without the proper analysis, thus it is imperative to undertake a life course analysis on the comparability of happiness and life satisfaction to better understand how the assessment of these two constructs may vary across time.

This study's theoretical framework suggests that age effects should weaken the empirical correlation between happiness and life satisfaction over the life course. Therefore, the research question at hand investigates the relationship between happiness and life satisfaction while controlling for age and cohort effects; thus the research question is:

Does the comparability of happiness and life satisfaction decrease over the life course?

#### Methods

The data for this research come from the General Social Survey (GSS). The GSS is a personal interview survey of U.S. households conducted annually or semi-annually since 1972 by the National Opinion Research Center. This repeated cross-sectional survey attempts to capture a representative sample of the non-institutionalized adult population in the contiguous U.S. through the use of full probability sampling. It contains demographic, behavioral, and attitudinal questions as well as topics of special interest, with a sample size that ranges between 1,500 and 3,000 respondents in each wave. The GSS is considered to be the best source of data on social trends in the U.S. (Yang, 2008). It is also considered to be the best national source of data on happiness and is part of the World Database on Happiness (WDH) (Yang, 2008). This research utilizes GSS surveys over a 21 year period from 1973 to 1994, as the GSS contains measures of life satisfaction and happiness for the survey years of 1973 – 1978, 1980, 1982 – 1991, and 1993 – 1994. The combined sample size from 1973 to 1994 is 53,043.

#### Measures

Life satisfaction is measured on a scale that ranges from 5 to 35, which is constructed by summing together the five domain satisfaction measures available in the GSS from 1973 to 1994. The five life satisfaction domains include place of residence, hobbies, family life, friendships, and physical health. They are measured in the GSS by asking "For each area of life I am going to name... tell me the number that shows how much satisfaction you get from that area – the city or place you live in , your non-working activities – hobbies and so on, your family life, your friendships, and your health and physical condition." The responses range from 1 to 7: (1) a very great deal, (2) a great deal, (3) quite a bit, (4) a fair amount, (5) some, (6) a little, (7) none.

Domain satisfaction is a valid and reliable method for measuring life satisfaction (Andrews & Withey, 1976). Domains of life satisfaction can include but are not limited to, places, things, activities, people, and roles. Moreover, domain satisfaction is a common and frequently used measure of life satisfaction (see Barkan & Greenwood, 2003; Beatty & Tuch, 1997; Louis & Zhao, 2002; Yoder & Nichols, 1980). Some previous researchers who utilized GSS data chose to use the five core domains of life satisfaction provided by the survey, where as other researchers chose to include extra measures or exclude specific measures from the core domains. The most common extra measures included were psychometric measures, and the most commonly excluded measure was health.

The decision to include extra measures or exclude core domain measures is based on theoretical and methodological determinants, as well as the availability of the desired measures. It would have been optimal to include psychometric measures of life satisfaction in the current study, but they are unavailable for all years of analysis. The most common reason for excluding health measures from life satisfaction scales is with issues of colinearity. This typically occurs when researchers decide to include another health related measure. In this analysis, the health measure is kept in the scale rather than including a separate health measure outside of the life satisfaction scale, because it provides a life satisfaction scale most comparable with other research.

In order to create the life satisfaction scale, the five domain life satisfaction items were reversed coded (1) none, (2) a little, (3) some, (4) a fair amount, (5) quite a bit, (6) a

great deal, (7) a very great deal. The GSS only asked about half of the entire sample to respond to the life satisfaction items, which yielded a sample size of 24,244. Of the 24,244 respondents who were asked these life satisfaction questions, only 394 did not respond to all the items in the scale, which means the scale includes about 98% of the valid sample. The 394 respondents who did not respond to the full life satisfaction scale were deleted list-wise. This procedure yielded a sample size of 23,850.

The life satisfaction scale was created by summing together the five domains, which resulted in a response range from 5 to 35, where 5 is the result of selecting (1) 'none' on each of the five domain items, and 35 is the result of answering (7) 'a very great deal' on each of the five domain items. Thus, a high score indicates a high level of life satisfaction.

Very few respondents selected (1) 'none' as their level of satisfaction in each specific domain. In each wave on average 'none' was only selected 1.62% of the time for each respective domain. Most of the domain scores are in the more positive end of the scale, with the majority of scores falling between the levels of (4) 'a fair amount' and (7) 'a very great deal.' Respondents were most satisfied with their friendships and their family life, with 90.9% and 87.3% of scores respectively falling between (4) 'a fair amount' and (7) 'a very great deal.' The domains for 'your non-working activities – hobbies and so on' and 'the city or place you live' were rated least satisfactory, with only 75.6% and 77.1% of the scores falling between (4) 'a fair amount' and (7) 'a very great deal.' The average score on the life satisfaction scale (range from 5 to 35) was 27.48 (SD = 4.76), indicating a relatively high level of life satisfaction. Table 1 shows the distribution of the life satisfaction scale for the full sample.

Happiness is measured by a single- item, three-point scale "Taken all together, how would you say things are these days -- would you say you are (1) very happy, (2) pretty happy, or (3) not too happy?" It would have been preferable to use a multiple item scale to measure happiness, but because secondary data analysis is utilized in this research, it is not possible to reconstruct the design of happiness measures. However, this is one of the most commonly used measures for happiness in the U.S. and is

Score	Percent	Cumulative %
~		0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.1
8	0.0	0.1
9	0.1	0.2
10	0.1	0.3
11	0.2	0.4
12	0.2	0.6
13	0.3	0.9
14	0.4	1.4
15	0.6	1.9
16	0.6	2.5
17	1.0	3.5
18	1.2	4.7
19	1.7	6.5
20	2.2	8.7
21	2.6	11.2
22	3.6	14.8
23	4.2	19.0
24	5.0	24.0
25	6.0	29.9
26	6.8	36.7
27	7.6	44.3
28	8.7	53.1
29	8.9	62.0
30	9.7	71.6
31	7.7	79.4
32	7.1	86.4
33	5.5	91.9
34	4.1	96.1
35	3.9	100.0
N = 23,850		
Mean	27.48	
SD	4.76	

Table 1. Distribution of Life Satisfaction Scale

considered one of the most accurate measures of happiness (Yang, 2008). Moreover, it has been found that single item measures of happiness are both valid and reliable (Crooker & Near, 1998). Single item happiness measures have been used in many developed countries' "Quality of Life Surveys" since the 1970s, and they are frequently used in international comparative studies on SWB (Yang, 2008). Happiness was reverse coded and ranges from (1) not too happy, (2) pretty happy, and (3) very happy to match the positive construction of the life satisfaction scale. The majority of happiness scores were found to be in the middle of the three point scale, with 54.6% of respondents reporting to be pretty happy. The next highest response category was very happy at 33.5%, followed by not too happy at 11.9% (See Table 2). Happiness scores were also found to be fairly stable over time. The distribution and stability of happiness scores are consistent with previous literature (Yang, 2008; Veenhoven & Hagerty, 2006). The average happiness scores were tested to examine their distribution in each wave of the GSS From 1973 to 1994 in order to determine if the measure approximated a normal distribution required for linear regression analysis (described below). These tests determined that happiness met the requirement of normality.

Level of Happiness	Percent	Cumulative %
Not Too Happy	11.9	11.9
Pretty Happy	54.6	66.5
Very Happy	33.5	100.0

 Table 2. Distribution of Happiness

Age is measured chronologically, ranging from 18 to 89 plus. It would have been optimal to have exact ages for respondents older than 89, but the GSS combines respondents 89 and older into one category. This is due to the low number of respondents over the age of 89. The average age for the sample is 44.6 (SD = 17.58).

Happiness was interacted with age, based on the theoretical assumption that the assessment of life satisfaction becomes more complex with increased age. The age happiness interaction measure is the product of chronological age and the reverse coded happiness measure (Age  $\times$  Happiness = age-happiness interaction). Interaction effects involve at least three different variables, where two predictor variables' simultaneous influence on a dependent variable is not additive (Hayes & Matthes, 2009). Interactions test for a moderating effect, where a third variable affects the strength and or the direction of the predictor variable and the dependent variable (Reuben & Kenny, 1986). This procedure helps to test the hypothesis that the assessment of happiness and life satisfaction differs with age. As shown in Figure 1, it is assumed theoretically that age moderates the relationship between happiness and life satisfaction in a way that decreases the strength of the relationship between happiness and life satisfaction. The agehappiness interaction measures the association between happiness and life satisfaction across age, which can be interpreted by the direction of the coefficient. A positive coefficient would indicate that happiness is a better predictor of life satisfaction with increased age, and a negative coefficient would indicate that happiness is a poorer predictor of life satisfaction with increased age (assuming a level of statistical significance of  $\alpha \leq .05$ ). Thus, a negative coefficient of the age-happiness interaction would be consistent with the absolute and relative perspective.

#### Figure 1. Age-Happiness Interaction Effect



It is always necessary to control for cohort when analyzing longitudinal, or specifically in this case, repeated cross-sectional data, to distinguish between age and cohort effects. Age effects may appear significant or stronger than they actually are if cohort is not controlled. Age effects are the result of aging-related developmental changes, and cohort effects are associated with social change that affects a group of individual who share a common temporal experience (Yang, 2008).

Cohorts were created by using the measure for birth year. Cohort is measured in ten year intervals, except for the youngest cohort, which spans thirteen years. The youngest cohort includes three more years, because cohorts could not be evenly divided by ten years for the GSS waves from 1973 to 1994. It is preferable to use one end of the birth cohort range as the reference group for easier statistical interpretation. The oldest cohort was too small to use as a reference group, so the youngest cohort was selected as the reference group. Birth years range from 1883 to 1976, yielding nine birth cohorts.

Birth Year	Percent	Cumulative %
1883 – 1892	0.4	0.4
1893 – 1902	3.1	3.5
1903 – 1912	7.9	11.4
1913 – 1922	12.7	24.1
1923 – 1932	13.8	37.9
1933 – 1942	14.8	52.7
1943 – 1952	22.1	74.8
1953 – 1962	19.2	94.1
1963 – 1976	5.9	99.6
Total = 23,850		
Missing = 94		
N = 23,756		

Table 3. Distribution of C	Cohorts
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Cohort was interacted with happiness to distinguish age from cohort effects in the relationship between happiness and life satisfaction (*Cohort x happiness = cohort-happiness interaction*). This is purely a methodological procedure, as SWB theory does not suggest that the assessment of happiness and life satisfaction should differ systematically by cohort.

Race is self reported in the GSS and measured by three categories: (1) white, (2) black, and (3) other (with the option to specify). More than four-fifths (84.2%) of respondents were white, 13.8% black, and 2.0% other. Previous research finds that happiness and life satisfaction vary between blacks and other non-white races, and that blacks have the lowest levels of happiness and life satisfaction (Beatty & Tuch, 1997; Yang, 2008). The 'other' category was collapsed with the 'black' category due to the low number of respondents in the other category and because blacks and other non-white races typically have lower levels of happiness and life satisfaction than whites. Race was recoded into an indicator variable, (0) non-white and (1) white. The dichotomized race measure is 84.2% white and 15.8% non-white.

The respondent's sex is interviewer coded with options for (1) male and (2) female. Sex was recoded into an indicator variable, (0) female and (1) male. The decision to use men as the reference group is arbitrary, because selecting either sex as the reference group has no effect on the results. Approximately two-fifths (43.4%) of the respondents are male, and 56.6% are female.

Religion is measured by asking "What is your religious preference? Is it (1) Protestant, (2) Catholic, (3) Jewish, (4) no religion, or (5 - 13) some other religion?" If the respondent states that they are another religion they are asked to specify. Previous literature finds that happiness and life satisfaction vary by religion, and that Christians are generally happier and more satisfied than non-Christians (Ferriss, 2002). Thus, religion was dichotomized into Christian and non-Christian. Protestants and Catholics were collapsed into a Christian measure (88.8%), and Jews, other religions, and atheist were collapsed into a non-Christian measure (11.2%). The Christian measure was selected as the reference group.

Income is measured in 1986 dollars, which were calculated by the GSS from categorical family income. Family income is assessed in terms of total family income,

which is measured by asking "In which of these groups did your total family income, from all sources, fall last year (from survey date) before taxes, that is?" The income ranges and increments of increase are dependent on which year the respective survey was conducted, because the GSS income response categories were adjusted in 1977, 1982, 1986, and 1991 "to avoid bunching in a few income groups" (GSS Codebook, 2008 Pg 2413). Income, in 1986 dollars, is separated into quartiles. Indicator variables are created for each quartile, with the first quartile as the reference group. Income, in 1986 dollars, ranges from \$382 to \$162,607, with a mean of \$29,857.94 and mode of \$32,761 (SD = \$25,141.79). (See Appendix A for family income categories by wave).

Quartile	Income Range	Percent	Cumulative %
1st	\$382 - \$12,381	31.0	31.0
2nd	\$12,381 - \$24,138	22.8	53.8
3rd	\$24,139 - \$37,602	23.2	77.0
4th	\$37,603 - \$162,607	23.0	100.0
Total = 23,85	50		
Missing = 1,95	54		
N = 21,89	6		
Mean Family In	come \$29,857.94		
Median Family	Income \$24,139.00		
Mode Family In	come \$32,761.00		

 Table 4. Family Income Quartiles (1986 Dollars)

Financial change is measured by asking "During the last few years, has your financial situation been getting better, worse, or has it stayed the same?" Response categories include (1) getting better (37.6%), (2) getting worse (22.5%), (3) stayed the same (39.1%), (8) don't know (0.3%), (9) No answer (0.5%). Financial change was dichotomized into (0) not getting better and (1) getting better. Three-fifths (62.1%) of respondents report that their financial situation is not getting better, and 37.9% state that it is getting better.

Martial status is asked by "Are you currently (1) married, (2) widowed, (3) divorced, (4) separated, or (5) have you never been married?" Almost three-fifths

(59.9%) of the respondents are married, 10.2% are widowed, 9.4% are divorced, 3.5% are separated, and 17% were never married. Each marital status was used to create a respective indicator variable, except for the never married category which was used as the reference group. This procedure produced the marital status indicator variables 'married,' 'widowed,' and 'divorced/separated.' The 'divorced' and 'separated' categories were combined because there is no previous literature to suggest that happiness and life satisfaction levels differ by these two martial statuses.

Number of children is measured by asking "How many children have you ever had? Please count all that were born alive at any time (including any you had from a previous marriage)." The response categories range from '0 to 8 or more,' with 'a no answer/don't know' option. The average number of children is 2.03 (SD = 1.88).

Labor force status is measured by asking "Last week were you working full time, part time, going to school, keeping house, or what?" Response categories include (1) working full time (48.5%), (2) working part time (9.7%), (3) with a job, but not at work because of temporary illness, vacation, strike (2.2%), (4) unemployed laid off, looking for work (3.3%), (5) retired (11.6%), (6) in school (2.9%), (7) keeping house (21.8%). Each labor force status was used to create an indicator variable, except for the working full time category which was used as the reference group. The labor force status variables were created using the same method as the marital status variables.

Education is measured by the respondent's highest degree. Responses include (0) less than high school, (1) high school, (2) associate/junior college, (3) bachelor's, (4) graduate. Slightly more than one-fifth (28.6%) of respondents have less than a high school education, 51.1% have a high school education, 3.5% have an associates or junior college degree, 11.6% have a bachelor's degree, 5% have a graduate degree, and 0.2% were missing. Each educational category was used to create an indicator variable, except for the high school category which was used as the reference group. The educational status variables were created using the same method as the marital status and labor force status variables. This produced the educational status variables 'less than high school,' 'associate/junior College,' 'bachelors,' and 'graduate.' (See Appendix B for the education question format).

#### Analysis

Ordinary least squares (OLS) regression was used to examine the relationship between happiness and life satisfaction. OLS is a robust statistical technique for estimating unknown parameters and for examining interaction effects. Interaction effects produce independent variables with high levels of correlation that violate the OLS assumption of independence, but the robust nature OLS allows for this violation to be overlooked.

Life satisfaction was selected as the dependent variable for methodological and theoretical purposes. The life satisfaction measure has more variance that can potentially be explained compared to the happiness measure, so it makes methodological sense to predict the life satisfaction parameters (Veenhoven & Hagerty, 2006). Moreover, it is theoretically assumed the association between happiness and life satisfaction weakens over the life course because the assessment of life satisfaction is assumed to become more complex with compounding life events over the life course. Thus, it makes theoretical sense to measure the variance in life satisfaction while controlling for all the other variables in the model.

Model 1 examines only the effects of age, cohort (main and interaction effects), and happiness (main and interaction effects) on life satisfaction. This parsimonious model analyzes the basic direction and strength of the relationship between the agehappiness interaction effect and life satisfaction. The cohort-happiness interaction effect is controlled for to ensure that the potential relationship between the age-happiness interaction effect and life satisfaction is a true age effect.

Model 2 adds the basic demographic measures that have had consistent results throughout the happiness and life satisfaction literature. These additional measures include race, sex, religion, marital status, and number of children. It is expected that these measures will have a similar relationship with life satisfaction as reported in previous literature, and they are added to the second model to examine if they influence the strength or direction of the relationship between the age-happiness interaction effect and life satisfaction. Model 3 adds economic related measures, which have mixed results throughout the happiness and life satisfaction literature. These additional measures include education, work, income, and financial change. Given the mixed results in prior research, there are no expectations for the relationship between these additional measures and life satisfaction. Moreover, there is no previous literature to suggest how these economic related measures may influence the age-happiness interaction effect on life satisfaction.

# Results

Model 1 examines the effects of age, cohort (main and interaction effects), and happiness (main and interaction effects) on life satisfaction. The adjusted R<sup>2</sup> suggests that this basic model explains approximately 18.6% of the variance in life satisfaction. Age is negatively associated with life satisfaction and highly significant. A one year increase in age yields a .069 unit decrease in life satisfaction. In other words, if a 30 year old has a score of 20 on the life satisfaction scale, then at age 31 they are predicted to have a life satisfaction score of 19.931. Cohort is only significantly associated with life satisfaction for the cohorts born between 1903 and 1952, and the cohorts are found to have higher levels of life satisfaction compared to the most recent cohort.

Happiness is positively associated with life satisfaction and highly significant. A one unit increase in happiness yields approximately a 2.41 increase in life satisfaction. The age-happiness interaction is also highly significant, but in the opposite direction than anticipated. Model 1 suggests that happiness is a better predictor of life satisfaction with increased age. The absolute and relative perspective suggests that the comparability of happiness and life satisfaction would decrease with age, but these findings show that happiness and life satisfaction are more comparable with increased age.

The cohort-happiness interaction effect is significant only for the cohorts born between 1893 and 1932. This finding is unexpected, because it was not predicted by previous literature or the SWB theoretical framework. Moreover, the cohort-happiness interaction effect's relationship with life satisfaction is negative, which suggests that the association between happiness and life satisfaction is weakened for these cohorts.

Variables	b	SE	p – value	
Age	069	.016	.000	
Cohorts				
1963-1976				
1883-1892	2.702	1.952	.166	
1893-1902	2.096	1.168	.073	
1903-1912	2.889	0.977	.003	
1913-1922	2.827	0.841	.001	
1923-1932	2.073	0.722	.004	
1933-1942	1.297	0.612	.034	
1943-1952	1.210	0.517	.019	
1953-1962	0.626	0.496	.207	
Нарру	2.407	0.251	.000	
Age×Happy	0.029	0.007	.000	
<i>Cohort×Happy</i>				
1963-1976				
1883-1892	-1.375	0.836	.100	
1893-1902	-1.103	0.504	.029	
1903-1912	-1.213	0.423	.004	
1913-1922	-1.015	0.365	.005	
1923-1932	-0.688	0.314	.029	
1933-1942	-0.306	0.267	.252	
1943-1952	-0.287	0.228	.207	
1953-1962	-0.183	0.220	.405	
Adjusted $R^2$ .186 N = 23,850				

Table 5.Model 1:OLS regression results for Age & Cohort (Main & Interaction Effects)

Therefore, the comparability of happiness and life satisfaction is weaker for the birth cohorts between 1893 and 1932 compared to the reference cohort (1963-1976).

Model 2 examines age, cohort (main and interaction effects), happiness (main and interaction effects), and adds sex, race, religion, martial status, and number of children. The adjusted R<sup>2</sup> increased by .017 from Model 1 to Model 2. This suggests that the addition of these basic demographic measures only explains about 1.7% more of the variance in life satisfaction, for a total of 20.3% of explained variance in Model 2. The relationship between age and life satisfaction is unchanged with the addition of these basic demographic measures. Four of the five cohorts from Model 1 remain significant; the 1933-1942 cohort loses statistical significance in Model 2. Furthermore, the strength of the cohort's relationships with life satisfaction weakens slightly.

Race is highly significant, and whites are more likely to have higher life satisfaction than non-whites. Sex is significant, and Model 2 shows that men are less likely to be satisfied with life than women, which is inconsistent with previous literature (See Forest, 1996). Religion is also significant, and Christians on average have a higher level of life satisfaction than non-Christians. All three marital status categories are found to be statistically significant. Married people are found to have the highest level of life satisfaction, followed by widows. Divorced-separated individuals are found to have lower life satisfaction than those who have never married. Also, number of children is negatively correlated with life satisfaction, so each additional child reduces life satisfaction by .088 units on average. These results are consistent with past research.

Happiness remains highly significant, but its relationship with life satisfaction is slightly weakened by the introduction of the basic demographic measures in Model 2. The age-happiness interaction effect is unaffected by introducing basic demographic measures into the model. This suggests that the comparability of happiness and life satisfaction still increases with age, even after controlling for basic demographic measures. The cohort-happiness interaction effect is mostly unchanged in Model 2, still suggesting that the comparability of happiness and life satisfaction is weaker for the birth cohorts between 1893 and 1932 compared to the reference cohort (1963-1976).

Variables	b	SE	Beta	p - value
Age	065	.016	240	.000
Cohorts				
1963-1976				
1883-1892	1.756	1.934	.024	.364
1893-1902	1.267	1.160	.046	.274
1903-1912	2.168	0.969	.123	.025
1913-1922	2.214	0.835	.156	.008
1923-1932	1.531	0.717	.111	.033
1933-1942	1.134	0.607	.085	.062
1943-1952	1.076	0.513	.094	.036
1953-1962	0.573	0.492	.047	.244
White	0.998	0.079	.076	.000
Male	-0.148	0.058	015	.010
Christian	0.588	0.090	.039	.000
Marital Status Never Marriea	l			
Married	0.773	0.091	.080	.000
Widowed	0.433	0.139	.028	.002
Divorced/				
Separated	-0.423	0.114	030	.000
Number of				
Children	-0.088	0.017	035	.000
Нарру	2.174	0.249	.292	.000
Age×Happy	0.029	0.007	.317	.000
<i>Cohort×Happ</i> 1963-1976	у			
1883-1892	-1.238	0.828	040	.135
1893-1902	-1.028	0.500	088	.040
1903-1912	-1.180	0.419	160	.005
1913-1922	-1.002	0.362	167	.006
1923-1932	-0.657	0.312	111	.035
1933-1942	-0.387	0.265	067	.144
1943-1952	-0.367	0.226	074	.104
1953-1962	-0.242	0.218	046	.267

Table 6.Model 2:OLS regression results for Age & Cohort (Main & Interaction Effects) plus demographic measures

Model 3, the final model, examines age, cohort (main and interaction effects), happiness (main and interaction effects), sex, race, religion, martial status, number of children, and adds education, work, income, and financial change. The adjusted R<sup>2</sup> increased by .019 from Model 2 to Model 3. This suggests that the addition of these economic related measures only explains about 1.9% more of the variance in life satisfaction, for a total of 22.2% of explained variance in Model 3. The unstandardized (negative) beta coefficient for age decreased from -.065 to -.058, with the addition of these economic measures. Therefore, a 30 year old with a life satisfaction score of 20 would be predicted to have a life satisfaction score of 19.942 at age 31. Three of the four cohorts from Model 2 remain significant, because the 1943-1952 cohort loses statistical significance in Model 3. Thus, the three cohorts from 1903-1932 are the only statistically significant cohort main effects. Furthermore, the strength of the cohort's relationships with life satisfaction increases slightly.

The effects of basic demographic measures in the final model are mostly consistent with previous literature. However, these findings should not be surprising when considering two points: 1) although demographic measures, such as race, marital status, religion, and gender have a strong relationship with life satisfaction, they only explain a small amount of the variance and 2) although life satisfaction research lacks a true age-period-cohort analysis, ongoing studies have effectively tracked trend changes in the relationship between these basic demographic measures and life satisfaction.

Non-whites are found to have lower levels of life satisfaction compared to whites. The magnitude of the relationship drops moderately after controlling for socioeconomic measures, but race still remains a significant predictor of life satisfaction. This suggests that racial disparities beyond socioeconomic inequalities still have a significant impact on life satisfaction. The present study did not examine the relationship between more specific racial categories than white and non-white, and there is little previous SWB literature that examines race beyond white and Black disparities. Therefore, future SWB research should focus on more specific racial measures. The findings concerning marital status are consistent with previous literature (See Easterlin, 2002). Married people are more satisfied with life than people who are not married, including those never married and widows. The introduction of economic related measures affects the relationship between marital status and life satisfaction in a similar manner as previously found (see Easterlin, 2002). These economic related measures decrease the magnitude of the relationship for two marital status categories ('married' and 'divorced/separated'), but increase the magnitude for

Table 7.Model 3:OLS regression results for Age & Cohort (Main & Interaction Effects) plus demographic & economic<br/>measures

Variables	b	SE	Beta	p - value
Age	-0.058	0.016	218	.000
Cohorts				
1963-1976				
1883-1892	2.417	1.925	.033	.209
1893-1902	2.080	1.161	.076	.073
1903-1912	2.609	0.968	.150	.007
1913-1922	2.467	0.835	.174	.003
1923-1932	1.581	0.716	.115	.027
1933-1942	0.968	0.605	.073	.110
1943-1952	0.787	0.511	.069	.123
1953-1962	0.399	0.490	.033	.415
White	0.720	0.079	.055	.000
Male	-0.354	0.065	037	.000
Christian	0.725	0.089	.048	.000
Marital Status				
Never Married				
Married	0.635	0.093	.066	.000
Widowed	0.576	0.139	.037	.000
Divorced/				
Separated	-0.290	0.115	020	.011
Number of				
Children	-0.025	0.018	010	.160

Education				
High School				
Less than HS	-0.778	0.071	074	.000
JC/Asoc	0.226	0.152	.009	.136
BA	0.478	0.092	.033	.000
Grad	0.408	0.132	.019	.002
Labor Force Status	7			
Full Time				
Part Time or Temp	0.096	0.091	.007	.293
Unemployed	0.136	0.162	.005	.400
Retired	-0.666	0.116	045	.000
Homemaker	-0.515	0.087	045	.000
School	0.457	0.173	.016	.008
Family Income				
First quartile				
2 <sup>nd</sup> quartile	0.561	0.080	.050	.000
$3^{rd}$ quartile	0.713	0.086	.064	.000
4 <sup>th</sup> quartile	0.974	0.092	.088	.000
Financial Change				
For the Better	0.360	0.061	.037	.000
Нарру	2.033	0.249	.274	.000
Age×Happy	0.028	0.007	.299	.000
<i>Cohort×Happy</i>				
1963-1976				
1883-1892	-1.109	0.827	036	.180
1893-1902	-0.930	0.499	080	.062
1903-1912	-1.000	0.418	136	.017
1913-1922	-0.914	0.361	154	.011
1923-1932	-0.658	0.311	112	.034
1933-1942	-0.398	0.264	070	.131
1943-1952	-0.354	0.225	072	.115
1953-1962	-0.228	0.217	044	.292
Adjusted R <sup>2</sup> .222				
N = 23,850				

widows. An initial reaction to these findings may be that widows are generally older and retired, so less likely to work and be affected by economic related measures. However, both age and labor force status are controlled for. This suggests that other social and/or psychological measures not controlled for may be more associated with life satisfaction for widows compared to those who are married or divorced.

Men are found to score lower on the life satisfaction scale than women, which is not consistent with previous research (see Forest, 1996). At first it appears that this inconsistent finding may be explained by the methodological procedure, because it is unlikely that previous research would use happiness as a predictor for life satisfaction because of their widespread use as interchangeable constructs. However, a further analysis, which removed happiness from the model, found that men continued to have lower levels of life satisfaction than women. This evidence suggests that future research should focus on examining the relationship between happiness, life satisfaction, and gender.

Education is positively associated with life satisfaction, which is consistent with previous literature. Having less than a high school degree is negatively associated with life satisfaction compared to having a high school education. A bachelor's degree and a graduate degree are both associated with a higher level of life satisfaction compared to having only a high school education. This evidence suggests that the positive social and psychological benefits of education most likely explain educations positive relationship with life satisfaction (see; Michalos, 2008).

Labor force status, and its relationship with life satisfaction, is also consistent with previous research. Retirement has a negative effect on life satisfaction, most likely because of a role loss. Homemakers are also less satisfied with life compared to full time employees, which is likely due to their marginalized status in American society. Part time/temporary employment and unemployment do not have an impact on life satisfaction when compared to those who are working full time. Part time/temporary employment have been found to be more associated with happiness than life satisfaction (see Easterlin, 2001).

The relationship between income and life satisfaction has mixed results throughout previous literature, as some scholars argue for absolute income while others argue for relative income. In the present study income and financial change have a positive association with life satisfaction. These findings suggest that absolute income is associated with life satisfaction. However, they are limited because this analysis does not properly address relative income measures. Therefore, the relationship between income and life satisfaction is still inconclusive and an important topic for future research.

Happiness remains highly significant, but its relationship with life satisfaction is weakened by the introduction of economic related measures in Model 3. A one unit increase in happiness yields approximately a 2.03 increase in life satisfaction (down by .38 from Model 1). The age-happiness interaction effect is unaffected by introducing economic related measures into the model. This suggests that the comparability of happiness and life satisfaction still increases with age, even after the introduction of basic demographic and economic measures. Thus, the final model suggests the opposite findings as predicted by the theoretical framework. However, the cohort interaction effects (for cohorts '1903-1912', '1913-1922' and '1923-1932') remain significant in model three, which suggests that there are some unanticipated cohort effects. These cohort-happiness interactions from 1903 to 1932 are negative, which suggests that happiness is less predictive of life satisfaction for these three cohorts.

#### Conclusions

The absolute and relative perspective suggests that the comparability of happiness and life satisfaction decreases with age, because it assumes that the assessment of life satisfaction becomes more complex due to life events compounding across the life course. Results of this study do not support the absolute and relative perspective, because the analysis shows that the age-happiness interaction effect is in the opposite direction as initially expected. These findings suggest that happiness is actually more comparable to life satisfaction across the life course.

The finding that happiness is more comparable to life satisfaction across the life course suggests that the absolute and relative perspective's assumption that the assessment of life satisfaction becomes increasingly complex with age is incorrect. Crooker and Near (1998) find that happiness and life satisfaction share more cognitive and affective characteristics than previously suggested, and the present study suggests that these psychometric similarities may actually increase with age. Therefore, an explanation for this disparate finding could be that the assessment of happiness may become more cognitive with age, and the assessment of life satisfaction may be more associated with measures of affect with increased age; thus, resulting in a stronger association between happiness and life satisfaction across the life course. Unfortunately, psychometric measures are unavailable in the GSS waves from 1972-1994, which prevented further investigation of this proposed explanation for the failure of the relative and absolute perspective. If possible, future research should include both social and psychological measures when examining the relationship between happiness and life satisfaction.

There is also a methodological explanation that could explain why happiness and life satisfaction are more comparable across the life course. Selection effects may partially explain why happiness and life satisfaction are found to be more correlated as one ages. Firebaugh and Schroeder (2009) state that happiness is positively associated with life expectancy, which suggests that happier people live longer lives compared to those who are less happy. Therefore, it is likely that there is less variance in the happiness and life satisfaction relationship that can be examined among older individuals in repeated cross-sectional data. This bias may inflate happiness scores, thus affecting the association between happiness and life satisfaction. Selection effects may increase the comparability of the two measures, but I am unable to examine this phenomenon due to the constraints associated with cross-sectional data. This should be a consideration in future research. Better data (such as panel data that spans a long period of time) could allow for the examination of selection effects. However, such panel data is not yet available; and moreover, most panel data does not yet cover a long enough time period to investigate the type of cohort effects found in the present study.

It was unclear how age and cohort would be associated with life satisfaction in this study. I find that age is negatively associated with life satisfaction, and the magnitude of the effect is quite small. However, the only other age-period-cohort analysis on happiness finds that age is positively associated with happiness (Yang, 2008). Despite the seemingly opposite findings, these results may not be inconsistent. Yang's work used happiness as the outcome measure, whereas life satisfaction is the outcome examined in the current study with happiness used as a predictor. If age does indeed moderate the relationship between happiness and life satisfaction, then it may be possible to observe such divergent direct effects of age on the two different SWB measures.

The most pressing finding in this study suggests that the comparability of happiness and life satisfaction is weakened substantially due to cohort effects. First, the only cohort main effects that predict life satisfaction are for the birth cohorts from 1903-1932, which essentially consist of individuals who were of impressionable age during the Great Depression. Those born in 1903 were young adults when the Great Depression began in 1929, and those born in 1932 were of school age when the Great Depression ended (about 1939). This suggests that something is different about life satisfaction for these 'Great Depression cohorts' compared to the most recent cohort. Second, the only cohort-happiness interaction effects that are statistically significant are also for these 'Great Depression cohorts.' Moreover, these cohort-happiness interaction effects negatively predict life satisfaction. This suggests that happiness and life satisfaction may be dissimilar constructs for these 'Great Depression cohorts.'

Elder (1974) suggests that experiencing the Great Depression may have a negative effect on general well-being. Yang (2008) states that there is some happiness literature that suggests happiness is lower for cohorts that experienced the Great Depression, but she finds no such supporting evidence in her study. Furthermore, the present study finds that the 'Great Depression cohorts' are generally more satisfied with life compared to the most recent cohort. Therefore, having experienced the Great Depression appears not to be detrimental to overall SWB in terms of life satisfaction.

The central finding in this study, however, is that happiness and life satisfaction are not comparable constructs for the 'Great Depression cohorts.' This is an important finding because almost all of the previous SWB literature uses happiness and life satisfaction interchangeably, and this study finds evidence that suggests happiness and life satisfaction are not interchangeable constructs for all cohorts. But why are happiness and life satisfaction not comparable for the 'Great Depression cohort'? Elder (1974) states that, "hard times during the Depression have been linked to an extraordinary work commitment, a self-conscious desire for security, [and] an inability to partake of pleasure or leisure without guilt feelings" (p 277). Elder's (1974) findings provide two explanations for why happiness and life satisfaction may not be comparable for the 'Great Depression cohort':

1) Their desire for security may influence them to strive for factors associated with higher life satisfaction (such as better housing, valued friendships, and stronger family bonds) and their extraordinary work commitment may have helped them achieve these factors associated with a higher level of life satisfaction (such as saving for better housing, and investing more time and energy into valued friendships and family life) and;

2) Their inability to partake of pleasure or leisure without guilt could be detrimental to their happiness.

Therefore, those who experienced the Great Depression during their formative years may be likely to look back when assessing their life satisfaction and happiness, and conclude that they are more satisfied with life now because it turned out better than they expected, but they are still not happy because of their feelings of guilt.

Overall the present study satisfies Andrews and Withey's (1976) six products of value for SWB research. The first product of value addresses the previously established baseline measurement for the correlation between happiness and life satisfaction, and I find that the two measures are still highly correlated. The second product of value suggests that it is important to investigate how the relationship between the two measures is distributed across the life course. I find that happiness is more comparable to life satisfaction in old age. The third product states that it is important to know how life events can affect measures of SWB, and I find that the relationship between the respective demographic/socioeconomic measures and life satisfaction is similar to most previous research, even when happiness is controlled. The fourth and fifth products of value suggest that it is important to know how people make evaluations about their lives and come to conclusions about their evaluations. The absolute and relative perspective was unsuccessful at distinguishing happiness from life satisfaction, but the present study

suggests that the assessment of happiness may be different than the assessment of life satisfaction for those who experienced widespread hardship during their formative years. The sixth product states that SWB research benefits society as a whole by promoting wellbeing, and hopefully this current research may be useful for increasing levels of happiness and life satisfaction.

Two limitations to this study should be noted. First, this study utilizes repeated cross-sectional data, which is not the best data for estimating individual age changes. It would have been preferable to use longitudinal panel data, but unfortunately there are only a few such data sets with SWB measures, with almost none including more than two data collection waves (Yang, 2008). Second, it would have been optimal to include psychometric measures in the analysis, but the GSS does not include such measures until more recent waves that often do not include both happiness and life satisfaction measures. Furthermore, the theoretical framework emphasizes the life course and not psychometric measurement, so it was preferable to include as broad a range of years in the analysis as possible. This study provides evidence that social factors contribute significantly to the conceptualization and comparability of happiness and life satisfaction, but fails to develop a theoretical framework. Therefore, future research should aim to integrate more theory into SWB studies in an attempt to better understand SWB and its associated measures.

(1972 – 1976)	(1977 – 1980)	(1982 – 1985)	(1986 – 1990)	(1991 – 1994)	
(1972 – 1976) Under \$1,000 \$ 1,000 to 2,999 \$ 3,000 to 3,999 \$ 4,000 to 4,999 \$ 5,000 to 5,999 \$ 6,000 to 6,999 \$ 7,000 to 7,999 \$ 8,000 to 8,999 \$10,000 to 14,999	(1977 – 1980) Under \$1,000 \$ 1,000 to 2,999 \$ 3,000 to 3,999 \$ 4,000 to 4,999 \$ 5,000 to 5,999 \$ 6,000 to 5,999 \$ 6,000 to 6,999 \$ 7,000 to 7,999 \$ 8,000 to 9,999 \$ 10,000 to 12,499	(1982 – 1985) Under \$1,000 \$ 1,000 to 2,999 \$ 3,000 to 3,999 \$ 4,000 to 4,999 \$ 5,000 to 5,999 \$ 6,000 to 6,999 \$ 7,000 to 7,999 \$ 8,000 to 9,999 \$ 10,000 to 12,499	(1986 – 1990) Under \$1,000 \$ 1,000 to 2,999 \$ 3,000 to 3,999 \$ 4,000 to 4,999 \$ 5,000 to 5,999 \$ 6,000 to 6,999 \$ 7,000 to 7,999 \$ 8,000 to 9,999 \$ 10,000 to 12,499	(1991 – 1994) Under \$1,000 \$ 1,000 to 2,999 \$ 3,000 to 3,999 \$ 4,000 to 4,999 \$ 5,000 to 5,999 \$ 6,000 to 5,999 \$ 6,000 to 6,999 \$ 7,000 to 7,999 \$ 8,000 to 9,999 \$ 10,000 to 12,499	
\$15,000 to 24,999 \$25,000 or over	\$12,500 to 14,999 \$15,000 to 17,499 \$17,500 to 19,999 \$20,000 to 24,999 \$25,000 to 49,000 \$50,000 or over	\$12,500 to 14,999 \$15,000 to 17,499 \$17,500 to 19,999 \$20,000 to 24,999 \$25,000 to 34,999 \$35,000 to 49,999 \$50,000 or over	\$12,500 to 14,999 \$15,000 to 17,499 \$17,500 to 19,999 \$20,000 to 24,999 \$25,000 to 29,999 \$30,000 to 34,999 \$35,000 to 39,999 \$40,000 to 49,999 \$50,000 to 59,999 \$60,000 or over	\$12,500 to 14,999 \$15,000 to 17,499 \$17,500 to 19,999 \$20,000 to 24,999 \$25,000 to 29,999 \$30,000 to 34,999 \$35,000 to 39,999 \$40,000 to 49,999 \$50,000 to 59,999 \$60,000 to 74,999 \$75,000 or over	

Appendix A: Income Categories by Wave

Source: 2008 GSS Codebook

# Appendix B: Education Question Format

What is the highest grade in elementary school or high school that you finished and got credit for?

Categories range from 'No Formal School' with options for '1<sup>st</sup> grade' thru '12<sup>th</sup> grade' respectively

If finished 9<sup>th</sup>-12<sup>th</sup> Grade or D.K.

- A. Did you ever get a high school diploma or a GED certificate? (Yes/No)
- B. Did you ever complete one or more years of college for credit not including schooling such as business college, technical or vocational school? (Yes/No)

# If Yes to B:

(1) How many years did you complete?

Categories range from '1year' to '8 plus years' respectively

(2) Do you have any college degrees? (Yes/No)

If yes to 2:

What degree or degrees? Code highest degree earned

'Associate/Junior college' 'Bachelor's' 'Graduate' 'Don't know'

Source: 2008 GSS Codebook

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