An Empirical Examination of a Well-Being Engine Model

Korey Jacob Connor
Marquette University

An Empirical Examination of a Well-Being Engine Model

by

Korey J. Connor, B.A., M.A.

A Dissertation submitted to the Faculty of the Graduate School,
Marquette University,
in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy

Milwaukee, Wisconsin

May 2017

ABSTRACT

AN EMPIRICAL EXAMINATION OF A WELL-BEING ENGINE MODEL

Korey J. Connor, B.A., M.A.

Marquette University, 2017

Humanity has struggled to define the good life from, at very least, the beginning of recorded history. The last three decades have seen a major uptick in the amount of scholarly activities in this vein, with contemporary iterations falling under the auspices of well-being studies. These studies in the field of psychology, while abundant, have tended to align closely with one of a select few schools of thought while eschewing alternative approaches. Studies are produced at a dizzying rate, but are often limited in scope and in need of greater conceptual clarification. A promising integrative theoretical model, called the engine of well-being, was proposed by Jayawickreme and colleagues (2012), but it has yet to be examined empirically.

The present study begins with a thorough review of the literature of well-being in psychology, including philosophical roots. Path analysis was employed, utilizing data from the second round of the Mid-Life in the United States (MIDUS 2) study, to empirically examine the theoretical engine model. The path analyses gave particular focus to integration of components of the prominent approaches and known correlates thereto with the intention of empirically validating the engine model as a dynamic platform for the study of human well-being. The MIDUS 2 data were found to support the engine model across numerous iterations and suggest that it may provide a sufficiently nuanced platform for the study of well-being.

ACKNOWLEDGEMENTS

Korey J. Connor, B.A., M.A.

בָּרוּךְ שֶׁהֶחֱיָנוּ וְקִיְּמָנוּ וְהִגִּיעָנוּ לַזְּמַן הַזֶּה.

I would like, first and foremost, to thank my wife for everything. To list the things that I need to thank her for would take more pages than the present dissertation itself. Suffice it to say that her abundant patience and grace have consistently provided the fuel for my graduate education. I would like to thank my children for making me smile no matter what challenges came my way and for always making me proud. I would like to thank my parents for always encouraging me to follow my passions – no matter how far afield they have taken me – and to pursue my education. I would like to thank my advisor, Dr. Timothy Melchert, for believing in and supporting me – knowing that I always had him in my corner means more to me than he will ever know. I also like to thank the members of my dissertation committee, Drs. Lisa Edwards and Robert Griffin, for sharing their valuable time and wisdom.

TABLE OF CONTENTS

CHAPTER

An Empirical Examination of a Well-Being Engine Model

Chapter One

Introduction

The immunization of children against preventable illness has been, somewhat curiously, a topic of significant debate in recent history. To most individuals, and to most parents in particular, this debate is cause for significant head-scratching and confusion. Medical science overwhelmingly agrees that immunizations are safe and that parents should, almost without exception, vaccinate their children in the interest of public health, not to mention the health of the child in question. The issue of whether or not to vaccinate a child should, at face value, be a non-starter – a safe, non-invasive medical procedure can serve to keep people safe and to prevent pain and discomfort for the masses. Why not? Yet, the question of whether or not to vaccinate continues to persist for an astonishingly large and vocal number of individuals. Why is this so and what should be done about it? Can (or should) the government intervene to mandate compliance on the part of reticent parents?

A thought provoking, if somewhat oversimplified, opinion piece appeared in the *Minneapolis Star-Tribune* (Tervaskas, 2015) that suggested an answer, not to the controversy itself, but to the question of *why* it is a controversy in the first place. Science, the author maintains, is tasked with identifying, researching, and promulgating *fact*. Democratic government, on the other hand and without a hint of irony, is charged with identifying and legislating in accordance with the *values* of the electorate and the constitution. Thus, there are certain questions that create flash-points by putting at odds these two forces – objective fact (vaccinations are safe and will prevent illness) and

subjective values (freedom, in this instance, to choose whether or not to vaccinate). The determination of the correct path forward that public policy, and public health in particular, are charged with necessarily requires, at very least, the acknowledgement of the delicate balance between objective and subjective determinants of what is to be promoted as the *right* way to live.

Well-being, the study and promotion thereof, has wrangled with the balance for generations. What is the good life and how is it to be identified, promoted, and measured? Should objective good be given precedence over subjective good or vice versa? Ought the two to be balanced?

The question of immunizations illustrates the challenges that individuals and societies face in identifying the good life and personal well-being. To some parents, mandatory vaccinations represent nothing more than an imprudent violations of their subjective freedoms and this is displeasing to them. To those informed by the scientific community however, the objective fact is that vaccinations create the greater good and that fact outweighs subjective discomfort.

Why Study Well-being?

This question of how to define the good life is one that humanity has struggled with from the very beginning. Since the beginning of recorded history, humanity has been driven toward a desire for something bigger or better – toward a good life. What, however, does it mean to live a good life? What are the indicators of a good life? Is it enough to simply feel happy? Are there activities or states that promote the good life? Do those activities need to be practiced proficiently to count as the good life? Is the good life

the same for all peoples in all cultures? If not, then at what levels are there commonalities, and what levels are there distinctions? How does the good life differ across time? Is the good life even something that can even be accomplished in the span of a single lifetime?

Not surprisingly, the quest to understand the good life continues until this very day and humanity continues to ask these questions. These questions are daunting, but they are important. Mental health professionals, like parents, need to give careful consideration of the good life that they are helping their patients to find. One contemporary iteration of this quest for the good life takes the form of well-being studies. This line of inquiry attempts to empirically investigate those things that contribute to optimal human living. Contemplate the idea of *optimal human living* for a moment, and consider the myriad points from which research could begin. This multiplicity of possibilities has allowed well-being studies to exist across a broad range of academic disciplines and perspectives, such as philosophy, public health, sociology, economics, psychology, as well as the intersections therein. The common thread that runs between these disparate fields is the challenge to the prevailing assumption that the lack of a deficit is a surplus – whether it be mental health, physical health, or economic welfare. In economics, for instance, well-being studies developed as a response to the assumption that gross domestic product (GDP) is the most appropriate indicator of general economic well-being in a society (Gasper, 2007). These challenges, such as the capabilities approach of Sen (2008), instead focus on access to an array of resources necessary to thrive as an indicator of well-being rather than relying on figures, such as GDP, that are not necessarily (nor by any means) indicative of the well-being of the general populous.

In psychology, well-being studies have developed in response to the prevailing assumption that mental health is synonymous with a mere lack of psychopathology (Huppert & So, 2013; Keyes, 2002).

Where to begin? Psychologists have grappled with the question of how to approach well-being. Namely, should the discussion build upon the work of philosophy or should psychology stick with bread-and-butter empiricism (Tiberius & Hall, 2010; Annas, 2004)? The predominant answer has been a resounding, "Both!" as two schools of thought have developed, each with sophisticated programs of state-of-the-art research and an accompanying discourse that thoroughly regards the roots tracing fluidly to the philosophers of ancient Greece. The resultant scholarly discussions are, understandably, as challenging as they are stimulating.

Well-Being Studies as a Response to Psychopathology

Well-being studies are, in a sense, a foil for the psychopathology focus of modern psychology. This is not to suggest, however, that well-being and psychopathology are by any means mutually exclusive – they do not exist on a dialectic. Rather, well-being is typically conceptualized in a dynamic and holistic sense in keeping with the oft-quoted proclamation of the World Health Organization that, "Health is a state of complete physical, mental, and social well-being and *not merely the absence of disease or infirmity*" (WHO, 1948 [emphasis added]). A broad spectrum ranging between well-being and illness exists in each biopsychosocial domain. It is not uncommon, for example, for a mental health practitioner to work at length to aid a patient in the development of mental and physical fortitude, only for that individual to remain in a toxic

social situation. Alternatively, much has been written about the deleterious toll of physical illness on mental health and social function (Melchert, 2015; Ryff & Singer, 1998).

Sociologist Corey Keyes (2002) has opined that in spite of this, "mental health remains the antonym of mental illness and a catchword of inert good intentions" (p. 208). In other words, mental health – the phrase – gets talked about ad nauseum, but mental health care still gives sole primacy to psychopathology and the alleviation of suffering. A noble goal, no doubt, except for the fact that it comes at the expense of the development of positive states of mental health and preventative mental health care. This focus maintains the false dialectic that lack of mental illness is a proxy for mental health. Ryff and Singer (1998) place the blame for this lopsided emphasis on deficit squarely on Descartes and mind-body dualism. Namely, in as much the human experience is directly related to the mechanistic functioning of the body, *health* becomes the mere maintenance of that basic biological functioning. Thus, if the body is healthy, what else could be wrong? This relegation of health solely to the field of medicine allowed the philosophical considerations of the promotion of the good life to atrophy. This medical model of mental health means that treatment is only sought when there is an impairment in functioning, when more philosophical considerations of mental health would perhaps aim for a more proactive development thereof (Ryff & Singer, 1998).

What if we were just to leave well enough alone? Where would that get us?

Keyes (2002) set out to develop a more dynamic indicator of definable mental health informed by models of well-being. He wanted to know just how many people could be said to be experiencing *mental health.* To do so, he placed a mirror to the

diagnostic schema used for the diagnosis of Major Depression Episode (vis-à-vis DSM III), wherein an individual must endorse a minimum number of symptoms, both affective and neurovegetative, in order to receive a diagnosis. By doing so, he aimed to broaden the concept of mental health beyond the traditional *ill-or-not* dialectic to include considerations of what he termed *languishing* and *flourishing.* He noted thirteen criteria for emotional, functional, and social well-being. An individual who is determined to be *flourishing* meets the minimum diagnostic criteria for mental health – for well-being – by endorsing elevations in the upper tertile (which Keyes admits is an arbitrary cutoff point) of a minimum of seven of the thirteen measures of emotional health and positive functioning. This parallels the diagnostic protocol for a Major Depression Episode that requires a minimum of five of nine criteria be endorsed. To be *languishing,* then, is to endorse low levels (in the lowest tertile) of the same minimum number of diagnostic criteria for well-being, again, whether or not one has a diagnosis of major depression. One may also have moderate mental health, wherein the person is neither languishing nor flourishing. This creates a broad consideration wherein each individual in the sample is assessed as meeting the diagnostic criteria for major depression or not, and within each of those categories, respondents are deemed to be either languishing, moderately mentally healthy, or flourishing.

Keyes applied this framework to a sizeable sample of nearly 5,000 people in the United States and found that of the individuals who denied having experienced a major depressive episode, nearly 86% of the sample, only 17.2% were actually considered to be flourishing (Keyes, 2002). This strongly suggests that more than “inert good intentions” are needed to promote mental health beyond a lack of depression.

Huppert and So (2011) performed a similar operation using data from the 43,000 respondents to the European Social Survey (ESS), representing 22 countries. Their diagnostic criteria for *flourishing* were based on factors deemed to represent the polar opposites of the diagnostic criteria for both Generalized Anxiety Disorder and a Major Depressive Episode, with consideration of both DSM-IV and the International Classification of Diseases – 10 (ICD-10). Ten terms were identified, representing factors of positive emotion, positive characteristics, and positive functioning, and these terms were matched with extant items from within the ESS. The arbitrary point decided upon for a diagnosis of *flourishing* was a necessary endorsement of the single positive-emotion item, as well as all but one of the items of each of the other two factors. Consideration was given only to *flourishing* and not to comorbid mental illness. The results of this diagnostic exercise revealed that an estimated 15.8% of the European populace are *flourishing* with a vast spectrum varying both by individual country and by European Region (Huppert & So, 2013). Thus, more than four out of every five European individuals are not *flourishing*.

In the face of these data, we would be remiss to just leave well enough alone.

The Present Study

There are numerous approaches to well-being, but two, known as subjective well-being (SWB) and psychological well-being (PWB), have come to the fore as the predominant approaches to well-being in psychology. SWB, the feeling-well approach to well-being, is an atheoretical three factor model (life satisfaction, presence of positive affect, lack of negative affect) (Diener, 1984). PWB, the functioning-well approach to

well-being, is a theory derived six factor model (autonomy, positive relations with others, environmental mastery, self-acceptance, purpose in life, and personal growth) (Ryff, 1989b). These two models were developed concurrently, but did so by treading very different paths. Their development has, owing to this concurrence, been accompanied by a strong sense of competition in a race to 'define' well-being. Each of these approaches rests upon highly idiosyncratic philosophical, epistemological, and psychometric bases (some explicit, others implicit), and each has noteworthy detractors whose critiques are whitewashed at best, or outright disregarded at worst. The distinctiveness of each of the approaches to well-being has not simply resulted in conceptual ambiguity for those looking in from outside the niche world of well-being research, but it has hindered collaboration and integration within the field of well-being studies itself. Each of the prominent schools of thought in well-being remains isolated in their respective corner like prize-fighters between rounds, bolstered and swabbed by supporters while being jeered by supporters of the opponent. Thus, meaningful integration has largely been eschewed in favor of a static sense of antipathy. Third-party scholars have, however, taken up the call and have worked toward some measure of integration. Some scholars have examined the factorial structure of the various scales of well-being to determine if SWB and PWB are in fact measuring the same phenomenon while others have proposed theoretical frameworks for dynamic integration.

Jayawickreme, Forgeard, and Seligman (2012) proposed one such model that draws from integrative work found in well-being studies outside psychology. Their model provides a parsimonious framework for both the course followed by and categories of well-being. The foundation of this model, the course of how well-being occurs, is an

adaption of a systems-informed model known as an engine model wherein well-being is parsimoniously thought of in terms of inputs, processes, and outcomes. This proposed model represents arguably the most promising attempt at complimentary integration of the SWB and PWB models, alongside numerous other factors from well-being studies across disciplines.

The engine model of well-being has not, however, yet been subjected to empirical scrutiny to determine if it is a viable model for integrative consideration of well-being. The present study will utilize data from the second round of the comprehensive Mid-Life in the United States (MIDUS 2) study to examine the validity of the engine model proposed by Jayawickreme, Forgeard, and Seligman (2012). Various iterations of the engine model were tested using path analysis with a primary model employing scales of the two most prominent schools of well-being as well as demographic correlates identified from the literature. The models were tested for goodness of fit and to examine the moderating role of process variables as proposed.

Chapter Two

Literature Review

Philosophical Roots

Flourishing prevalence studies strongly suggest that the field of psychology would be remiss to end the discussion of mental health solely with the amelioration of psychopathology. Simply put, the development of the good life, of well-being, requires a broader conception of mental health. With this in mind, proponents of well-being have, with varying degrees of willingness, plumbed the depths of philosophy to inform the development of their models of well-being. To truly plumb those same depths would be beyond the scope of this review; however, the philosophical correlates of well-being models merit consideration in order to fully understand the foundation of contemporary well-being research. Psychologists are obliged to give appropriate attention to the philosophical underpinnings of their research in order to avoid a range of unintended assumptions regarding, among others, the epistemology, ontology, and axiology of the theory building and research in question. These, however, are tricky points that are not frequently discussed, and perhaps more often, are avoided outright, by psychologists. This is because the answers to these questions are not very forthcoming. Two researchers could very easily approach well-being from opposing paradigms, and each has the unquestionable right to do so in a thoughtful way, utilizing methodologies congruent with the assumptions of their paradigmatic stance. There are, however, with many points of potential conflict that, at very least, deserve to be named, even if they are not likely to be settled, as these research programs *compete* in the court of academic public opinion (Ponterotto, 2005).

The philosophy underlying well-being will presently be analyzed beginning with a general discussion drawn from the broader world of well-being studies. Following this, the discussion will be honed down to present the philosophy of well-being as understood in the world of psychology (before the operationalization thereof). This will be done largely with the aid of a highly informative scholarly debate about the current philosophical taxonomy of well-being studies in psychology that dominated the pages of the *Journal of Positive Psychology* (*JPP*) during 2008-9.

The most basic distinction to make in the discussion of well-being falls into the realm of axiology, or consideration of values. Philosophers Tiberius and Hall (2010), responding to the debate in *JPP*, state that there is an imperative for psychological theories of well-being to bear in mind, first and foremost, the distinction between objective and subjective theories. They define subjective theories of well-being as those theories, "according to which whether something counts as part of a person's well-being depends on her subjective psychological states" (p. 213). This definition includes those models of well-being, such as SWB, that are associated with hedonic forms of well-being. These theories hold subjective individual assessment of pleasure, both affective and cognitive, as a backbone. Objective theories, on the other hand, are those theories that, "claim that there are at least some components of well-being whose status as components of well-being does not depend on people's attitudes toward them" (p. 213). Well-being models, such as PWB, are included in this camp, as they include prescriptive objective items thought to constitute the good life, as opposed to subjective satisfaction, at their core.

Tiberius and Hall quickly note that these factors provide each type of theory with both advantages and disadvantages that raise significant questions of epistemology. For instance, subjective theories carry the distinct disadvantage of hedonic adaptation (a topic of much debate and discussion in its own right, e.g. Easterlin, 2003; Diener, Lucas, & Scollon, 2006) wherein a person in objectively poor conditions, such as an oppressed person, favorably adjusts their standard for subjective satisfaction in accordance with their station – despite being objectively oppressed or mistreated. Objective theories, for their part, have an almost unavoidable pall of elitism that makes them, subjectively, distasteful to many.

Thus, Tiberius and Hall note that while neither approach is perfect, psychologists must understand these underpinnings, particularly in the context of policy decisions. Namely, only objective theories are prescriptive (or normative), and as such they carry greater utility in the context of policy decisions where scant resources are available for research and implementation aimed at the promotion of the good life (Tiberius & Hall, 2010).

Gasper (2010) warns that a reduction of well-being theories into either subjective or objective theories is an oversimplification driven by the need for parsimonious solutions that can be easily touted by policy makers. He warns that while it may seem like an attractive option, in so doing "we typically hypostatize or reify a noun – 'well-being' or 'quality of life' – suggesting a concrete definite thing" where one does not necessarily exist as such but rather we are placing artificial limits on a broader, more dynamic phenomenon (p. 6). Noting six dimensions (scope, values, research methodology, purpose of research, point of view, and theoretical framework) within

which there are variations when giving consideration to well-being, Gasper suggests that a 2x2x2 model be adopted to provide a broader array of starting points for well-being theories and research: objective/subjective; private values/public values; self-report/observed states or behaviors. The resultant eight options, while still categorical and limited, illuminate a greater swath of options within which well-being can be approached. Gasper, an economist, is, admittedly, speaking to the larger world of well-being studies including a number of disciplines such as economics, whereas psychology typically retains the binary view of well-being.

The frameworks suggested by Gasper and others like him (e.g. Veenhoven, 2007), while not commonly employed by psychology, are worth noting. As well-being studies in psychology develop greater complexity across time, the sophistication of the underlying philosophical conceptualizations will likely have to grow concurrently. Well-being studies have struggled to define themselves, dancing in, on, or around so-called *happiness studies* (e.g. Diener, 1984), without being entirely comfortable with the term (Annas, 2004). In turn, well-being studies in psychology currently tend to align (or are cajoled into be aligned, as is argued by Kashdan, Biswas-Diener, & King, 2008) with one of two specific philosophies: hedonism or eudaimonism (Ryan & Deci, 2001).

In the broad framework discussed above, hedonism is categorized as a subjective theory of well-being, because it gives primacy to individualized satisfaction. Eudaimonism, which psychologists tend to associate with functioning and the fulfillment of criteria, is categorized as an objective theory of well-being. Both hedonism and eudaimonism are concepts that have been hotly debated since ancient Greece, and as such, the interpretation of each of the respective theories, including their place as

objective or subjective theories, has been the subject of significant scholarly argument (Deci & Ryan, 2008).

Hedonic Philosophy

Now comes the hard part: how can abstract philosophical concepts dating back thousands of years be satisfactorily and succinctly defined (with the aim of ultimately operationalizing them)? Herein lies the crux of the challenge. Hedonism presents less of a challenge and as such shall be addressed first. Stated broadly, philosophical hedonism is a subjective theory wherein a direct equivalency is made between happiness (a proxy for well-being) and pleasure. This philosophical stance originates with the Greek philosophers Aristippus and Epicurus (Ryan & Deci, 2001; Waterman, 2008; Keyes & Annas, 2009). In other words, one has well-being when pleasure is experienced and lacks well-being when displeasure is experienced. This fairly commonsense basic conceptualization forms the basis for more sophisticated iterations of hedonic thought, such as the utilitarian philosophy of Mill and Bentham that move beyond the pleasure of an individual to the pleasure (or utility) of larger groups of people (Tiberius, 2013; Forgeard, Jayawickreme, Kern, & Seligman, 2011; Waterman, 2008).

It sounds simple enough, right? Identify individuals experiencing pleasure and identify the antecedents to that pleasure; however, as Diener (1984) notes, it is more complicated than that, as pleasure and pain are necessary bed-fellows, each providing context for the other, which necessitates more subtle nuanced understandings of hedonism. Vittersø (2013) enumerates the details of exactly how complex considerations of hedonism can be. Pleasure itself, for instance, can be understood as either a physical

pleasure or as a sense of satisfaction, such as when the team that you support wins the Super Bowl. This dichotomy leads to the question: are all pleasures created equal? As one reviews even a short list of pleasures, the seemingly apparent answer becomes "No."

Scientific psychology, Vittersø notes, has taken up a similar distinction with considerations of basic biological inclinations toward pleasure versus a second-order pleasure regarding some specific thing that, in a different circumstance, might not have that same experience of pleasantness, giving the example of the sweetness of chocolate eaten by someone already quite full (to the point of nausea) of chocolate – something that is objectively sweet tasting, but displeasing on another level. In other words, pleasure can be experienced, and meta-pleasure, or pleasure at having experienced a pleasure, can be experienced. In all, Vittersø identifies three distinct characterizations of pleasure, two deriving from emotions (first and second order) and the third from non-affective cognitive judgments and types of pleasures may derive from any of a range of biopsychosocial domains (Vittersø, 2013; Waterman, 2008). Not all pleasures are created equally, which, with the clarity of hindsight, now seems as intuitive as the initial assumptions of simplicity placed upon hedonism to begin with. Kashdan and colleagues (2008), however, note that hedonic philosophy is often criticized for the perception of an inherent lack of values that will, taken to the extreme, justify extreme cruelty in the name of the pursuit of pleasure. Annas (2004), in a broader discussion of the proper way to approach the study of happiness, critiques hedonism (without calling it as such) by noting that, "Some people feel happy when helping old ladies across streets; others feel happy when torturing puppies" before stating somewhat emphatically that the implication is that, "happiness comes down to whatever you like" including the aforementioned

prophetic warning about the welfare of puppies (p. 45). Anecdotally, this writer recalls his first exposure, as a child, to the word hedonism coming in the form of a completely garish commercial advertising a tropical resort of the same name, leaving the impression that (as was directly advertised) hedonism was literally a philosophy of *anything goes*. The implications were, and are, as Annas noted, somewhat frightening.

Kashdan and colleagues (2008), however, are quick to respond that, "[w]e have not seen the legions of people who are made truly happy through anti-social or morally reprehensible behavior" (p. 228). They argue that the relegation of hedonistic philosophy (and its doppelganger SWB) to an inherently suspect second class is not only a disservice to our understanding of human well-being, but it would imply that much of psychological research (anything employing self-report) is inherently suspect as well. As greater consideration has been given to the complexity of hedonic philosophy, however, it has been noted that hedonism is not solely to be conceived of as liberally subjective, with some even suggesting that it is possible, theoretically, for hedonism take on the form of an objective-list theory (Tiberius, 2013).

Eudaimonic Philosophy

Eudaimonia presents as a notably more challenging philosophy to define. Aristotle endorsed the idea of eudaimonia as a philosophical alternative to hedonism – the aim of life is not to live for pleasure (hedonia) but to live for eudaimonia. The term itself implies living in a manner concordant with a full personal potential (Waterman, 1993). As was noted above though, hedonism is a multifaceted thing; in turn, disagreement abounds regarding specifically what aspect of hedonism Aristotle intended

eudaimonism to counter. As a result, a veritable many-headed hydra of eudaimonic iterations has emerged centered loosely around eudaimonia as an amorphous objective theory of well-being. The resulting definitions appear to have come about through both retrograde and anterograde means. Anterograde as philosophers have struggled with various ways to translate the word and the idea of eudaimonia as Aristotle intended. Retrograde as psychologists have taken a look at diverse and disparate concepts and placed them under the collective auspices of eudaimonia (Waterman, 2013; Kashdan, Biswas-Diener, & King, 2008).

Waterman (2013), arguably the fiercest proponent of eudaimonic philosophy in psychology, lists several forms taken by eudaimonia, including: happiness, flourishing, and self-realization. Herein lies the problem: what, exactly, *is* the philosophy of eudaimonia that has allowed it to be understood by contemporary psychology in so many varying and disparate ways? Kashdan, Biswas-Diener, and King (2008) opened up a fruitful discussion in the pages of the *Journal of Positive Psychology* about exactly that point by raising several issues with contemporary treatment of eudaimonia (particularly as opposed to hedonia, and SWB in particular.) Chief among their list of concerns is their understanding that eudaimonia was intended by Aristotle to refer to a realization of virtues. What follows is, they argue, that whether or not someone achieved their full potential is something that is best left to retrospective consideration – posthumously – and by the assessment of others. Further, they argue that, even were appropriate operationalization of virtues to exist (an assumption they question), there is no set list of virtues or values that would fully and accurately constitute eudaimonia, making it impossible to ever accurately measure. The term has, they charge, taken on a catch-all

quality for anything relating to objective theories of well-being, drawing concerns of *bracket creep* – namely, if a concept is not hedonic well-being, then it must be eudaimonic, at least for now. They conclude that "[w]e are not convinced that an objective notion of happiness is possible or, more importantly, meaningful or useful" (Kashdan, Biswas-Diener, & King, 2008, p. 223).

This critique sent the world of eudaimonia researchers into a veritable tizzy! As Tiberius and Hall were quick to note, however, the onus for these critiques rests firmly on the shoulders of those psychologists that would operationalize and assess eudaimonia, and not in this "cherished philosophical concept" itself (Tiberius & Hall, 2010, p. 212). The irony, however, is that the responses of a cadre of psychological proponents of eudaimonia to this article arguably illustrated the murky, or at best inconsistent, understanding of eudaimonia that has informed much of the research conducted under the auspices of eudaimonia. This does not necessarily discredit the research in question, rather, it illustrates the sometimes unsteady understanding philosophical base upon which much nominally eudaimonic research is done.

Waterman (2008), responding to the critiques of Kashdan et al. (2008), states that their concerns show a narrow and antiquated understanding of eudaimonic philosophy and cites several contemporary eudaimonic philosophers that incorporate subjective assessment of virtuous living into the extant pursuit of virtues and righteousness. Waterman (1990) himself has termed this modern eudaimonia *personal expressiveness* – the individual realization of some potential that corresponds with an objective good. Other eudaimonist psychologists, however, may not be as apt as Waterman to incorporate the adaptations of contemporary eudaimonic philosophers. For instance, Ryan and Huta

(2009) suggest that eudaimonic concepts may include any of those things that serve as antecedents to hedonia. In so doing, they make passing mention of Aristotle and retain a fairly inclusive (and somewhat vague) definition of eudaimonia, stating that "Aristotle's goal in discussing eudaimonia was to determine what functions, ways of living and values best represent and promote human wellness and flourishing" (p. 202).

Keyes and Annas (2009) offer what is, perhaps, the most compelling (if somewhat acerbic) treatment of eudaimonia from the entire foray (in which they state flatly that all of Kashdan et al.'s arguments are wrong and that Waterman has ignored three decades of eudaimonist philosophy to create a eudaimonia that is "excessively eccentric" p. 197). They reject the objective (eudaimonia) versus subjective (hedonia) distinction and, in a somewhat circular manner, state that eudaimonia *is* what life is lived for, whatever that may be. They acknowledge that such a definition is not necessarily exclusive or inclusive of hedonia – the two may overlap, but are not inevitably required to do so. In other words, my eudaimonia may be living for pure unadulterated hedonism, but even if it is not, I will likely experience some measure of hedonia (pleasure) from doing so, with central focus being upon that which I am living for rather than the ancillary benefit. They conclude that eudaimonia is best defined as "*the quality of your life as a whole*, as opposed to just having good feelings, or getting what you want, or enjoying something you are doing" (p. 198) which adequately informs the simplest contemporary distinction between eudaimonia and hedonia as functioning well versus feeling well, respectively (Keyes & Annas, 2009). Waterman (2008) has similarly stated a direct relationship between hedonia and eudaimonia. Contemporary eudaimonist philosophy would state

that while hedonia is possible in lieu of eudaimonia, eudaimonia will never truly occur in the absence of some measure of hedonia.

Subjective Well-Being (SWB)

How is philosophical hedonia to be translated into the language of empirical science? Perhaps more specifically, how was hedonia transformed from an ancient philosophy into a branch of well-being studies in psychology? The development was far from straight-forward and not, arguably, linear. In fact, it is interesting to note that much of the discussion above regarding the philosophical roots of hedonia as understood in psychology was not drawn from scholars associated with SWB, the traditional hedonic correlate in well-being studies in psychology, but rather from those scholars associated with eudaimonic philosophy in psychology. This is not accidental, in fact, it is a fundamental point of emphasis to consider when attempting to understand SWB and as such it will be explained short order.

The prominence of SWB in psychology is directly tied to the work of psychologist Ed Diener (Larsen & Eid, 2008). This is not to say that he is the sole originator of SWB, although he is frequently credited as such. That said, Diener has been widely acknowledged as the primary progenitor of SWB since publishing a landmark review of SWB in the journal *Psychological Bulletin* in 1984. That original review set the stage for a massive explosion of SWB research that continues to this very day. That review covered a vast breadth of research from models to methodology to theory and philosophy, but in the midst of all of this, Diener was (and still is) emphatic that SWB is new enough that it should be approached in an inductive and atheoretical manner until the

aggregate data reveals an appropriate framework (Lucas & Diener 2015; Diener, 1984). This directive has largely been followed, as many of the most prolific researchers of SWB are directly associated with Diener. Thus, the association with hedonic philosophy has been made, in large part, retrospectively as a manner of comparison with alternative approaches to well-being, rather than from a philosophy-driven, theoretical base (Kashdan et al., 2008).

The result of this avowedly anti-theoretical stance is that, despite several decades of SWB research, several major unanswered questions remain. SWB will be discussed in five sections: a basic definition of SWB; the debate about the most appropriate methodology to measure SWB; a consideration of the ambiguity that remains in the tripartite SWB model; a discussion of the debate around hedonic adaptation; and a broad review of relational studies of SWB.

Contemporary SWB exists upon a compact frame. The roots of contemporary SWB can be traced directly to Bradburn (1969) who first suggested that positive affect and negative affect were distinct constructs. This is in contrast to a conceptualization of positive and negative affect as two ends of a single continuum. Diener and his colleagues (1985) furthered Bradburn's distinction by explaining affect in terms of frequency *and* intensity – not just how often a certain affect is experienced but to what degree. Namely, it was found that in terms of frequency alone, positive and negative affect are negatively correlated, but the inclusion of intensity allows them to be distinguishable, independent constructs. Frequency and intensity were found to be relatively uncorrelated aspects and thus, affect conceptualized through frequency and intensity helps to explain the separateness of positive and negative affect. Affective intensity, between positive and

negative affect, was found to consistently correlate at .70, but when affective intensity was removed from the overall picture, positive and negative affect (in terms of frequency) were found to be negatively correlated from a measure of -.46 to -.86 meaning that "in terms of subjective well-being, the intensity dimension implies that low- and high-intensity persons typically experience happiness and unhappiness in very different ways" whereas the prevailing assumption had been that both positive and negative affect always existed solely in lieu of the other, intensity adds a separable dimension of complexity (Diener, Larsen, Levine, & Emmons, 1985, p. 1263). Schimmack and Diener (1997), in a series of studies, validated the constructs of affect intensity and frequency in distinguishing between positive and negative affective states and suggested that *event* may be more meaningful than *personality* in the explanation of the variance in intensity. In other words, the meaning and personal import of a given event has more of an influence on affective intensity than does personality characteristics such as extraversion or neuroticism. Further, unpublished research by Diener and his colleagues (noted in Lucas & Diener, 2015) indicates that frequency ultimately has a larger influence on overall SWB, as consistently high intensity may have associated detrimental health consequences. Reich, Zautra, and Davis (2003) reviewed the literature regarding the relationship between positive and negative affect and found evidence sufficient to say that both affective models – independent and unipolar – are valid depending on a wide array of factors and they present a dynamic model to explain this relationship.

Basic SWB builds a tripartite model upon roots that includes a cognitive component in addition to the affective components, namely, presence of positive affect, absence of negative affect, and life satisfaction. This model is very strongly associated

with Diener, but he (in his 1984 review) credits the model to the work of Andrews and Withey. This simple tripartite model is the basic starting point for most research on SWB, which typically involves correlations with a broad array of demographic factors. SWB is attractive in its seeming simplicity – studies reporting correlates of given levels of SWB are published at a dizzying pace that only seems to be increasing across time. The compact size of this model is deceptive, however, as there are numerous additional points to consider regarding the conceptualization and measurement thereof.

Diener (1984), from the point of his initial review, acknowledged concern about research methodologies employed in SWB research, and particularly the question of how SWB can be meaningfully assessed beyond retrospective self-report measures. SWB is, as the name states explicitly, subjective, and as such, the initial million dollar-question was how to appropriately assess a subjective state without the complications and woes associated with retrospective memory. Techniques for measurement have run the gamut, including the somewhat perplexing option of informant report (Pavot, 2008). This salient problem has been the Achilles Heel of SWB research, as much of the data used in SWB are self-report survey data that often rely on relatively few items. This problem is of particular concern when seeking some degree of longitudinal perspective from a respondent.

The result has been the formation of two separate frames of thought. These schools of thought parallel the distinction made by Kahneman and Riis (2005) between the *experiencing self* and the *remembering self*. In other words memory produced from an aggregate view of experiences (via the *experiencing self)* versus the recall of a summative whole (via the *remembering self*). For example, the *experiencing self* has a great time

moment-to-moment during the baseball game whereas the *remembering self* had a horrible time due to the nail-biter ninth-inning not going in favor of the home team. The question, then, in the study of SWB, is how suspect are the reports of the *remembering self*?

First are those who say that retrospective self-report is inherently suspect and needs to be rejected, in favor of some aggregate method, or at very least seriously repaired. In the other camp are those who agree, in principle, with the first camp, but acknowledge that it is a very tall order to do something more in a meaningful way, and in turn justify the use of retrospective report as acceptable (Lucas & Diener, 2015; Kashdan et al., 2008). These two schools of thought will be addressed in turn, with the latter being addressed first.

Researchers in the camp that continues to utilize retrospective self-report have followed the lead of, and built upon, the Affect Balance Scale of Bradburn (1969). The initial approach Bradburn employed to assess positive and negative affect involved the presentation of a list of ten affect-representative adjectives, five positive and five negative, which the respondent would endorse or deny based on their experience "during the past few weeks." The scoring of this assessment, as the name Affect *Balance* Scale (emphasis added) implies, involved subtracting the negative affect score from the positive affect score. Subsequent SWB researchers have increased the sophistication and breadth of their surveys, but they have remained in fairly close proximity to the work of Bradburn.

Affective assessment has typically followed the model wherein the respondent endorses or denies, typically using a Likert scale, the relationship of an affective

adjective to their experience during a certain period of time (Pavot, 2008). For example, the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), one of the most prominent affect scales, presents a list of twenty positive and negative adjectives. The respondent is told to indicate, on a 5-point Likert scale from 1-'very slightly or not at all' to 5-'extremely', how a given adjective describes his or her feelings during a given period of time, to be determined by the researcher. Options for time periods include: moment; today; past few days; week; year; or general.

Assessment of life satisfaction follows a similar model, with respondents rating, typically on Likert scales, the applicability of statements to their life. Life satisfaction can be assessed in a general sense or tailored to specific domains, according to the research question. Time can also be adjusted. The Satisfaction with Life Scale (SWLS; Pavot & Diener, 1993) is a commonly used, 5-item life satisfaction assessment that asks respondents to rank, on a seven-point Likert scale, the applicability of general life satisfaction statements to their experience.

Diener (1984) acknowledged that there would be short-comings in self-report. He notes, in a broader consideration of SWB as trait versus state that there is only modest reliability across time. He cites several early studies, however, that indicate that factors such as social desirability do not correlate highly with SWB. Larsen, Diener, and Emmons (1983) reviewed extant measures and found reasonable construct and divergent validity across an array of self-report measures of the facets of SWB. Diener (1994) opines that while self-report measures have shown "adequate validity, reliability, factor invariance, and sensitivity to change" (p. 103) they are capturing SWB displayed through a cognitive lens, including affective aspects of SWB. Diener and his colleagues (1999)

continue to justify the use of retrospective self-report measures of SWB as not ideal but necessary and legitimate.

There are many, however, that adamantly oppose the use of self-report measures in SWB research altogether (Schwarz & Strack, 1999). Kahneman (1999) is a leading advocate for this approach, which he typically refers to as hedonic psychology or hedonic well-being rather than SWB, arguing that there are numerous flaws in human memory that come together to largely disqualify retrospective report, including the peak-end rule and heuristics. Heuristics are those go-to methods that we use to quickly and easily evaluate more complicated experiences. Thus, if survey respondents apply their typical heuristic to retrospective assessment of a given experience, the answer will be quick and easy, but not necessarily accurate, as the true experience was likely hewn down for mental parsimony.

The peak-end rule is the term used to describe the phenomenon wherein individuals remember the overall pleasantness or unpleasantness of an experience based on the peak affective intensity level or the affective level at the conclusion of the episode. Redelmeier and Kahneman (1996) tracked ongoing pain levels of individuals undergoing medical procedures and then asked them to retrospectively rate the experience. They found that while the duration of the procedure did not have a significant relationship with the evaluation of the procedure, the peak level of pain and the pain experienced during the final three minutes of the procedure did have a significant bearing on the retrospective evaluation. Later research has indicated that peak levels may be subject to the same flaws as general retrospective recall, and may be influenced during recall making it a less potent filter of affective memory, and that end levels may hold the most sway over

recalled affective memory, particularly when the peak level occurred more than twenty-four hours prior to the evaluation (Kemp, Burt, & Furneaux, 2008). Stone, Shiffman, and DeVries (1999) cite many shortcomings of retrospective memory, particularly the role of current mood and environment on recall. They suggest the incorporation of Ecological Momentary Assessment (EMA), as an alternative to self-report recall. EMA is a technique wherein an individual is asked to report on their current state (or whatever the variable in question may be) at several random times throughout the day, typically through some technological means. This technique removes some of the bias created by retrospective memory by reporting on the state in question with as much immediacy as possible. Also given consideration are greater environmental factors that have an effect on the person – such as the likelihood of blood pressure rising when confronted by someone with a white lab coat.

Advocates of the first approach, such as Kahneman, have, in effect, developed a distinct alternative approach to well-being that is often referred to as hedonic well-being (HWB), or hedonic psychology, that lays roots in hedonic philosophy via utilitarian philosophy (Kahneman, 1999). While HWB clearly parallels SWB, it does so in a manner that is not encumbered by the limits of the traditional SWB tripartite model (Christodoulou, Schneider, & Stone, 2014). There are those, such as Waterman (2008) that chafe at and discourage the distinction.

It is important to emphasize that both camps of researchers are interested in finding the most valid and reliable methods for researching SWB (and/or HWB). The researchers seem genuinely guided by the cause of the greater good. Diener, in a piece that reads like an academic victory lap, trumpets the advances in SWB research

methodologies such as the use of "experience sampling, biological measures, and informant reports" (Diener, 2013). Experience sampling methodology (ESM) is a long-standing method wherein respondents answer questions either at agreed upon times or in response to some stimulus (such as being paged) that are subsequently aggregated in the interest of arriving at a measure less sensitive to memory bias. This method has received quite a bit of attention within SWB research (Scollon, Kim-Prieto, & Diener, 2003). ESM, however, is quite costly and cumbersome to carry out (for both researchers and participants), despite recent advances in technology such as the smart-phone boom. In turn, ESM does not appear to have grabbed hold in SWB research in any meaningful way. Lucas and Diener (2015) note that to date, ESM has rarely been employed in long-term SWB research, again noting the burden that it places upon respondents. Further, while research utilizing informant report has been conducted (e.g., Pavot, Diener, Colvin, & Sandvik, 1991), later informant report research, in the forms of acquaintance report, clinician judgement, and directly observed social behaviors found that there is poor discriminant validity between types of well-being (Nave, Sherman, & Funder, 2008). This is, however, again in keeping with the position stated clearly by Waterman (2008) that, from a philosophically-informed model of well-being constructs, eudaimonic well-being cannot exist, as such, in lieu of hedonic well-being. Thus, while methodologies other than retrospective self-report have been employed, they have not been employed with sufficient consistency or skeptical rigor to truly herald a shift in SWB research. Rather, the distinction is increasingly felt between those who identify within the self-report domain (typically SWB researchers) and those who avoid self-report measures (and who typically identify with HWB).

Turning the focus to the researchers themselves, Larsen and Fredrickson (1999) complicate the issue even further by noting that the problems of retrospective memory are moot if the researchers have not done due diligence in defining the construct, particularly emotions, in question. Namely, emotions, and the working definitions thereto, must also state clearly whether they are being assessed "as (a) discrete and/or dimensional (b) states and/or traits and (c) event-related and/or diffuse" (p. 41). This definition is fundamental because it needs to inform the assessment tool used, and if the variable in question is poorly defined, an improper assessment tool may be chosen and retrospective memory bias becomes a non-issue as all of the findings may be called into question. A game of football would be tremendously interesting, albeit meaningless if one team showed up ready for a game of baseball – so too research that rests on ill-defined constructs will be lacking in clear meaning.

The difficulty of the aforementioned questions of *how* and *what* is being measured are compounded even further by ambiguity regarding the question of precisely how the tripartite model of SWB functions. Busseri and Sadava (2011) reviewed SWB literature and found that the three pieces of the SWB model – life satisfaction, positive affect, and negative affect – were treated inconsistently throughout the literature and appeared to be the subject of significant confusion on the part of SWB researchers. How precisely do the various pieces of the tripartite SWB model act upon one another? Are they all signposts of a higher-level phenomenon or are they entirely independent? Five distinct approaches to the conceptual organization of this model were identified throughout the literature and will be laid out in turn.

The first approach is one where the three components are considered as three independent pieces that are simply studied under the auspices of SWB, without SWB itself being a construct as such – much as oil painting, dance, and music could all be considered under the category of art. The word *independent* is to be stressed particularly, as noted by Busseri and Sadava, as those who follow this approach are so adamant that they choose to avoid considerations of the correlations that occur between the components. This approach may seem familiar, as it is in keeping with the original approach espoused by Diener. It is driven by the traditional emphasis of the components as separable, particularly positive and negative affect as well as a belief that by staying the separable course, a clearer picture of SWB will emerge. Thus, the primary focus remains on identifying correlates of each of the parts of the SWB model.

The second approach is hierarchical, viewing the three components of SWB as first order factors that represent a second order factor SWB. In this approach, SWB represents a latent factor that influences the components in predictable ways, namely, positive loadings for the life satisfaction and positive affect and negative loading for negative affect. Confirmatory factor analyses have supported this approach to SWB (see also Gallagher, Lopez, & Preacher, 2009). Busseri and Sadava note, however, that while confirmatory factor analysis has shown that a second order SWB has an influence on the first order parts, the evidence in favor of this approach has been far from definitive. This has led some researchers to suggest a hybrid of sorts wherein focus remains divided between the variance explained by second order SWB as well as the variance explained by the individual first-order components themselves (Busseri, Sadava, & DeCourville, 2007).

The third approach examines causal relationships between the various components. Particularly, the relationship between positive and negative affect and their collective effect on life satisfaction. This approach, while acknowledging the causal relationships between components, retains the ambiguous relationship between SWB and the three constituent parts that seems to be a sticking point in the first approach. In so doing it retains a vague definition of overall SWB itself. Busseri and Sadava note that the emphasis placed on life satisfaction (and how it is affected by positive and negative affect and the interplay therein) carries the tacit implication that life satisfaction is synonymous with SWB, as primary focus in this nominally SWB model is on the single life satisfaction factor.

The fourth approach is one wherein the three components comprise a composite representative of SWB. This approach seemingly represents an inverse of the second (or hierarchical) approach, in that the three parts of the model collectively influence the amount of SWB, as opposed to SWB representing a latent factor that influences the three components in turn. Busseri and Sadava note, however, that approach 2 (hierarchical) and approach 4 are calculated with similar methodology, namely with the latent factor being calculated through considerations of the components, causing these two approaches to appear nearly identical. They note that this approach, while similar to approaches 1 (individual components) and 2 (hierarchical), has added flexibility because it provides a clearer definition of SWB vis-à-vis the individual components as well as the freedom to explore the relationships between components as well as other correlates thereto.

The fifth approach sees configurations of the three components representing levels of SWB. According to this approach, configurations of SWB represent recipes for

various levels of SWB. This approach allows for both individualized considerations of SWB to be tested empirically. The configuration approach has grown tremendously in sophistication beyond the initial presentation of high levels of SWB as high life satisfaction, high levels of positive affect, and low levels of negative affect proposed by Diener (1984). Shmotkin (2005) discussed at length a dynamic model wherein SWB and associated configurations were adapted in accordance with a range of environments and utilities. He distinguishes between private, public, synchronic, and diachronic modules. The distinction between private and public, which is particularly germane to the debate regarding relationship of memory and social biases to retrospective self-report, is that an individual will utilize SWB differently for private, personal purposes, or what Shmotkin refers to as experiential, than will the individual reporting publicly their SWB as a social act of sorts, which Shmotkin calls declarative SWB. This distinction is particularly salient to this writer, in recalling his Nebraskan roots wherein presentation of declarative SWB was a primary social expectation that was, at least anecdotally, separable from private SWB.

The distinction between synchronic and diachronic can be thought of as those ways in which individuals discern between assorted concurrent types of SWB present within their experience (synchronic) versus those ways in which individuals discern between types of SWB experienced across time as part of a personal narrative (diachronic).

Shmotkin illustrated the complexity present within the configuration approach. Building upon this dynamic consideration, Busseri and his colleagues (2009) cluster analyzed data from both student and community samples and produced five distinct

configurations of SWB (1: high LS, high PA, low NA; 2: moderate LS, moderate to low PA, low NA; 3: moderate LS, moderate PA, high NA; 4: moderate LS, low PA, high NA; and 5: low LS, low PA, high NA) and found that increased levels of positive physical health, mental health, and interpersonal functioning were not solely limited to those individuals with the classic high-SWB (high life satisfaction, frequent positive affect, infrequent negative affect). Rather, they note that, for instance, individuals with moderate LS, moderate to low PA, and low NA were found to function at a level reasonably similar to the high LS, high PA, and low NA sample. They hypothesize that while these individuals may experience a deficit in life satisfaction and positive affect, their lack of relation to negative affect may ameliorate these lacks. This research raises questions about whether or not there exists the possibility of a single ideal SWB.

The dynamic and complex nature of SWB is complicated even further when the temporal aspect is given more attention. Namely, the concept known as hedonic adaptation. Brickman and Campbell (1971) note, somewhat ironically, in their seminal chapter that brought this topic to the fore, that the reason that utopias are confined to fantasy literature, owes to the common-knowledge fact that with the passing of time, even paradise will become boring. They declare that "[h]abituation will produce a decline in the subjective pleasurableness of the input" (p. 287). In other words, the factors that contribute to produce a given pleasure will not do so in an objective and consistent manner, rather, greener pastures must continually be sought in order to achieve the same level of pleasure as was initially experienced. Thus, as SWB research works to identify the subjective factors that correlate with a state of well-being, it must wrangle with the idea that SWB may well be a moving target, or rather that it exists on what Brickman and

Campbell call the *hedonic treadmill*. This is alternatively known as set-point theory, as the level of pleasure is said to return to a set-point across time as new pleasures are sought. This set-point is thought to be the result of heritable genetic factors that determine the set level of happiness that a person will typically experience over longer periods of time. The implication of this biological set-point is that interventions (whether they be psychological, economic, or some other such domain) are not likely to do more than to aid in retention of the set-point, as variance above or below will, with time, fade into the familiar level (Diener & Lucas, 1999).

Economist Richard Easterlin (2003) further complicates matters, however, by asserting that hedonic adaptation as proposed is too simplistic. Easterlin suggests that adaption is more nuanced than the idea that more and new pleasures must always be sought in order to maintain a given level of pleasure over time. He argues strongly against set-point theory in particular, stating that specific consideration must be given to a range of domains. Surgery ought not to be done with a sledgehammer. Particularly, he argues that while it is true that changes in pecuniary domains (those relating to money) do not produce an increase in well-being over time (resulting from the ubiquitous American ideal of *Keeping up with Jones'*), changes relating to physical self and family, such as death, divorce, or disability, do, indeed have an impact on well-being. The idea that rising incomes do not result in an increase in well-being is known as the *Easterlin Paradox*. (Easterlin notes that he is not simply arguing against psychologists, but is arguing against his fellow economists, who, in direct opposition to the position staked by psychologists, argue that more stuff will continue to make more happiness.)

Veenhoven and Hagerty (2006) argue again the Easterlin Paradox and provide data that suggest that an economic uptick does in fact produce higher, albeit only slightly higher, levels of well-being. In an effort to parse out the debate, Diener and his colleagues (2010) approached the Easterlin Paradox from a different angle. They hypothesized that the seemingly contradictory evidence offered by Easterlin versus that of Veehnoven and Hagerty could be resolved by looking at the two primary components of SWB separately, namely, the cognitive component (life satisfaction or judgment) and the affective component. What they found was that income was robustly correlated with the judgment based cognitive side of SWB. The affective side of SWB, however, showed poor correlation to income. Thus, both sides of the debate were, to some degree correct, as an increase in income is *not* correlated with *part* of SWB (Veenhoven & Haggerty, 2006; see also Luhmann, Hofmann, Eid, & Lucas, 2012 for a meta-analysis of data distinguishing between the cognitive and affective parts of SWB as pertains to hedonic adaptation).

Diener, Lucas, and Scollon (2006) proposed a handful of changes to Brickman and Campbell's original model of the hedonic treadmill, drawing from contemporary research on hedonic adaptation. First, they note that a hedonic treadmill does not exist around a neutral (neither happy nor sad) set-point that is returned to consistently; rather, they provided evidence that most individuals tend to experience set-points of higher SWB. Second, they note that set-points are both highly individualized and, citing twin studies, likely to have a genetic component that determines where the set-point of an individual is located. Third, they state that research indicates that an individual does not have one primary, universal *master* set-point that guides SWB across multiple areas of

life, rather people may have many set-points representing a number of domains, thus, my set-point vis-à-vis my home may be a different set-point than the set-point of my occupation. This echoes positions taken by Easterlin (2003) regarding domain specific adaptation. Fourth, also in keeping with Easterlin, they acknowledge that levels of SWB can change. Finally, they note that just as set-points appear to be highly individualized, so too is the process and substance of adaptation itself.

Many methodological and conceptual hurdles remain in the study of SWB, however, in keeping with the direction of Ed Diener, as well as the general conceptual primacy enjoyed by SWB, a wholly overwhelming number of studies are published each year. According to Diener (2013) the number of articles pertaining to SWB has ballooned from 131 publications in 1981 to 12,000 in 2012 (including a full three-volume complete collected works of Ed Diener). To review them all here is beyond the breadth of this review (to review even the reviews may arguably be beyond as well as they too are being produced at a dizzying pace); however, it is worthwhile to take note of some of the most recent reviews of these studies to give a flavor of the research being done under the auspices of SWB. Reviews relating to the areas of national accounts, demographics, and personality of SWB will be explored.

Prominent areas of contemporary SWB research. Diener, Oishi, and Lucas (2015) reviewed studies of national accounts of SWB. Their review follows the course laid out previously by Diener (2000) and Diener and Seligman (2004) that calls for national accounts of well-being to be established as supplements to economic indices that they deem to be inadequate indications of well-being. Diener and his colleagues (2015)

outline a set of ten characteristics that current literature suggests are reflective of nations with high SWB. Their review indicates that high SWB nations are: economically developed; adherent to rule of law and human rights; less corrupt; governed by more efficient and effective governments; subject to more progressive taxation systems; the beneficiaries of adequate income security and job training programs; protective of political freedoms while providing adequate civil protections such as property rights and employment laws; unharmed by the milieu of problems associated with high rates of unemployment; more physical healthy (e.g. lower rates of death by diabetes, heart disease, and cancer); surrounded by healthier natural environments. An impressive list, no doubt, however, there are several points to be made. First, the review makes several broad sweeping statements about positive benefits following from SWB with a causal relationship (e.g. "[SWB] research clearly reveals that it causes other outcomes that people desire – health and longevity, social relationships, good citizenship, and productivity at work" (p. 236). In support of this assertion, they cite the work of Lyubomirsky, King, and Diener (2005) that attempts to support several causal models while drawing support from strong correlations, limited longitudinal data, and a number of experimental studies showing causal patterns relating to positive affect. In that article, however, the authors acknowledge that there are several major questions remaining before conclusively drawing a causal relationship between SWB and other variables. Chief among their concerns is the overwhelming focus on positive affect, which is an important construct, but notably separable and distinct from the other components of SWB, particularly negative affect. Second, they acknowledge the very real possibility of additional mediating or third factors explaining the causality, as primary generalization

comes from longitudinal analyses and limited experimental studies. This author adds that while Lyubomirsky et al. provide some compelling evidence for causality (see also Diener & Chan, 2011), their work suffers from additional ambiguity as *happiness* is often used in the generic (while not entirely incongruous) sense, with insufficient consideration given to the way in which positive affect (the primary focus of this work) relates to the remaining SWB components, negative affect and life satisfaction, as well as to the general construct of SWB itself. Readers are reminded of the work of Busseri and Sadava (2011). Further ambiguity remains regarding the utility of a monolithic discussion of *high SWB* itself, as readers are similarly reminded of the work of Shmotkin (2005) that details the various iterations of tripartite SWB shown to correlate with positive measures.

Despite these admitted shortcomings, Diener, Oishi, and Lucas (2015) have pointed to the Lyubomirsky, King, and Diener (2005) article as proving a causal relationship between SWB and at least some of the findings. This is even more problematic as several of the stated characteristics found in the review, such as better physical health and healthier natural environments, were found to relate to high life satisfaction specifically and not SWB generally. Additionally, they write broadly about correlations for places with high SWB, but, as reviewed above, research indicates that *high SWB* is likely a more dynamic concept than initially thought. Finally, the first point made by Diener et al. in this review is that economically developed nations have the highest SWB. They cite Diener, Kahneman, Tov, and Arora (2010), which was likewise discussed above, that indicated that this relationship can be said to be true for parts, but not all, of SWB. Namely, evaluative judgment is likely to correspondingly increase with income whereas affect is likely to be subject to adaptation to a set point. Thus, while high

SWB may be correlated with economic development and wealth at points, to imply much beyond that is to prematurely rule on an ongoing debate. This selective reading and suggestive language in Diener, Oishi, and Lucas' review is troubling, particularly when considering that the review is intended to further both private and public policy decisions. SWB research has much to offer those making policy decisions, however, this influence must be wielded with abundant caution to avoid making causal claims that tread a fine line between suggestive and spurious.

Diener, Oishi, and Lucas (2009) discussed known demographic correlates to SWB. In addition to a discussion of the correlation of income with SWB, they discuss a correlation between age and SWB, noting that research has shown a decline in positive affect with increasing age, while negative affect and life satisfaction tend to remain stable. Pavot and Diener (2013) cite further research that indicates that negative affect may decline across age alongside positive affect, whereas life satisfaction may rise with increasing age. They note that while women tend to experience more extreme levels of SWB, average levels of SWB do not differ significantly between males and females. Married individuals typically have higher levels of SWB, although the reasons for this continue to be a topic of debate. Namely, does high SWB prime an individual for marriage or does marriage elevate SWB? The end of a marriage has been shown to correspond with lower levels of SWB, although research indicates that this decline is more severe with death of a spouse than with divorce. Research has similarly examined the link between religious practice and SWB, and while it has generally found a positive correlation, the literature is far from definitive (Pavot & Diener, 2013).

Lucas and Diener (2015) reviewed personality correlates of SWB. They note that consideration of personality characteristics is particularly important to our understanding of SWB as research has consistently shown that SWB is more strongly correlated with personality characteristics than with demographic variables. Similarly, personality characteristics have been found to be more stable across time, meaning that they are less susceptible to the influence of the things taking place in the life of the respondent. Lucas and Diener offer several possible explanations for the inequality between personality and demographic variables. First, they point out the intuitive point that it is an easy task to compile a lengthy list of demographic variables, each with their own contribution to variance SWB scores. Further, as Lucas and Diener note when discussing the seemingly simple variable of income, there are many compounding variables such as health, social circle, and job satisfaction, each of which complicates what should simply be a happy rich person. They also note that the concept of effect sizes are often overlooked or misunderstood. This is particularly true in discussions of correlations. For instance, Lucas and Schimmack (2009) looked at the small correlation between income and SWB, which typically correlate between .17 and .20 and, when broken down into meaningful groups (e.g., rich versus poor) they found that individuals in the *rich* group (earning approximately $200,000 per year) were on average between .79 and .88 standard deviations higher in SWB than were those in the *poor* group. Thus, despite the small correlation, there is important practical information about how different groups of people experience happiness and income. Finally, Lucas and Diener note that the correlations between SWB and personality characteristics may be inflated due to shared method variance, namely, personality and SWB are both assessed using self-report measures that

research has shown to artificially enlarge correlations as opposed to different assessment methods for each variable.

Steel, Schmidt, and Shultz (2008) performed a meta-analysis of 347 samples (representing 122,588 total respondents) and found that all of the big-five personality characteristics (neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience) significantly correlated with SWB. In fact, they found that, with the exception of openness that correlated only with positive affect, these personality characteristics correlated significantly with positive affect, negative affect, and life satisfaction. Particularly, they found that neuroticism correlated particularly strongly with negative affect and extraversion correlated particularly strongly with positive affect. They found that overall, personality characteristics correlated as high as .40 with SWB.

Lucas and Diener (2015) state that the literature suggests possible explanations of this relationship between personality and SWB. The first are termed instrumental theories, and they suggest that particular personality types may lead individuals to engage in particular behaviors or activities that, in turn, result in higher or lower SWB. New research, however, has called instrumental theories into doubt, as the varying personality characteristics have not shown to discriminate between activities. Temperament theories posit that personality influences the ways in which an individual reacts to a given event or activity, if not the activity or event itself.

SWB research has experienced astonishing growth over the course of the last three decades. There remain, however, several fundamental questions regarding the basic structure of SWB and the most desirable configuration(s) thereof. Diener continues to argue that there are not sufficient data to answer many of these questions (e.g., Lucas &

Diener, 2015) and in turn patience is the name of the game, but a review of SWB research suggests that failure to act on many of these fundamental questions may ultimately find the castle sinking into the sand as the badly needed foundation is lacking despite tremendous construction above. SWB research, while beneficial, desperately needs conceptual clarification to both accurately guide future research and to accurately and appropriately aggregate and make sense of existing research.

Psychological Well-Being (PWB)

SWB followed hedonic philosophy as it developed as a theory-averse reflection of those indicators of general subjective satisfaction or pleasure and honed in on cognitive life satisfaction as well as the frequency and intensity of positive and negative affect to do so. Psychological well-being (PWB), standing opposite SWB, intentionally followed the tradition of eudaimonic philosophy. The result has been a markedly different approach to understanding human well-being. Eudaimonia, while exceedingly challenging to nail down and define, is generally understood to be the concept of living in congruence with an objectively possible, virtuous self. This broad definition, employed as a foundation for understanding human well-being, has spawned a multiplicity of conceptual formulations. Each formulation attempts to accurately and parsimoniously provide a model of well-being that is as generally applicable as possible. This stands in stark contrast to the near homogeny accorded to SWB as the representative of hedonic philosophy as well-being. This stands to reason, however, as the objective implications of eudaimonia, even if not solely objective (e.g., the inclusion of subjective considerations suggested by Waterman, 2008), means that there is some generally definable best path to

follow to arrive at well-being, whereas subjective well-being is, at the core, a reflection of the subjective desire of the individual. This distinction continues to be a sticking point between SWB and PWB, namely, proponents of SWB (e.g. Lucas & Diener, 2015) argue that no objective list will ever be sufficiently comprehensive to define the good-life promised by well-being, and thus it is futile to attempt to develop such theories.

Models of eudaimonic well-being have developed, in turn, across a great breadth of ideas, as scholars draw from a range of sources to determine precisely what objective functions ought to be proffered as components. This broad abundance of models precludes a comprehensive discussion of each in the present review. Instead, primary focus will be given to the PWB model of Carol Ryff (1989a; 1989b), as it is arguably the most prominent eudaimonic model of well-being. Brief consideration will likewise be given to two other notable models: self-determination theory (SDT) proposed by Ryan and Deci (2000) and personal expressiveness (PE) of Waterman (1993; 1990).

Ryff (1989a) developed her model of psychological well-being in a somewhat roundabout way. Namely, she was responding to a dearth of theoretically informed models for successful ageing (which can be understood, in effect, as well-being throughout the lifespan). Generally, she noted that a lack of theory, and particularly of development-informed theory, can lead to bias against older individuals. This was particularly true when extant well-being approaches were applied to older populations. Her critiques of the extant research on successful ageing were four, and they will be each be addressed in turn as they concurrently allude to the motivations driving developers of eudaimonic theories. First, she notes a general lack of theoretical focus. This resulted in ill-defined or haphazard measures cobbled together to measure ill-defined constructs. The

reader is reminded of the work of Busseri and Sadava (2011) that highlighted SWB, not as cobbled together, but as suffering from ambiguously defined relationships between components. Second, she notes that the focus remained entirely upon the deficits inherent in ageing while failing to describe in any meaningful way typical or optimal courses of ageing. This clearly parallels the broader field of well-being that is, in a sense, responding to the pathology-forward focus of the field of psychology. Third, she notes that research on ageing (and well-being in general) has not been adequately developmental, and has in turn, suffered from what she calls a "pervasive stability bias" (p. 38) wherein indicators of well-being are presumed to be consistent across the life-span, leading to unfair assumptions, particularly regarding older individuals who are developing appropriately for their cohort. This criticism is directly tied to the first, as Ryff notes that this bias is likely resulting from measures and constructs that discount unexpected (albeit accurate) indications of well-being varying by life-stage. Finally, Ryff notes that axiological considerations must be given to well-being. Namely, Ryff argues that "conceptions of well-being are human constructions, and thereby, open to diverse and competing definitions as well as to cultural variation and historical change" (p.39). Thus, we carry value considerations into any discussion of well-being, be they explicit or implicit, and we must acknowledge them in order to, at least, disclose the values informing our conception of what it means to live well. While this is particularly germane to Ryff's original discussion of ageing, and the social implications placed thereupon, it is likewise salient to all eudaimonic formulations of what *the good life* is.

Ryff draws from theories in three areas of psychology to help inform her model: developmental theories, such as those of Erickson and Buhler; personal growth theories,

such as those of Rogers and Maslow; and the literature outlining positive functioning as mental health, most prominently the work of Jahoda. From these three areas, Ryff examined the individual components included in each and took note of conceptual overlap. From this overlap, six dimensions emerged that are discussed consistently across the three domains with greater or lesser specificity. These dimensions were developed with the explicit understanding that while they broadly represent positive mental health and personal growth, they will do so in a way that will not be consistently representative of every age cohort all the time. They will, rather, likely display unique profile configurations that are dynamic over time, as will be discussed in turn. The theoretically derived dimensions of PWB are: self-acceptance; positive relations with others; autonomy; environmental mastery; purpose in life; and personal growth. Ryff, remaining mindful of her own prescient critique regarding implicit values present in theories, preempts concerns about value imposition by experts by noting that "we must (…) be mindful of the values that are implicit in our theories as well as be attentive to the values of those we study" (p. 49).

Ryff's PWB follow most closely the six themes of mental health observed by Jahoda (1958). Jahoda, then a professor at NYU, was one of a number of scholars tasked by the Joint Commission on Mental Illness and Health to prepare reports on the state of various aspects of mental health for the United States Congress. She was specifically tasked with identifying conceptualizations of positive mental health within the psychological literature. Her work, *Current Concepts of Positive Mental Health*, is a must read for anyone interested in the positive side of mental health, not simply for the thoroughness of her review, but for the thoughtfulness with which she approached her

topic. At that early date (comparatively), she decried the notion that lack of mental illness was synonymous with mental health. Similarly, she noted the importance of clearly and explicitly stating the values implied in any definition of mental health. The six approaches identified by Jahoda were: "*attitudes of an individual toward his own self"; "growth, development, or self-actualization* as expressions of mental health"; "a central synthesizing psychological function, […] called *integration"; "Autonomy"*; "adequacy of an individual's *perception of reality;* and *environmental mastery"* (p. 23, italics original).

Four of the six dimensions identified by Ryff – self-acceptance, personal growth, autonomy, and environmental mastery – directly line up with approaches 1, 2, 4, and 6 identified by Jahoda. It is worth noting that in addition to the strong reliance upon Jahoda by Ryff, Jahoda's review itself drew upon many of the same theorists as Ryff, such as Maslow and Erickson.

Upon this foundation, Ryff (1989a) identified ideas that appeared consistently throughout the various approaches, with particular emphasis on life-span development models. Ryff's sources for each of her six dimensions will be discussed in turn. For example, in the self-acceptance dimension, Ryff aligns Jahoda's attitudes toward self with self-actualization of Maslow, sense of self-worth described by Rogers, Jung's idea of the recognition of the various iterative parts of the self, as well as Erickson's ego integrity stage, wherein an older individual accepts and incorporates the various iterations of their life.

Positive relations with others was not drawn directly from Jahoda, who did discuss "an emphasis on the ability to love and […] an adequacy in interpersonal

relations" (Ryff, 1989a, p. 42) while not making it one of her six aspects of positive mental health. This aligns with the social interests of self-actualizers described by Maslow, the trusting nature of a fully-functioning person described by Rogers, warm relations toward others described by Allport, as well as Erikson's stages of intimacy and generativity, which is characterized by "the guidance and direction of others" (p. 42).

Autonomy, the ability to function independently and above pressures placed upon the individual by others, factored prominently throughout. Ryff cites Rogers' emphasis on internal locus of control, Jung's idea of "a deliverance from convention," (p.42) as well as developmental theorists such as Neugarten and Loevinger, who note that this autonomy is a hallmark developmental feature.

Environmental mastery is likewise a particularly fundamental point to many developmental theorists. Ryff notes the work of Neugarten, Buhler, as well as Birren and Renner, who all place an emphasis on appropriate and adequate control of and interaction with the world around a person. This is both in terms of creating environments wherein an individual will thrive as well as possessing the ability to function in any given situation.

Purpose in life is, again, a point of particular significance for developmental theorists. Ryff notes Erikson's generativity and ego integrity, Buhler's idea of middle life as a time to "change the world creatively" (p. 43), as well as the work of Loevinger, and Birren and Renner. She likewise notes Rogers' discussion of "increased existential living" and Allport's emphasis on a person having "a unifying philosophy of life" (p. 43). Through this conceptualization of purpose, she incorporates Jahoda's aspect of integration.

Personal growth drew from all of the aforementioned areas of psychology as a primary idea. Ryff notes that this was emphasized by Maslow as a feature of the *process* of self-actualization (rather than self-actualization being thought of as a destination), by Rogers in terms of openness as a mark of the fully-functioning person that is not limited by previously held ideas, by Erikson's very formulation of life stages, and Buhler's life tendencies "from self-limiting adaptation to creative expansion to upholding internal order" (p. 44). Conceptualized thusly, personal well-being is actively dynamic, as opposed to static, continually changing, particularly across the lifetime.

Ryff (1989b) operationalized these theoretically derived dimensions in order to empirically test them. She did so by asking her team to "write self-descriptive items that fit with the theoretical definitions and that could be applicable to both sexes as well as to adults of any age" (p. 1072). The statements were constructed so that there were some items representing the endorsement of and some items the denial of a given dimension. After initial critical analysis confirming that the items were parsimoniously measuring only the purported dimension, the remaining 32 items per scale were administered to a sample of 321 adults (consisting of 133 young adults, 108 middle-aged adults, and 80 older adults). The sample was, by Ryff's own admission, "a sample of relatively healthy, well-educated, financially comfortable respondents" (p.1072). Items that overlapped excessively with a scale other than the one intended were deleted. Following these deletions, a 20-item scale remained for each dimension with reliability coefficients (alpha) ranging from .86 for environmental mastery to .93 for self-acceptance. Test-retest reliabilities at six weeks, based on a smaller contingent of the original sample (n=117), ranged from .81 for personal growth to .88 for autonomy. These six scales were then

tested alongside 6 previously developed measures of well-being (including Bradburn's Affect Balance Scale), as well as a measure of depression, to determine both correlations between Ryff's scales themselves and between the newly developed scales and the extant scales. The data support the scales generally, as they positively correlated with the previously developed well-being scales and negatively with the measure of depression, but there are some reasons for concern. The six scales of theoretically derived PWB are all, amongst themselves, positively correlated ranging from .32 to .76, with the purpose in life scale correlating at .72 with both personal growth and self-acceptance, as well as the environmental mastery scale correlating at .76 with self-acceptance scale. Ryff notes that this is perhaps the result of some latent trait, but defends these scales by noting that despite their strong correlation, they correlate differently with the extant measures of well-being. A further point of concern comes from relatively weak correlations between three of the new dimensions (positive relations with other, autonomy, and personal growth) and the existing scales, ranging from .25 to .45. Ryff notes, however, that factor analysis reveals that whereas the other three PWB scales fall onto a factor together with the existing measures of well-being, these three scales do not. She hypothesizes that this indicates that these new scales are measuring previously untapped dimensions of well-being. Given the life-span development thrust behind the development of these theoretically derived PWB scales, age and gender were likewise examined. Regarding sex, women reported higher levels on the positive relations with others and the personal growth scales. Regarding age, Ryff notes that "the results point to a highly differentiated profile of psychological functioning across the adult life cycle" (p. 1079), namely, environmental mastery was found to be high during middle- and later-adulthood.

Autonomy was found to be highest in the middle-adulthood group and a decreased level of purpose in life and personal growth were found in older-adulthood. These data led Ryff to decry "that even well-educated, healthy, economically comfortable older adults face significant challenges in their efforts to maintain a sense of purpose and self-realization in later life" (p. 1079).

The initial empirical examination of Ryff's PWB scales, while promising, was far from definitive. In addition to the lingering questions of high inter-scale correlations, the convenience sample was hardly representative. Thus, Ryff and Keyes (1995) returned to Ryff's PWB scales, this time with a nationally representative sample of 1,108 adults in the United States. The sample employed phone interviews arrived at through random digit dialing. The sample was 60% female and 87% Caucasian and it consisted of 133 individuals aged 25 to 29 years, 805 individuals aged 30 to 64 years, and 160 individuals 65 years or older. The 20-item scales developed for the initial study were shortened to 3-item scales that represented the breadth of each scale. These shortened scales correlated with the original 20-item scales from .70 to .89. The resulting data supported the six-factor PWB model together with a second-order factor over alternative models such as a single factor or two factors. These data generally supported the distinct developmental age-group profiles found in the initial study as well as the finding that women were typically higher in positive relations with others, although it did not find that women were higher in personal growth, as previously indicated. It is worthwhile to note, however, that while these data indicated lower inter-scale correlations (from .13 to .46) than the initial examination, the reliability coefficients for each of these scales were not particularly impressive, ranging from .33 to .56. Ryff (1989b) suggests that, were it not

for the theoretical foundation underlying these scales, the data may be more appropriately arranged on a five-factor model, citing a particularly high latent construct correlation; however, she ultimately suggests that research more sophisticated than the present self-report may be required to definitively support or reject the present six-factor model.

The case for the six-dimension model of PWB is, however, far from settled. Springer and Hauser (2006) used data from three large surveys that included a version of Ryff's PWB scales – Mid-Life in the United States (now known as MIDUS I, 18-item PWB scale, complete n = 2731), Wisconsin Longitudinal Study (WLS, a 42-item PWB scale, complete n = 6282) and the National Survey of Families and Households II (NSFH, 18-item PWB scale, complete n = 9240) – to test the validity of the six dimension model of PWB. Specific statistical techniques (i.e., polychorics and weighted least squares) were employed because they may provide a more accurate representation of the data than previous factor analyses as they treat the data as ordinal and non-normal, whereas previous analyses treated the data as continuous (Springer & Hauser, 2006). They tested the data for model fit, possible methodology bias (i.e., interview versus self-report), and test construction issues such as question order, redundancy, and reverse coded items.

They found that self-report survey data displayed higher factor correlations than interview (both phone and in-person) consistently throughout the instruments, even when controlling for methodological concerns, such as item redundancy. They suggest that this is perhaps owing to the influence of social desirability that may cause individuals to over-report well-being when being interviewed. They note that this is problematic because Ryff and Keyes' (1995) validation of the PWB scales employing nationally

representative data was done using phone interviews and thus produced smaller factor correlations that supported the six-dimension model. This methodological problem is compounded by the nature of the scale construction employed in the operationalization of the PWB scales, inasmuch as items that loaded excessively on an unintended dimension were removed from the initial set of items that Ryff and her colleagues (1989b) created. Thus, as Springer and Hauser argue, even if the dimensions are not truly distinct, it may not be possible to prove or disprove their uniqueness statistically. This does not, obviously, discredit the research of Ryff and Keyes, but it does suggest that their findings of six statistically distinct dimensions are not as robustly supported as originally thought. Further, when Springer and Hauser tested model fit on these three large data sets they did not find sufficient evidence in support of a six-dimension model, indicating that correlations were sufficiently strong to disqualify a six-dimension model of well-being. Rather, they found that a four-dimension model, with self-acceptance, purpose in life, and environmental mastery reduced to a single dimension, was a more accurate representation of the data (although they note that a six dimension model, one that unpacks the proposed second order factor, is likewise supported, they discount this finding, stating that caution is warranted due to the challenge of parsing out truly significant findings when using such large data sets).

These findings, however, are consistent with previous research that has called into question the six-dimension model of SWB. Kafka and Kozma (2002) administered a series of well-being measures – a full 120-item version of Ryff's PWB scales, the Satisfaction with Life Scale (used to measure cognitive evaluations of life), and the Memorial University of Newfoundland Scale of Happiness (MUNSH – used to measure

positive and negative affect) – to a convenience sample of 227 mostly female, highly educated, Canadian university students with the stated aim of empirically validating Ryff's six-dimension PWB scales themselves.

To test their question regarding the factorial structure of Ryff's PWB scales, Kafka and Kozma performed a factor analysis of the 120 items of the PWB scales and found that 15 factors provided the best fit when limited solely by eigenvalues greater than 1. When they artificially limited the factor analysis to 6 factors, they found that many of the items failed to load on their intended factors. They state from these findings, rather authoritatively (and somewhat grimly), "It would appear that the structure of the SPWB is limited to face validity" (p. 186). Ryff and Singer (2006) declare the findings of Kafka and Kozma to be null and void as principal components analysis with varimax rotation was employed in their factor analysis. This, however, implies that the data are orthogonal (or uncorrelated), which they most certainly are not, as the question is not if they are correlated, but to what degree they are correlated.

Abbott and her colleagues (2006) administered a 42-item version of the PWB scales to 1,179 women (957 of whom provided complete surveys) in the United Kingdom that were part of a 1946 birth cohort tracked as part of the National Survey of Health and Development. They were 52 years of age at the time of administration of the PWB scales. The confirmatory factor analysis of Abbott et al. similarly found the proposed six-dimension model, as well as a range of variations including single factor, random item-factor, and single second order models, to be a poor fit with the data. They alternatively recommend reducing four highly correlated scales (environmental mastery, self-acceptance, purpose in life, and personal growth) into a single second-order factor that

they dub the *motivation/self-direction* factor alongside the remaining first-order factors of autonomy and positive relations with others. Abbott and colleagues note that this is not an outright rejection of Ryff's six-dimension model, but rather that it likely represents a more parsimonious representation thereof. They likewise note, in a very interesting observation, that their suggested three-factor model of a second order motivation/self-direction factor alongside first order factors of autonomy and positive relations with other seems to parallel self-determination theory, the eudaimonic well-being theory of Ryan and Deci (2000), that is built on a tripartite model of competence, autonomy, and relatedness (Abbott et al., 2006).

These findings raise some very important questions about both the six-dimension structure of PWB and of the operationalized scales, particularly the appropriate size and structure of each scale (see Van Dierendonck, 2004 for a comparison of the factorial validity of the variously sized item number iterations of the PWB scales), but they are hardly sufficient to claim that any empirical support beyond face validity has been completely dashed. Rather, Ryff and Singer (2006) issued a forceful response to the criticisms of Springer and Hauser that was unabashedly titled "Best news yet on the six factor model of well-being." (The reply that followed, i.e. Springer, Hauser, & Freese, 2006, which will be discussed in turn, itself bears the glib title "Bad news indeed for Ryff's six-factor model of well-being.") Ryff and Singer flatly deny the conclusions drawn by Springer and Hauser, insisting that their critiques only served to illustrate a lack of familiarity with prominent construct-oriented scale development methods employed frequently in personality research. Thus, the removal of items that correlate with other factors is not a strong critique, as it is a prescribed part of the process, and further, the

statistical tests Springer and Hauser performed to determine factorial structure and model fit were not appropriate for what was being measured. To further support the six-factor PWB model, Ryff and Singer provide supporting evidence for the six-dimension model from five areas of PWB literature. Factorial studies such as those of Ryff and Keyes (1995) and Van Dierendonck (2004), support the six-dimension model. Also noted is that Springer and Hauser themselves identified statistical support for the six-dimension model, but dismissed these findings owing to their large sample size.

Ryff and Springer, for their second support, cite several longitudinal studies of the relationship between an array of psychological characteristics and PWB that indicate that there are distinct patterns across time for each of the six dimensions. Thus, despite their strong intercorrelations, the individual dimensions appear to relate uniquely to other psychological variables and life events.

Sociodemographic variables, the third source of support, likewise suggest distinct profiles for each of the six-dimensions. Age and gender profiles have been observed from the outset of PWB research (Ryff, 1989b). Ryff, Keyes, and Hughes (2004), looking at a nationally representative sample of white and black Americans alongside samples of African-Americans in New York City and Mexican-Americans in Chicago, found additional support for the dynamic profiles, with certain dimensions increasing across time while others may decrease or remain stable, associated with group variables such as age, gender, and race/ethnicity. Springer, Pudrovska, and Hauser (2011) debate this as a proof for the validity of the six-dimensions of the PWB scales. They examined two large scale longitudinal data sets (WLS and MIDUS I and II) and were not able to identify sufficient support for consistent age patterns for the six dimensions as claimed by Ryff

and Singer. Namely, they did, generally, observe distinct age group patterns; however, this was not consistently the case as purpose in life and personal growth displayed very similar changes, and whatever age group patterns were identified explained little variance, ranging from 1% to 4%, and this was further confounded by their consideration of methodological considerations likewise discussed above. Further, they note that the within group variance was more significant than between groups, which, taken altogether, suggests that it may be premature to conclude that the six dimensions of PWB indeed display distinct age profiles.

Distinct dimension profiles were similarly found in biological correlates of PWB, the fourth source of support. Numerous studies have been conducted examining the relationship between biological concerns such as fibromyalgia, rheumatoid arthritis, cardiovascular health, and REM sleep.

The final source of support that Ryff and Singer draw upon is based upon logic rather than empirical evidence, and is, perhaps, the most forceful argument of all. Namely, studies have been conducted of interventions based upon the six-dimension PWB model that have shown to be efficacious. Ryff and Singer argue that even with the strong correlations between factors, there is greater clinical utility and precision to be had from a six-dimension model, stating that:

> *even if* some subset of the six theory-guided dimensions of PWB were found to be highly overlapping, practitioners trying to improve people's lives based on a theory of well-being would find it unhelpful to construe any of the six dimensions (…) as equivalent, *as each points to different challenges facing the troubled client.* Guided by the conceptual meanings of, and empirical referents for, each

> dimension, the therapist can thus fine-tune treatment to the unique vulnerabilities and strengths of each patient. (Ryff & Singer, 2006, p. 1113).

This quotation is an apt summation of the debate over the ideal shape and measurement of PWB. Each side will produce arguments that seem to the other to be idiosyncratic and obstinate. They will, in turn, reject any such arguments out of hand. Ryff and Singer (2006), in what appears to be a wholly unscientific position, conclude their "Best News" article by stating that "we intend no further engagement in these kinds of exchange as they detract from our larger aims of understanding how well-being is contoured (…) we will use the six theory-guided dimensions of PWB" (p.1117). Springer, Hauser, and Freese (2006), for their part, acknowledge in "Bad news indeed" that the theory guided dimensions may be accurate, but feel that the evidence against the measures thereof are strong enough to recommend that their use be discontinued altogether. Researchers of PWB are well-served to bear this debate in mind, as the unspoken epistemological underpinnings of the debate likely serve as a necessary determinant of whether or not Ryff's scales of PWB, and the six-dimension model itself, are employed.

Prominent areas of contemporary PWB research. PWB has continued to be employed in research, despite the questions that remain about Ryff's PWB scales, and hundreds of studies of PWB correlates have been published. Ryff (2014) reviewed PWB research to date and identified six major streams of research: development and aging; personality correlates; family experiences; work and other life engagements; health and biological research; and clinical and intervention studies (Ryff, 2014, p. 13). These areas will each be addressed briefly in turn.

Research has shown that, in terms of development and aging, there are certain patterns that generally hold true. For example, ego development has been found to correlate with higher levels of well-being and aging has been found to correlate with a decrease in personal growth and purpose in life. These findings are not as simple as they seem, however, for as Ryff points out, while ego development typically promotes well-being, that is not the case for lesbian, gay, and bisexual individuals that self-identify as such, but is the case for women who espouse strong feminist identities. Typical patterns for aging, likewise, can be confounded by factors such as income and culture. Ryff also cites research on subjective aging that indicates that there is a distinction between *feeling* younger and *wishing* to be younger in that those individuals that feel, or perceive themselves to be, younger tend to report higher levels of PWB. These perceptions may ameliorate some of the decline in PWB that occurs in later life. This intuitive point follows research that likewise indicates that realistic perception bears more strongly upon PWB than illusory perceptions do. Research has also focused on the relationship between developed coping mechanisms and adaptive processes following challenging life changes. For example, it was found that older women who engaged in active social comparison, wherein the individual judges herself favorably compared to others, reported higher PWB following a move from their home to a care facility or apartment (Ryff, 2014).

Personality characteristics, Ryff (2014) notes, have been found to correlate highly with, as well as predict, high PWB. These links between personality characteristics, most notably of the "Big Five", and PWB have been similarly been found in international samples from countries such as Iran and Germany. For example, in a longitudinal study

of teenage females it was found that individuals reporting strong characteristic extraversion had higher PWB later in life whereas individual reporting neuroticism predicts lower PWB (Ryff, 2014; p. 14). Ryff further reports on a broad range personality characteristics that correlate with PWB.

Research on family experiences has found that the various roles that an individual may assume in a family (i.e. child, parent, spouse, etc.) can have distinct implications for PWB. Further, it was been found that assuming multiple roles increases PWB. Trauma within the family, such as abuse or the loss of a parent or child, has been associated with lower PWB.

Ryff presents research on a broad area that she called workplace and other life engagements. She details various considerations around employment and PWB, such as type of employment, employment aspirations, and work-life-balance. For example, PWB varied by paid versus unpaid work, as unpaid work was associated with decreased self-acceptance and environmental mastery for women. Paid work, on the other hand, showed an increase in sense of personal growth for men. In terms of area of employment, women's PWB was found to decrease moving from teachers to bank employees to industry workers, respectively. Research on the balance between work and family has found distinctions between age and gender cohorts as increased focus on the family, at opposed to work, was found to increase self-acceptance for older women and younger men whereas it showed a decrease in self-acceptance for older men and younger women (Ryff, 2014; p. 17). These trends are far from universal, however, as cultural variations were observed in other research. Ryff also discussed research that found an association between religious observance and increased PWB, with the exception of the dimension of

autonomy. Spirituality, as opposed to formal religious practice, however, was found to be associated with generally higher PWB, including autonomy.

A broad range of research has been conducted to identify the relationship between PWB and health. This biological research has shown a complex relationship between the two. This relationship has been particularly strong with the dimension of purpose in life. For example, individuals reporting strong purpose in life experience less cognitive decline and symptoms of Alzheimer's disease. High levels of PWB have similarly been found to correlate with beneficial neurological functions.

Finally, clinical and intervention studies have shown that PWB can carry serious implications for individuals with psychopathology. For example, Ryff cites research that indicates that high levels of the PWB dimensions of self-acceptance, autonomy, and personal growth may contribute to increased insight among individuals with paranoid symptoms. Additional research has found that purpose in life may have a moderating effect on the PTSD symptom severity. PWB has been incorporated into efficacious interventions for a range of disorders, largely as an adjunct to cognitive behavioral therapy. These PWB-informed treatments have been shown to be efficacious for symptom reduction and the prevention of symptom recurrence. Additionally, Ryff's PWB scales have been employed as outcome measures (Ryff, 2014).

PWB clearly represents a broad and dynamic body of research that continues to flourish. In so doing, it has provided valuable insights into the relationship of human well-being and many other areas. That said, greater transparency is needed regarding the philosophical assumptions (e.g., axiology, epistemology) that underlay PWB. This is particularly true for the scales used to measure it, as they may differ from those

advocated by scholars who argue vehemently that it is premature to work in the six-dimensions of PWB. Ultimately, Ryff's scales may or may not be the best measure for six-dimension PWB – and the six dimensions themselves may not be the most ideal theoretical formulation of psychological well-being. They were developed, after all, by one individual drawing from a select pool of theories. Regardless, Ryff's six-dimension model of PWB, and the associated scales, have done an important service to well-being studies by creating a conversation in the broader field of psychology about the multi-faceted and dynamic nature of psychological well-being.

Alternative Eudaimonic Well-Being Theories

Two additional theories of eudaimonic well-being deserve brief mention. Self-determination theory (SDT; Ryan & Deci, 2001; 2000) is a tripartite theory inductively built upon competence, relatedness, and autonomy. Ryan and Deci describe these three components not as defining what well-being is, but rather, as needs that, when met, will result in both PWB and SWB. SDT has been the basis of a sizeable body of research. It exists in a somewhat ambiguous place, however, as it is categorized alternatively as a need-fulfillment, motivation, or well-being theory (Ryan & Deci, 2001).

Waterman, one of the most prominent proponents of eudaimonic philosophy in well-being studies, has likewise proposed a broad eudaimonic conception of well-being that he calls a personally expressive personality that is culled from a broad range of sources (Waterman, 1993; 1990). He indicates that a personally expressive personality can be characterized as,

> "(a) an unusually intense involvement in an undertaking, (b) a feeling of special fit or meshing with an activity that is not characteristic of most daily tasks, (c) a feeling of being complete or fulfilled while engaged in the activity, and (d) an impression that this is what the person was meant to do" (Waterman, 1990; p. 47).

Personal expressiveness is, arguably, the eudaimonic theory most closely aligned with eudaimonic philosophy, but it is also the most esoteric. This stands in stark contrast to SDT that, while eudaimonic in nature, is found to be so as more of an afterthought than an intention. PWB, which has from its inception straddled the line of philosophy and empiricism, may owe much of its predominance to this balance as it appeals to a broad range of theorists, philosophers, and empiricists.

Gaps in the Literature

Well-being research has grown exponentially in the past few decades. Diener (2013) celebrates the fact that as of 2012 there were more than 12,000 articles pertaining to SWB. Ryff (2014) proclaims that there are more than 350 articles researching PWB. Suh and Koo (2008) found that there had been a five-fold increase (from 97 to 481) in studies of culture and well-being between 1991 and 2005. This is great news! Our knowledge of well-being is expanding at a dizzying rate, and there is tremendous potential for good in that knowledge. This dramatic growth also means, however, that the field of well-being research has grown to be a bit unwieldy. This overarching critique represents the largest gap in the literature, namely, the ceaseless production of studies built upon foundations that require greater conceptual clarification. The intention of this review was to return to the basic formulations of SWB and PWB and to examine exactly

what foundation this very intimidating mountain of research rests upon. Both SWB and PWB rest largely upon the shoulders of their near monolithic progenitors, Ed Diener and Carol Ryff. These scholars have produced work of astonishing breadth and depth; their fundamental works ought not to be, however, taken solely at face value. Gaps in the literature will be addressed in three parts, first focusing on SWB, followed by PWB, and concluding with concerns about larger conceptual integration.

Diener, in continuing to press for atheoretical SWB, has allowed the very real concerns of scholars such as Busseri and Sadava (2011) and Shmotkin (2005) to go ignored. We do not yet have a clear picture as to how the three constituent parts of SWB function, and in turn, we do not have a clear picture of what SWB is. Furthermore, accepting Diener's argument that conceptual clarification will come with time as larger and larger amounts of data are collected (Lucas & Diener, 2015), there is no real sense of when or how that clarification will arise. Barring an expectation of renewed prophecy, systematic programs of research must be organized to investigate these pressing concerns. Thus, instead of urging SWB research forward toward greater breadth, it ought to be urged toward greater depth with a commitment to conceptual clarification. This will be tremendously helpful, for example, in research of causal relationships of SWB that currently draw heavily upon isolated aspects of SWB such as positive affect or life satisfaction (e.g., Lyubomirsky, King, & Diener, 2005). Greater understanding of both the relationship of positive affect to the larger concept of SWB as well as a further understanding of what constitutes desirable formulations of SWB, then causal research would be more dynamic, more nuanced, and, quite frankly, more meaningful. These questions do not, however, appear to be a priority for the broader community of SWB

researchers but they must, particularly as SWB researchers have taken such a prominent role in public policy advocacy in the last decade (i.e. Diener, Oishi, & Lucas, 2015; Diener, Lucas, Schimmack, & Helliwell, 2009; Diener & Seligman, 2004; Diener, 2000).

Ryff (1989a) did a great service to well-being studies with the introduction of her theory-driven six-dimension model of PWB. She is a strong and persuasive advocate for theory-driven well-being. Her righteous adherence to the six-dimension model (e.g., Ryff & Singer, 2006), however, appears to represent some troublesome gaps in this literature. Namely, while there are a number of studies that statistically support the six-dimension model of PWB (i.e. Keyes, Shmotkin, & Ryff, 2002; Ryff & Keyes, 1995; Ryff, 1989b), there are those that do not (i.e. Gallagher, Lopez, & Preacher, 2006; Abbott et al., 2006; Springer & Hauser, 2006). Thus, adherence to, rather than thoughtful re-examination of, the six-dimensions represents a serious gap. This is particularly true when considering that the initial development of the dimensions was done by Ryff alone surveying a select theoretical literature. Transparency and self-examination are needed to either confirm or deny these dimensions, as reticence to do so only serves to make the theory suspect. They may, as suggested by Abbott et al. (2006), be valid but capable of being more parsimoniously conveyed. Nevertheless, failure to reexamine these dimensions means that, as was the case in SWB, research will likely be hindered by an increasingly large body of literature resting upon, at very least, a potentially very inefficient base. Ryff and Singer (2006) argued that this hesitance is, at its core, for the sake of clinical utility. This argument is found lacking when reminded that the validity of associated scales ought not to be hampered by something that could be explained to clinicians via thoughtful literature. In other words, the dimensions and scales could be reduced and/or reevaluated

in the interest of parsimony and distinctness while continuing to be informed by a broad conceptual base.

Cultural Concerns

The proverbial elephant in the room is the realization that well-being studies are thoroughly anchored in the majority culture. Thus, no matter how collaborative they may be, they continue to be framed in the reference of western culture that has clearly delineated roots to ancient Greece. This is not to say that the topic of culture has gone ignored in well-being studies; quite the contrary, research on the relationship between culture and well-being could alone fill several reviews. Suh and Koo (2008), in a review of studies relating culture and well-being, summed up the major directions within this area as asking two primary questions: what is well-being in a given culture?; and why are there differences in levels of well-being between cultures? This framework similarly highlights the two primary ways in which culture and well-being has been studied.

First, there are those who maintain that the what-is-well-being of a culture is a subtle thing that may be all-but-imperceptible to traditional survey data. This owes to the argument that many cultural artifacts, particularly those that influence well-being, likely do not function in an explicit manner within the culture itself (Kitayama & Marcus, 2000). Thus, to ask the individuals within that culture about their well-being generally may provide a nicely shaped cookie, but it does so at the expense of the significant portion of dough outside the cookie-cutter. Rather, qualitative research, particularly cross-cultural qualitative research may provide the necessary sensitivity to understand the minute details driving distinct forms of well-being (Delle Fave & Bassi, 2009). For

example, Kitayama and Marcus (2000) contrast contemporary Japanese and American cultures and note that one primary distinction is between the American drive toward personal happiness derived from bolstering the individual versus Japanese collective happiness derived from interpersonal interconnectedness. The implication is, then, that in order to achieve a measure of happiness in individualistic American culture one must aggrandize self and other as independent, important, and self-assured whereas the Japanese culture would achieve a comparable measure of happiness by being self-controlled and critical of self with the aim of diminishing distinction of self from the interconnected social unit. It is not hard to imagine the dramatically different survey results that may arise between individuals from these two cultures both performing culturally sanctioned forms of happiness seeking. This difference could, to some degree, be arrived at via survey data, but qualitative research would arguably provide richer data regarding the cultural differences.

The alternative approach focuses on the question of why there are differences in well-being between cultures, often in the form of national indexes of well-being. This type of question is more likely to be approached through a quantitative survey methodology (Oishi, 2010; Diener, Oishi, & Lucas, 2003). However, as Suh and Koo (2008) note, the second approach is best employed when informed by the first approach. It is possible to compare typical levels of well-being between cultures, but one must then inform the findings through the lens of what well-being means to each culture that is reflected in the data. This is not to discredit survey data used cross-culturally, but to place import on awareness and transparency of cultural influences and assumptions that accompany theory and measure development (Christopher, 1999).

Ethical Concerns

The ethical concerns associated with the study of well-being beg reflection of what well-being studies are in the first place. Namely, as stated in the introduction, well-being research attempts to discern and encourage the good life. There are numerous ethical implications that must be considered, particularly as this encouragement leaves the realm of academia and enters the realm of public policy and clinical utility. This discussion will follow the principles for ethical consideration in biomedical ethics adapted by Kitchener (1984). Namely, there are five primary principles through which well-being merits consideration: autonomy, beneficence, nonmaleficence, justice, and fidelity.

Well-being researchers must be constantly and consistently mindful of the philosophical, cultural, and political positions that their research assumes. Well-being research generally, and SWB and PWB in particular, is strongly based in the tradition of Western culture. Thus, as research is done, particularly research concerning cultural alternatives, such as non-majority Western cultures and non-Western cultures, proper consideration must be given to the ethical principles of justice, fidelity, and autonomy. Namely, the simple fact that the research is being done from a Western perspective does not free researchers from a duty to justly deal with participants and cultures outside the culture of the researchers. Individuals, and their cultures must be treated fairly at all times, especially as they may deviate from cultural norms, be they objective or subjective norms, identified through research. Failure to do so may serve to pathologize culturally appropriate thoughts, emotions, and behaviors. Such artificial pathology is a violation of the ethical principle of nonmaleficence. The information that participants share must

similarly be dealt with utilizing appropriate fidelity. In other words, the way that the information is collected, organized, analyzed, and, ultimately published or otherwise utilized, must always maintain fidelity to the participants themselves and their rights. Failure to do so, particularly upon reaching the point of public policy recommendations, carries the very real risk of adversely impacting the autonomy of individuals, in a way that may likewise violate the ethical principle of nonmaleficence, as it may adversely impact individuals.

The ethical concerns voiced thus far, while specifically addressing research involving non-majority or non-Western cultures, are by no means exclusively limited to those populations. The ethical principle of beneficence means that researchers have a duty to seek out the greatest good for all of their participants while avoiding harm (nonmaleficence). Thus, many of the gaps that were identified in the well-being literature must be addressed in the best interest of those who may be influenced by such literature. People are going to read this literature, or quotations thereof (often couched in the non-descript language of happiness), especially as it continues to grow in prominence and volume, and they may choose to change real aspects of their lives as result. Alternatively, policy makers may read this research and make real changes for them. Further, clinicians utilizing this research need to have as clear a picture of well-being as is possible. This requires honest consideration of philosophies, values, and goals of well-being research from the outset. Failure to do so poses a very real ethical threat.

Integration

Where do we go from here? The picture of well-being, while bright, remains unfocused. Disagreement abounds as several conceptualizations of well-being have been identified – SWB, HWB, PWB, SDT, PE – and the list here assembled is far from exhaustive. Each of these approaches rests upon highly idiosyncratic philosophical, epistemological, and psychometric bases (some explicit, others implicit), and each has noteworthy detractors whose critiques are whitewashed at best, or outright disregarded at worst. The distinctiveness of each of the approaches to well-being has not simply resulted in conceptual ambiguity for those looking in from outside the niche world of well-being researchers, but it has hindered collaboration and integration within the field of well-being studies itself. Each of the prominent schools of thought in well-being remains isolated in their respective corner like prize-fighters between rounds, bolstered and swabbed by supporters while being jeered by supporters of the opponent.

Recently, there have been several efforts to promote some measure of integration or to, at the very least, decrease the sense of division. These approaches have tended to take one of two forms. One employs a more data-driven empirical approach that confirms the unique form of well-being represented by each of the approaches while the other attempts to develop a framework for theoretical integration.

There have been numerous data-driven studies that have employed statistical methods to examine a larger model of well-being. These studies, as stated, tend to be driven by the aim of confirming previously established models of well-being without practically integrating them. The models may be validated, but the players remain ultimately at odds like two cold-war era superpowers. Integration does not exist beyond

the adage to live and let live (alone). Keyes, Shmotkin, and Ryff (2002) utilized a large national data set, MIDUS I, to perform a factor analysis that supported SWB and PWB as two separate but highly related factors. Several PWB dimensions loaded on the SWB factor, including self-acceptance and environmental mastery, but the best model fit was for the two factor model. Further, purpose in life and personal growth were found to be the PWB dimensions that correlated least with SWB. Gallagher, Lopez, and Preacher (2009) employed confirmatory factor analysis to examine 14 first order dimensions of well-being – 3 dimensions of SWB, 6 dimensions of PWB, and 5 dimensions of Keyes' social well-being (KSWB). They analyzed data from two samples: MIDUS II (n = 4,043) and a supplementary convenience sample of undergraduate students in a large Midwestern university (n = 591). They tested three models for fit, a single second-order factor with 14 first-order factors, two second-order factors (SWB and a second factor called positive functioning that combined PWB and KSWB), and three second-order factors. They found that the model with three second-order factors (SWB, PWB, and KSWB) represented the best fit for the model. Additionally they utilized confirmatory factor analysis to confirm that the 3 SWB, 6 PWB, and 5 KSWB first order factors held together appropriately, and each was found to have adequate to close fit. They also tested hierarchical models and found the model with three second-order factors to be the most appropriate fit, although they found that positive relations with others was a more appropriate fit as part of social well-being than with PWB (recall that positive relations with others was one of the dimensions of PWB). Gallagher and colleagues are quick to note, however, that while their findings do seem to confirm the existence of three discernably distinct approaches to well-being, the three second-order factors "may have

more shared variance than unique variance" (pp. 1044-1045). It is worthwhile to note that while self-report data seem to support SWB and PWB as distinct second-order factors, Nave, Sherman, and Funder (2008), in a study employing informant report, found poor discriminant validity between SWB and PWB.

Other studies have similarly investigated the various approaches to well-being empirically. Keyes (2007; 2005; 2002) developed an integrated scale of mental health liberally comprised of components of SWB, PWB, and KSWB. He did so, however, to mirror DSM diagnoses to explore the concept of flourishing rather than to explore factorial structure of well-being itself. He did find that the items of his integrated scale loaded on a separate factor than the items of the mental illness measures he employed. Compton, Smith, Cornish, and Qualls (1996) performed an early investigation into the factorial structure of positive mental health, but did so with a relatively small convenience sample (n=338) compared to those discussed above employing nationally representative samples like MIDUS.

Studies such as these, while not directly serving to integrate the various approaches to well-being, serve an important purpose in that they remove a certain element of competition from well-being research. The various approaches to well-being can each rest assured that it is going to remain in the mix, as each serves an important part in the development of overall well-being. Overall well-being, and particularly how to conceptualize or integrate such a concept, is precisely what research needs to attempt to begin to identify. To that end, Lent (2004) proposed several integrative models of well-being for the purpose of culling clinical utility rather than conceptual integration.

In an attempt to directly speak to the lack of conceptual integration, Jayawickreme, Forgeard, and Seligman (2012) proposed a model that draws from the integrative work found in well-being studies outside psychology. Their model provides a parsimonious framework for and integrative conception of well-being. Their model, known as the engine model, is parsimoniously thought of in terms of inputs, processes, and outcomes (see Figure 1).

Input variables are "exogenous and endogenous predictors of well-being" vis-à-vis the individual (p. 329). In other words, inputs are those things such as the various components of the environment (income, education, green space, and clean water are some of the examples given) and personality characteristics that contribute to well-being. Process variables are those internal characteristics that subjectively influence how input variables are dealt with, for instance, cognitive and affective evaluations. Outcome variables are those behaviors and activities that constitute lived well-being that "people, free from coercion, would do for their own sake" (p. 329). Examples given include positive relationships, positive accomplishment, engagement in any number or domains, and autonomous behavior. There are three necessary components for a given outcome in this model: outcomes must contribute to well-being and the good-life, be sought for its own sake and not for any secondary gain, and be definable and discernable from other outcome variables.

This engine model is particularly beneficial toward a general integration of the various well-being approaches by creating linear relationship couched in neutral language. Thus it is not hard to imagine integrating work that identifies those

demographic variables (inputs) that contribute to high SWB (processes) that in turn encourage PWB-congruent behaviors (outcomes).

This idea is further developed by adopting a general framework for consideration of the various types of well-being. Three categories are discussed: liking, wanting, and needing theories. Liking theories are those theories, like SWB, that are informed by a direct subjective desire, whether that be from a cognitive judgement or from an emotional pull. This stands in direct contrast to wanting theories, which are drawn largely from economics, wherein the variable in question is wanted, but for a secondary purpose and not for any inherent reason. Examples include things such as money that, in lieu of the value associated with it that enables it to be traded for liked or needed things, is not particularly desirable. Psychology, Jayawickreme and colleagues relate, would place wanting theories firmly in the camp of instrumental reinforcement. Needs-based theories, the final type, are further divided into objective, subjective, and plural needs theories. Objective theories of needs, such as those of Maslow and Sen, are those that delineate those things that are objectively necessary for a given function. This places them, typically, in the role of input variables in the engine model. Subjective theories of needs include eudaimonic theories that, while not objectively necessary, are needed inasmuch as they encourage generally a state of well-being. Thus they can be considered as input, process, or outcome variables. The distinction between these two can be seen as, for example, a certain level of physical health is needed in order to function and perform basic activities of daily living (still living = input); autonomy (one of the dimensions of PWB), on the other hand, will contribute to increased well-being, but it may do so as any piece of the engine model. Living autonomously may, for example, serve as a process

variable by influencing how a given input is dealt with or it may be an outcome variable as autonomous behaviors represent lived well-being. Plural needs theories would include the PERMA (i.e., positive emotions; engagement; relationships; meaning; accomplishment) model of Seligman (2011) that includes both objective and subjective characteristics.

The engine model coupled with the over-arching categories of wanting, liking, and needing theories could serve as a significant integration point for the field of well-being, by illustrating the dynamic relationship between each of the extant theories. This, in and of itself, makes it the most noteworthy integrative work in well-being in psychology to date. Use of this model, despite abundant inherent potential therein, has been scant. It has been used, for instance, as a theoretical basis to clarify and refine research questions (e.g., Ng, Huebner, & Hills, 2015). It has not, however, been subject to any empirical examination to ensure the validity of the model as proposed.

Chapter Three

Methods

The engine model is complex and dynamic. Jayawickreme and colleagues fully admit that many of the variables can be understood in multiple ways; as such, the model that they suggest is not intended to be exhaustive. They suggest, rather, that the model serves to increase intentionality among well-being researchers as they indicate what they understand, in a given instance, to be an input variable, a process variable, and an outcome variable. From these designations, causal relationships are, theoretically, capable of being identified.

To test this model in the broadest manner possible, the present study examined the variables of the framework suggested by Jayawickreme and colleagues (2012, p.336) and, when possible, paired them with an existing measure found in MIDUS 2. These measures were, in turn, subjected to several path analyses utilizing AMOS path analysis software to determine if the proposed three part model is an appropriate fit with the data. The ultimate goal was to determine if data would provide empirical support for the theoretical framework of the engine model.

Participants

The present research utilized survey data from the second round of the Midlife in the United States (MIDUS 2) study. MIDUS 2 is the second round of a multi-faceted longitudinal study with many components. Data from the MIDUS 2 self-answered questionnaire (SAQ) were predominantly used in the current analyses, as these data are

the location of a majority of the scales in question. Additional data from these respondents, such as general demographic data, were drawn from the broader MIDUS 2 survey. These data were collected between 2004 and 2006 and a total of 4,032 individuals completed the SAQ. The demographic make-up of participants was as follows: 47% male, 53% female; age range from 32 years to 84 years, with a mean age of 55 (SD 12.4); 6% did not complete high school, 27% completed high school, and 67% had at least some college education. The ethnicity of the sample is: 91.1% Caucasian; 0.6% Asian-American; 3.7% African-American; 2.6% Hispanic; and 2.0% other (Gallagher, Lopez, & Preacher, 2009). The participants were paid $60 if they completed all of the components of MIDUS 2.

Measures

Jayawickreme and colleagues describe the engine model as a dynamic framework for broad consideration of well-being. As such, they do not set down an end-all-tell-all definitive model; they do, however, provide a general list of domains and where those domains are located within the engine model. These domains are listed here in accordance with their place on the engine model, and associated measures found in MIDUS 2 are similarly discussed. Several of the available measures were selected for examination of the engine model in path analyses and are noted as such. Summated versions of the larger psychosocial scales were utilized for the analyses. Reliability coefficients for each respective variable are reported as Cronbach alphas, but it should be noted that these coefficients represent the data prior to mean substitution. Mean

substitution did occur at a later stage in research, but it was done at the level of scale scores, precluding the calculation of Cronbach alphas.

Ten input domains are listed in the framework: income; adequate nutrition; political freedom; education; healthcare; personality/strengths; values; talents/virtues; needs; and capabilities. Of these ten domains, four are directly measured by indices included in MIDUS 2: healthcare; income; education; and personality/strengths. Income data are available for individuals, spouses, and total households. Healthcare is measured in terms of "Are you covered by any healthcare insurance?" Education is measured on a scale with 12 categories ranging from "no school/some grade school (1-6)" to "Ph.D., Ed.D., MD, DDS, LLD, JD, or other professional degree." Personality traits are assessed by endorsing a set of 26 adjectives on a 4-point Likert scale: neuroticism (alpha = .74); extraversion (alpha = .76); openness to experience (alpha = .77); conscientiousness (alpha = .68); and agreeableness (alpha = .80).

Four process domains listed in the framework are: positive affect; cognitive evaluations; self-control; and capabilities (a variant form to that included in input domains). Three of these domains are assessed by measures included in MIDUS 2: positive affect; cognitive evaluations; and self-control. Positive affect is measured by asking "During the past 30 days, how much of the time did you feel…" about a set of four adjectives from the PANAS (alpha = .86). Respondents utilized a five-point Likert scale from "none of the time" to "all of the time" to select their answer. It should be noted that MIDUS 2 also includes a scale consisting of six positive affect adjectives retained from MIDUS 1, but only the PANAS items are utilized here because they are a more accepted measure in well-being research. Cognitive evaluation, a pseudonym for

life satisfaction, is assessed in MIDUS 2 in a single question of overall life satisfaction as well as four domain specific life satisfaction questions (alpha = .65 for the summated scale of all five life satisfaction questions). The four domains are work, health, relationship with spouse/partner, and relationship with children. Life satisfaction variables were rated on a ten-point Likert scale from the worst possible to the best possible. Self-control is assessed with four statements about personal mastery (alpha = .73) and eight statements about perceived constraints (alpha = .86). These twelve statements are endorsed or denied on a seven-point Likert scale from strongly agree to strongly disagree.

Four domains are suggested as outcome domains: engagement/meaning; accomplishment/contribution to the human heritage; relationships; and goal-driven functionings. Three of these domains are assessed by measures included in MIDUS 2: engagement/meaning; accomplishment/contribution to the human heritage; and relationships. Engagement/meaning is assessed using the "purpose in life" scale from Ryff's PWB scales (alpha = .70). They include seven statements, such as "I have a sense of direction and purpose in life." These statements are ranked on a seven-point Likert scale from strongly agree to strongly disagree. "Accomplishment/contribution to the human heritage" can be assessed using the six-item Loyola Generativity Scale (alpha = .85). These items are statements, such as "Others would say that you have made unique contribution to society" that are scored on a four-point Likert scale from "a lot" to "not at all." Relationships can be assessed using the "positive relations with other measure," also from Ryff's PWB scales (alpha = .78). This scale likewise consists of seven items that are each ranked on a seven-point Likert scale.

Procedures

The aforementioned measures drawn from MIDUS 2 were examined and evaluated using a path analysis. Path analysis is an appropriate choice because it allows for the identification of directionality as well as the moderating effects of endogenous variables (e.g. the process variables of the engine model). Path analysis was employed, as opposed to structural equation modeling, due to the complexity and large number of variables included in the model.

The engine model includes three factors: input, process, and outcome. The structural make-up of this model implies that the relationship between input and outcome is mediated by process variables. The primary path analysis executed followed this design and was informed by the extant well-being literature regarding correlates.

Input variables took the form of exogenous variables (i.e., exogenous in terms of the path analysis). Exogenous variables on the model included: age; gender; race; income; education; and personality characteristics. Process variables took the form of endogenous variables (i.e., endogenous in terms of the path analysis). Endogenous variables on the model included: positive affect; cognitive evaluations (life-satisfaction); and self-control. It is a charged statement to call any variable in well-being a "dependent variable" for fear of reigniting the debate over the 'correct' conception of well-being. In the interest of validating an integrative model, however, the outcome measurements drawn from Ryff's PWB scales were utilized as the dependent variable in this analysis. Namely, positive relationships with others and purpose in life (i.e., engagement/meaning, as referred to by Jayawickreme et al., 2012) were utilized. Thus configured, the analysis placed demographics in an exogenous position in the path analysis, SWB variables in the

endogenous position in the path analysis, and PWB variables were considered the dependent variables in the path analysis. This model was tested for fit, examining the root mean square error of approximation (RMSEA) as an indicator of fit, with the hypothesis that the model as proposed (i.e., input – process – outcome) will produce an acceptable model fit. This was intended to provide a basic broad measure of support for the engine model of well-being by analyzing goodness of fit of the theoretical model employing variables that meet the definitions of the engine model as well as the directionality thereof.

Based on initial model fit and observed 'effect' sizes, alternative iterations with fewer exogenous variables were examined in order to attempt to increase goodness of fit in the model. Following this procedure, and once a reasonable model fit was achieved in order to validate the model generally, competing models informed by extant well-being research were tested to examine the practical utility of the engine model as a basis for the integrated study of well-being. For example, the SWB model of Diener (1984) is built upon two forms of evaluation – cognitive and affective. As such, process variables, which represent "internal states that influence the choices that individuals make" (p. 329) were examined in two competing models (see Figure 3) that employ only one process variable – life satisfaction (i.e., cognitive evaluation) versus positive affect (i.e., affective evaluation) – and the model fit of these two models was compared (Jayawickreme et al., 2012, p. 329). Further, Ryff, Keyes, and Hughes (2004) proposed distinct profiles of PWB by age and gender. To examine this in the engine model, age and gender were, among other variables, employed in order to examine the differences in model fit according to these demographic characteristics. Distinct PWB profiles by ethnicity were

also suggested, but this was not examined due to measurement complications and because the sample was overwhelmingly Caucasian. Finally, personality characteristics have been a rich source of inquiry for both SWB and PWB researchers (e.g., Lucas & Diener, 2015; Ryff, 2014) and as such measures of personality characteristics were interchanged as input variables in order to determine if there are differences in model fit and effect size given an emphasis on personality characteristics.

These path analyses were intended to provide answers to two basic questions. First, is the engine model valid? Second, is the engine model a platform upon which meaningful analyses can be conducted in order to build upon the foundation of existing literature?

Chapter Four

Results

Well-being is complicated. A model that employed as many of the proposed variables of the Engine Model as possible given the data available in the MIDUS 2 survey was analyzed for model fit (see Figure 2). Aside from being overwhelming to merely look at and even more challenging to untangle, this initial model had very poor model fit (RMSEA = .178). As such, a second model that significantly reduced the size of the model was tested (see Figure 4). This second model was designed to hone in specifically on the primary components of well-being studies in psychology and their notable correlates. The input variables retained from the first model to the second were those that were emphasized by the literature as being directly germane to the investigation of well-being (e.g., Lucas & Diener, 2015; Ryff, 2014; Lucas & Schimmack, 2009; Steel, Schmidt, & Shultz, 2008; Easterlin, 2003). Variables that had negligible effect sizes (i.e., one or no beta greater than .1) were eliminated unless they were retained due to the literature (e.g., income and personal mastery, both of which had low betas but a strong foundation in the literature). The reduced model included: income and four of the original five personality characteristics (i.e., agreeableness, extraversion, neuroticism, and conscientiousness) as input variables; PANAS positive affect items, life satisfaction, personal mastery, and perceived constraints as process variables; and purpose in life and positive relations as outcome variables. The model thus reduced, however, actually produced a poorer model fit (RMSEA = .197) than the original model!

These analyses were conducted with the untouched MIDUS 2 data (i.e., without replacing missing data), precluding bootstrapping and modification indices. The missing

data were replaced by mean substitution performed at the level of scale scores (see Table 1), but to no avail, as no meaningful improvement in model fit was found. In fact, the reduced model with mean replacement saw yet a further decline in model fit (RMSEA = .203, PCLOSE = .000) and a wholly overwhelming number of suggested modifications. Alas, the model as initially proposed seemed too cumbersome.

Fear of embarking on any significant fishing expeditions led back to the original paper of Jayawickreme and colleagues (2012) for direction. Therein, amidst the delicate disclaimers of just how intricately complicated well-being can obviously be expected to be, a very simple model is proposed, almost as an afterthought, as examples of variables are given in parentheses. This model places income and extraversion as input variables, positive affect as the process variable, and positive relations with others as the outcome variable (see Figure 5). In the same breath, the authors note that they are "open to the presence of important feedback loops" (p.336). Based on this simple model, several additional models were analyzed, retaining the initial intention to examine the validity of the Engine Model by identifying a model that met theoretical definitions of the model and produced an acceptable model fit.

The initial two models tested were highly related in form. The first is the simplified model outlined above: income and extraversion as input variables; positive affect as the process variable; and positive relations with others as the outcome variable (see Figure 5). This model explained a fair amount of variance (i.e., the r-squared statistic) in the process and outcome variables (r-squared of .23 and .21 respectively) but still produced a poor model fit (RMSEA =.203, PCLOSE = .000). As such, the validity of the simple input-process-outcome model seemed to be drawn into question.

The second model tested adds to this by incorporating a feedback loop between the process and outcome variables (see Figure 6). The second model, including a feedback loop, reduced the model fit to an astonishingly desirable level (RMSEA = .015). Additionally, this model produced a PCLOSE statistic of .999, which is a strong indicator that the model fit is indeed noteworthy. This model contained, however, an entirely different manner of hiccup in that the r-squared statistics produced for both the process and outcome variables are negative (r-squared of -1.11 and -.10 respectively)! The simple model of the Engine Model without a feedback loop produced promising betas and r-squared statistics but poor model fit whereas the model with the addition of a feedback loop produced fantastic model fit but wholly head-scratching r-squared statistics.

Hope was not lost though, because these analyses were performed without missing data, which allowed for bootstrapping and modification indices. The modification indices of the first simple model suggested a path connecting the personality characteristic of extraversion, which serves as an input, directly to the outcome of positive relations with others. This relationship is supported by the literature (e.g., Ryff, 2014) and not directly precluded by the Engine Model.

A third model was tested that employed the simplified model outlined above: income and extraversion as input variables; positive affect as the process variable; and positive relations with others as the outcome variable along with the addition of a path between extraversion and positive relations with others (see Table 2 and Figure 7). This model explained a fair amount of variance in the process and outcome variables (r-squared of .23 and .30 respectively) and it produced a strong model fit (RMSEA = .028,

PCLOSE = .975). This model indicates that the data support the basic theoretical definitions and directionality of the Engine Model as proposed.

Table 1

Correlations and Descriptive Statistics of the 12 Variables Utilized in the Final Models

	INC	EXT	NEU	AGR	CON	OPE	AGE	GEN	EDU	PA	LS	PR
INC	1											
EXT	.027	1										
NEU	-.027*	-.195**	1									
AGR	.096**	.504**	-.113**	1								
CON	.091**	.284**	-.196**	.291**	1							
OPE	.076**	.510**	-.210**	.328**	.340**	1						
AGE	-.250**	.053**	-.159**	.097**	-.024	-.005	1					
GEN	-.103**	.070**	.103**	.254**	.073**	-.045**	.004	1				
EDU	.313**	-.027	-.090**	-.085**	.074**	.185**	-.144**	-.101**	1			
PA	.070**	.473**	-.392**	.257**	.339**	.344**	.111**	-.025	.049**	1		
LS	.123**	.328**	-.340**	.214**	.291**	.206**	.137**	.028*	.085**	.521**	1	
PR	.060**	.484**	-.363**	.466**	.310**	.292**	.095**	.113**	.052**	.461**	.452**	1
Mean	73,364	3.10	2.07	3.45	3.39	2.90	55.4	1.53	7.20	3.58	7.76	40.62
SD	53,280	0.52	0.56	0.45	0.42	0.48	12.4	0.50	2.52	0.68	1.12	06.27

Note. INC = Total Household Income, EXT = Extraversion, NEU = Neuroticism, AGR = Agreeableness, CON = Conscientiousness, OPE = Openness, AGE = Age, GEN = Gender, EDU = Highest Level of Education (on a scale with 12 categories ranging from 1 = "no school/some grade school (1-6)" to 12 = "Ph.D., Ed.D., MD, DDS, LLB, LLD, JD, or other professional degree" wherein the mean of 7.76 lies between 7 = "3 or more years of college, no degree yet" and 8 = "graduated from 2-year college, vocational school, or associates degree"), PA = Positive Affect (from PANAS), LS = Life Satisfaction, PR = Positive Relations with Others.
*$p < .05$, **$p < .001$.

Table 2
Direct, Indirect, and Total Effects of Extraversion Total Household Income, and Positive Affect on Positive Relations with Others

Effect	Direct Effect	Indirect Effect	Total Effect
On positive affect			
of extraversion	.471	*n/a*	.471
of total HH income	.057	*n/a*	.057
On positive relations			
of extraversion	.342	.141	.483
of total HH income	*n/a*	.017	.017
of positive affect	.299	*n/a*	.299

All effects were significant at p < .001

The data do seem to support the model as proposed, but they also serve to highlight how complicated any further meaningful integration of well-being will be. Numerous iterations of the Engine Model needed to be analyzed and distilled down to the most fundamental parts before the model began to tread water. This need to refine may be due as much to the intricacies of human well-being as it is to any theoretical flaws in the Engine Model. As such, and with a meaningful iteration of the Engine Model identified, the second proposed line of inquiry came to the fore as several alternative variables were examined within the model to attempt to identify its utility as a platform for further research in well-being.

The first test of the utility of the Engine Model as a platform for well-being research was to compare the simplified engine model that employs an affective variable, positive affect, as the process variable with a model that instead employs a cognitive variable, life satisfaction, as the process variable. These two models were compared in order to independently examine the relationships between variables (i.e., the beta statistic,

direct effect unless otherwise noted) and the model fit of both parts of SWB – affect and cognition – independently, and specifically in relation to income in the present model.

The simplified cognitive model (see Figure 8), as compared to the affective model (figure 7), had an improved overall model fit (RMSEA = .015; PCLOSE = .999). The input variables accounted for less variance in life satisfaction (r-squared = .12) but for slightly more variance in positive relations (r-squared = .33). Extraversion had a much smaller relationship with life satisfaction than it did with positive affect (beta = .32 versus .47, respectively). Income, however, had an increased stronger relationship with life satisfaction than it did with positive affect (beta = .11 versus .06).

The second test of the utility of the Engine Model as a platform for well-being research examined age, gender, and highest level of education in the place of income in the basic model. Each of these demographic variables, serving as input variable, was analyzed both with and without a direct path to positive relations with others, the outcome variable. These variables are going to be examined to determine their impact upon greater well-being both in terms of their relationships and model fit, given the distinct PWB profiles of each of these variables as identified by Ryff (2014).

The first demographic model (see Figure 9) placed age and extraversion as the input variables, positive affect as the process variable, and positive relations as the outcome variable. In the first model extraversion has a direct path to positive relations but age does not. The second demographic model (see Figure 10) is identical with the exception of the addition of a direct path from age to positive relations. These two models produced identical model fit (RMSEA = .051, PCLOSE = .437 and .425, respectively) and an identical amount of variance explained in positive affect and positive relations (r-

squared = .23 and .30, respectively). The added path between age and positive relations showed only a very small relationship (beta = .04).

The third demographic model (see Figure 11) placed gender and extraversion as the input variables, positive affect as the process variable, and positive relations as the outcome variable. In the third model extraversion has a direct path to positive relations but gender does not. The fourth demographic model (see Figure 12) is identical with the exception of the addition of a direct path from gender to positive relations. The fourth model, with a direct path from gender to positive relations, produced an acceptable (but not great) model fit (RMSEA = .069, PCLOSE = .074) while the third model, without the direct path, produced a barely acceptable model fit (RMSEA = .095, PCLOSE = .000). These two models explained an identical amount of variance in positive affect (r-squared = .23) but the fourth model explained slightly more variance in positive relations (r-squared = .31 versus .30 in the third model). The added path between gender and positive relations showed a meager relationship between these variables (beta = .10).

The fifth demographic model (see Figure 13) placed highest level of education and extraversion as the input variables, positive affect as the process variable, and positive relations as the outcome variable. In the fifth model extraversion has a direct path to positive relations but education does not. The sixth demographic model (see Figure 14) is identical with the exception of the addition of a direct path from education to positive relations. The model fit of the sixth model is notably better than that of the fifth (RMSEA = .023, PCLOSE = .947 versus RMSEA = .042, PCLOSE = .756). These two models explained an identical amount of variance in positive affect (r-squared = .23) but the sixth model explained slightly more variance in positive relations (r-squared = .31

versus .30 in the fifth model). The added path between education and positive relations showed a small relationship (beta = .05).

The third test of the utility of the Engine Model as a platform for well-being research examined personality characteristics by replacing extraversion in the initial model with each of the four remaining big-five personality characteristics: neuroticism; agreeableness; conscientiousness; and openness. The base model was retained for each, with income and a personality characteristic as input variables, positive affect as the process variable, and positive relations as the outcome variable – and direct path from the personality variable to the outcome variable (as in Figure 7) was likewise retained.

Extraversion was employed in the base model (see Figure 7) and produced a strong model fit (RMSEA = .028, PCLOSE = .975) as well as strong relationships between variables (beta = .47 for positive affect; .34 for positive relations). The second personality model employed neuroticism (see Figure 15) and produced a strong model fit (RMSEA = .026, PCLOSE = .984) as well as strong relationships between variables (beta = -.39 for positive affect; -.22 for positive relations). The third personality model employed agreeableness (see Figure 16) and produced a mediocre model fit (RMSEA = .091, PCLOSE = .000) but relationships between variables (beta = .27 for positive affect; .37 for positive relations). The fourth personality model employed conscientiousness (see Figure 17) and produced an acceptable model fit (RMSEA = .064, PCLOSE = .068) and a strong relationship with positive affect (beta = .34) and a smaller relationships with positive relations (beta = .17). The fifth and final personality model employed openness (see Figure 18) and produced similar model fit and direct effects as the previous model

(RMSEA = .054, PCLOSE = .307; beta = .34 for positive affect and .15 for positive relations).

Chapter Five

Discussion

A basic iteration of the Engine Model was identified and found to be supported by the MIDUS 2 data. The process of identifying this model, however, highlighted just how very delicate a balancing act the study of well-being can be. The model necessitated significant distillation to produce something meaningful. This meaningful model serves as a starting point from which further investigation of well-being may occur; and yet, while the data do seem to indicate that the input to process to outcome categorization holds true, they simply do not appear to be telling the whole story. The identified model does not pass muster, for example, in lieu of the addition of a direct path from extraversion, an input variable, to positive relations, an outcome variable. This is by no means a terminal blow to the Engine Model as proposed – the authors themselves acknowledged and anticipated such complexities from the outset – but it does oblige healthy skepticism as to the practical, empirical merit of the model beyond a set of guidelines for a theoretical taxonomy. By the same token, a theoretical taxonomy that allows for even basic statistical examination of models that integrate aspects from across the spectrum of well-being thought is indeed a noteworthy and significant contribution. To this end, the data indicate that what is perhaps most valuable about the Engine Model is, in fact, the taxonomy itself. Thus, regarding the first research question – is the Engine Model valid – the answer appears to be yes. No longer does each camp need to sequester itself away to create arguments defending their own brand of well-being as the most accurate depiction of human well-being – because after all, well-being is complicated! The Engine Model can thus be thought of as something akin to a skeleton upon which the

meat of well-being may rest, strung together with tendons and ligaments necessary to maintain structure and purposeful movement. The skeleton of a thing carries loads of information, as any paleontologist will heartily argue, but it does not tell the whole story of the thing itself.

In order to discern just how much information can be gleaned from the bones of the Engine Model, three sets of variant models – cognitive versus affective; demographic; and personality characteristics – were analyzed, with regard to the second research question to determine just how useful the Engine Model would be as a platform for future examination of well-being. In order to establish utility, variant models were examined and compared for general congruence the findings of the extant well-being literature.

The first comparison placed a model with an affective SWB variable as the process variable against a model with a cognitive SWB variable in order to isolate and compare the two primary types of components of SWB within a larger well-being context. These two models are very similar but they do show some small distinctions. Arguably the most noteworthy distinction between the two models is the difference in the amount of variance accounted for by identical input variables. Life satisfaction found roughly a tenth of variance explained (r-squared = .12) as compared to nearly a quarter of the variance of positive affect (r-squared = .23). The smaller amount of explained variance for life satisfaction is found despite that fact that the direct effect size of one of the input variables, income, increased as compared to the affective model (beta = .11 versus .06), although the direct effect size of the other input variable, extraversion, decreased (beta = .32 versus .47 in the affective model). These distinct direct effect sizes seem to support the distinction made by Diener, Kahneman, Tov, and Arora (2010) as

they sought to respond to the contradicting findings of Easterlin (2003) and Veenhoven and Hagerty (2006), namely, Diener and his colleagues found that increased income is more likely to produce an increase in cognitive well-being than it is in affective well-being. Nevertheless, it similarly supports the argument of Easterlin (2003) who argues that income is not as significant a contributor to overall well-being across time as other considerations (i.e., in this instance, the decrease in variance seemed to correspond more with the extraversion personality characteristic than with income). It is also noteworthy that the amount of variance explained in positive relations, the outcome variable, was very similar between the cognitive and affective models (r-squared = .33 versus .30, respectively).

The second comparison looked at three demographic variables – age, gender, and highest level of completed education – as inputs in place of total income. Two models within each demographic also compared these variables with and without direct paths to positive relations, the outcome variable in order to assess the holistic impact of a given demographic variable.

Age was the first demographic variable examined. The model fit for both models, with and without the direct path to positive relations, was identical and acceptable (RMSEA = .051). The direct effect size of the path from age to positive relations was rather small (beta = .04). Overall, age had a slightly higher direct effect size than income did on positive affect, but the model fit was poorer overall. Ryff (2014) did suggest distinct age profiles but also discussed the numerous confounds likely to complicate the relationship between well-being and age and this appears consistent with what the engine model shows. The positive, albeit small, direct effect size of age on positive affect

appears to contradict the findings of Diener, Oishi, and Lucas (2009) who found that positive affect decreased with age.

Gender was the second demographic variable examined. The model that includes a direct path from gender to positive relations had a moderately acceptable model fit (RMSEA = .069) whereas the model without that path had a poor, barely acceptable model fit (RMSEA = .095). Gender had small effect sizes overall, but had a larger direct effect size for positive relations (beta = .10) than for positive affect (beta = .06). The small direct effect size was to be expected as Pavot and Diener (2013) have previously cited literature that suggests that there is no notable distinction between genders in average SWB.

Highest level of education was the final demographic variable examined. The model that includes a direct path from education to positive relations had a good model fit whereas the model without that path had only an acceptable fit. This difference in model fit comes, as in the previous model, despite only the small effect size that education had on positive relations (beta = .05).

The small direct effect sizes associated with these demographic variables suggest that these demographics, in isolation, do not explain large amounts of variance in well-being. It is worthwhile to note, however, that they do appear to have an impact on the overall fit of the model. This is consistent with the dynamic models suggested by Ryff, Keyes, and Hughes (2004) that suggest that while there may not be tremendous divergence between groups on any one given demographic variable, there is discrimination as more nuanced groups are compared.

The third, and final, comparison looked at four personality characteristic variables – neuroticism, agreeableness, conscientiousness, and openness – as inputs in place of extraversion with the intention of comparing all big-five personality characteristics. The personality characteristics had by far the largest direct effect sizes, ranging from a beta of .47 for extraversion to positive affect, to a beta of .15 for openness to positive relations. As suggested by the literature, extraversion and neuroticism produced the strongest effect sizes and overall model fits within the model (Ryff, 2014; Steel, Schmidt, & Shultz, 2008). It is worthwhile to note that agreeableness actually produced larger effect sizes than neuroticism but resulted nevertheless in a poorer total model fit. Agreeableness, in fact, had the poorest model fit of any of the five personality characteristics examined.

The data suggest that the Engine Model provides a helpful platform for analysis of the bits and pieces that constitute the whole of well-being. It allows for independent variables to be studied not simply in terms of their relationship to a single school of thought within the wide-world-of-well-being, but to assess the relationship with several aspects of well-being concurrently. Highest level of education, for example, had a small effect size for positive relations, but it had a notable impact on the overall fit which suggests that, at very least, should not be ignored in the discussion of well-being. The breadth allowed for by the theoretical framework of the Engine Model will allow researchers to step out of their fox-holes and work toward laying the foundation of an integrative understanding of human well-being.

Limitations

There were several limitations to this study. The MIDUS 2 data set utilized cover a broad range of variables. Nevertheless, these data were all self-report data. There is a significant debate, as discussed above at length, as to the appropriate way to measure well-being, and while self-report is well accepted, it is simply not ideal. Second, the sample used was, while representative, still predominantly composed of white Americans (it was for this reason that race was not examined as a demographic variable). Third, these data represent a snapshot in time, which likely compounds the limitation of self-report data. Much of the literature that seemed to contrast with the findings of this examination utilized more nuanced and sophisticated data collection and statistical methods which may explain discrepancies between the findings presented here and those reported in the literature; nevertheless, the intention of the current work was never to discredit or defame any existing literature, rather, it was intended to take an eagle's-eye view of well-being within the framework of the Engine Model.

Suggestions for Future Research, Policy, and Practice

Any suggestions for future research, policy, and practice are going to be complicated. Numerous directions for future research have already been enumerated above, such as the call by Busseri and Sadava (2011) to give greater attention precise nature of the relationships that constitute the tripartite structure of SWB or that of Springer, Pudrovska, and Hauser (2011) who question the six factor model of PWB and suggest more parsimonious models may better represent the data. These calls for research

on foundational issues seem imperative, but have been met with a lukewarm response at best and, despite this response, suggestions for policy nevertheless continue to flow freely (e.g., Diener, Oishi, & Lucas, 2015). As such, arguably the most prudent recommendation for future research is to follow the leads already detailed in the extant literature that are necessary to clarify basic points about the primary models. This will be beneficial for the models themselves as well as for any future integrative work through platforms such as the Engine Model. As Busseri and Sadava (2011) noted, it is necessary to continue to determine how positive affect, negative affect, and life satisfaction act upon, and in concert with, one another. It is premature, and arguably irresponsible, to refer to any one component of SWB as a proxy for the larger model until these relationships are clarified. Once these relationships have been determined, the context of relationships needs to be examined, perhaps through examination via integrated models such as the Engine Model to determine not just *an ideal* SWB profile, but to understand the nuance associated with the larger model within different people (Busseri et al., 2009; Shmotkin, 2005). Caution is warranted in making policy or practice suggestions while there are still such fundamental gaps in exactly what well-being is. As noted, policy proclamations by Diener, Oishi, and Lucas (2015) seem premature at best, and hyperbolic at worst, when they attempt to direct policy based on part of a model or a model that is, frankly, not yet fully understood.

A similar accusation can likely be leveled at PWB, although it would have more to do with *what* constitutes the model than *how* the model is constituted. To that end, further research clarifying the model structure is warranted, with the necessary caveat that any such research must be conducted with an openness and desire for truth. Again,

the above review would indicate that the fundamental question of the factorial make-up of PWB would necessarily take precedence over research that aims to build upon basic PWB.

Future research would similarly benefit from additional research utilizing integrative models such as the Engine Model. Such research could examine more complex iterations of the Engine Model in order to incorporate more aspects that contribute to well-being. Such research may benefit from more sophisticated statistical procedures than those employed in the present research. Additional research may examine longitudinal data in order to examine the nuances of well-being across time and groups.

Until there is a greater understanding of what well-being is and how it functions, it seems the more prudent choice to focus on further research rather than suggesting implications for policy. In terms of practice, the above research firmly emphasizes, perhaps above all else, how much care and nuance are warranted in working with individuals because well-being is multifaceted, dynamic, and complicated.

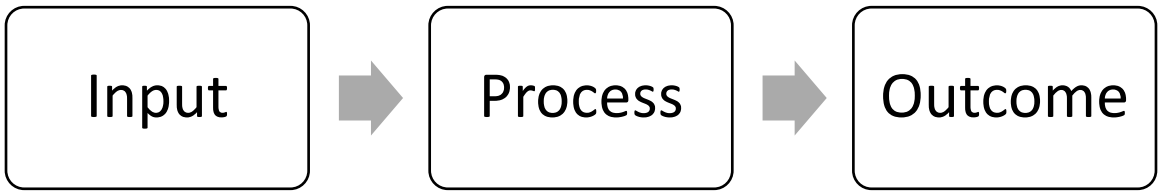

Figure 1: The basic structure of the engine model.

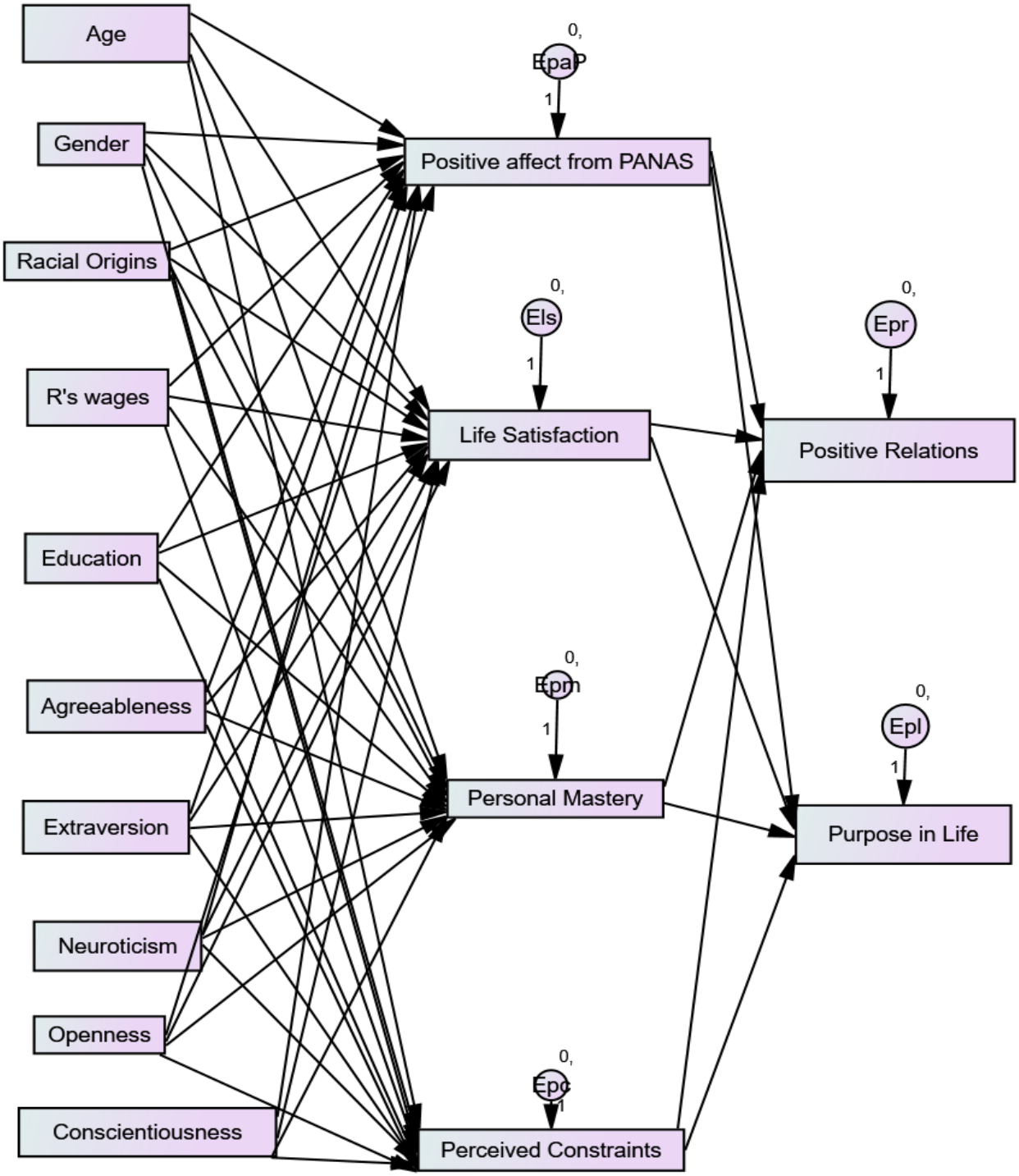

Figure 2: The path analysis of the engine model with proposed variables (RMSEA = .178).

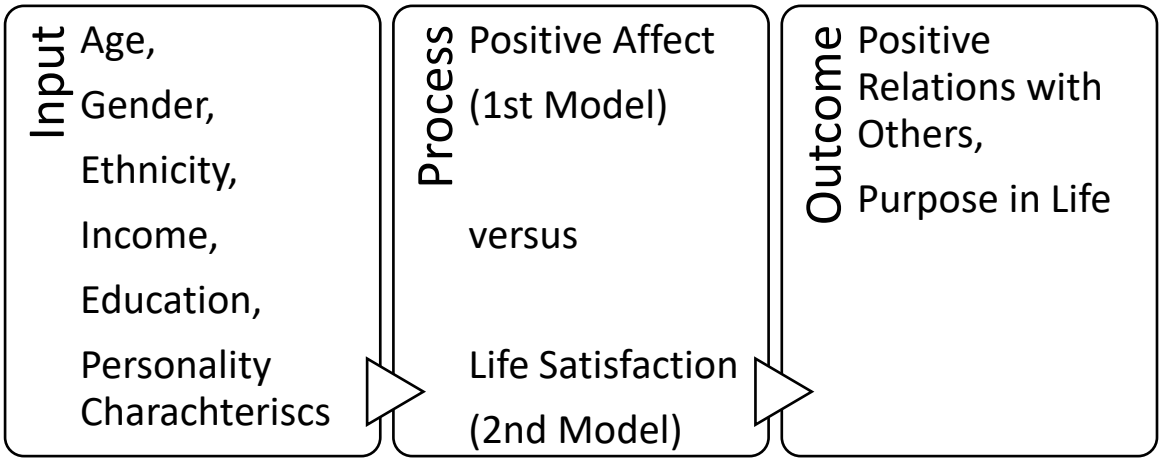

Figure 3: The path analyses of the engine model examining cognitive versus affective process variable.

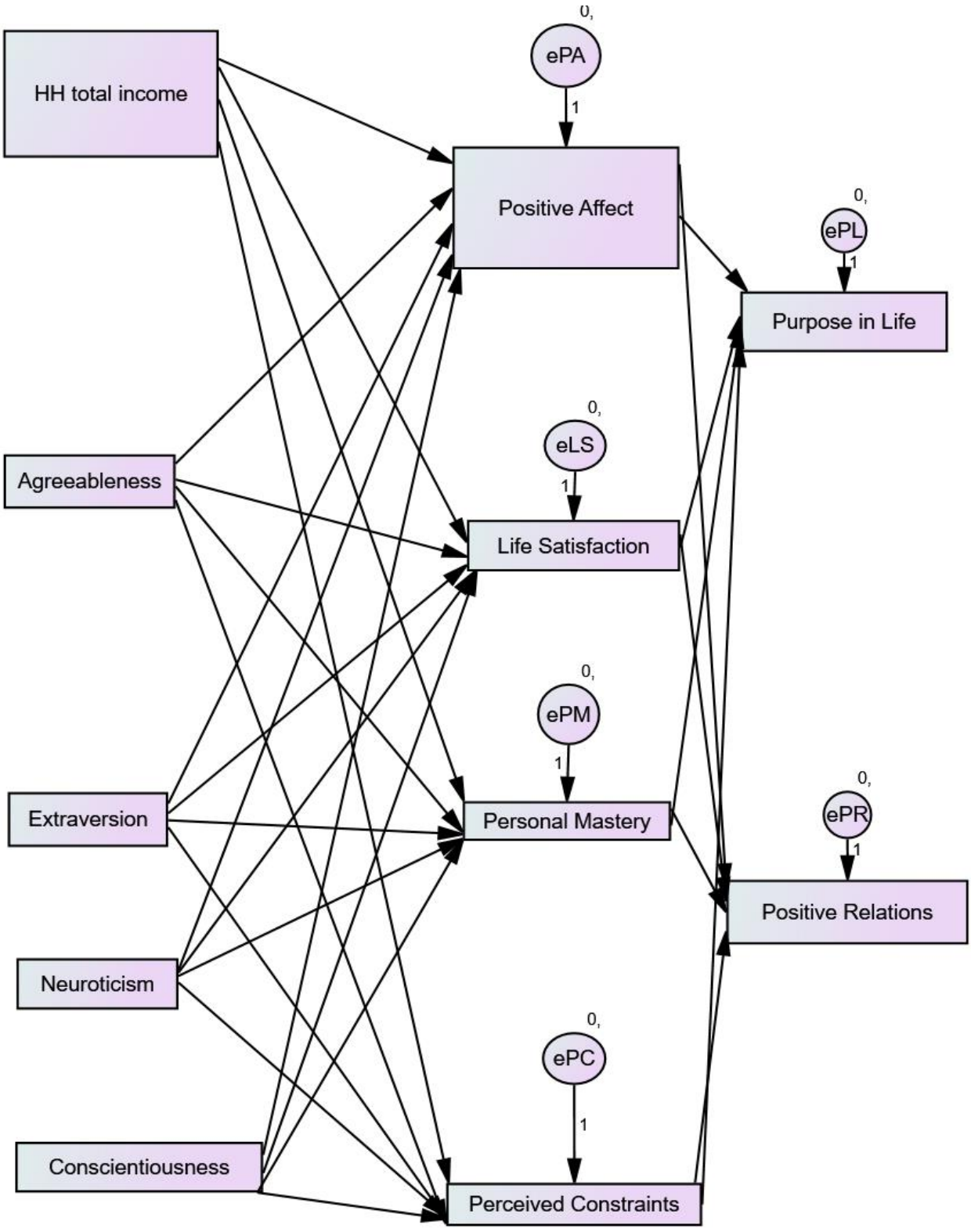

Figure 4: The path analysis of the engine model with reduced number of variables (RMSEA = .197, PCLOSE = .000).

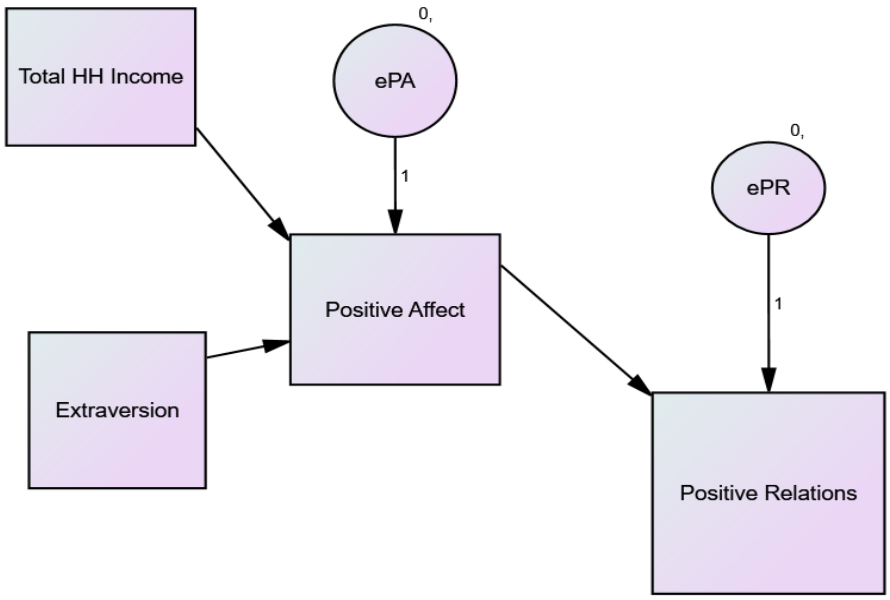

Figure 5: The path analysis of the simplified engine model. This model was also analyzed with a feedback loop between Positive Relations and Positive Affect (RMSEA =.203, PCLOSE = .000).

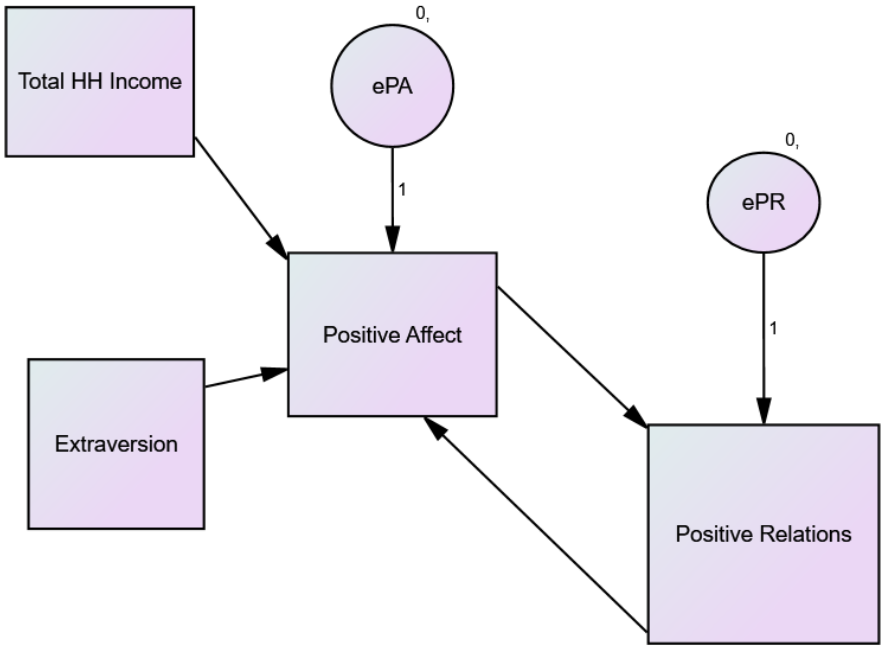

Figure 6: The path analysis of the simplified engine model with a feedback loop between the outcome variable and the process variable (RMSEA = .015, PCLOSE = .999).

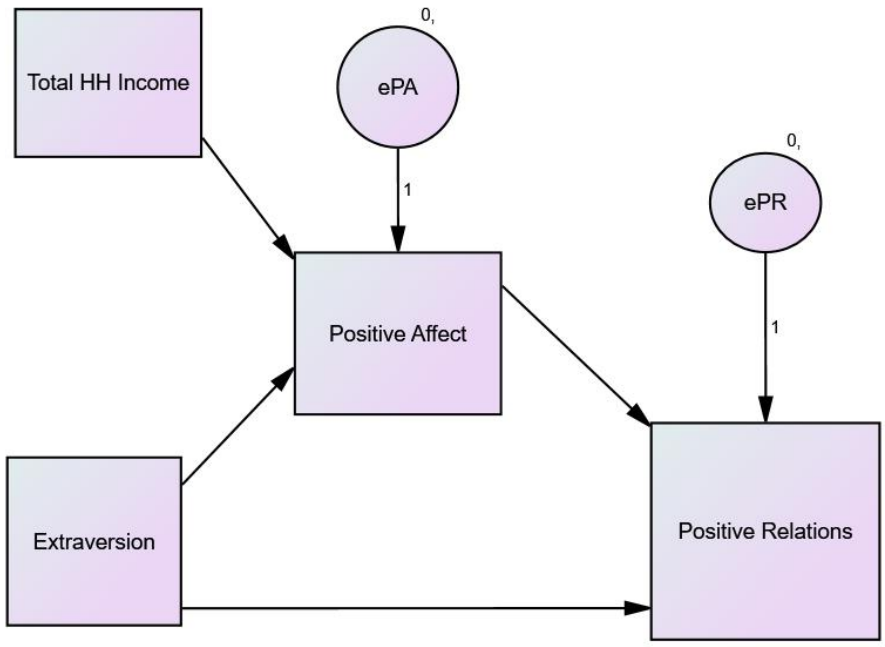

Figure 7: The path analysis of the simplified Engine Model with an additional path between extraversion and positive relations (RMSEA = .028, PCLOSE = .975).

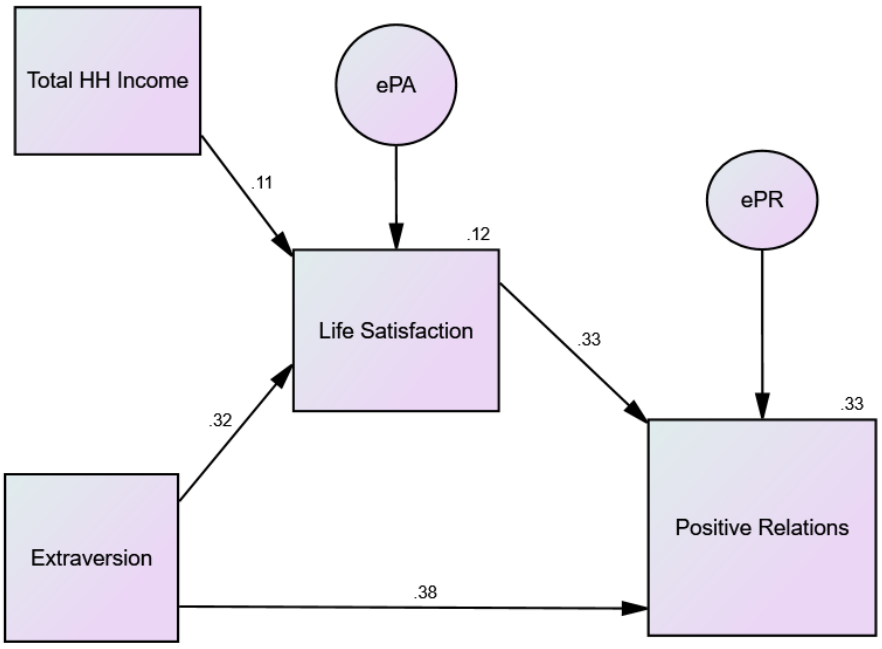

Figure 8: The path analysis of the simplified Engine Model with Life Satisfaction, a cognitive process variable (RMSEA = .015; PCLOSE = .999).

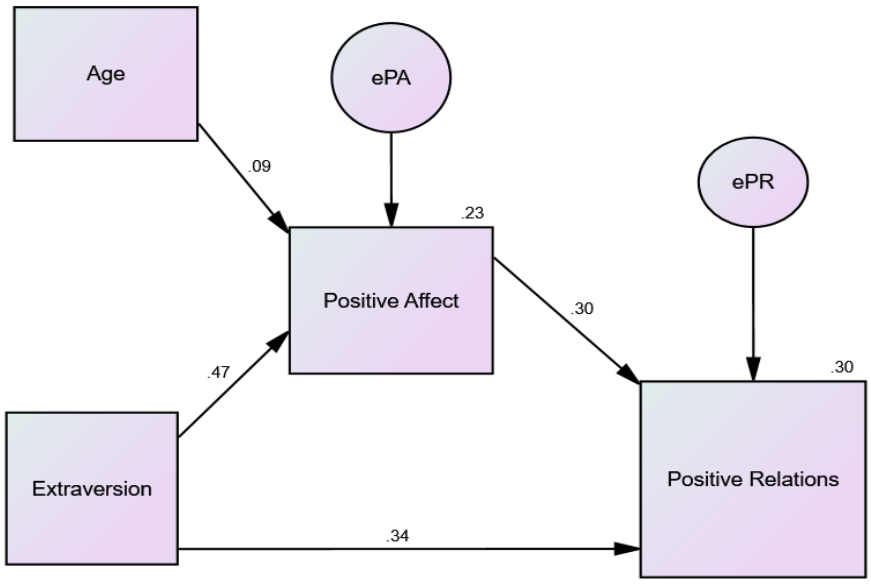

Figure 9: The first demographic model with age as an input variable (RMSEA = .051, PCLOSE = .437).

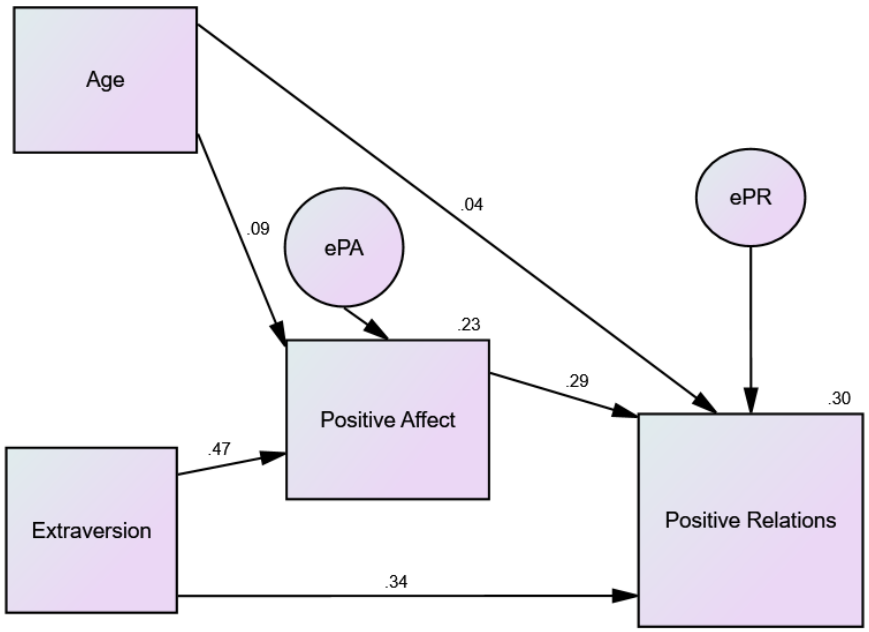

Figure 10: The second demographic model with age as an input variable and a direct path from age to positive relations (RMSEA = .051, PCLOSE = .425).

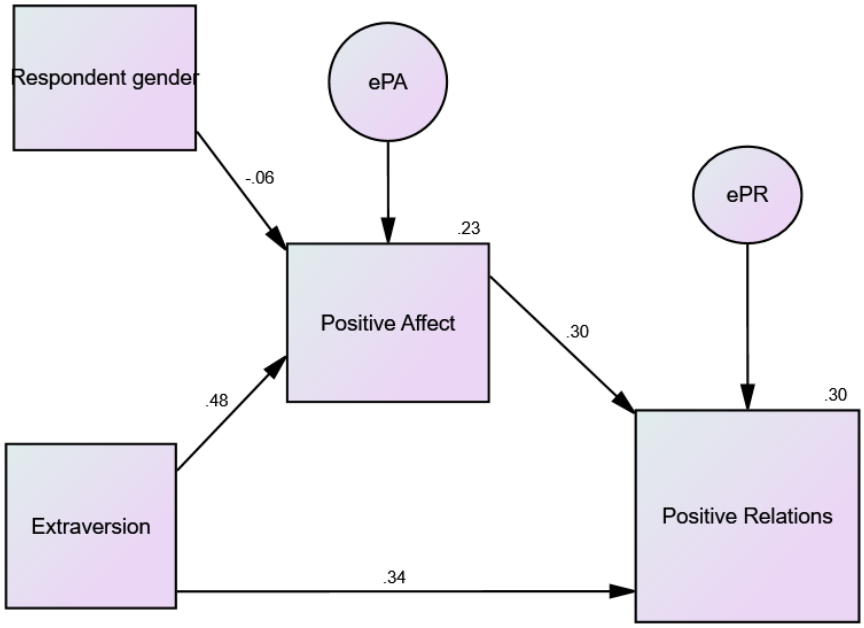

Figure 11: The third demographic model with gender as an input variable (RMSEA = .095, PCLOSE = .000).

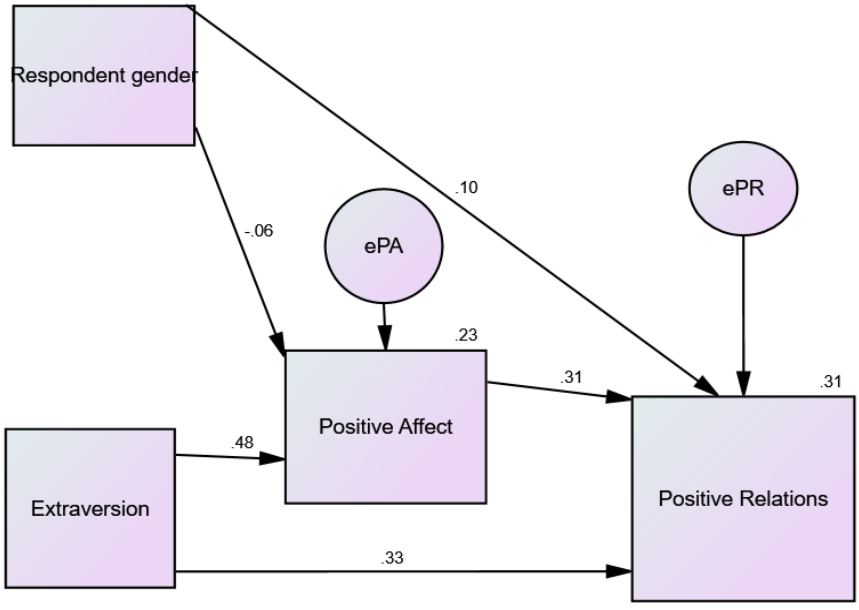

Figure 12: The fourth demographic model with gender as an input variable and a direct path from age to positive relations (RMSEA = .069, PCLOSE = .074).

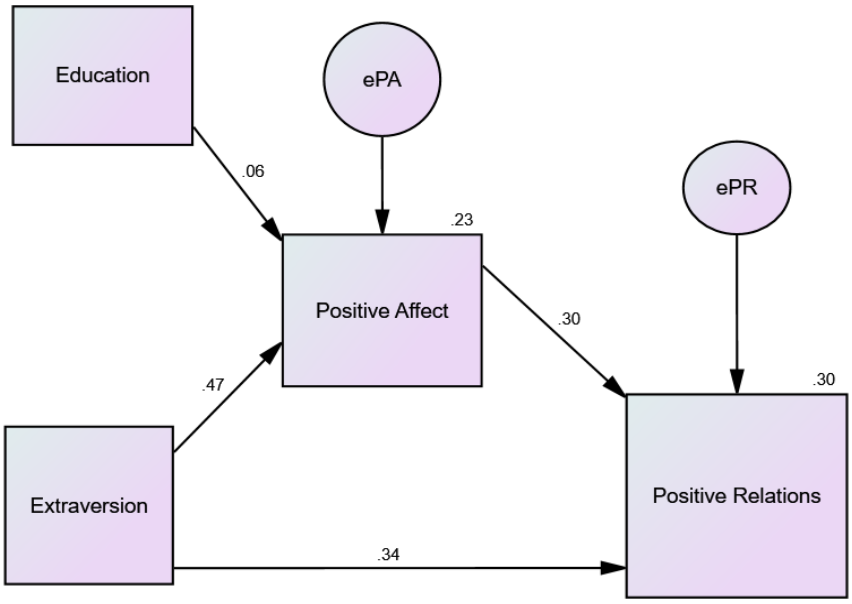

Figure 13: The fifth demographic model with highest level of education as an input variable (RMSEA = .042, PCLOSE = .756).

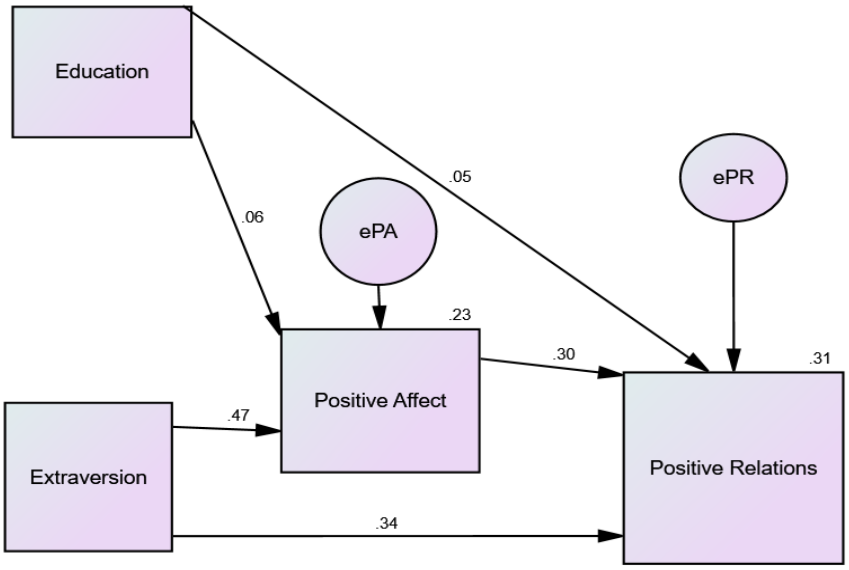

Figure 14: The sixth demographic model with education as an input variable and a direct path from education to positive relations (RMSEA = .023, PCLOSE = .947).

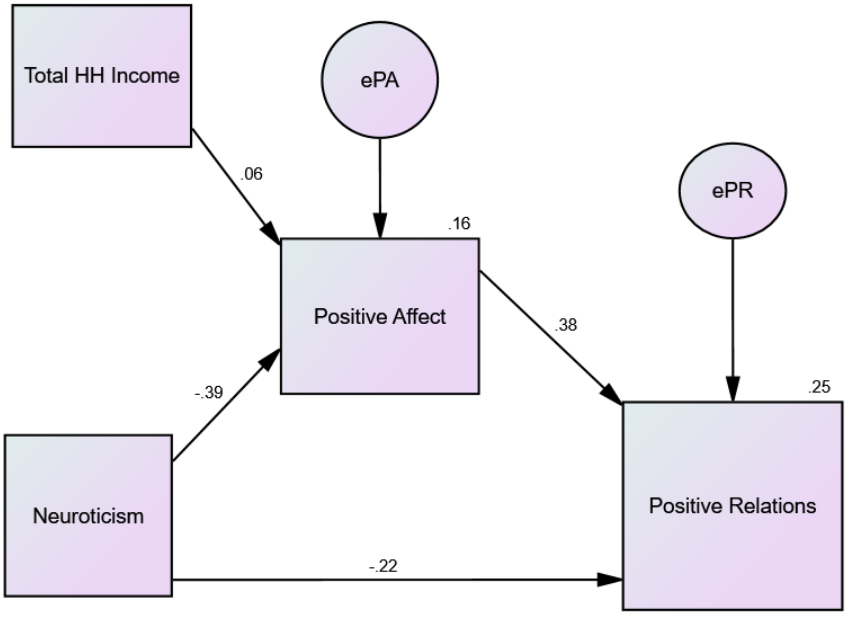

Figure 15: The basic model with neuroticism as an input variable in place of extraversion (RMSEA = .026, PCLOSE = .984).

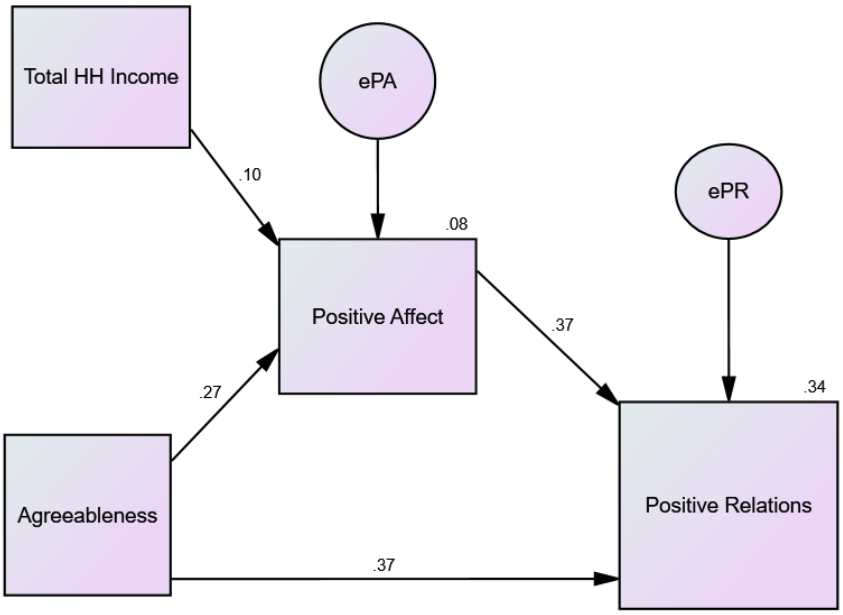

Figure 16: The basic model with agreeableness as an input variable in place of extraversion (RMSEA = .091, PCLOSE = .000).

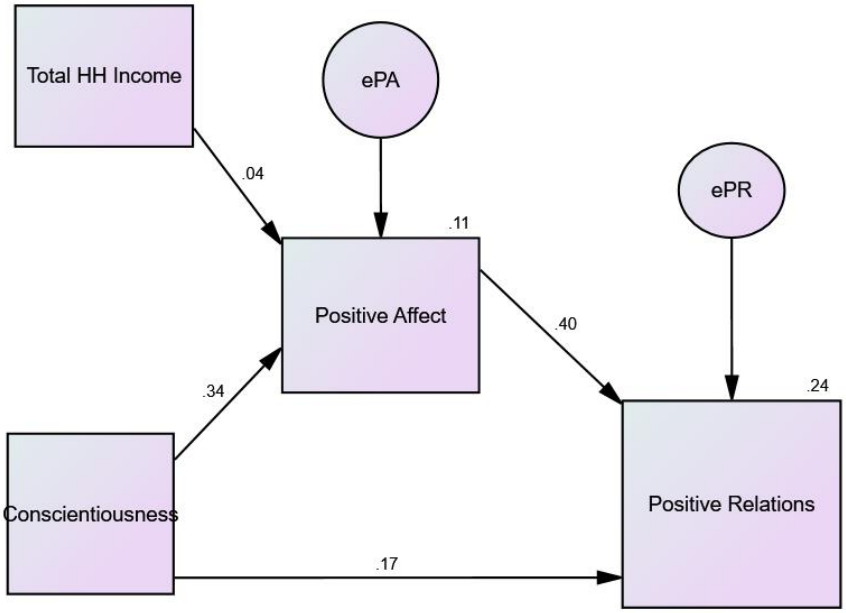

Figure 17: The basic model with conscientiousness as an input variable in place of extraversion (RMSEA = .064, PCLOSE = .068).

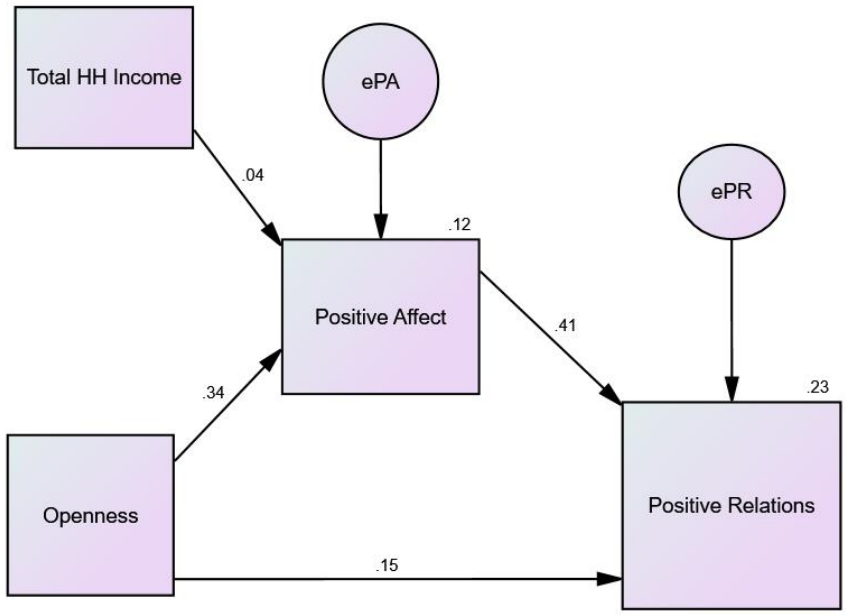

Figure 18: The basic model with openness as an input variable in place of extraversion (RMSEA = .054, PCLOSE = .307).

References

Abbott, R. A., Ploubidis, G. B., Huppert, F. A., Kuh, D., Wadsworth, M. E., & Croudace, T. J. (2006). Psychometric evaluation and predictive validity of Ryff's psychological well-being items in a UK birth cohort sample of women. *Health and quality of life outcomes*, *4*(1), 76-82.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Annas, J. (2004). Happiness as achievement. *Daedalus*, *133*(2), 44-51.

Bradburn, N. M. (1969). *The structure of psychological well-being.* Chicago: Aldine.

Brickman, P. & Campbell, D.T. (1971). Hedonic relativism and planning the good society. In M.H. Appley (Ed.), *Adaptation-level theory* (pp. 287-302). New York: Academic Press.

Busseri, M. A., & Sadava, S. W. (2011). A Review of the Tripartite Structure of Subjective Well-Being: Implications for Conceptualization, Operationalization, Analysis, and Synthesis. *Personality and Social Psychology Review*, *15*(3), 290-314.

Busseri, M., Sadava, S., & DeCourville, N. (2007). A hybrid model for research on subjective well-being: Examining common-and component-specific sources of variance in lifesatisfaction, positive affect, and negative affect. *Social Indicators Research*, *83*(3), 413-445.

Busseri, M. A., Sadava, S., Molnar, D., & DeCourville, N. (2009). A person-centered approach to subjective well-being. *Journal of Happiness Studies*, *10*(2), 161-181.

Christodoulou, C., Schneider, S., & Stone, A. A. (2014). Validation of a brief yesterday measure of hedonic well-being and daily activities: Comparison with the day reconstruction method. *Social indicators research, 115*(3), 907-917.

Christopher, J. C. (1999). Situating psychological well-being: Exploring the cultural roots of its theory and research. *Journal of Counseling & Development, 77*(2), 141-152.

Compton, W. C., Smith, M. L., Cornish, K. A., & Qualls, D. L. (1996). Factor structure of mental health measures. *Journal of Personality and Social Psychology, 71*(2), 406-413.

Deci, E.L., & Ryan, R.M. (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of Happiness Studies, 9*(1), 1-11.

Delle Fave, A., & Bassi, M. (2009). The contribution of diversity to happiness research. *The Journal of Positive Psychology*, *4*(3), 205-207.

Delle Fave, A., Brdar, I., Freire, T., Vella-Brodrick, D., & Wissing, M. P. (2011). The eudaimonic and hedonic components of happiness: Qualitative and quantitative findings. *Social Indicators Research*, *100*(2), 185-207.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 542-575.

Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social indicators research, 31*(2), 103-157.

Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist, 55*(1), 34-43.

Diener, E. (2013). The remarkable changes in the science of subjective well-being. *Perspectives on Psychological Science*, *8*(6), 663-666.

Diener, E., & Chan, M. Y. (2011). Happy people live longer: Subjective well-being contributes to health and longevity. *Applied Psychology: Health and Well-Being*, *3*(1), 1-43.

Diener, E., Kahneman, D., Tov, W., & Arora, R. (2010). Income's association with judgements of life versus feelings. In E. Diener, J.F. Helliwell, & D. Kahneman (Eds.), *International differences in well-being* (pp. 3-15). New York: Oxford University Press.

Diener, E., Larsen, R. J., Levine, S., & Emmons, R. A. (1985). Intensity and frequency: dimensions underlying positive and negative affect. *Journal of Personality and Social Psychology*, *48*(5), 1253-1265.

Diener, E., & Lucas, R.E. (1999). Personality and subjective well-being. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 213-229). New York, New York: Russell Sage Foundation.

Diener, E., Lucas, R. E., & Oishi, S. (2002). Subjective well-being: The science of happiness and life satisfaction. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford handbook of positive psychology* (pp. 187-196). New York, NY: Oxford University Press.

Diener, E., Lucas, R. E., & Scollon, C. N. (2006). Beyond the hedonic treadmill: revising the adaptation theory of well-being. *American Psychologist*, *61*(4), 305-314.

Diener, E., Lucas, R. E., Schimmack, U., & Helliwell, J. F. (Eds.) (2009). *Well-being for public policy.* New York, NY: Oxford University Press.

Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology*, *54*(1), 403-425.

Diener, E., Oishi, S., & Lucas, R. E. (2015). National accounts of subjective well-being. *American Psychologist*, *70*(3), 234.

Diener, E., & Seligman, M. E. (2004). Beyond money: Toward an economy of well-being. *Psychological Science in the Public Interest*, *5*(1), 1-31.

Diener, E., Suh, E.M., Lucas, R.E., & Smith, H.L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*(2), 276-302.

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, *97*(2), 143-156.

Easterlin, R.A. (2003). Building a better theory of well-being. *IZA Discussion paper series*, 742.

Forgeard, M. J., Jayawickreme, E., Kern, M. L., & Seligman, M. E. (2011). Doing the right thing: Measuring wellbeing for public policy. *International Journal of Wellbeing*, *1*(1). 79-106.

Gallagher, M.W., Lopez, S.J., & Preacher, K.J. (2009). The hierarchical structure of well-being. *Journal of Personality*, *77*(4), 1025-1049.

Gasper, D. (2007). Human well-being: Concepts and conceptualizations. In M. McGillivray (Ed.), *Human well-being: Concept and measurement* (pp. 23-64). New York, NY: Palgrave Macmillan.

Gasper, D. (2010). Understanding the diversity of conceptions of well-being and quality of life. *The Journal of Socio-Economics, 39*(3), 351-360.

Huppert, F., & So, T. (2011). Flourishing across Europe: Application of a new conceptual framework for defining well-being. *Social Indicators Research, 110*(3), 837-861.

Jahoda, M. (1958). *Current concepts of positive mental health.* New York: Basic Books.

Jayawickreme, E., Forgeard, M. J., & Seligman, M. E. (2012). The engine of well-being. *Review of General Psychology*, *16*(4), 327-342.

Kafka, G. J., & Kozma, A. (2002). The construct validity of Ryff's scales of psychological well-being (SPWB) and their relationship to measures of subjective well-being. *Social Indicators Research, 57*(2), 171-190.

Kahneman, D. (1999). Objective happiness. In D. Kahneman, E. Diener, & N. Schwarz (Eds.) Well-being: The foundations of hedonic psychology (pp. 3-25). New York, New York: Russell Sage Foundation.

Kahneman, D., & Riis, J. (2005). Living, and thinking about it: Two perspectives on life. In F. A. Huppert, N. Baylis, & B. Keverne (Eds.), *The science of well-being* (pp. 285-304). New York, NY: Oxford University Press.

Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. *The Journal of Positive Psychology*, *3*(4), 219-233.

Kemp, S., Burt, C. D., & Furneaux, L. (2008). A test of the peak-end rule with extended autobiographical events. *Memory & Cognition*, *36*(1), 132-138.

Keyes, C.L.M. (2002). From languishing to flourishing in life. *Journal of Health and Social Research, 43*, 207-222.

Keyes, C. L. M. (2005). Mental illness and/or mental health? Investigating axioms of the complete state model of health. *Journal of Consulting and Clinical Psychology, 73*(3), 539-548.

Keyes, C. L. M. (2007). Promoting and protecting mental health as flourishing: a complementary strategy for improving national mental health. *American Psychologist, 62*(2), 95-108.

Keyes, C. L., & Annas, J. (2009). Feeling good and functioning well: Distinctive concepts in ancient philosophy and contemporary science. *The Journal of Positive Psychology, 4*(3), 197-201.

Keyes, C. L., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology, 82*(6), 1007-1022.

Kitayama, S., & Markus, H. R. (2000). The pursuit of happiness and the realization of sympathy: Cultural patterns of self, social relations, and well-being. In E. Diener & E. M. Suh (Eds.), *Culture and subjective well-being* (pp. 113-161). Cambridge, MA: The MIT Press.

Kitchener, K. S. (1984). Intuition, critical evaluation and ethical principles: The foundation for ethical decisions in counseling psychology. *The Counseling Psychologist, 12*, 43-55.

Larsen, R. J., Diener, E. D., & Emmons, R. A. (1985). An evaluation of subjective well-being measures. *Social Indicators Research, 17*(1), 1-17.

Larsen, R. J., & Eid, M. (2008). Ed Diener and the science of subjective well-being. In M. Eid & R. J. Larsen (Eds.), *The science of subjective well-being* (pp.1-13). New York, NY: Guilford Press.

Larsen, R. J., & Fredrickson, B. L. (1999). Measurement issues in emotion research. In D. Kahneman, E. Diener, & N. Schwarz (Eds.) Well-being: The foundations of hedonic psychology (pp. 40-60). New York, New York: Russell Sage Foundation.

Lent, R.W. (2004). Toward a unifying theoretical and practical perspective on well-being and psychosocial adjustment. *Journal of Counseling Psychology, 51*(4), 482-509.

Lucas, R. E., & Diener, E. (2015). Personality and subjective well-being: Current issues and controversies. In M. Mikulincer, P.R. Shaver, M.L. Cooper, & R.J. Larsen (Eds.), *APA handbook of personality and social psychology, volume 4: Personality processes and individual differences. APA handbooks in psychology* (pp. 577-599). Washington, DC, US: American Psychological Association.

Lucas, R. E., & Schimmack, U. (2009). Income and well-being: How big is the gap between the rich and the poor? *Journal of Research in Personality*, *43*(1), 75-78.

Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: A meta-analysis on differences between cognitive and affective well-being. *Journal of Personality and Social Psychology*, *102*(3), 592-615. doi:10.1037/a0025948

Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: does happiness lead to success? *Psychological bulletin, 131*(6), 803-855.

Melchert, T.P. (2015). Biopsychosocial practice: A science-based framework for behavioral healthcare. Washington, DC, US: American Psychological Association.

Nave, C. S., Sherman, R. A., & Funder, D. C. (2008). Beyond self-report in the study of hedonic and eudaimonic well-being: Correlations with acquaintance reports, clinician judgments and directly observed social behavior. *Journal of Research in Personality*, *42*(3), 643-659.

Ng, Z. J., Huebner, S. E., & Hills, K. J. (2015). Life satisfaction and academic performance in early adolescents: evidence for reciprocal association. *Journal of School Psychology*, *53*(6), 479-491.

Oishi, S. (2010). Culture and well-being: Conceptual and methodological issues. In E. Diener, J. F. Helliwell, & D. Kahneman (Eds.), *International differences in well-being* (pp.) 34-69. New York, NY: Oxford University Press.

Pavot, W. (2008). The assessment of subjective well-being. In M. Eid & R. J. Larsen (Eds.), *The science of subjective well-being* (pp.124-140). New York, NY: Guilford Press.

Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment*, *5*(2), 164-172.

Pavot, W. & Diener, E. (2013). Happiness experienced: The science of subjective well-being. In S. David, I. Boniwell, & A. Conley Ayers (Eds.), *The Oxford handbook of happiness* (pp. 134-151). New York, NY: Oxford University Press.

Pavot, W., Diener, E., Colvin, C. R., & Sandvik, E. (1991). Further validation of the satisfaction with life scale: Evidence for the cross-method convergence of well-being measures. *Journal of Personality Assessment*, *57*(1), 149-161.

Ponterotto, J. G. (2005). Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. *Journal of Counseling Psychology*, *52*(2), 126.

Redelmeier, D. A., & Kahneman, D. (1996). Patients' memories of painful medical treatments: real-time and retrospective evaluations of two minimally invasive procedures. *Pain*, *66*(1), 3-8.

Reich, J. W., Zautra, A. J., & Davis, M. (2003). Dimensions of affect relationships: Models and their integrative implications. *Review of General Psychology*, *7*(1), 66.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68-78.

Ryan, R.M., & Deci, E.L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, *52*, 141-166.

Ryan, R. M., & Huta, V. (2009). Wellness as healthy functioning or wellness as happiness: The importance of eudaimonic thinking (response to the Kashdan et al. and Waterman discussion). *The Journal of Positive Psychology*, *4*(3), 202-204.

Ryff, C. D. (1989a). Beyond Ponce de Leon and life satisfaction: New directions in quest of successful ageing. *International Journal of Behavioral Development*, *12*(1), 35-55.

Ryff, C. D. (1989b). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069-1081.

Ryff, C. D. (2014). Psychological well-being revisited: advances in the science and practice of eudaimonia. *Psychotherapy and Psychosomatics*, *83*(1), 10-28.

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, *69*(4), 719-727.

Ryff, C. D., Keyes, C. L. M., & Hughes, D. L. (2004). Psychological well-being in MIDUS: Profiles of ethnic/racial diversity and life course uniformity. In O. G. Brim, C. D. Ryff, & R. C. Kessler (Eds.), *How healthy are we? A national study of well-being at mid-life* (pp. 398-424). Chicago, IL: The University of Chicago Press.

Ryff, C. D., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry*, *9*(1), 1-28.

Ryff, C. D., & Singer, B. H. (2006). Best news yet on the six-factor model of well-being. *Social Science Research*, *35*(4), 1103-1119.

Schimmack, U., & Diener, E. (1997). Affect intensity: Separating intensity and frequency in repeatedly measured affect. *Journal of Personality and Social Psychology*, *73*(6), 1313.

Schwarz, N. & Strack, F. (1999). Reports of subjective well-being: Judgmental processes and their methodological implications. In D. Kahneman, E. Diener, & N. Schwarz (Eds.) *Well-being: The foundations of hedonic psychology* (pp. 353-373). New York, New York: Russell Sage Foundation.

Scollon, C.N., Kim-Prieto, C., & Diener, E. (2003). Experience sampling: Promises and pitfalls, strengths and weaknesses. *Journal of Happiness Studies, 4*(1), 5-34.

Seligman, M.E.P. (2011). *Flourish*. New York: Simon & Schuster.

Sen, A. (2008) Capability and well-being. In D.M. Hausman (Ed.), *The philosophy of economics: An anthology (3rd ed.)* (pp. 270-294). New York, NY: Cambridge University Press.

Shmotkin, D. (2005). Happiness in the face of adversity: Reformulating the dynamic and modular bases of subjective well-being. *Review of General Psychology, 9*(4), 291-325.

Springer, K. W., & Hauser, R. M. (2006). An assessment of the construct validity of Ryff's scales of psychological well-being: Method, mode, and measurement effects. *Social Science Research, 35,* 1080-1102.

Springer, K. W., Hauser, R. M., & Freese, J. (2006). Bad news indeed for Ryff's six-factor model of well-being. *Social Science Research, 35*(4), 1120-1131.

Springer, K. W., Pudrovska, T., & Hauser, R. M. (2011). Does psychological well-being change with age? Longitudinal tests of age variations and further exploration of the multidimensionality of Ryff's model of psychological well-being. *Social Science Research, 40*(1), 392-398.

Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin*, *134*(1), 138-161.

Stone, A. A., Shiffman, S. S., & DeVries, M. W. (1999). Ecological Momentary Assessment. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 25-39). New York, New York: Russell Sage Foundation.

Suh, E. M., & Koo, J. (2008). Comparing subjective well-being across cultures and nations. In M. Eid & R. J. Larsen (Eds.), *The science of subjective well-being* (pp. 414-427). New York, NY: The Guilford Press

Teravskis, P. (2015) Freedom, values, consensus, denial: What matters in national debate. *Minneapolis Star-Tribune.* Retrieved from http://www.startribune.com/opinion/commentaries/291333011.html

Tiberius, V. (2013). Recipes for a good life: Eudaimonism and the contribution of philosophy. In A.S. Waterman (Ed.), *The best within us: Positive psychology perspectives on eudaimonia* (pp.19-38). Washington, DC: American Psychological Association.

Tiberius, V., & Hall, A. (2010). Normative theory and psychological research: Hedonism, eudaimonism, and why it matters. *The Journal of Positive Psychology*, *5*(3), 212-225.

Van Dierendonck, D. (2004). The construct validity of Ryff's scales of psychological well-being and its extension with spiritual well-being. *Personality and Individual Differences*, *36*(3), 629-643.

Veenhoven, R. (2007). Human well-being: Concepts and conceptualizations. In M. McGillivray (Ed.), *Human well-being: concept and measurement* (pp. 214-239). New York, NY: Palgrave Macmillan.

Veenhoven, R., & Hagerty, M. (2006). Rising happiness in nations 1946–2004: A reply to Easterlin. *Social Indicators Research*, *79*(3), 421-436.

Vittersø, J. (2013). Feelings, meanings, and optimal functioning: Some distinctions between hedonic and eudaimonic well-being. In A.S. Waterman (Ed.), *The best within us: Positive psychology perspectives on eudaimonia* (pp.39-56). Washington, DC: American Psychological Association.

Waterman, A. S. (1990). Personal expressiveness: Philosophical and psychological foundations. *Journal of Mind and Behavior*, *11*(1), 47-74.

Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness(eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, *64*(4), 678-691.

Waterman, A. S. (2008). Reconsidering happiness: A eudaimonist's perspective. *The Journal of Positive Psychology*, *3*(4), 234-252.

Waterman, A.S. (2013). Introduction: Considering the nature of a life well-lived—intersections of positive psychology and eudaemonist philosophy. In A.S. Waterman (Ed.), *The best within us: Positive psychology perspectives on eudaimonia* (pp.3-17). Washington, DC: American Psychological Association.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063.

World Health Organization. (1948). World Health Organization constitution. In *Basic documents.* Geneva: Author.