

THE EFFECT OF MEDITATION ON MINDFULNESS AND HAPPINESS

A thesis presented to the faculty of the Graduate School of Western  
Carolina University in partial fulfillment of the requirements for the  
degree of Master of Arts in Psychology

By

Sabrina Rose Teeter

Director: Dr. Thomas E. Ford  
Associate Professor of Psychology  
Psychology Department

Committee Members: Dr. Windy Gordon, Psychology  
Dr. Erin Myers, Psychology

April 2016

## TABLE OF CONTENTS

List of Figures .....	iii
Abstract .....	iv
Chapter One: Introduction.....	1
Chapter Two: Literature Review.....	3
Happiness.....	3
Subjective Well-Being.....	4
Psychological Well-Being.....	5
Meditation.....	7
The Relationship between Meditation and Happiness.....	10
Mindfulness.....	12
Present Research.....	13
Chapter Three: Method.....	15
Participants and Design.....	15
Procedure.....	15
MBSR Protocol.....	16
Dependent Measures.....	19
State Mindfulness.....	19
Psychological Well-Being.....	20
Subjective Well-Being.....	20
Trait Mindfulness.....	20
Chapter Four: Results.....	21
Subjective Well-Being.....	21
Psychological Well-Being.....	22
State Mindfulness.....	23
Mediation Analyses.....	24
Discussion.....	26
Limitations and Future Directions.....	27
Summary and Conclusion.....	28
Works Cited.....	29
Appendices.....	36
Appendix A: Toronto Mindfulness Scale.....	36
Appendix B: Scales of Psychological Well-Being.....	37
Appendix C: Satisfaction with Life Scale.....	38
Appendix D: Five Facet Mindfulness Questionnaire.....	39
Appendix E: Debriefing Script.....	41

## LIST OF FIGURES

Figure 1. Mean SWB scores as a function of the type of meditation manipulation .....	22
Figure 2. Mean PWB scores as a function of the type of meditation manipulation .....	23
Figure 3. Mean state mindfulness scores as a function of the type of meditation manipulation ...	24
Figure 4. Expected Path Analysis Based on Hypothesis .....	25

## ABSTRACT

### THE EFFECT OF MEDITATION ON MINDFULNESS AND HAPPINESS

Sabrina Teeter, Master of Arts in Psychology

Western Carolina University (April 2015)

Director: Dr. Thomas Ford

Meditation has been linked to increased levels of happiness. Meditation is broken down into two types: focused attention meditation and mindfulness meditation. The current study sought to examine the relationship between meditation and two different types of happiness: subjective well-being (SWB) and psychological well-being (PWB). Research has shown that mindfulness may be a mediator underlying this relationship; meditation may lead to increased levels of mindfulness, which may, in turn, lead to increased levels of happiness. I hypothesized that individuals exposed to mindfulness meditation will demonstrate increased levels of SWB. Also, I predicted that mindfulness would mediate the relationship between mindfulness meditation and SWB. To test this, participants were exposed to meditation and their levels of happiness and mindfulness measured. Contrary to my hypotheses, a one time meditation session had no significant effect on participants' level of SWB or state mindfulness.

## CHAPTER ONE: INTRODUCTION

“The most important thing is to enjoy your life—to be happy—it's all that matters.”

— Audrey Hepburn

As the quote by Audrey Hepburn suggest, the pursuit of happiness appears to be the ultimate life goal for people in our society. The United States’ constitution references the pursuit of happiness as one of the inherent rights of its citizens. In many cultures, happiness is glorified as an innate virtue, an intrinsic value of what it means to be a human-being. Indeed, Diener (2000) found that people of every country in the world indicated that happiness was the most important quality of life to attain.

Furthermore, people are obsessed with finding new things, experiences or people that can make them happy. On average, Americans think about happiness at least once a day (Freedman, 1978; Lyubomirsky & Ross, 1990). Given Americans’ obsession with happiness, the self-help section of bookstores is ever expanding with step-by-step guides for how to achieve happiness. Simply typing “How to be happy” into Google’s search engine brings up over fifty-one million results and 210,648 book titles on Amazon.com (a 95% increase over the past year).

One popular strategy for achieving happiness practiced by over 10 million people in the United States alone is meditation. According the US census Bureau Survey, nearly 10% of the United States population engages in some form of meditation, an increase from the 8% five years earlier. Supporting cultural folk wisdom, extensive research has demonstrated the efficacy of meditation for enhancing happiness (Wachholtz & Austin, 2013).

The proposed research is designed to expand on this literature by addressing the novel question of whether certain forms of meditation cause one to experience greater happiness. Furthermore, the proposed research distinguishes between two happiness experiences: subjective well-being (SWB) and psychological well-being (PWB), and examines the effect of mindfulness meditation on each.

## CHAPTER TWO: LITERATURE REVIEW

### **Happiness**

Positive psychology is a branch of psychology that emphasizes the study of emotions and traits that enable people to lead happy, fulfilling lives (Gable & Haidt, 2005, Weiss, Bates & Luciano, 2008). The term “positive psychology” first appeared in Maslow’s 1954 book, *Motivation and Personality*. And in the 1960s and 70s, humanistic psychologists such as Maslow and Rogers emphasized the importance of studying human potential and self-actualization. In 1998, Martin Seligman, president of the American Psychological Association, called for a revival of these humanistic approaches coupled with more rigorous research methodologies. He argued that psychology had historically over emphasized an understanding of human pathology (i.e., what can go awry in individuals, families, groups and institutions) and neglected the study of human strengths and flourishing (Gable & Haidt, 2005; Martin, 2014). The emergence of a modern positive psychology has shifted the focus of emotion research from the traditional emphasis on negative emotions (e.g., depression, anxiety, anger) to include positive emotions such as happiness, optimism, joy, gratitude, and love.

Researchers have become interested in the study of happiness because they have found that being happy is good for us. Numerous studies have shown both psychological and physical benefits of being happy. Happy people tend to cope better with threatening information (Aspinwall & Brunhart, 1996). In contrast with depressed people happy people tend to be more self-focused, forgiving, energetic, and creative (Myers & Diener, 1995; Myers, 1993; Veenhoven, 1988). Furthermore, happy people are significantly less likely to be affected by disease (Veenhoven 2007; Zautra 2003; Siahpush et al., 2008).

Because the term happiness has many different meanings in popular culture, researchers traditionally have preferred the term, “subjective well-being” (Diener, Scollon, & Lucas, 2004). Subjective well-being (SWB) emphasizes the individual’s subjective judgment of his or her own affect and life satisfaction (Lyubomirsky & Lepper, 1999). Recently, researchers have begun to differentiate SWB from a related but separate conceptualization of happiness, psychological well-being (PWB) (Hanley, Warner, & Garland, 2014; Linley et al., 2009). Psychological well-being can be understood as an enduring inner peace, which seems to transcend external events or circumstances.

### **Subjective Well-Being**

Subjective well-being has its roots or underlying framework in hedonism, which can be defined as the pursuit of pleasure. This self-centered strategy for obtaining happiness is often associated with approach-avoidance tactics. The individual’s subjective well-being depends on the attainment of pleasure and the avoidance of displeasure (Dambrun & Ricard, 2011).

Theorists have proposed that two distinct motives underlie the attainment of pleasure and the avoidance of displeasure associated with subjective well-being. Approach motives lead one to seek appetitive stimuli or positive experiences, whereas avoidance motives lead one to avoid aversive stimuli or negative experiences (e.g., Carver, 1996; Davidson, 1998, 2000; Gray, 1970, 1981; Higgins, 1998).

Gray (1994) conceptualized the approach and avoidance motives as two motivational/neurological systems: the Behavioral Activating System (BAS) and the Behavioral Inhibition System (BIS). The BAS regulates approach motivation. People with a sensitive BAS actively and routinely pursue potential rewards and potentially positive emotional experiences. The BIS regulates aversive or avoidance motivation; it inhibits goal directed behavior that might

have aversive outcomes. For example, an individual might avoid taking part in a potentially lucrative but also risky business venture to avoid the negative consequences that could arise.

Importantly for the present research, the BAS and BIS systems differentially predict the experience of subjective well-being (Gray, 1990). Specifically, BAS sensitivity relates to the general experience of positive affect or subjective well-being; whereas BIS sensitivity relates to the experience of negative affect (Carver & White, 1994; Gable, Reis, & Elliot, 2000; Sutton & Davidson, 1997; Updegraff, Gable, & Taylor, 2004). Carver and White (1994), for instance, showed that participants scoring high on their BAS scale reported greater subjective well-being upon the anticipation of a reward than those scoring low on the BAS scale (Exp. 4). Participants scoring higher on their BIS scale reported greater nervousness upon anticipation of a punishment than those scoring low on the BIS scale (Exp. 3). Taken together, existing research suggests that a relatively sensitive BAS enhances their subjective well-being; a sensitive BIS makes happiness harder to find, thus diminishing subjective well-being.

It is noteworthy that fluctuation between BAS or BIS dominance can lead to fluctuating sense of subjective-well-being, as pleasant and unpleasant feelings alternate repeatedly (Dambrun et al. 2012). According to Brickman and Campbell's (1971) adaptation theory, the pleasant and unpleasant feelings derived from external events last only a brief time before an individual returns to a baseline level of happiness.

### **Psychological Well-Being**

In contrast to the self-centered construct of SWB is the construct of psychological well-being. Psychological well-being (PWB) is characterized by an enduring, inner peace and tranquility which seems to be independent of outside circumstances or situations (Hanley, Warner, & Garland, 2014). PWB is derived from the concept of eudemonism, a concept derived

from Aristotle's *Nicomachean Ethics*. Eudemonism is understood as the pursuit of realizing one's true potential. In direct contrast with pleasure-chasing hedonic individuals, eudemonic individuals are interested in autonomy, environmental mastery, maximizing individual talents, and maintaining positive relations with others.

This eudemonic state of durable contentment instills the individual with the attitude and skills to embrace not only the joys in life, but also the tragedies and pain. PWB represents an enduring happiness that pervades an individual's emotions, behaviors and interpretations of experiences. In short, happy individuals (those high in PWB) view life through a positive lens. A study conducted by Biswas-Diener & Diener (2001) examined the level of happiness of slum dwellers in Calcutta. One would naturally assume that the poverty and often-difficult way of life would give way to a low level of happiness. The researchers, however, found that these individuals were actually as happy as the average American (check this study for details). Their happiness, it seems, comes from a place of inner peace that does not take into account lower finances or a paucity of material possessions.

High levels of PWB result from mental balance, coupled with an unfiltered awareness of the true nature of reality. This mental balance and heightened awareness stems from a selfless predisposition. These individuals have a tendency to view the self as a fluid entity without a rigid distinction between self and others. In other words, individuals high in PWB tend to place a low degree of importance on the self, relative to connectedness with others. This interdependence with others is similar to the "transpersonal state", which refers to the notion that one's identity goes beyond the self, encompassing everything surrounding an individual, including nature, other individuals and creatures, essentially the entire cosmos (Dambrun & Ricard, 2011). William James referred to this concept as "cosmic consciousness" (Walsh & Vaughan, 1993).

This relational or interdependent view of the self falls in line with the Buddhist meditative tradition, which states that the self is not a structured, separate entity, but rather can be thought of as a dynamic, shifting web of interconnections among various aspects of the individual (Dambrun & Ricard, 2011).

PWB and SWB are not fixed types of functioning, with strict adherence to either one type or the other, with individuals acting in a rigid, unchangeable manner. Rather they should be thought of as malleable orientations toward happiness. Some individuals may have a predisposition for engaging in strategies commonly associated with a fluctuating happiness (SWB), while others may gravitate towards the more adaptive strategies associated with an enduring happiness (PWB). While this predisposition towards one type or the other exists, people may take measures to increase their orientation toward the adaptive eudemonic PWB.

In fact, effective strategies to incorporate this more adaptive tactic for navigating life has been the subject of increasing popularity in mainstream society, and also academic research. Intuitively, one would assume that pleasurable experiences would instill a sense of enduring happiness, but as discussed above, this is not the case. According to Myers & Diener (1995), happiness is not correlated with an abundance of wealth and material possessions. So how does one obtain a sense of enduring happiness, independent of outside influences? A tactic which has garnered considerable attention with regard to acquisition of happiness is the practice of meditation.

## **Meditation**

Meditation originated in Asia, dating back to 6<sup>th</sup> century BC. Meditation, also known as self-reflected thought, first began as a central component of various religious practices and is the oldest known relaxation technique. The purpose of meditation is regulation of one's internal

processes through conscious attention and awareness. Despite the various methods and focuses that vary depending on meditation type, the end goal is always a cleansing of the mind, leading to the feeling of inner peace commonly associated with PWB. This quote by Eckhart Tolle articulates the implications of meditation:

The moment you start watching the thinker, a higher level of consciousness becomes activated. You then begin to realize there is a vast realm of intelligence beyond thought, that thought is only a tiny aspect of intelligence. You also realize that all things that truly matter-- beauty, love creativity, joy, inner peace-- arise from beyond the mind. You begin to awaken.

Meditation has been characterized along two dimensions: open monitoring or focused attention. Open monitoring, also known as mindfulness meditation, involves focusing attention on the present moment, observing any thought, feeling or sensation without any specific focus. The mind is essentially free to accept all thoughts, free from judgment or emotion, a process known as detached observation. The ultimate goal is to essentially step outside of one's self, and simply be a passive observer of thoughts. An accurate analogy would be to think of the mind as a movie screen, with thoughts projected onto the screen as images to be observed non-judgmentally.

Retraining the mind in this way allows the individual to better cope with stressors in everyday life. This ability to maintain an unemotional and detached perspective in the face of adversity is known as "domesticating the ego." In other words, the state of mind attained from meditation can be thought of in conjunction with the selfless approach to functioning that is characteristic of PWB. Individuals that maintain an enduring sense of happiness do not view the

self as a rigid and unchangeable entity, but rather as fluid and dynamic, thus bestowing them with the ability to maintain the non-judgmental detachment associated with meditation outcomes.

A second type of meditation, known as focused attention meditation, involves an individual focusing on a particular mantra, image, thought or idea. This fixation with a specific construct may act as a device used to wipe out all other thoughts or feelings from consciousness. This type of meditation is often practiced with the eyes closed, so as to block out all potential distractors from the visual field. Individuals engaging in a focused attention meditation session may fixate on positive feelings, a specific religious passage, or calming images, such as an image of a mountain or lake.

One form of focused attention meditation, loving kindness meditation (LKM), seeks to increase the frequency of positive emotions by directing one's attention on warm tender feelings. The theoretical framework behind this practice is known as the broaden-and-build theory, which asserts that the experience of positive affect has the ability to widen an individual's outlook, which will gradually reshape who they are, helping to construct valuable, personal resources (Fredrickson et al., 2008).

Fixations on such images as a mountain or lake come from the Mindfulness Based Stress Reduction Protocol (Kabat-Zinn, 1990). Individuals engaging in this protocol are instructed by the therapist to reflect on the fact that a lake is receptive to any change that might occur on the water's surface, yet it maintains a peaceful, calm under the water's surface. Individuals engaging in lake meditation are encouraged to fixate on such aspects as the peaceful banks surrounding the lake, and the aqua and deep blue colors that checker the surface of the water.

Although originating in the Far-East, Meditation has since made its way across the Atlantic and become integrated into mainstream Western culture. In July of 2003, Time

magazine featured a cover story on the increased prevalence of meditation by Americans. In that same year Business Weekly featured an article enumerating several CEOs of successful Fortune 500 companies who frequently engage in meditation. Also, well-known celebrities such as Katy Perry, Angelina Jolie and Paul McCartney practice meditation regularly.

The popularity stems, in part, to the copious number of scientific findings that correlate meditation to a myriad of positive health benefits, such as lower triglyceride levels, more stable heart rate, lower blood pressure, more stable respiratory rate, and increased immune function (Davison et al., 2003; Grossman et al., 2004). In fact, habitual meditators tend to be physiologically younger by twelve to fifteen years, in contrast with non-meditators.

In addition to physical health benefits, meditation has also been shown to have a positive impact on psychological characteristics, such as self-esteem, mindfulness, forgiveness, and well-being (Wachholtz & Austin, 2013; Grossman et al., 2004; Fredrickson et al., 2008). Emavardhana and Tori (1997) found that participants who completed a 7 day Vipassana meditation retreat were less affected by external stimuli and sexual impulses, and reported increased self-acceptance.

### **The Relationship between Meditation and Happiness**

The practice of meditation may help to awaken individuals to the joys of the present moment. The underlying goal of meditation is not a removal from the world, but rather a conscious attention to the beauty of a given moment. Regardless of the goal of the specific type of meditation, the underlying philosophy is that true happiness will not be found in the fluctuating experiences of the external environment, but rather by turning attention inward on the mind. This deep sense of inner peace obtained by meditation shares the same core tenets as the strategies discussed earlier in relation to obtaining a high level of PWB. Individuals high in PWB

maintain a detached engagement with regard to obtaining material, worldly pleasures. Instead, the focus is on a non-judgmental acceptance of the reality of the present moment.

Accordingly, research on the relationship between meditation and happiness has focused on dispositional happiness or PWB rather than a temporary affective state or SWB. Fredrickson et al. (2008) conducted an experiment in which they assigned participants to either a Loving Kindness Meditation condition or a control condition. In the LKM condition, participants practiced LKM for six 60-minute sessions. LKM positively affected PWB compared to the control condition. Similarly, Kozasa et al. (2008) found that participants who engaged in Siddha Samadhi Yoga for a period of two weeks showed a significant increase in PWB. Also, in a correlational study, Hanley et al. (2014) found that participants who engaged in “contemplative practices” such as meditation reported greater PWB *and* SWB; however, they related more strongly with PWB than SWB.

Some studies have also examined the effect of meditation on areas of the brain typically associated with positive feelings. Lutz , Greischar, Rawlings, Ricard, and Davidson (2004) found that habitual meditation over a period of six weeks was correlated with an increase of rapid oscillations in gamma frequencies in the left prefrontal area, an area that is typically associated with positive emotions. In contrast, during a “normal” state of consciousness, rapid, jagged beta waves are emitted. These are primarily associated with censorship, analysis, judgment and rationality. Thus, meditation may precipitate an altered state of consciousness typically comprised of hyper awareness and receptivity, leading to an influx of positive thoughts and feelings. This alteration in brain functioning highlights the notion that the brain can be trained to become more oriented towards eudemonic happiness. This means that an individual may take steps to increase their PWB through meditation.

## **Mindfulness**

At any given moment, the mind is customarily oscillating between thoughts about the past, present and future. The past is oftentimes wrought with memories of remorse and regret, while thoughts of the future hold anxieties or fears of potential hardships to come. The act of being mindful involves complete and total engagement and awareness of the present moment with an attitude of nonjudgmental acceptance. Baer et al. (2006) characterized Mindfulness along five distinct, but interrelated dimensions: observing, describing, acting with awareness, non-judging, and non-reacting.

The notion of the existence of this trait originally came to light in conjunction with eastern religious traditions, such as Buddhism and Hinduism. The shared core characteristics between mindfulness and desired meditation outcomes is no coincidence. A central tenet of these religious traditions is the notion that an individual may cultivate the characteristic of mindfulness, through meditation (Baer et al., 2006). This assertion has seen considerable attention, as well as statistical support, in the field of academic research (Brown, Ryan, & Cresswell, 2007). Hanley et al. (2014) found that meditators had significantly higher levels of mindfulness, compared to non-meditators. They also found that meditators had significantly higher levels of PWB and SWB. These findings raise the possibility that mindfulness acts as a mediator in the relationship between meditation and happiness. (Hanley et al., 2014; Harrington, Loffredo & Perz, 2014).

The Mindfulness Based Stress Reduction (MBSR) is a set of instructions aimed at increasing happiness as well as reducing feelings of negative emotion through meditation (Kabat-Zinn, 1990). The meditation procedures articulated in the protocol are aimed at helping the individual to become more mindful. The beginning of each meditation session always begins

with a relaxed body posture and instructions to slow down the mind and focus on one's state of being in the present moment, thoughts that are characteristic of being mindful. The MBSR has seen considerable success with regard to reducing distress and enhancing well-being in (Baer, 2003; Bishop, 2002; Grossman, Niemann, Schmidt, & Walach, 2004). Shapiro et al. (2008) found that, after exposure to the spiritual protocol in the Mindfulness Based Stress Reduction Protocol, participants experienced an increase in mindfulness, which was associated with decreased stress levels and rumination, in contrast with participants that were not exposed to meditation. Carlson and Garland (2008) exposed cancer patients to the MBSR and found a considerable increase in sleep quality, and also a decrease in stress, and mood disturbance.

### **Present Research**

Given that previous research on the relationship between meditation and happiness has examined the effect of meditation over multiple sessions, it is unclear how one single session of meditation will impact an individual's PWB and SWB. Given the stable, dispositional nature of PWB, it seems that one solitary session of meditation will have little impact on this type of happiness. PWB is defined as an enduring sense of happiness, not contingent on an individual's current situation. In contrast, SWB, a state of happiness contingent on a person's current environment or state of being, would be more likely to be impacted by a single session of meditation.

The proposed research is designed to examine the relationship between meditation and SWB and PWB. Instead of conducting a correlational study, measuring those who already engage in a regular contemplative practice compared with non-meditators over time, I experimentally manipulated meditation by having participants either engage in a one time meditation session or watch a documentary. This extends previous research by assessing the

effect of a one-time meditation session on an individual's mindfulness and happiness. On the basis of previous research, I will test the following hypotheses. First, mindfulness meditation will lead to increased levels of SWB. Second, mindfulness will mediate the relationship between mindfulness meditation and SWB.

I tested these hypotheses by having participants engage in mindfulness meditation, focused attention meditation or no meditation. Next, participants completed measures of SWB, PWB and mindfulness (state and trait). I expected to find that participants in the mindfulness meditation condition will report the highest levels of SWB, followed by participants in the focused attention meditation condition. I expected no change in PWB across conditions, as this type of happiness is not contingent upon an individual's current situation or mental state. Furthermore, I expected that mindfulness will mediate the relationship between happiness and meditation in the mindfulness meditation condition.

## CHAPTER THREE: METHOD

### **Participants and Design**

Male and female participants were recruited from the Western Carolina University PSY 150 participant pool. Participants voluntarily took part in the study in exchange for course credit. Participants were 18 years of age or older and were a citizen of the United States. I randomly assigned participants to one of three experimental conditions with type of meditation (mindfulness meditation, focused attention meditation, no meditation) serving as a between-subjects factor.

### **Procedure**

Participants completed the experiment in small groups of up to six. Upon arrival at the lab, participants were greeted by a research assistant and told they would be completing a study assessing the effects of meditation on art appreciation. Specifically, I instructed participants that they would be randomly assigned to either a meditation condition or a control condition. The meditation condition required the participants to meditate for 20 minutes. Afterwards they gave their opinions about the aesthetics of three paintings. Alternatively, the control condition involved watching a video for 20 minutes before giving their opinions about the paintings.

### **MBSR Protocol**

For participants in the mindfulness meditation condition I instructed them to engage in MBSR meditation for 20 minutes using the following MBSR instructions dedicated specifically to mindfulness meditation.

*Experimenter:* Mindfulness sitting meditation involves choiceless awareness, or bare attention. *Choiceless awareness* means being aware of whatever you experience in

each moment without seeking or rejecting any particular experience. Remember to be accepting and patient with what you can manage and not think of it as some sort of competition.

*Experimenter:* Now that you're seated, close your eyes or lower your eyelids. Notice your breath. Feel the air moving into your nostrils, into your body. Breathing in, and breathing out. *(Pause for ten seconds. Remember to speak slowly as you guide your client through this meditation.)*

Notice your body connected to the floor or seat. Allow yourself to feel grounded and supported by the earth, knowing as you sit here that you are connected to all things. Allowing yourself to just be right now, moment by moment.

As you breathe in and out, you'll notice that your mind begins to wander. *(Pause for ten seconds.)* Notice your thoughts, feelings, or whatever sensations come into your awareness. Observe them, letting them pass into your awareness. Then gently bring your awareness back to your breath. Breathing in, and breathing out...in and out. *(Pause for ten seconds.)*

Continue observing and not judging yourself for whatever enters your mind. Bringing your attention back to your breath, then watching it wander away again.

When you find yourself getting involved in thoughts, images, or feelings, gently and patiently bring your awareness back to your breath. Don't get upset with yourself if you have to do this frequently. With time you'll find that you move into a place that's calm and watchful and not reactive to these images and thoughts.

Continue to sit, gently bringing your awareness back to the breath whenever you find yourself dwelling in thoughts of the past or images of the future. It might help you to

label these as “thought,” “feeling,” “image,” “planning,” and so on. Then return to the breath.

Breathing in and out...in and out. Continue to observe and bring your attention back to the breath whenever it wanders for the next fifteen minutes. (*You can periodically say a word or two to help them remember to focus on the breath, such as “breathe in...breathe out” or “notice your breath.”*)

Now notice your body connected to the floor or seat. Sense your hands, arms, feet, legs, shoulders, and face. When you’re ready, slowly open your eyes and gently move your body. You can gently stretch out your legs and arms.

For participants in the focused attention mediation condition, I instructed them to meditate using the following MBSR instructions that encourage participants to focus their attention on a lake:

*Experimenter:* Now that you’re seated, close your eyes or lower your eyelids. Notice your breath. Feel the air moving into your nostrils, into your body. Breathing in, and breathing out. (*Pause for five seconds.*)

Allow yourself to imagine a lake. What surrounds the lake? Are there soft, green banks that gently slope into the lake? Is the lake nestled between two mountain peaks? Breathing in the stillness of the lake, breathing out calm. (*Pause for ten seconds.*)

Allow yourself to be the lake and breathe with it. Explore the depths of the lake. What colors do you see? What changes in the water temperature do you experience? Breathing in the stillness of the lake, breathing out calm. (*Pause for ten seconds.*)

Notice any forms of life within the water. Fishes, turtles, otters, plants, all living in harmony. Notice any birds that may be floating on the water's surface. Breathing in the stillness of the lake, breathing out calm. *(Pause for ten seconds.)*

Look up, above the water, to observe the sky and feel the wind on the surface of the lake. Noticing the season and its coolness or warmth. Breathing in stillness, breathing out calm. *(Pause for ten seconds.)*

Now imagine a storm brewing above the lake, and experience the surface of the lake being whipped by winds and pelted with rain. Notice how the inner depths of the lake remain calm. In time the storm passes, and slowly the surface return to stillness. Breathing in stillness, breathing out calm. *(Pause for ten seconds.)*

*(Continue with images of the calm and stillness of the depths of the lake for at least five more minutes. You can continue for up to twenty more minutes.)*

Now notice your body connected to the floor or seat. Sense your hands, arms, feet, legs, shoulders, and face. When you're ready, slowly open your eyes and gently move your body. You can gently stretch out your legs and arms.

I instructed participants in the no meditation condition that we are interested in comparing the art appreciation of meditators to non-meditators. As a result, we would like them to engage in a non-meditation activity and then give their impressions of three paintings. For their non-meditation activity, we asked them to watch a video clip of ocean life for 20 minutes, the same amount of time the other participants meditated (see link to video below).

<https://www.youtube.com/watch?v=EueBzS3kPe8>

After completing the meditation protocol or no-meditation video all participants answered the following questions about three paintings, "To what extent does this painting evoke

an emotional reaction in you?” “To what extent is this painting aesthetically pleasing?” and “To what extent do you like this painting?” Participants will respond to each question using a scale ranging from 1 (not at all) to 7 (very much).

After rating the paintings, participants completed the dependent measures under the guise that we have to control for a number of variables in a study like this one. Lastly, participants answered the following question about their meditation practices: “Do you engage in a regular meditative/contemplative practice?” Data from participants indicating they do have a regular contemplative practice were excluded from all subsequent analyses.

### **Dependent Measures**

**State Mindfulness.** The momentary, state mindfulness of each participant was assessed using the Toronto Mindfulness Scale (TMS). The TMS is a 13-item questionnaire assessing an individual’s state mindfulness across two dimensions: curiosity and decentering. Participants indicated on a 5 point scale, ranging from 0 (Not At All) to 4 (Very Much). I constructed an aggregate measure of state mindfulness by averaging responses of the thirteen items. Then I ran a reliability analysis, resulting in a Cronbach’s alpha of .84, exceeding Nunnally’s (1977) criteria of acceptable reliability of .70.

**Psychological Well-Being.** To assess each participant’s level of enduring psychological well-being, they completed Ryff’s (1989) Scales of Psychological Well-Being (SPWB). The SPWB consists of 18-items measuring well-being across six dimensions: self-acceptance, purpose in life, environmental mastery, positive relations, personal growth and development, and autonomy. Participants responded to each item using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). After constructing an aggregate measure of PWB by taking the average of the responses, I ran a reliability analysis. The Cronbach’s alpha was .73.

**Subjective Well-Being.** The Satisfaction With Life Scale measured participants' level of SWB. This is a 5-item instrument utilizing a 7-point Likert scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree), to measure an individual's SWB (i.e. fluctuating, momentary happiness). The Cronbach's alpha for this measure was .80. I also created averaged responses from the five items to create an aggregate measure of SWB.

**Trait Mindfulness.** Each participant's level of trait mindfulness was assessed using the Five Facet Mindfulness Questionnaire (FFMQ). The FFMQ is a 39-item instrument that uses a 5-point Likert-type scale, ranging from 1 (Never True) to 5 (Always True), to measure dispositional mindfulness across five dimensions: observing, describing, acting with awareness, non-judging, and non-reacting. The Cronbach's alpha was .83, thus demonstrating good internal consistency. This was treated as a covariate, as a predilection toward mindfulness may result in an increase of happiness (both SWB and PWB), regardless of experimental manipulation.

After this, participants were debriefed, thanked and granted course credit for their participation. See Appendix A, B, C and D for a complete description of all the dependent measures and Appendix E for a description of the debriefing script following the procedure recommended by Mills (1976).

## CHAPTER FOUR: RESULTS

I predicted that participants that engage in mindfulness meditation would report higher levels of SWB (but not PWB) than participants that engaged in focused attention meditation or participants that did not engage in any form of meditation. Furthermore, I expected that state mindfulness would mediate the relationship between happiness and meditation in the mindfulness meditation condition.

I subjected the measures of SWB, PWB and state mindfulness to a one-way analysis of covariance (ANCOVA) with type of meditation (mindfulness, focused attention, no meditation) serving as the between-subjects factor and trait mindfulness serving as a covariate. I enumerated on significant effects of type of meditation by conducting planned comparisons derived from my hypotheses using an independent samples t-test based on the error term pooled from the complete experimental design. To examine whether meditation (mindfulness or focused attention) affected responses on my dependent measures relative to no meditation, I performed secondary analyses on each dependent variable comparing the two meditation conditions to the no-meditation control condition. Specifically, I conducted separate ANCOVAs with intervention (meditation, no meditation) serving as a between-subjects factor.

### **Subjective Well-Being**

The mean SWB scores for each meditation condition are presented in Figure 1. The ANCOVA revealed no significant effect of type of meditation on SWB,  $F(2, 44) = 0.441, p = 0.646$ . Contrary to my hypothesis, participants that engaged in mindfulness meditation did not report greater levels of SWB ( $M = 4.80, SD = 1.18$ ) than participants that engaged in focused attention meditation ( $M = 4.94, SD = 1.29$ ) or participants that did not engage in any meditation

( $M = 5.10$ ,  $SD = 1.17$ ).

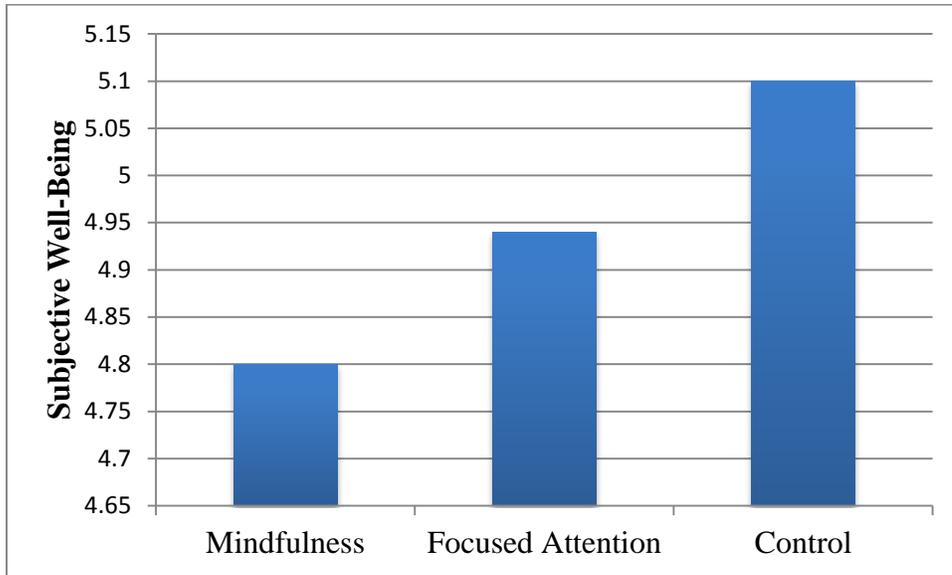


Figure 1. Mean SWB scores as a function of the type of meditation manipulation.

Secondary analyses examining the effect of meditation versus no meditation on SWB revealed no significant effect,  $F(1, 45) = 0.845$ ,  $p = .363$ , indicating that participants that engaged in meditation did not report greater SWB ( $M = 4.8722$ ,  $SD = 1.22185$ ) than participants that did not engage in meditation ( $M = 5.1000$ ,  $SD = 1.17705$ ).

### Psychological Well-Being

As displayed in Figure 2, the ANCOVA revealed no significant effect of type of meditation on PWB,  $F(2, 44) = 0.089$ ,  $p = 0.915$ . Contrary to my hypothesis, participants that engaged in mindfulness meditation did not report greater levels of PWB ( $M = 4.73$ ,  $SD = 0.44$ ) than participants that engaged in focused attention meditation ( $M = 4.76$ ,  $SD = 0.56$ ) or participants that did not engage in any meditation ( $M = 4.62$ ,  $SD = 0.55$ ).

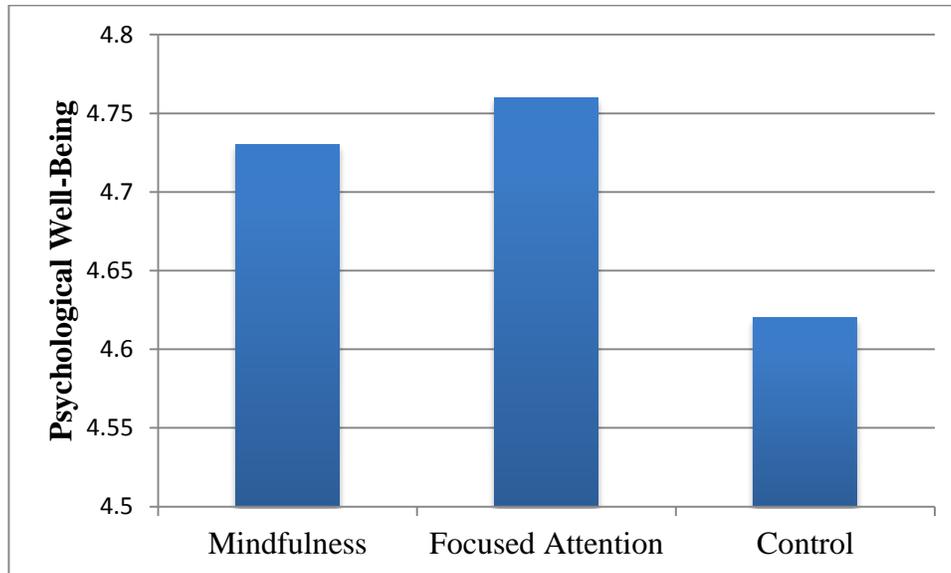


Figure 2. Mean PWB scores as a function of the type of meditation manipulation.

Secondary analyses examining the effect of meditation versus no meditation on PWB revealed no significant effect,  $F(1, 45) = 0.177, p = .676$ , indicating that participants that engaged in meditation did not report greater PWB ( $M = 4.74, SD = 0.50$ ) than participants that did not engage in meditation ( $M = 4.62, SD = 0.55$ ).

### State Mindfulness

The mean state mindfulness scores for each meditation condition are presented in Figure 3. The ANCOVA revealed no significant effect of type of meditation on state mindfulness,  $F(2, 44) = 0.99, p = 0.378$ . Contrary to my hypothesis, participants that engaged in mindfulness meditation did not report greater levels of state mindfulness ( $M = 2.82, SD = 0.65$ ) than participants that engaged in focused attention meditation ( $M = 2.92, SD = 0.55$ ) or participants that did not engage in any meditation ( $M = 2.57, SD = 0.65$ ).

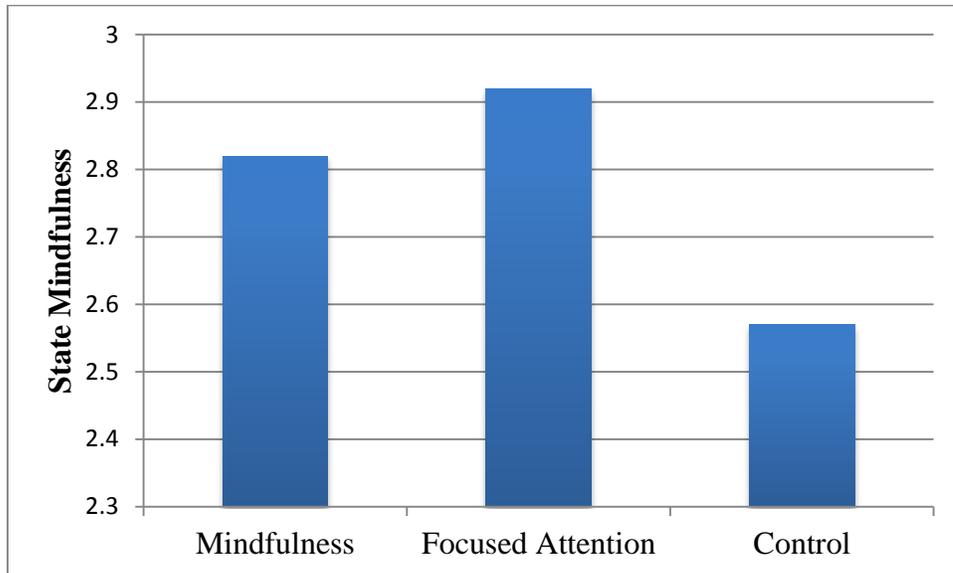


Figure 3. Mean state mindfulness scores as a function of the type of meditation manipulation.

Secondary analyses examining the effect of meditation versus no meditation on state mindfulness revealed no significant effect,  $F(1, 45) = 1.80, p = .187$ , indicating that participants that engaged in meditation did not report greater state mindfulness ( $M = 2.87, SD = 0.60$ ) than participants that did not engage in meditation ( $M = 2.57, SD = 0.65$ ).

### Mediation Analyses

If mindfulness meditation had significantly increased SWB I would have tested Hypothesis 2 that state mindfulness mediated that effect. I would have tested the mediation hypothesis in the following way. First, I would have performed a path analysis following Baron and Kenny's (1986) procedure regressing SWB onto the independent variable, type of meditation. I predicted that the direct path would be significant. Next, I would regress the mediator variable, state mindfulness, onto type of meditation. This path should also be significant. Finally, I would have regressed SWB onto both state mindfulness and type of meditation. The path from state mindfulness to SWB should be significant, but importantly, the direct path from type of meditation to SWB (PWB) should no longer be significant.

In addition, I would have tested Hypothesis 2 using bootstrapping procedures described by Preacher and Hayes (2004). The goal of bootstrapping is to examine whether the indirect path from type of meditation to SWB through state mindfulness is significantly different from zero. This is done by providing a 95% confidence interval for the population value of the indirect effect (Preacher & Hayes, 2004). If zero is not in the 95% confidence interval, the indirect effect is significant at  $p < .05$ .

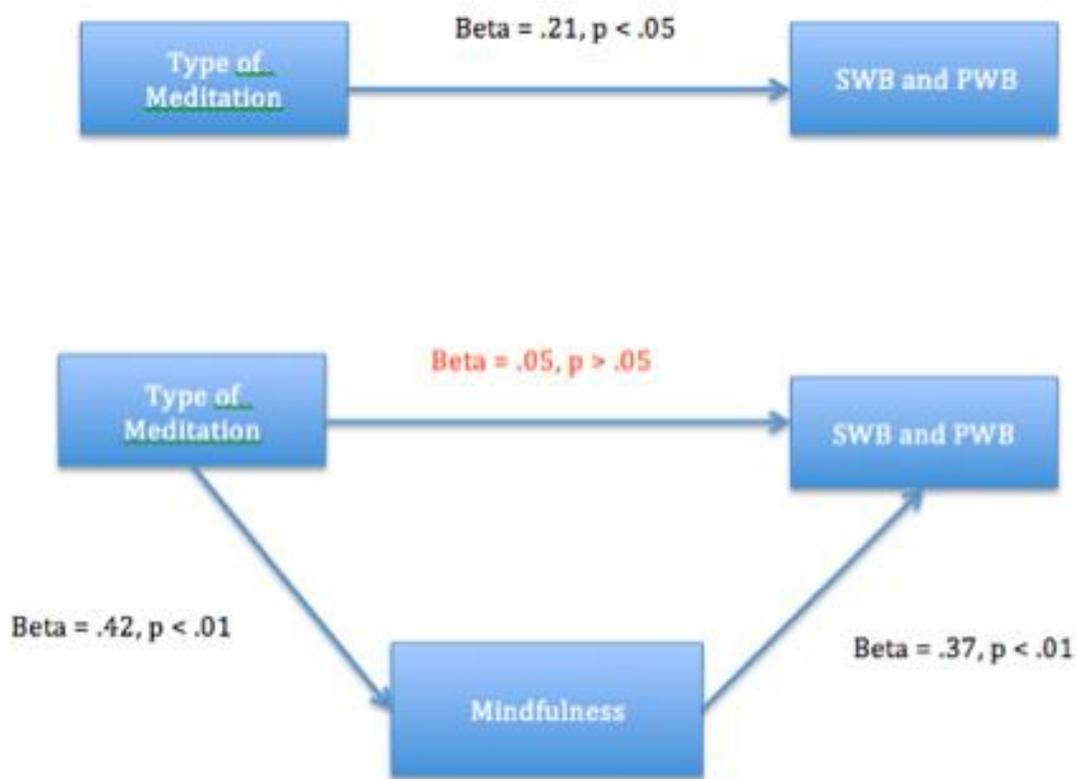


Figure 4. Expected Path Analysis Based on Hypothesis 2

## CHAPTER 5: DISCUSSION

My experiment tested the hypothesis that engagement in a one-time mindfulness meditation session increases level of SWB. I also hypothesized that the relationship between mindfulness meditation and SWB is mediated by state mindfulness. In the context of my experiment, I predicted that participants would report higher scores on my measure of SWB, compared to participants that engaged in focused attention meditation or participants that engaged in no meditation. Based on my meditation hypothesis, I predicted that the scores on the TMS would mediate the effect of mindfulness meditation on my measure of SWB.

Contrary to my hypotheses, a one time meditation session had no significant effect on participants' level of SWB or state mindfulness. Subjecting the measures of SWB, PWB and state mindfulness to a one-way analysis of covariance (ANCOVA) with type of meditation (mindfulness, focused attention, no meditation) serving as the between-subjects factor and trait mindfulness serving as a covariate revealed no significant effects. Participants' engagement in meditation did not affect their level of happiness (SWB or PWB) or state mindfulness.

Had my results revealed support for my hypothesis, they would have contributed new knowledge to the literature on meditation. Specifically, previous studies have examined the effect of meditation after multiple sessions, over a period of weeks or months. My study examined the novel question of whether one time engagement in meditation would have any significant effects on happiness. Significant results would have illuminated the fact that the benefits of meditation may be available for anyone, not just for the practiced and experienced meditator. While meditation is becoming increasingly ubiquitous in our western culture, significant findings could have further contributed to the popularity among Americans.

In addition to examining the varying effects of two types of meditation, secondary analyses involved investigating whether meditation affected participants differently compared to no meditation. I combined the two meditation conditions together (mindfulness and focused attention), creating a “meditation condition” and “no meditation condition”. Although not significant, the relationship between state mindfulness and meditation became stronger when the two meditation conditions were combined. These findings are encouraging, as they indicate that a relationship between mindfulness and meditation may exist. As previous studies have shown, mindfulness is correlated with increased levels of well-being (Harrington, Loffredo & Perz, 2014). For this reason, further investigation into the ways in which mindfulness may be cultivated has important societal implications. Despite not being significant, my findings are encouraging in the pursuit of the cultivation of mindfulness.

### **Limitations and Future Directions**

There are some important limitations to this study. First, my experimental manipulation may have been weak. Although the meditation protocols used in my study followed from Kabot Zin’s MBSR (1990), perhaps one single twenty minute session with no prior experience or training in meditation was not sufficient to lead to alterations in emotional affect. To address this, future studies could involve meditation training/instruction for several sessions.

Given that meditation takes some degree of mental control and also willingness to try, the motivation of the participants in my sample to complete my study may have also contributed to my null findings. My sample was comprised of WCU freshmen students that took part in order to earn course credit for their PSY 150 class. For this reason, they may not have had the motivation or willingness to try to meditate. In order to address this, future studies could engage in targeted recruiting, utilizing participants that have an interest in meditation.

In order to investigate the hypothesis that mindfulness meditation would lead to higher levels of happiness than focused attention meditation, a longitudinal study could be utilized. I would have participants engage in mindfulness meditation, focused attention meditation or no meditation once a week for six weeks. After each session, participants would fill out measures of PWB, SWB and mindfulness.

In addition to examining the effect of focused attention meditation and mindfulness meditation over multiple sessions, other types of meditation could be investigated. To test for this, a correlational design could be utilized. Participants would indicate if they meditate, what type of meditation and the frequency. They would also fill out measures of SWB, PWB and state and trait mindfulness.

### **Summary and Conclusion**

The present study set out to contribute to the existing findings on meditation and its subsequent effects on happiness. Unfortunately, my results showed no significant effects and thus, add no new information to the existing knowledge on meditation. Perhaps if the limitations of my study were addressed and some of the future directions were pursued, more would be learned about meditation and its implications for positive psychology.

## WORKS CITED

- Aspinwall, L. G., & Brunhart, S. M. (1996). Distinguishing optimism from denial: Optimistic beliefs predict attention to health threats. *Personality and Social Psychology Bulletin*, 22(10), 993-1003. doi:10.1177/01461672962210002
- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using Self-Report Assessment Methods to Explore Facets of Mindfulness. *Assessment*, 13(1), 27-45. doi:10.1177/1073191105283504
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182. doi:10.1037/0022-3514.51.6.1173
- Biswas-Diener, R., & Diener, E. (2001). Making the best of a bad situation: Satisfaction in the slums of Calcutta. *Social Indicators Research*, 55(3), 329-352. doi:10.1023/A:1010905029386
- Brickman, P., Coates, D., & Janoff-Bulman, R. (1978). Lottery winners and accident victims: Is happiness relative?. *Journal of Personality and Social Psychology*, 36(8), 917-927. doi:10.1037/0022-3514.36.8.917
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822-848. doi:10.1037/0022-3514.84.4.822
- Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry*, 18(4), 211-237. doi:10.1080/10478400701598298

- Carlson, L. E., & Garland, S. N. (2005). Impact of mindfulness-based stress reduction (MBSR) on sleep, mood, stress and fatigue symptoms in cancer outpatients. *International Journal of Behavioral Medicine*, 12(4), 278-285. doi:10.1207/s15327558ijbm1204\_9
- Carver, C. S. (2006). Approach, avoidance, and the self-regulation of affect and action. *Motivation and Emotion*, 30(2), 105-110. doi:10.1007/s11031-006-9044-7
- Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS/BAS Scales. *Journal of Personality and Social Psychology*, 67(2), 319-333. doi:10.1037/0022-3514.67.2.319
- Dambrun, M., & Ricard, M. (2011). Self-centeredness and selflessness: A theory of self-based psychological functioning and its consequences for happiness. *Review of General Psychology*, 15(2), 138-157. doi:10.1037/a0023059
- Dambrun, M., Ricard, M., Després, G., Drelon, E., Gibelin, E., Gibelin, M., & ... Michaux, O. (2012). Measuring happiness: From fluctuating happiness to authentic–durable happiness. *Frontiers in Psychology*, 3doi:10.3389/fpsyg.2012.00016
- Davidson, R. J. (1998). Anterior electrophysiological asymmetries, emotion, and depression: Conceptual and methodological conundrums. *Psychophysiology*, 35(5), 607-614. doi:10.1017/S0048577298000134
- Davidson, R. J. (2000). Affective style, psychopathology, and resilience: Brain mechanisms and plasticity. *American Psychologist*, 55(11), 1196-1214. doi:10.1037/0003-066X.55.11.1196
- Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S. F., & ... Sheridan, J. F. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine*, 65(4), 564-570.

doi:10.1097/01.PSY.0000077505.67574.E3

Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist*, 55(1), 34-43. doi:10.1037/0003-066X.55.1.34

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71-75. doi:10.1207/s15327752jpa4901\_13

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.

doi:10.1037/0003-066X.61.4.305

Emavardhana, T., & Tori, C. D. (1997). Changes in self-concept, ego defense mechanisms, and religiosity following seven-day Vipassana meditation retreats. *Journal for the Scientific Study of Religion*, 36(2), 194-206. doi:10.2307/1387552

Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2007). GPower 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175-191. doi:10.3758/BF03193146

Fredrickson, B. L., Cohn, M. A., Coffey, K. A., Pek, J., & Finkel, S. M. (2008). Open hearts build lives: Positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality and Social Psychology*, 95(5), 1045-1062. doi:10.1037/a0013262

Freedman, J.L. (1979). *Happy people: What happiness is, who has it and why?:* Houghton Mifflin Harcourt.

Gable, S. L. (2006). Approach and Avoidance Social Motives and Goals. *Journal of Personality*, 74(1), 175-222. doi:10.1111/j.1467-6494.2005.00373.x

Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology?. *Review of General*

- Psychology*, 9(2), 103-110. doi:10.1037/1089-2680.9.2.103
- Gable, S. L., Reis, H. T., & Elliot, A. J. (2000). Behavioral activation and inhibition in everyday life. *Journal of Personality and Social Psychology*, 78(6), 1135-1149. doi:10.1037/0022-3514.78.6.1135
- Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research*, 57(1), 35-43. doi:10.1016/S0022-3999(03)00573-7
- Gray, J. A. (1970). The psychophysiological basis of introversion-extraversion. *Behavior Research and Therapy*, 8(3), 249-266. doi:10.1016/0005-7967(70)90069-0
- Gray, J. A. (1981). A critique of Eysenck's theory of personality. In H. J. Eysenck (Ed.), *A model of personality* (pp. 246-276). New York: Springer.
- Gray, J. A. (1990). Brain systems that mediate both emotion and cognition. *Cognition and Emotion*, 4(3), 269-288. doi:10.1080/02699939008410799
- Gray, J.A. (1994). Three fundamental emotion systems. In P Elkman & R.J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp.243-247). New York: Oxford University Press.
- Hanley, A., Warner, A., & Garland, E. L. (2014). Associations between mindfulness, psychological well-being, and subjective well-being with respect to contemplative practice. *Journal of Happiness Studies*, doi:10.1007/s10902-014-9569-5
- Higgins, E.T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In M. E Zanna (Ed.), *Advances in experimental social psychology* (Vol. 30, pp. 1-46). New York: Academic Press.
- Hollis-Walker, L., & Colosimo, K. (2011). Mindfulness, self-compassion, and happiness in non-

- meditators: A theoretical and empirical examination. *Personality and Individual Differences*, 50(2), 222-227. doi:10.1016/j.paid.2010.09.033
- Kabat-Zinn, J. (1990). Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness. New York: Dell.
- Kozasa, E. H., Sato, J. R., Lacerda, S. S., Barreiros, M. M., Radvany, J., Russell, T. A., & ... Amaro, E. J. (2012). Meditation training increases brain efficiency in an attention task. *Neuroimage*, 59(1), 745-749. doi:10.1016/j.neuroimage.2011.06.088
- Lau, M. A., Bishop, S. R., Segal, Z. V., Buis, T., Anderson, N. D., Carlson, L., & ... Devins, G. (2006). The Toronto Mindfulness Scale: Development and Validation. *Journal of Clinical Psychology*, 62(12), 1445-1467. doi:10.1002/jclp.20326
- Linley, P. A., Maltby, J., Wood, A. M., Osborne, G., & Hurling, R. (2009). Measuring happiness: The higher order factor structure of subjective and psychological well-being measures. *Personality and Individual Differences*, 47(8), 878-884. doi:10.1016/j.paid.2009.07.010
- Lutz, A., Greischar, L., Rawlings, N. B., Ricard, M., & Davidson, R. J. (2004). Long-term meditators self-induce high-amplitude synchrony during mental practice. *Proceedings of the National Academy of Sciences, USA*, 101, 16369–16373.
- Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, 46(2), 137-155. doi:10.1023/A:1006824100041
- Lyubomirsky, S., & Ross, L. (1997). Hedonic consequences of social comparison: A contrast of happy and unhappy people. *Journal of Personality and Social Psychology*, 73(6), 1141-1157. doi:10.1037/0022-3514.73.6.114

- Myers, D.G. (1993). *The pursuit of happiness*. New York: Avon Books.
- Myers, D. G., & Diener, E. (1995). Who is happy?. *Psychological Science*, 6(1), 10-19.  
doi:10.1111/j.1467-9280.1995.tb00298.x
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments & Computers*, 36(4), 717-731. doi:10.3758/BF03206553
- Shapiro, S. L., Oman, D., Thoresen, C. E., Plante, T. G., & Flinders, T. (2008). Cultivating mindfulness: Effects on well-being. *Journal of Clinical Psychology*, 64(7), 840-862.  
doi:10.1002/jclp.20491
- Siahpush, M., Spittal, M., & Singh, G. K. (2008). Happiness and life satisfaction prospectively predict self-rated health, physical health and the presence of limiting, long-term health conditions. *American Journal of Health Promotion*, 23(1), 18-26.  
doi:10.4278/ajhp.061023137
- Sutton, S. K., & Davidson, R. J. (1997). Prefrontal brain asymmetry: A biological substrate of the behavioral approach and inhibition systems. *Psychological Science*, 8(3), 204-210.  
doi:10.1111/j.1467-9280.1997.tb00413.x
- Taylor, S. E., Kemeny, M. E., Reed, G. M., Bower, J. E., & Gruenewald, T. L. (2000). Psychological resources, positive illusions, and health. *American Psychologist*, 55(1), 99-109. doi:10.1037/0003-066X.55.1.99
- Updegraff, J. A., Gable, S. L., & Taylor, S. E. (2004). What Makes Experiences Satisfying? The Interaction of Approach-Avoidance Motivations and Emotions in Well-Being. *Journal of Personality and Social Psychology*, 86(3), 496-504. doi:10.1037/0022-3514.86.3.496
- Veenhoven, R. (2008). Healthy happiness: Effects of happiness on physical health and the

- consequences for preventive health care. *Journal of Happiness Studies*, 9(3), 449-469.  
doi:10.1007/s10902-006-9042-1
- Veenhoven, R. (1988). The utility of happiness. *Social Indicators Research*, 20, 333-354.
- Wachholtz, A. B., & Austin, E. T. (2013). Contemporary spiritual meditation: Practices and outcomes. In K. I. Pargament, J. J. Exline, J. W. Jones, K. I. Pargament, J. J. Exline, J. W. Jones (Eds.), *APA handbook of psychology, religion, and spirituality (Vol 1): Context, theory, and research* (pp. 311-327). Washington, DC, US: American Psychological Association. doi:10.1037/14045-017
- Walsh, R., & Vaughan, F. (1993). *Paths beyond the ego: The transpersonal vision*. Hawaii: University of Hawaii Press.
- Weiss, A., Bates, T. C., & Luciano, M. (2008). Happiness is a personal(ity) thing: The genetics of personality and well-being in a representative sample. *Psychological Science*, 19(3), 205-210. doi:10.1111/j.1467-9280.2008.02068.x
- Zautra, A. J. (2003). *Emotions, stress and health*. Oxford NY, USA: Oxford University Press.

## APPENDIX A: TORONTO MINDFULNESS SCALE (TMS)

Instruction: Please indicate the degree to which you agree or disagree with the following statements. Rate each statement according to the scale below.

0 = Not At All; 1 = Not Really; 2 = Undecided; 3 = Somewhat; 4 = Very Much

- \_\_\_\_\_ 1. I was curious about my reactions to things.
- \_\_\_\_\_ 2. I was curious about what I might learn about myself by taking notice of how I react to certain thoughts, feelings or sensations.
- \_\_\_\_\_ 3. I was curious to see what my mind was up to from moment to moment.
- \_\_\_\_\_ 4. I was curious about each of the thoughts and feelings that I was having.
- \_\_\_\_\_ 5. I remained curious about the nature of each experience as it arose.
- \_\_\_\_\_ 6. I was curious about what I might learn about myself by just taking notice of what my attention gets drawn to.
- \_\_\_\_\_ 7. I was more invested in just watching my experiences as they arose, than in figuring out what they could mean.
- \_\_\_\_\_ 8. I was more concerned with being open to my experiences than controlling or changing them.
- \_\_\_\_\_ 9. I was receptive to observing unpleasant thoughts and feelings without interfering with them.
- \_\_\_\_\_ 10. I approached each experience by trying to accept it, no matter whether it was pleasant or unpleasant.
- \_\_\_\_\_ 11. I was aware of my thoughts and feelings without over-identifying them.
- \_\_\_\_\_ 12. I experienced my thoughts more as events in my mind than as a necessarily accurate reflection of the way things 'really' are.
- \_\_\_\_\_ 13. I experienced myself as separate from my changing thoughts and feelings.

## APPENDIX B: SCALES OF PSYCHOLOGICAL WELL-BEING

Instruction: Please indicate the degree to which you agree or disagree with the following statements. Rate each statement according to the scale below.

1 = Strongly Disagree; 2 = Moderately Disagree; 3 = Slightly Disagree; 4 = Slightly Agree; 5 = Moderately Agree; 6 = Strongly Agree

- \_\_\_\_\_ 1. I tend to be influenced by people with strong opinions.
- \_\_\_\_\_ 2. I have confidence in my opinions, even if they are contrary to the general consensus.
- \_\_\_\_\_ 3. I judge myself by what I think is important, not by the values of what others think is important.
- \_\_\_\_\_ 4. In general, I feel I am in charge of the situation in which I live.
- \_\_\_\_\_ 5. The demands of everyday life often get me down.
- \_\_\_\_\_ 6. I am quite good at managing the many responsibilities of my daily life.
- \_\_\_\_\_ 7. For me, life has been a continuous process of learning, changing, and growth.
- \_\_\_\_\_ 8. I gave up trying to make big improvements or changes in my life a long time ago.
- \_\_\_\_\_ 9. Maintaining close relationships has been difficult and frustrating for me.
- \_\_\_\_\_ 10. People would describe me as a giving person, willing to share my time with others.
- \_\_\_\_\_ 11. I have not experienced many warm and trusting relationships with others.
- \_\_\_\_\_ 12. I live life one day at a time and don't really think about the future.
- \_\_\_\_\_ 13. Some people wander aimlessly through life, but I am not one of them.
- \_\_\_\_\_ 14. I sometimes feel as if I've done all there is to do in life.
- \_\_\_\_\_ 15. When I look at the story of my life, I am pleased with how things have turned out.
- \_\_\_\_\_ 16. In many ways, I feel disappointed about my achievements in life.
- \_\_\_\_\_ 17. I like most aspects of my personality.
- \_\_\_\_\_ 18. I think it is important to have new experiences that challenge how you think about yourself and the world.

## APPENDIX C: SATISFACTION WITH LIFE SCALE (SWLS)

Instruction: Please indicate the degree to which you agree or disagree with the following statements. Rate each statement according to the scale below.

1 = Strongly Disagree; 2 = Moderately Disagree; 3 = Slightly Disagree; 4 = Undecided; 5 = Slightly Agree; 6 = Moderately Agree; 7 = Strongly Agree

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

APPENDIX D: FIVE FACET MINDFULNESS QUESTIONNAIRE (FFMQ)

Instructions: Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

1 = Never True; 2 = Very Rarely True; 3 = Sometimes True; 4 = Often True; 5 = Always True

- \_\_\_\_\_ 1. When I'm walking, I deliberately notice the sensations of my body moving.
- \_\_\_\_\_ 2. I'm good at finding words to describe my feelings.
- \_\_\_\_\_ 3. I criticize myself for having irrational or inappropriate emotions.
- \_\_\_\_\_ 4. I perceive my feelings and emotions without having to react to them.
- \_\_\_\_\_ 5. When I do things, my mind wanders off and I'm easily distracted.
- \_\_\_\_\_ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.
- \_\_\_\_\_ 7. I can easily put my beliefs, opinions, and expectations into words.
- \_\_\_\_\_ 8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.
- \_\_\_\_\_ 9. I watch my feelings without getting lost in them.
- \_\_\_\_\_ 10. I tell myself I shouldn't be feeling the way I'm feeling.
- \_\_\_\_\_ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
- \_\_\_\_\_ 12. It's hard for me to find the words to describe what I'm thinking.
- \_\_\_\_\_ 13. I am easily distracted.
- \_\_\_\_\_ 14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.
- \_\_\_\_\_ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.
- \_\_\_\_\_ 16. I have trouble thinking of the right words to express how I feel about things
- \_\_\_\_\_ 17. I make judgments about whether my thoughts are good or bad.
- \_\_\_\_\_ 18. I find it difficult to stay focused on what's happening in the present.

- \_\_\_\_\_ 19. When I have distressing thoughts or images, I “step back” and am aware of the thought or image without getting taken over by it.
- \_\_\_\_\_ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.
- \_\_\_\_\_ 21. In difficult situations, I can pause without immediately reacting.
- \_\_\_\_\_ 22. When I have a sensation in my body, it’s difficult for me to describe it because I can’t find the right words.
- \_\_\_\_\_ 23. It seems I am “running on automatic” without much awareness of what I’m doing.
- \_\_\_\_\_ 24. When I have distressing thoughts or images, I feel calm soon after.
- \_\_\_\_\_ 25. I tell myself that I shouldn’t be thinking the way I’m thinking.
- \_\_\_\_\_ 26. I notice the smells and aromas of things.
- \_\_\_\_\_ 27. Even when I’m feeling terribly upset, I can find a way to put it into words.
- \_\_\_\_\_ 28. I rush through activities without being really attentive to them.
- \_\_\_\_\_ 29. When I have distressing thoughts or images I am able just to notice them without reacting.
- \_\_\_\_\_ 30. I think some of my emotions are bad or inappropriate and I shouldn’t feel them.
- \_\_\_\_\_ 31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.
- \_\_\_\_\_ 32. My natural tendency is to put my experiences into words.
- \_\_\_\_\_ 33. When I have distressing thoughts or images, I just notice them and let them go.
- \_\_\_\_\_ 34. I do jobs or tasks automatically without being aware of what I’m doing.
- \_\_\_\_\_ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.
- \_\_\_\_\_ 36. I pay attention to how my emotions affect my thoughts and behavior.
- \_\_\_\_\_ 37. I can usually describe how I feel at the moment in considerable detail.
- \_\_\_\_\_ 38. I find myself doing things without paying attention.
- \_\_\_\_\_ 39. I disapprove of myself when I have irrational ideas.

## APPENDIX E: DEBRIEFING SCRIPT

There's more to this study than I told you from the beginning. I'm curious, do you have any idea what that might be?

*(Participant Responds* This question functions as a "suspicion check." We do not analyze responses from participants whose answers suggest suspicion of the true purpose of the study.)

Well, there is more to this study, and I'm going to explain what it is. But first, I want to explain why I didn't tell you everything about the study from the beginning. Social psychology studies are designed to examine how people spontaneously react to certain situations or events. But sometimes, if participants know what we're studying from the beginning or know the hypotheses from the beginning it can affect the way they respond. For instance, often people give us responses they think we want them to. If that happens our results could be misleading. We wouldn't get an idea of how people spontaneously respond in a given situation. So, do you see why I didn't tell you everything about the study from the very beginning?

Happiness can be thought of along two dimensions: the first is a momentary happiness (contingent upon circumstance) and the second is more enduring happiness (independent of circumstance). Engagement in meditation may increase an individual's momentary happiness by allowing the individual to become more in touch with the present moment, also known as being mindful. This study will attempt to examine the relationship between meditation, mindfulness and happiness and to test the hypothesis that exposure to meditation will increase an individual's momentary, fluctuating happiness by making them more mindful in that present moment.

To test this hypothesis, we're asking students like you to engage in either a mindfulness meditation session, focused attention meditation session or no meditation. You were in the (blank) condition. After engagement with either meditation or no meditation, momentary happiness, enduring happiness, and mindfulness levels were measured using questionnaires.

Are there any questions about the study or about any of the activities you participated in during the experiment?

Before you leave, I'd like to ask you not to discuss this study with other students because we'll be using other students as subjects in our study. And if they know about the study ahead of time, then we might not get the spontaneous responses we need. Does everyone agree to not tell others about the study?

Thank you.