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Subjective Time and Mindfulness

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Subjective Time and Mindfulness

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Ian LeSueur

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Subjective Time and Mindfulness

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Abstract

The purpose of this study was to gain a better understanding of how time is subjectively experienced when one is being mindful or fully engaged in the present moment. Although attending to and being aware of the present moment is a defining feature of mindfulness (Brown & Ryan, 2003), there has been little research done concerning how time is experienced when being mindful. Thus, the present study examined the relationship between mindfulness and four different conceptions of the subjective experience of time: Time Perspective, Balanced Time Perspective, Temporal Focus, and Temporal Depth. One hundred and forty-two university students responded to scales measuring each student's *attitude* toward the past, present, and future (Time Perspective), *ability to flexibly engage* in the past, present, and future (Balanced Time Perspective), *attention* toward the past, present, and future (Temporal Focus), and *distance* traveled when imagining their past and future (Temporal Depth). The study results suggest that while being mindful is primarily about being focused in the present, it also involves having positive attitudes about and being flexibly engaged in the past, present, and future. Implications of these findings on theory and the treatment of temporal biases were discussed.

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Subjective Time and Mindfulness

Mindfulness is the process of attending to and being aware of the present moment. Marlatt & Kristeller (1999) describe mindfulness as, "bringing one's complete attention to the present experience on a moment-to-moment basis" (p. 68), but what does it mean to be focused in the present moment? How is time experienced subjectively when one is attending to the present? This study will attempt to explore the concept of present moment awareness in a more in-depth fashion. In particular, it will investigate how mindfulness is correlated with existing constructs about the subjective experience of time found in the psychological literature.

Both the constructs of mindfulness and time perspective have been of particular interest to psychologists because both have documented significant relationships with measures of well-being and optimal-functioning. Mindfulness is a strong correlate of many health-related aspects of life (Brown & Ryan, 2003; Carmody & Baer 2008; Ekman et al., 2005; Grossman et al., 2007; Kabat-Zinn, 1990) and simultaneously it describes a healthy relationship to the present. Research investigating concepts such as mindfulness and flow advocate for the necessity of present moment awareness for realizing optimal functioning and well-being (Rush et al., 2012). Likewise, an individual's subjective experience of time affects every decision that a person makes. The unconscious tendency to organize all of one's experiences into time frames or zones affects how people determine their choices. Someone can be present-oriented (focusing on immediate results and consequences), past-oriented (concerned with situations that have already happened and how they are important) or future-oriented (individuals whose decisions are based on future outcomes). Research on the subjective experience of time has shown that both past and future temporal perspectives are correlated to high levels of self-esteem and

happiness (Zimbardo and Boyd, 1999), agreeableness and energy (Goldberg and Maslach, 1996) and are indicative of the use of social support networks (Holman and Zimbardo, 1999). On the other hand, a present hedonistic perspective is associated with sensation-seeking, reckless behavior, and alcohol abuse (Keough, Zimbardo, & Boyd, 1999). Thus, both mindfulness and subjective time are predictive of well-being. Surprisingly, however, there are hardly any studies investigating relationship between these two psychological processes (see Vowinckel, 2012 for a study on balanced time perspectives and mindfulness). This study will examine how mindfulness (the attention to and awareness of the present moment) is associated with the subjective experience of time using four different constructs of subjective time found in the psychological literature: Time Perspective, Balanced Time Perspective, Temporal Focus, and Temporal Depth.

What is Mindfulness?

The concept of mindfulness has its roots in Buddhist spiritual practices where it occupies a central role in a system that was developed as a path leading to the cessation of personal suffering (Thera, 1962; Silananda, 1990). Although mindfulness has a religious origin, mindfulness-based therapies are typically secular in nature. In the realm of psychology, mindfulness is commonly defined as the state of being attentive to and aware of what is taking place in the present moment. Kabat-Zinn (1994) describes mindfulness as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (p. 4). Bishop et al. (2004) explain that:

> In a state of mindfulness, thoughts and feelings are observed as events in the mind, without over-identifying with them and without reacting to them in an automatic, habitual pattern of reactivity. This dispassionate state of

> self-observation is thought to introduce a ''space'' between one's perception and response. Thus mindfulness is thought to enable one to respond to situations more reflectively (as opposed to reflexively) (p. 232).

We are all mindful to one degree or another, moment by moment. Mindfulness is inherently a state of consciousness. Brown and Ryan (2003) explain that although attention and awareness are relatively constant features of normal functioning, mindfulness is considered as enhanced attention to and awareness of current experience or present reality. Depending on the present stimuli, our awareness and attention can vary considerably. For example, when driving to work our path eventually becomes habitual and routine. We memorize the twists and turns and our need for attention decreases. In many people, this often lowers awareness and can cause us to drive more recklessly. However, if you witness an accident or are forced to change your route due to construction, your awareness would increase and you would place more attention to the road. When practicing mindfulness, it wakes us up to the fact that our lives unfold only in moments. If we are not fully present for many of those moments, we may not only miss what is most valuable in our lives but also fail to realize the richness and the depth of our possibilities for growth and transformation (Kabat-Zinn, 1994).

Mindlessness

Human beings are creatures of habit, and in Western societies there is a benefit to going about life on "autopilot." It helps us go through life quickly and efficiently, and enables us to concentrate on complex tasks. But there is a cost: we miss out on big chunks of our lives. We are not fully present to ourselves-physically, emotionally, or spiritually. William James (1911) described this phenomenon by stating: "Compared to

what we ought to be, we are only half awake" (p. 237). A diminished awareness of the present moment inevitably creates other problems for us as well through our unconscious and automatic actions and behaviors, often driven by deep-seated fears and insecurities. These problems tend to build over time if they are not attended to and can eventually leave us feeling stuck and out of touch (Kabat-Zinn, 2010).

Mindfulness is also compromised when people behave compulsively or automatically, without awareness of or attention to one's behavior (Deci & Ryan, 1980). Mindfulness may be important in disengaging someone from automatic thoughts, habits, and unhealthy behavior patterns and thus could play a key role in fostering informed and self-endorsed behavioral regulation, which has long been associated with enhanced well-being (Deci & Ryan, 1980).

The Features and Cultivation of Mindfulness

Bishop et al. (2004) suggest a two-component model of mindfulness, where the first component is the regulation of attention in order to maintain it on the immediate experience, and the second component involves approaching one's experiences with an orientation of curiosity, openness, and acceptance, regardless of their valence and desirability. On the other hand, Baer et al. (2008) describe mindfulness as a concept containing five facets, these include:

> *observing* (attention to both internal and external stimuli, including emotions, thoughts, and sensations), *describing* (mentally labeling these stimuli with words), *acting with awareness* (fully attending to the present moment, as opposed to behaving automatically or mindlessly), *non-judging of inner experience* (processing one's sensations, cognitions, and emotions freely without criticism),

> and *non-reactivity to inner experien*ce (allowing thoughts and feelings to come and go, without attention getting caught up in them) (p. 330).

Mindfulness is typically cultivated through formal meditation practices, such as sitting meditation, walking meditation, or mindful movements (Kabat-Zinn, 1990). The practice of mindfulness meditation encompasses focusing attention on the experience of thoughts, emotions, and body sensations, simply observing them as they arise and pass away. Phenomena that enter someone's awareness during mindfulness practice, such as perceptions, cognitions, emotions, or sensations, are observed carefully, but are not evaluated as good or bad, true or false, healthy or sick, or important or trivial (Marlatt & Kristeller, 1999). Mindfulness training aims at cultivating an alternative ("being") mode through meditation practices that teach people how to pay open-hearted attention to objects in the exterior and interior world as they unfold, moment by moment. Williams (2010) explains that in mindfulness training, "attention is paid not only to the objects themselves but to our *reactions* to them, particularly reactions of wanting positive states to last, negative states to end, and neutral states to be less boring" (Williams, 2010, p. 2). Thus, mindfulness is the nonjudgmental observation of the ongoing stream of internal and external stimuli as they arise.

The Benefits of Mindfulness

Until recently, mindfulness has been a relatively unfamiliar concept in much of Western culture, perhaps because of its origins in Buddhism. Kabat-Zinn (2000) suggests that mindfulness practice may be beneficial to many people in Western society who might be unwilling to adopt Buddhist traditions or vocabulary. Thus, Western researchers and clinicians who have introduced mindfulness-based practice into mental health

treatment programs usually teach these skills independently of the religious and cultural traditions of their origins (Kabat-Zinn, 1982).

In the current empirical literature, clinical interventions that are based on or incorporate training of mindfulness skills are examined with increasing frequency, and their popularity appears to be growing rapidly. Many of these mindfulness-based interventions are widely available in medical and mental health settings. They include mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1982, 1990), mindfulness-based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2002), acceptance and commitment therapy (ACT; S. C. Hayes, Strosahl, & Wilson, 1999), and relapse prevention for substance abuse (Marlatt & Gordon, 1985; Parks, Anderson, & Marlatt, 2001) as well as variations on these approaches. The preceding interventions conceptualize mindfulness as a skill that can be developed with practice to reduce psychological symptoms and increase health and well-being.

A large body of research have documented the efficacy of mindfulness-based interventions in the treatment of a number of clinical disorders, including anxiety (Hofmann et al. 2010), depression (Hofmann et al., 2010), substance abuse (Bowen et al., 2006), eating disorders (Tapper et al., 2009), and chronic pain (Grossman et al. 2007). Empirically supported studies have also shown that higher levels of mindfulness is associated with reduced rumination (Chambers et al., 2008) and stress reduction (Hoffman et al., 2010). A large multisite randomized controlled trial has shown that mindfulness-based interventions can significantly reduce the rate of relapse in recurrent major depression (Teasdale et al., 2000).

Furthermore, mindfulness meditation positively influences aspects of physical

health, including improved immune function (Davidson et al., 2003), reduced blood pressure and cortisol levels (Carlson et al., 2007). Not only has mindfulness successfully been used in the treatment of disorders and improvement of health; it has also been shown to produce positive effects on the psychological well-being in healthy participants (Carmody & Baer, 2008), to increase relationship satisfaction (Barnes et al., 2007), and boost working memory (Jha et al., 2010).

Understanding Time: Objective Time vs. Subjective Time

Time has proven to be a difficult subject to conceptualize and has been studied in a multitude of different ways throughout human history. In general, the subject of time has been researched from two different perspectives. On the one hand, time is approached as an objective phenomenon and is sometimes called "geographical" or "clock" time (Snyder & Lopez, 2009). This position regards time as linear and continuous, homogenous, infinitely divisible, objective, and universal. Such a view is dominant in Western societies where time can be scheduled, measured, coordinated, and is externally created and reinforced by society (Snyder & Lopez, 2009). Objective time is often used in industrial-organizational research and focuses on budgeting time, job performance, and adjustment (Shipp & Jansen, 2009).

On the other hand, time can be approached as an internal subjective phenomenon. According to Kant (1781), time serves from the beginning of one's life as a basic mental category, structuring the phenomena of the world. Hendricks & Peters (1986) state that subjective time is influenced by pace, life stages, changes in life, contents and sequence of thoughts, feelings, and the activities of individuals. Depending on the background, a person can structure his or her experience of time in very different ways. For example,

two people may experience the same event, but one may recall the event as vivid and still current, whereas another person may perceive it as having occurred "ages ago." Additionally, the same duration of events as measured by the clock may be experienced very differently when people "lose" themselves in the process. Albert Einstein famously explained this phenomenon by stating, "put your hand on a hot stove for a minute, and it seems like an hour. Sit with a pretty girl for an hour and it seems like a minute" (as cited in Holms & Mayer, 1996, p. 65). Furthermore, when recalling memories in one's mind, time can flow backward as well as forward. Subjective time has a unique significance and meaning for everyone.

In studying subjective time, researchers have created various constructs to explain different dimensions of a person's subjective experience of time. These included concepts such as time attitude, time perspective, temporal orientation, and time perception. Hulbert and Lens (1988) claim, however, that these concepts are often synonymous and interchangeable. The current study will tap into dimensions of subjective time experience that have been well-studied in the psychological literature. These dimensions are Time Perspective, Balanced Time Perspective, Temporal Focus, and Temporal Depth.

Zimbardo Time Perspective: Attitude toward the Past, Present, and Future

What is one's attitude toward the past, present, and future? Phillip Zimbardo developed the concept of Time Perspective as a way to assess an individual's attitude toward the three time frames. According to time perspective theory (Zimbardo, Keough, & Boyd, 1997), our view of ourselves, our world, and our relationships is filtered through temporally based cognitive processes. Time Perspective is "a cognitive operation that

implies both an emotional reaction to imagined time zones (such as future, present or past) and a preference for locating action in some temporal zone" (Lennings, 1996, p. 72). In other words, time perspective represents a person's cognitive way of relating to the psychological concepts of past, present and future, which in turn, affects decision-making and subsequent actions (Boniwell, 2005). Zimbardo argues that our experiences and attitudes toward particular time frames influence every one of our actions. For example, a MacLeod et al. (1998) study concluded that hopelessness in depressed patients appears to consist of two factors: preoccupation with the negative past and a lack of a positive future.

Wessel Van Beek (2010) adopts Zimbardo's definition of Time Perspective and describes five of the different attitudes one can take toward each of the three time frames. A Past Negative reflects a generally negative and aversive view of the past where negative experiences in the past still have a hold on one's thinking and emotions. On the other hand, a Past Positive reflects a warm, nostalgic, and positive attitude toward the past, focusing on family, traditions, history, and a continuation of the self. With regard to the present, one can have a Present Hedonistic attitude, approaching the present in a pleasure-seeking and risk-taking manner, or a Present Fatalistic attitude where one cannot enjoy the present or feels trapped in the present because of the belief that the future cannot be changed. Finally, a Future Focused attitude reflects a heavy investment on the achievement of future goals, often delaying gratification, not enjoying the present, and avoiding wasting of time.

Zimbardo and his colleagues (1996) developed the Zimbardo Time Perspective Inventory (ZTPI), a 56-item self-report instrument with five sub-scales to measure these five attitudes towards the three time frames. The ZTPI has been used in several research

studies to investigate the outcomes of particular temporal biases. Zimbardo has found that the Past Negative (PN) frame has been correlated with depression, anxiety and low self-esteem, and it has been demonstrated that PN people have fewer close friends (Zimbardo and Boyd, 1999). On the other hand, high Past Positive (PP) scores are related to high levels of self-esteem and happiness (Zimbardo and Boyd, 1999), agreeableness and energy (Goldberg and Maslach, 1996) and indicative of the use of social support networks (Holman and Zimbardo, 1999, cited in Zimbardo and Boyd, 1999).

A temporal bias towards the present (Present Hedonistic and Present Fatalistic) is associated with negative emotions, such as anger, anxiety and depression (Wills et al., 2001), alcohol use, smoking and illegal drug use (Keough et al., 1999; Wills et al., 2001) and engaging in risky sexual practices (Rothspan and Read, 1996). Although there are studies that have shown that present focus is correlated with subjective well-being and general happiness (Keough, et al., 1999), the majority of the studies found correlations with impulsive behaviors and immediate gratification.

Zimbardo and Boyd (1999) have found that people with a more future-oriented outlook are more optimistic and anticipate positive outcomes. Research has continuously demonstrated the benefits of a future focus, whether it is higher academic achievement, financial success, or health-conscious behavior (Boyd & Zimbardo, 2005).

The Absence of a "Holistic Present"

Although Zimbardo's inventory is widely used in research, the temporal perspective of "Present Hedonistic" does not represent a healthy relationship to the present moment. Zimbardo (2008) discussed the absence of a holistic time frame by admitting that one can have a positive attitude toward the present:

> Another present-oriented time zone can be called the Holistic Present. It involves training to live one's life in the present moment and to include past and future in an expanded state of focus on the present... Because it is less common in Western than Eastern cultures and is rather vague in its components, we did not include it in our ZTPI assessment (p. 811).

The Zimbardo Time Perspective Inventory describes approaches to the present that are either hedonistic or fatalistic. This is an incomplete view of perspectives that can be taken about the present, and it does not provide a facet of time perspective that is associated with mindfulness. Vowinckel (2012) criticizes Zimbardo by stating that, "considering the numerous health supporting implications of mindfulness (Grossmann, Niemann, Schmidt, & Walach, 2004), [Zimbardo's definition of the present] is a shortcoming, when aiming at defining an optimal health promoting architecture of time perspective" (p. 4).

Though some research has demonstrated that a present focus is directly associated with risk taking behaviors, such as increased substance use (Keough, Zimbardo, & Boyd, 1999) and unsafe sexual activity (Rothspan & Read, 1996), research investigating concepts such as mindfulness and flow advocate for the necessity of a present moment awareness for realizing optimal functioning and well-being (Rush et al, 2012). Other researchers such as Kazakina (1999) found positive correlations between a present orientation and positive affect. Unfortunately, due to the constraints of the Zimbardo Time Perspective Inventory, there has been little research done concerning positive present moment attitudes

Balanced Time Perspective: Avoiding a Temporal Bias

An overemphasis or preoccupation with a specific time frame creates a temporal bias toward being past, future, or present oriented that can diminish adaptive functioning (Rothspan & Read, 1996; Stratham et al. 1994; Zimbardo & Boyd, 1999; Zhang et al., 2011). As mentioned earlier, Zimbardo argues that one should strive to achieve what they call a Balanced Time Perspective (BTP). With a balanced time perspective, someone can use the past to become grounded and connected to identity and family, the future to set new goals and challenges and the present to gain energy from the people, places and sensations experienced. Zimbardo (2002) states that "in an optimally balanced time perspective, the past, present and future components blend and flexibly engage, depending on a situation's demands and our needs and values" (p. 62).

A key factor in the development of a balanced time perspective is the ability to flexibly switch one's focus from one time perspective to another according to the demands of the moment. Vowinckel (2012) found that the perspectives on past, present, and future vary more day-to-day within a person than it does from person to person. This shows that although a person may have a temporal bias, they have the ability to fluctuate in their levels for all dimensions of temporal orientation (focus, attitude, and depth), as well as across each temporal region (past, present, and future).

The ability to switch mindsets, such as being dominated by a certain time frame, is similar to the mental flexibility that occurs in people with high levels of mindfulness. Shapiro & Carlson (2009) explain that mindfulness may function as an important variable in overcoming our tendency to develop a negatively biased past perspective, as mindfulness is a state of awareness which gives 'freedom of reflexive conditioning and

delusion'.

Webster and his colleagues (2011) developed the 28-item Balanced Time Perspective Scale (BTPS) to measure the balance between a positive attitude toward both the past and future. Webster (2011) defines Balanced Time Perspective as, "a frequent and equal tendency to think about both one's past and future in positive ways, enables individuals to use both the past and the future as sources of insight, strength, and happiness" (p. 112). Webster (2011) discusses how someone can mentally be in one's past or project oneself into an anticipated, desired or feared future, but the present is also always present at the same time. However, their relation to the present is in turn affected by the current cognitions about the past and the future, since these thoughts and emotions are 'framing' the present. The omnipresence of the present time zone makes it the most relevant factor when describing someone's time perspective.

The BTPS assesses one's thoughts and feelings about the past and the future in two subscales and creates four categories of respondents: Reminiscers, Futurists, Time Restrictives, and Time Expansives. Reminiscers score high on the past scale but low on the future scale while people who score the opposite on both scales are Futurists. Time Restrictives score low on both past and future scales while Time Expansives score high on both. Webster developed the Time Expansive category to represent someone who possesses a Balanced Time Perspective.

Unfortunately, very few studies have focused on the concept of Balanced Time Perspective and instead focus on individual temporal dimensions. However, newer studies are beginning to focus on Balanced Time Perspective and the results are

promising. Boniwell et al. (2011) have discovered that having a Balanced Time Perspective is associated with the higher levels of well-being. Webster (2011) has found that those classified as Time Expansive scored significantly higher on subjective well-being than those categorized as Time Restrictive.

Temporal Focus: Attention toward the Past, Present, and Future

Among the criticisms raised concerning the weaknesses of existing constructs of the subjective experience of time, Steinberg et al. (2009) argued that these measures often do not systematically distinguish the cognitive, attitudinal, and motivational aspects of subjective time. The Temporal Focus Scale does, and is focused on the cognitive. *How much attention does one give to the past, present, and future?* In 2009, Ship et al. developed the Temporal Focus Scale to capture the extent to which people devote their attention to the past, present, and future. In childhood and adolescence, people develop a general pattern of attention on one or more time periods, due to influences from their national culture, socioeconomic status, and parental beliefs about time, among others (McGrath & Tschan, 2004). This temporal focus impacts current attitudes and behaviors and people can shift their attention among these time periods. The concept of Temporal Focus addresses the *focus* or *attention* given towards specific temporal frames or regions regardless of one's feelings or attitudes. Zimbardo's concept of Time Perspective emphasizes the latter, portraying valences (e.g., Past Negative or Past Positive) and at times reflecting moral valuations (e.g., Present Hedonistic and Present Fatalistic).

The Temporal Focus Scale has 12 neutral items that only focus on cognitive attention to the past, present, and future (e.g., "I think about things from my past" or "I replay memories of the past in my mind"). Since its development in 2009, however, very

few studies have been done using the Temporal Focus Scale. A 2012 study by McKay et al. examined a sample of Northern Irish adolescents and found that a greater focus on the past and the present, but not the future, was related to higher drinking behaviors.

Temporal Depth: Distance Traveled to the Past and Future

The previous constructs of subjective time have captured either a person's attitude or attention toward temporal frames or regions, but do not describe how deep one goes through each. *How far in the past or future does an individual go?* Temporal Depth refers to the temporal distances into the past and future that a person and collectivities typically take when contemplating events that have happened, may have happened, or may happen (Bluedorn, 2002).

Temporal depth does not address the importance someone places on the past or future, rather, temporal depth measures how far into the future and the past people think about things, regardless of how important they regard the past or future. Temporal Depth is a distinct dimension from Temporal Focus both conceptually and empirically. Temporal Depth specifies the exact position of the time line the past and future is of concern to the person, whereas, Temporal Focus simply specifies the temporal direction of attention or emphasis just as east or west signals the general direction (Bluedorn & Standifer, 2006).

Bluedorn (2002) developed the Temporal Depth Index (TDI). It is a six-item scale designed to measure an individual's future, past, and total temporal depths. Bluedorn's research has focused mainly on organizations and how people organize and manage time. For example, Bligh & Hess (2007) analyzed the leadership of Alan Greenspan. They

found that, "the nature of his job necessitated that Greenspan's temporal depth be rather shallow because immediacy, or referring to everything with a "present" stance, was a very key concern for him" (as cited in Bluedorn & Jaussi, 2008, p. 662). Bluedorn states that in the workplace, an employee's temporal depth depends on where they are in the organizational chart, "with lower level manager having time spans of up to three months to upper level leaders having from 10 to over 20 years of accountability in their time span" (Bluedorn & Jaussi, 2008). Boal and Schultz (2007) found that leaders use time in storytelling to facilitate a cohesive organizational identity and that when compared to individual workers, leaders typically have a deeper temporal depth. Boal & Schultz explain this by stating that leaders consider the organization's life history, as well their own personal life history when creating the organization's identity. Bluedorn and Martin (2008) found that higher past temporal depth negatively correlates with person's ability to be flexible in a work environment. This illustrates how someone can become stuck in their ways, and struggle to adapt to changes within a work setting.

Goals of Present Study

Attending to and being aware of the present moment is a defining feature of mindfulness, yet what does it really mean to be focused in the present moment? How is time experienced subjectively when one is attending to the present moment? The goal of the present study is to explore the latter concept in a more in-depth fashion by examining how mindfulness is associated with various constructs of subjective time found in the current psychological literature. In particular, the study will examine how mindfulness is associated with the following specific constructs of subjective time: Time Perspective, Balanced Time Perspective, Temporal Focus, and Temporal Depth.

Mindfulness and the subjective experience of time appear to be deeply related concepts and this research can help further develop an understanding of the benefits of each. An individual's subjective experience of time is one that the person continually identifies with and refines (Block, 1990). As Zimbardo and Boyd (2008) put it: you cannot change your past, but you can change your attitude toward it. Mindfulness not only describes a healthy relationship to the present but also is a state of increased awareness and an ability to respond to situations more reflectively (as opposed to reflexively) (Bishop et al., 2004). This ability to reflect and self-observe appears to be an essential skill in examining one's attitudes, behaviors, cognitions, and emotions toward specific dimensions of time. Higher levels of mindfulness may also help reshape one's subjective experience of time and remove temporal biases.

Additionally, this study could help correct misconceptions about mindfulness. As mentioned earlier, meditation is not commonly practiced in Western cultures. For those unfamiliar with meditation or mindfulness-based practices, mindfulness techniques may appear to be a waste of time. Many people assume that being in the present moment is simply 'living in the moment' and an avoidance of responsibilities and planning. This relationship to the present moment is not representative of mindfulness and is more descriptive of Zimbardo's Present Hedonistic time perspective.

We need to define a healthy relationship to the present. In Western culture, many people avoid the present moment. The development of a healthy relationship toward the present will benefit society on both an individual and group level. Our avoidance of the present moment is unhealthy and needs to be addressed. Harris (2014) describes this culture of avoidance and makes a strong case for addressing the present moment:

> Make the present moment your friend rather than your enemy. Because many people live habitually as if the present moment were an obstacle that they need to overcome in order to get to the next moment. And imagine living your whole life like that, where always this moment is never quite right, not good enough because you need to get to the next one. That is continuous stress (p. 80).

Much like mindfulness, an person's relationship to the present moment is a skill that can be developed with practice. Once we identify which elements of subjective time are correlated with mindfulness, we will have a clear conceptualization of what it means to be in the present moment. This knowledge has many implications on treatment and therapy as it will help people develop a healthy relationship with the present moment and will help identify and remove temporal biases. In the future, subjective time based therapy methods and mindfulness based therapy methods can be integrated to further develop the practical applications of positive psychology.

The research questions and hypotheses of the current study are as follows:

Study Question 1: Which attitudinal and behavioral preferences for the past, present, and future are associated with mindfulness? It is hypothesized that being more mindful would be positively correlated with being more Past Positive, negatively correlated with Past Negative, Present Hedonistic and Present Fatalistic, but not significantly correlated with Future Focused time perspective.

The first prediction is that a Past Positive time perspective will be positively correlated with mindfulness. Empirically supported studies have shown that higher levels of mindfulness are associated with reduced rumination (Chambers et al., 2008). A Past

Positive reflects a warm, nostalgic, and positive attitude toward the past. This perspective is opposite of a Past Negative, which reflects a generally negative view of the past where negative memories are emphasized. Zimbardo's definition of a Past Negative perspective is similar to features of rumination. It is logical to assume that there will be an inverse relationship and that a Past Positive perspective would be positively associated with mindfulness while a Past Negative perspective would be negatively associated with mindfulness. Additionally, Drake et al. (2008) found the relationship between Past Positive and mindfulness to be positive. Vowinckel (2012) also found a positive correlation, although this was not found to be statistically significant.

The second prediction is that the Present Hedonistic time perspective will be negatively correlated with mindfulness. Despite some findings suggesting that a focus on the present is associated with subjective well-being (Csikszentmihalyi, 1992), general happiness (Keough, et al., 1999) and optimism (Lennings, 2000), it seems that seeking immediate gratification, while disregarding the consequences of actions, is typical of a predisposition to a present temporal bias. In a 1980 study by Deci & Ryan, mindfulness was compromised when a person behaved compulsively or automatically, without awareness of or attention to their behavior. This behavior is descriptive of the Present Hedonistic frame and therefore should be negatively correlated with mindfulness.

However, in a 2012 study, Vowinckel found a positive correlation with Present Hedonistic and mindfulness. This is surprising because the Present Hedonistic time perspective includes characteristics that are not consistent with the features of mindfulness. Vowinckel's result of a positive correlation of a Present Hedonistic perspective with mindfulness stands in contradiction to the results of Drake et al. (2008),

who found a negative correlation. These contrary results may be due to differences in demographic variables of the participants such as age, life background or nationality. Vowinckel's (2012) study only recruited students, whereas Drake et al. (2008) recruited participants from a broader range of life background and age (16 to 83). Although, the current study will be sampling a population of college students, it is anticipated that results will replicate the Drake findings. Additionally, Vowinckel's (2012) study used the Five-Facet Mindfulness Questionnaire (FFMQ-SF) as a measure of mindfulness, and Drake's (2008) study used the Mindfulness Attention Awareness Scale (MAAS).

The third prediction is that the Past Negative time perspective will be negatively correlated with mindfulness. The Past Negative time perspective has been correlated with depression, anxiety and low self-esteem, and it has been demonstrated that Past Negative people have fewer close friends (Zimbardo and Boyd, 1999). Considering that mindfulness-based practices have been shown to be effective in treatment of a number of clinical disorders, including anxiety (Hofmann et al. 2010) and depression (Hofmann et al., 2010), a negative view on one's past should be negatively associated with mindfulness. Both Drake (2008) and Vowinckel (2012) found a negative relationship between the Past Negative time perspective and mindfulness.

The fourth prediction is that the Present Fatalistic time perspective will be negatively correlated with mindfulness. Zimbardo & Boyd (1999) found that the present fatalistic (PF) time frame correlates positively with depression, anxiety and aggression. A fatalistic attitude toward the present is characterized by a lack of belief in one's own ability to influence the conditions of one's environment and life circumstances. Both Drake (2008) and Vowinckel (2012) found a negative relationship between the Past

Negative time perspective and mindfulness. These findings are consistent with the characterization of a fatalistic attitude because when all processes a person is involved in, are determined by forces that are exclusively located outside of the individual, inner experiences that are inconsistent with the tide of events are likely to be judged by the person and might be interpreted as disturbing its functioning. Hence, there is also no need to become skilled in describing these inner processes that are experienced as distracting and hindering.

The fifth prediction is that the Future Focused time perspective will not be significantly associated with mindfulness. Research has consistently demonstrated the benefits of a future focus, whether it is higher academic achievement, financial success, or health-conscious behavior (Boyd & Zimbardo, 2005). However, Boniwell and Zimbardo (2003) have suggested that an emphasis on achieving future goals may compromise the level of enjoyment in present activities. Vowinckel (2012) found that the Future Focused time perspective was not significantly correlated with mindfulness. Drake et al. (2008) also found this relationship to be non-significant. The future scale of the ZTPI measures an attitude toward the future which focuses on accomplishing goals, getting work done on time and fulfilling one's responsibilities. Drake et al. (2008) proposed that in Zimbardo's conceptualization of a Future Focus, the emphasis on future goals not only pulls people away from absorption in present reality, but could also create more anxiety and hurriedness.

Study Question 2: Is the ability to flexibly engage in the past, present, and future (i.e., having an optimally balanced time perspective) associated with mindfulness? It is

hypothesized that being more mindful is associated with being more *time expansive* (i.e., having a balanced time perspective) and being less *time restrictive.*

Zimbardo (2002) states that "in an optimally balanced time perspective, the past, present and future components blend and flexibly engage, depending on a situation's demands and our needs and values" (p. 62). Webster (2011) created the *time expansive* category to represent Zimbardo's concept of a balanced time perspective. The ability to switch mindsets and not being dominated by a certain time frame is similar to the mental flexibility that occurs in someone with high levels of mindfulness. Vowinckel (2012) found positive correlations between mindfulness and both Webster Past ($r = .22, p < .05$) and Webster Future ($r = .36, p < .001$). A *time expansive* person has high levels of both past and future, so this supports our hypothesis. Additionally, the BTPS was developed so that every item simultaneously describes the present. This construct most accurately measures the present moment and time expansiveness should be positively correlated with mindfulness.

Study Question 3: Is the extent to which people focus and devote their attention to the past, present, and future associated with mindfulness? It is hypothesized that being more mindful would be negatively associated with being more past focused, and positively associated with being more present and future focused.

Our first prediction for this question is that the past focus of the Temporal Focus Scale will be negatively associated with mindfulness. A 2012 study by McKay, et al. examined a sample of Northern Irish adolescents and found that a greater temporal focus on the past and the present, but not the future, was related to higher drinking behaviors.

Research has documented the efficacy of mindfulness-based interventions in the treatment of a substance abuse and reducing drinking behaviors (Bowen et al., 2006). Therefore, it is logical to assume that higher levels of past temporal focus would be negatively associated with higher levels of mindfulness. Additionally, the TFS captures all attention toward past events. As stated earlier, we predict that mindfulness will be positively associated with a Past Positive time perspective and negatively associated with a Past Negative time perspective. In the development of the TFS, Shipp et al. (2009) reported a stronger relation between TFS past focus and the Past Negative subscale of the ZTPI, than the Past Positive subscale, suggesting that thinking about the past was associated with more negative than positive thoughts.

The second prediction is that the present focus of the TFS scale will be positively associated with mindfulness. The TFS was developed to measure an individual's *attention* toward a particular time frame. In the definition of mindfulness provided by Baer et al. (2008), there are five facets of mindfulness. Three appear to describe attention to the present moment: *observing* (attention to both internal and external stimuli, including emotions, thoughts, and sensations), *acting with awareness* (fully attending to the present moment, as opposed to behaving automatically or mindlessly), and *non-reactivity to inner experien*ce (allowing thoughts and feelings to come and go, without attention getting caught up in them). Additionally, in this study we will be using the Mindfulness Attention Awareness Scale (MASS) to measure an individual's level of mindfulness. Shapiro & Schwartz (1999) explain that the MAAS is focused on the presence or absence of *attention* to and *awareness* of what is occurring in the present moment.

Our third prediction for this question is that the future focus of the TFS will be positively associated with mindfulness. The Webster future scale found a positive correlation between mindfulness and future focus ($r = .36$, $p < .001$). Additionally, Drake et al. (2008) has suggested that there is a slight positive correlation between mindfulness and the Zimbardo Future Focus, although this has not been shown to be significant ($r = .03$, *ns*). Since the TFS captures the positive aspects of future focus (e.g., health-conscious behavior, consideration of future outcomes), and does not include the emphasis of goals and getting work done on time that is present in Zimbardo's Future Focus.

Study Question 4: Is mindfulness associated with how far into the past and future people travel when thinking about events that have happened, may have happened, or may happen?

The first prediction for this research question is that a shallow total temporal depth will be positively associated with mindfulness. At first this may seem counterintuitive, but a more shallow temporal depth describes a more immediate focus on the present. This prediction is based on the findings of Bligh & Hess (2007) and their analysis of the leadership of Alan Greenspan. As we stated earlier, they found that his focus on the present moment led to a more shallow total temporal depth.

The second prediction is that a past temporal depth will be negatively associated with mindfulness. In a 2008 study, Bluedorn and Martin found that higher past temporal depth negatively correlates with a person's ability to be flexible in a work environment. This illustrates how someone can become stuck in their ways, and struggle to adapt to

changes within a work setting and describes a pattern of behaviors that is opposite to the mental flexibility found in people with higher levels of mindfulness.

The third prediction is that a future temporal depth will be negatively associated with mindfulness. Several studies have found positive correlations between length of past and future temporal depths: El Sawy (1983); Bluedorn (2000, 2002); Bluedorn and Ferris (2004), and Bluedorn and Richtermeyer (2005). Given these findings and the prediction that a past temporal depth will be negatively associated with mindfulness, it is logical that the future temporal depth will go in the same direction.

Method

Participants

Two hundred and forty-five students from Eastern Illinois University participated in this research. Students in Introduction to Psychology course were recruited and given course credit for their participation. Of the 245 participants, 196 answered all of the items included within the five scales. From this sample, 28% ($N = 54$) were omitted due to problematic patterns of responding (e.g., indicating the same response across all items of the scale). These participants were removed from the data set prior to all analyses, trimming down the sample size to 142 participants. At an alpha level of .05, a desired power level of .95, and anticipated medium effect size, at least 138 students were required for these planned meaningful analyses; thus the remaining 142 participants satisfied the desired parameters.

The final sample consisted of 31 males (22%) and 111 females (78%) with ages ranging from 18-29 years old ($M = 19.96$, *Mdn.* = 19). Forty-five percent of the respondents were freshmen students. Ninety-six of the participants were White/Caucasian

(68%), 25 were Black/African-American (18%), 13 were Hispanic/Latino(a) (9%), 4 were multi-ethnic (3%), and the remaining 2% were Native American, Asian American, Pacific Islander, and other.

Materials

Mindful Attention Awareness Scale (MAAS: Brown & Ryan, 2003). The MAAS is a 15-item self-report measure designed to measure the general tendency to be attentive to and aware of present-moment experience in daily life. The MAAS is focused on the presence or absence of attention to and awareness of what is occurring in the present rather than on attributes such as acceptance, trust, empathy, gratitude, or the various others that have been associated with mindfulness (e.g., Shapiro & Schwartz, 1999). The MAAS has a single-factor structure and yields a single total score. Higher scores reflect higher levels of dispositional mindfulness. Using a 6- point Likert-type scale (*almost always* to *almost never*), respondents rate how often they have experiences of acting on automatic pilot, being preoccupied, and not paying attention to the present moment. Items include, "I find it difficult to stay focused on what's happening in the present," and "It seems I am "running on automatic," without much awareness of what I'm doing." The authors reported internal consistency (coefficient alpha) of .82 and expected convergent and discriminant validity correlations. For example, the MAAS was significantly positively correlated with openness to experience, emotional intelligence, and well-being; negatively correlated with rumination and social anxiety; and unrelated to self-monitoring. For the full scale, see Appendix B.

Zimbardo Time Perspective Inventory (ZTPI: Zimbardo and Boyd, 1999). The ZTPI is a 56-item self-report instrument, with five sub-scales (Past Negative, Past

Positive, Present Hedonistic, Present Fatalistic, and Future Focused) as described previously, which measures participants' time-related attitudes and behavior by asking them to rate, on a Likert scale, how true each statement is of them (1 being 'very untrue' and 5 being' very true). The scale was developed from case studies, surveys and factor analysis and has shown high reliability, validity and ease of administration (Zimbardo & Boyd, 1999). The subscale test–retest Pearson's *r* coefficients ranged from .70 to .80 and demonstrated predictive validity (Pluck, 2008). Once a participant has completed the ZTPI, time perspective scores are obtained by adding up responses within each sub-scale and then dividing that number by the total number of questions for each sub-scale. This results in an average score for each of the five time perspectives. A higher score represents a higher sense of the relevant time perspective (e.g., more present hedonistic in perspective or attitude). For the full scale, see Appendix C.

Balanced Time Perspective Scale (BTPS: Webster, 2011). The BTPS is a 28-item self-report that contains 14 statements assessing thoughts and feelings about the future and 14 statements assessing thoughts and feelings about the past. Past items include statements such as, "the pattern of my life makes more sense to me when I reflect on my past." Future items include statements such as, "imagining my future makes me feel optimistic." Items are scored on a 6-point Likert scale from "strongly disagree" to strongly agree." The BTPS showed favorable psychometric qualities (Webster, 2011). The outcome of the scale is two scores, each representing a person's focus on either the past or future. A higher score represents a higher focus on that time frame or region.

Factor analysis by Webster (2011) produced two theoretically clean factors. All past items loaded strongly on one factor only (Past), with weak cross-loadings; similarly,

all future items loaded strongly on one factor only (Future), with weak cross-loadings. Moreover, each factor had excellent scale score reliability. Further, both subscales correlated in predicted ways with the appropriate subscales of the ZTPI, indicating concurrent validity. Cronbach's alpha in this study was .91 for the past scale and .92 for the future scale (n=124).

Webster (2011) created a four category model including the *time restrictive*, the *reminiscers*, the *futurists* and the *time expansive* (i.e., balanced) category by crossing both the past-and the future-subscale and performing a median split on each. Reminiscers are those with past scale scores that are above the median and future scale scores below the median. Those with opposite scores on the two scales are classified as Futurists. Time Restrictives are those with scores below the median on both past and future scales while Time Expansives have scores above the median on the two scales. For this study, we focused on only the Time Expansive and Time Restrictive categories. In order to do this, we combined the participant's scores. Higher scores reflected being more *time-expansive*. For the full scale, see Appendix D.

Temporal Focus Scale (TFS: Shipp, Edwards, and Lambert 2009). The TFS is a 12-item scale assessing cognitive attention to the past, present and future. The scale consists of: four TFS Past items (e.g., I reflect on what has happened in my life); four TFS current items (e.g., "I live my life in the present"); and four TFS future items (e.g., "I imagine what tomorrow will bring for me"). Responses are assessed on a 7-point scale (1 = never, 3 = sometimes, 5 = frequently, 7 = constantly). For each factor, scale items are averaged to provide an overall score. The higher the score the more focused on the past (present, or future). Differences among the three foci are emphasized, and therefore

scores on each should not be combined into an overall temporal focus. Cronbach's alphas for the TFS ranged from 0.74 to 0.89 (Shipp et al., 2009). Construct validity of the scale was demonstrated through correlations between scale factors and other pre-existing measures of time perspective, including the ZTPI (Shipp et al., 2009). For the full scale, see Appendix E.

Temporal Depth Index (TDI: Bluedorn, 2002). The Temporal Depth Index (TDI) is a six-item scale designed to measure an individual's future, past, and total temporal depth). The TDI includes three items for past temporal depth and three items for future temporal depth. For example, a past item asks, "When I think about things that happened a *long time ago*, I usually think about things that happened this long ago". Each item is scored using a Likert scale that includes 15 options of time spans. The items range from one day to more than twenty-five years. For each factor, scale items are averaged to provide an overall score. The scale produces a score for future temporal depth and past temporal depth. These two scores may also be combined into a total temporal depth. Higher numbers reflect longer distances traveled in each dimension of time and a total temporal depth measures how far someone travels overall. Bluedorn (2002) reported high Cronbach's alphas for each dimension: future temporal depth, .90; for past temporal depth, .76; and for total temporal depth, .81. For the full scale, see Appendix F.

Procedure

Participants were administered all scales online (through Qualtrics). They completed the online survey after reading an informed consent statement. The participants were given a brief demographic questionnaire, followed by a battery of five

measures. The presentation of each scale was counterbalanced to avoid order effects. Participants were able to complete the survey in approximately 30 minutes.

Results

Internal Consistency Analyses of the Measures

Scores on negatively worded items were reversed prior to analysis. Cronbach's alpha coefficients were then obtained for each scale and sub-scale. All of the measures exhibited high internal consistency. The Balanced Time Perspective Scale had excellent internal consistency (.94). The Past Depth sub-scale of the Temporal Depth Index had a borderline poor internal consistency (.60).

Table 1

Internal Consistency of the Measures (N = 142)

Measures	*Cronbach's Alpha*
MAAS	.83
ZTPI	.73
Past Positive	.76
Past Negative	.81
Present Hedonistic	.81
Present Fatalistic	.72
Future	.76
BTPS	.94
Webster Future	.91
Webster Past	.94
TFS	.83
Past Focus	.81
Current Focus	.75
Future Focus	.82

TDI	.79
Past Depth	.60
Future Depth	.81

Characteristics of the Study Sample

An overall mindfulness score was obtained by averaging the responses across all items of the Mindful Attention Awareness Scale. Mean scores and standard deviations of each measurement and sub-scale can be found in Table 2. Overall, the participants displayed a moderate level of attention and awareness to the present-moment experience in their daily lives.

Table 2

Means and Standardized Deviations (N = 142)

Variable	*M*	*SD*	Scale Range
Overall Mindfulness	3.80	.67	1-6
ZTPI			
Past Positive	3.61	.56	1-5
Past Negative	3.19	.64	1-5
Present Hedonistic	3.48	.49	1-5
Present Fatalistic	2.74	.56	1-5
Future	3.61	.51	1-5
BTPS			
Webster Future	4.87	.81	1-6
Webster Past	4.26	.72	1-6
Time-Expansiveness	9.13	1.36	1-12
TFS			
Past Focus	3.65	.82	1-7
Current Focus	4.18	.74	1-7

Future Focus	4.33	.82	1-7
TDI			
Past Depth	5.99	1.80	1-15
Future Depth	6.73	2.24	1-15
Total Temporal Depth	12.92	3.52	1-30

Interestingly, participants scored the same for Past Positive ($M = 3.61$) and Future ($M = 3.61$) orientation. Higher scores on the Future scale reflect a general future orientation and planning for future goals. Higher scores on the Past Positive scale reflect a warm, sentimental, positive attitude toward the past. These responses suggest that on average, participants equally reminisce positively on their past and plan for their future.

Participants reported higher levels of Present Hedonistic ($M = 3.48$) than Present Fatalistic ($M = 2.74$), which had the lowest scores out of the five sub-scales. The participants were more likely to have a hedonistic, pleasure centered, risk-taking 'devil may care' attitude towards time and life rather than a fatalistic, helpless, and hopeless attitude towards the future and life, with a belief that the future is predestined and uninfluenced by individual action.

Participants had high levels of both Webster Future ($M = 4.87$) and Webster Past ($M = 4.26$). This implies that on average participants tended to think about both the past and future. They also scored highly on Time-Expansiveness ($M = 9.13$), which suggests that they tended to be balanced in their thinking about the past and future.

On average, participants displayed an equal focus across all three temporal foci, with small variation between them. Temporal Focus captures the extent to which people

devote their attention to the past, present, and future. The small variation between the three foci suggests that on average participants appear to not have any temporal biases and have the ability to shift their attention among these time periods.

Participants responded to the TDI by stating far into the past and future they consider when making their plans or decisions. Participants' responses can range from 'one day' to 'more than twenty-five years'. The Temporal Depth Index sub-scales have similar means. Participants consider approximately six to nine months when focusing in both the past and the future direction.

Mindfulness and Time Perspective

The first study question asked about whether there were relationships between mindfulness and attitudinal and behavior preferences for the past, present, and future. Before examining these relationships, the correlations between these temporal attitudes and preferences were first examined. There were several significant correlations found between the sub-scales of the Zimbardo Time Perspective Inventory (see Table 3 below). In fact, each time perspective was correlated with at least another.

Table 3

Correlations between Time Perspectives (N=142)

Constructs	PN	PP	PH	PF	F
PN	--	-.34**	.15	.39**	-.06
PP	-.34**	--	.12	-.25**	.35**
PH	.15	.12	--	.33**	-.23**
PF	.39**	-.25**	.33**	--	-.39**
F	-.06	.35*	-.23**	-.39**	--

** $p < .01$

Note: PN = Past Negative, PP = Past Positive, PH = Present Hedonistic, PF = Present Fatalistic, F = Future

The Past Negative (PN) time perspective was negatively correlated with Past Positive (PP) and positively correlated with the Present Fatalistic (PF) time perspective. The more someone has a generally negative, aversive view of the past (PN) the less likely he or she is to have a warm, sentimental, positive attitude toward the past (PP). Additionally, as people have higher degrees of a PN time perspective the more likely they are to feel trapped in the present and have a helpless and hopeless attitude about life and the future (PF).

In addition to being negatively correlated with the Past Negative and Present Fatalistic time perspectives, the Past Positive (PP) time perspective is positively correlated with the Future (F) Time Perspective. This implies that people with a warm, sentimental, positive attitude toward the past are more likely to have a general future orientation, with increased focus on planning for and achieving future goals.

Present Hedonistic (PH) was positively correlated with the Present Fatalistic (PF), and negatively correlated with Future time perspective. People with a risk-taking 'devil

may care' attitude towards life are more likely to also feel helpless and hopeless and less likely to plan for their future or anticipate consequences for their behavior.

The Present Fatalistic (PF) was positively correlated with Past Negative (PN) and Present Hedonistic (PH) time perspective, and it was negatively correlated with the Past Positive (PP) and Future (F) time perspective. This implies that people with a more fatalistic (PF) time perspective is more likely to have a negative view of their past, feel hopeless about their present, and will be less likely to feel a positive attitude about their past experiences and less likely to plan for their future.

The Future (F) time perspective was positively correlated with Past Positive (PP), and negatively correlated with Present Hedonistic (PH), and Present Fatalistic (PF). The greater people consider future goals and achievements (F) the more likely they will display a warm, sentimental, positive attitude of their past, and the less likely they will have a hedonistic, pleasure-centered view toward time and life (PH) and the less likely they will feel helpless and hopeless (PF).

To answer the first study question, raw correlations between mindfulness and each time perspective were obtained. There were significant correlations between mindfulness and four of the five time perspectives (see Table 4 below).

Table 4

Raw Correlations between Mindfulness and the five Time Perspectives (N = 142)

Time Perspective	*r*
Past Negative	-.29*
Past Positive	.23*
Present Hedonistic	-.11
Present Fatalistic	-.23*
Future	.25*

* $p < .05$

The Past Positive (PP) time perspective is positively correlated with mindfulness. This suggests that someone with a more positive view of one's past would be more likely to have higher levels of mindfulness. A positive outlook on one's past would most likely lead to openness to experience and self-reflection, which are necessary for the development of mindfulness. This may explain the positive direction of this correlation and why there is a negative relationship between the Past Negative (PN) time perspective and mindfulness. Additionally, previous research by Baer (2006) has shown that mindfulness is negatively correlated with rumination. Someone with a higher degree of Past Negative (PN) time perspective is more likely to ruminate on his or her failures and mistakes in the past.

The Present Fatalistic (PF) time perspective was negatively correlated with mindfulness. A person with a fatalistic perspective would view his or her decisions as meaningless and would have little motivation to be fully engaged in the present moment. The Future (F) time perspective was positively correlated with mindfulness. This suggests that someone with a higher focus on future goals would be more likely to be mindful. Brown (2007) expressed that mindfulness may be associated with enhancements

in executive attention, which includes planning, decision-making, and the ability to overcome habitual actions. An person with a Future (F) time perspective have the ability to break free of automatic, mindless behavior by switching their attention to planning for the future.

Because the five time perspectives were highly correlated, a multiple regression analysis was conducted to examine how each dimension of an individual's time perspective (Past Negative, Past Positive, Present Hedonistic, Present Fatalistic, Future Focused) is associated with mindfulness, while controlling for the other four time perspectives. Only the Past Negative and Future time perspectives retained their significance (See Table 5 below).

Table 5

Summary of Multiple Regression Analysis for Mindfulness and the Time Perspectives (N=142)

Variable	*B*	*SE B*	*β*
Past Negative	-.24	.09	-.23*
Past Positive	.09	.11	.08
Present Hedonistic	-.04	.12	-.03
Present Fatalistic	-.04	.11	-.03
Future	.25	.12	.19*

Note. $R^2 = .14$; adjusted $R^2 = .11$.

* $p < .05$

This set of time perspectives accounted for 14% of the overall variance of mindfulness $F(5,136) = 4.58$, $p < .001$. The Past Negative (PN) time perspective had a significant negative association with mindfulness while the Future (F) time perspective

had a significant positive association. The significance of the Past Negative (PN) time perspective highlights the importance of taking into account this temporal bias. A cynical view of the past hinders a person's ability to develop a healthy relationship to the present moment. The significant positive correlation between a Future (F) focus and mindfulness implies that goals and consideration of future consequences are important factors for cultivating mindfulness.

Mindfulness and Time-Expansiveness

The second study question asked about whether mindfulness is associated with an ability to flexibly engage in the past, present, and future (i.e., being time-expansive). The two sub-scales of the Balanced Time Perspective Scale were first examined and were found to be significantly correlated. The BTPS measures the tendency to think about the past, present, and future so this means that the more an individual is open to consider the past, the more likely he or she is also expected to consider the future ($r = .55$, $p < .001$).

When examining the relationship between mindfulness and each of the two sub-scales, mindfulness was significantly positively correlated with the Webster Future scale, ($r = .27$, $p = .001$). This reflects that someone with a greater openness to consider his or her future goals and consequences will have a higher degree of mindfulness. This provides further evidence the mindfulness includes some level of consideration of future consequences. The BTPS frames each Future item within the present moment by discussing future goals in the present tense. This means that the Future scale addresses the future and the present moment simultaneously. The Webster Past scale was not significantly correlated with mindfulness, ($r = .13$ $p = .12$).

Given that the current study was particularly interested in the association between having a balanced time perspective (e.g., being *time-expansive*) and mindfulness, the participants' scores on the past and future scales were combined to generate composite scores that represent a continuum ranging from being *time-restrictive* (i.e., having lower scores on both past and future scales) to being *time-expansive* (i.e., having higher scores on both past and future scales). A higher score represents being more *time-expansive.* A Pearson's *r* test showed a significant positive correlation between time-expansiveness and mindfulness ($r = .23, p = .005$). People with a time-expansive perspective have a greater ability to switch between mindsets, and are less likely to be dominated by a certain time frame. This mental flexibility is also observed in people with higher levels of mindfulness (Boniwell, 2005). Time expansiveness most accurately measures the 'present moment' as Zimbardo initially intended in his 'Present Holistic' concept. The positive association with mindfulness observed in this study provides further evidence that time-expansiveness accurately represents engagement in the present moment.

Mindfulness and Temporal Focus

The third study question is about which temporal foci (past, present, and future) mindfulness is associated with. The associations between these temporal foci were first examined and they were found to positively correlated with each other (see Table 6 below). This means that a person focusing highly on the past will be more likely to place their attention on the present, and future as well. Ship (2009) points out that thinking about one time period does not preclude thinking about the others, and that the same person can have multiple temporal foci. This means that increased attention on the

attitudes and behaviors concerning one time frame is likely to lead to increased attention to the attitudes and behaviors concerning the remaining time frames.

Table 6

Correlations between Temporal Foci (N=142)

	Past Focus	Current Focus	Future Focus
Past Focus		.19*	.30**
Current Focus	.19*		.49**
Future Focus	.30**	.49**	

** $p < .01$, * $p < .05$

Raw correlations were obtained to examine how each dimension of the Temporal Focus Scale is associated with mindfulness. Mindfulness was significantly positively correlated with Current Focus (see Table 7 below).

Table 7

Raw Correlations between Mindfulness and the Temporal Focus Scale (N = 142)

Temporal Focus	*r*
Past Focus	-.07
Current Focus	.23*
Future Focus	.16

* $p < .05$

The Mindful Attention Awareness Scale used in this study restricts mindfulness to *attention to and awareness* of what is occurring in the present rather than on attributes such as acceptance, trust, empathy, gratitude, or the various others that have been associated with mindfulness (e.g., Shapiro & Schwartz, 1999). It is not surprising then

that a higher level of attention to the present (Current Focus) is correlated positively with mindfulness. This suggests that attention to the present moment is necessary for both Current Focus and higher levels of mindfulness. There also was a slight positive correlation between Future Focus and mindfulness though it was not found to be statistically significant ($r = .16, p = .06$).

A multiple regression analysis was also conducted to further examine how an individual's temporal focus (Past, Current, or Future) is associated with mindfulness while controlling for the other temporal foci. This set of temporal foci accounted for 7% of the overall variance of mindfulness $F(3,138) = 3.55, p = .02$. There was a significant positive correlation between current focus and mindfulness when past and future foci were controlled (see Table 8 below).

Table 8

Summary of Multiple Regression Analysis for Mindfulness and Temporal Foci(N=142)

Variable	*B*	*SE B*	β
Past Focus	-.11	.07	-.13
Current Focus	.19	.08	.21*
Future Focus	.08	.08	.10

Note. $R^2 = .27$; adjusted $R^2 = .07$.

* $p < .05$

Mindfulness and Temporal Depth

The last study question is about the relationship between mindfulness and the depth into the past and future that people travel when thinking about events that have happened, may have happened, or may happen. The two sub-scales of the Temporal

Depth Index were significantly correlated ($r = .55, p < .001$). Temporal depth measures how *far* into the future and past people think about things, regardless of how important they regard the past or future. The significant correlation between the scales means that the farther into the past a person considers, the more likely they will think farther into the future as well. Bluedorn (2001) explains that past and future temporal depths have consistently been positively correlated at both the individual and organizational levels.

Raw correlations were then obtained to examine how each dimension of the Temporal Depth is associated with mindfulness. Past Temporal Depth was not significantly correlated with mindfulness ($r = .12, p = .17$). Likewise, Future Temporal Depth was not significantly correlated with mindfulness ($r = .05, p = .55$). A multiple regression analysis was also conducted to further verify how a person's temporal depth on one dimension is associated with mindfulness while controlling the other dimension. The results of this test were statistically insignificant $F(2,139) = .96, p = .38$ (see Table 9 below).

Table 9

Summary of Multiple Regression Analysis for Mindfulness and Temporal Depth(N=142)

Variable	*B*	*SE B*	β
Past Depth	-.003	.03	- .01
Future Depth	.05	.04	.12

Note. $R^2 = .27$; adjusted $R^2 = .07$.

* $p < .05$

After obtaining the participants scores from the Temporal Depth Index, the Past and Future sub-scale scores were combined to examine their degree of Total Temporal Depth. Bluedorn explains that Total Temporal Depth is the combination of the, "past *plus* future temporal depths to consider the total time span that people tend to use to think about things" (p. 201). A Pearson's *r* test showed no significant correlation between total temporal depth and mindfulness ($r = .09$, $p = .28$). This suggests that the distance traveled when some considers events that have happened, may have happened, or may happen has no significant correlation with an person's level of mindfulness.

Discussion

Lewin (1939) describes time as, "an inescapable part of our life-space, an omnipresent, dynamic force which structures our lives in sometimes subtle and sometimes profound ways" (p. 111). Time is not only a physical phenomenon, but it is open to individual, cognitive, emotional, social, and cultural interpretation. Western societies regard time as linear and continuous, objective, and universal. Snyder & Lopez (2009) express that the concept that time should be scheduled, measured, and coordinated is externally created and reinforced by society. As a result of this perspective, many of us have coped with the stress of time by going through life on "autopilot". This helps us move through life quickly and efficiently, and enables us to concentrate on complex tasks. But there is a cost: we miss out on big chunks of our lives. We are not fully present to ourselves-physically, emotionally, or spiritually. As a society, it is important for all of us to take a moment and re-evaluate our relationship with time.

Albom (2012) eloquently describes how our obsession with time is both socially constructed and can be damaging to our wellbeing:

> Try to imagine a life without timekeeping. You probably can't. You know the month, the year, the day of the week. There is a clock on your wall or the dashboard of your car. You have a schedule, a calendar, a time for dinner or a movie. Yet all around you, timekeeping is ignored. Birds are not late. A dog does not check its watch. Deer do not fret over passing birthdays.
>
> Man alone measures time.
>
> Man alone chimes the hour.
>
> And, because of this, man alone suffers a paralyzing fear that no other creature endures:
>
> *A fear of time running out* (p. 6).

Conquering this fear and developing a healthy relationship toward the present will benefit society on both an individual and group level. Zimbardo (2008) expressed that the greatest gift you can give to someone else and to yourself is time. He states, "Allow yourself to be fully present and to choose happiness. The past is gone, and the future will never arrive. The present is all that you have. Give yourself permission to enjoy the present and to pursue happiness in the future" (p. 264).

The purpose of this study was to gain a better understanding of how time is subjectively experienced when one is attending fully to the present moment. Attending to and being aware of the present moment is a defining feature of mindfulness. The results of this study have helped clarify what it means to be mindful and in the present moment through an exploration of the following constructs of subjective time: Time Perspective, Balanced Time Perspective, Temporal Focus, and Temporal Depth.

Mindfulness and Time Perspective

It was hypothesized that being more mindful would be positively correlated with being more Past Positive, negatively correlated with Past Negative, Present Hedonistic and Present Fatalistic, but not significantly correlated with Future Focused time perspective.

The study confirmed our hypothesis that a Past Negative time perspective is negatively associated with mindfulness. This means that someone with a cynical view of the past would be less likely to be mindful. When considering the two past time perspectives, being mindful is associated with having positive rather than negative attitudes about the past. When people have negative views of the past, they often create a temporal bias where their negative experiences in past maintain a grip on their thoughts and emotions. In order to overcome this temporal bias and become more mindful, you must consider that although you can learn from or dwell on your past mistakes, you are not defined by them. You can orient yourself with the present and decide that this moment marks the first day of the rest of your life.

Contrary to what was predicted, the Future time perspective was positively associated with mindfulness. This was surprising as the items measuring Zimbardo's future focus includes some anxiety-provoking scenarios such as struggling to meet future deadlines, and arriving late for an appointment. Drake et al. (2008) observed a slight positive correlation between mindfulness and the Zimbardo Future Focus, but their results were insignificant ($r = .03$, *ns*). The positive relationship between mindfulness and a future perspective may be better explained when you consider that both mindfulness and a future perspective have a documented relationship with well-being. Deci and Ryan

(1980) explain that mindfulness is, "important in disengaging individuals from automatic thoughts, habits, and unhealthy behavior patterns and thus could play a key role in fostering informed and self-endorsed behavioral regulation, which has long been associated with enhanced well-being" (p. 823).

Boyd & Zimbardo (2005) state that research has continuously demonstrated the benefits of a future focus, whether it is higher academic achievement, financial success, or health-conscious behavior. In future studies, it will be important to closely examine the relationship between future focus and mindfulness while accounting for well-being. Will the observed relationship between mindfulness and future focus hold when controlling for well-being? For now, the study results imply that being mindful means having an increased awareness and a positive outlook on the future.

The study results (i.e., the raw correlation) show that a Present Fatalistic time perspective is negatively correlated with mindfulness. An individual that has no faith in the power of his or her actions would have little motivation to develop a greater sense of awareness in the present moment. When considering the present, being mindful means overcoming this fatalistic perspective, finding meaning, and increasing your level of engagement. Zimbardo (2008) states that, "by being mindful, you may be able to detect the influence of your environment when you want to be rid of it, and to do something to eliminate it" (p. 263). A fatalistic person must learn to identify how their actions can affect the world, discover activities that give them purpose, and remove the environmental stressors that are negatively impacting their well-being.

Additionally, a Present Hedonistic time perspective was not significantly correlated to mindfulness in either direction. Therefore, being mindful may not be about

being indulgent in the present. Being mindful in the present moment is neither about leaving things up to fate nor being indulgent. Being mindful in the present means to be fully engaged and to use that awareness to choose how you reconstruct the past, interpret the present, and construct the future. Unfortunately, Zimbardo's conceptualization of the present does not accommodate such a more Present-Holistic perspective.

Mindfulness and Time-Expansiveness

It was hypothesized that being more mindful is associated with being more *time-expansive* (i.e., having a balanced time perspective) and being less *time-restrictive.* The results of the study confirm that higher levels of time-expansiveness are positively associated to mindfulness. Vowinckel (2012) also found a positive association between a Balanced Time Perspective and mindfulness. Webster's (2011) Balanced Time Perspective is defined as a 'frequent and equal tendency to think about both one's past and future in positive ways' and can be described as having a positive relationship to one's past and future, in the present. Someone with a time-expansive perspective has a positive view of both their past experiences and an optimistic outlook of their future. With the elimination of temporal biases, a person is more likely to have a clear outlook on life that is free of reflexive conditioning and delusion. Being mindful means having the ability to switch between past, present, and future mindsets.

Mindfulness and Temporal Focus

It was hypothesized that being more mindful would be negatively associated with being more past focused, and positively associated with being more present and future focused. The study confirmed our hypothesis that a focus on the present moment is positively associated with mindfulness. The Mindfulness Attention Awareness Scale used

in this study was designed to assess present moment awareness. Reflecting upon this definition, it seems obvious that higher levels of attention to the present (Current Focus) would be correlated with mindfulness. Brown and Ryan (2003) identified attention to the present moment as the core characteristic of mindfulness.

Although Current Focus was associated positively with mindfulness, study results also showed that the three temporal foci were correlated with each other. This may suggest that although being mindful involves flexibility and the switching of attention between each temporal region (past, present, and future), it is primarily an act of attending to the present.

Mindfulness and Temporal Depth

There was no observed relationship between mindfulness and temporal depth. How far one focuses in the past or future does not seem to have any bearing on an individual's level of mindfulness. The lack of significance in the statistical results might be partly explained by the poor internal consistency of the past sub-scale (.60), but another explanation could be due to the nature of the study sample. The participants were mostly undergraduate students with ages ranging from 18-29 years old with a mean of 19.96 years old. The Temporal Depth Index included items with responses ranging from one day to more than twenty-five years. It is possible that this study sample is too young to have developed a significant temporal depth in either direction, thereby restricting the range for the index. With the majority of the participants being freshmen in college, their focus is probably spread equally between the past and future. On average, the participants looked 5.99 years into the past and 6.73 years into the future on each scale. They miss their friends and family back home, but are eager for their upcoming college years.

Another important consideration for this section is that unlike the other measures used in this study, the Temporal Depth Index was developed in the context of industrial-organizational research that focused on the relationship between temporal depth and how *organizations* and their individual employees budget and manage their time. Bluedorn (2001) explains that past and future temporal depths have consistently been positively correlated at both the individual and organizational levels. Bluedorn (2004) found that total temporal depth related to organizational decision making about capital expenditures (the greater the depth, the greater the expenditures) and that the greater the depth, the greater the earnings per share. Results of the studies also showed that temporal depth varied depending on the person's placement in the organization (e.g., leaders had deeper temporal depth). Although the measure was appropriate for the current study in that it measures people's subjective experience of time, positive results obtained in organizational studies involving organization or work-related outcomes may not necessarily signal similar results in a different context such as that found in the current study.

Mindfulness and the Subjective Experience of Time

What does it mean then to be in the present moment? How is time experienced subjectively when one is attending to the present? The study results suggest that while being mindful is primarily about being focused in the present, it does not mean being unconcerned about the past and the future. In fact, it is about being flexibly engaged in the past, present, and future, and not possessing undue attachments or biases to either. Being mindful means having positive attitudes and behavioral preferences about each temporal dimension. It entails having positive rather than negative attitudes about the

past, healthy rather than pleasure-seeking and risk-taking approach to the present, and an optimistic outlook about the future. Mindfulness is a balanced and holistic subjective experience of time. How far one travels to the past and future, however, may not be a critical element of being mindful.

Clinical Implications

The findings of this study have important implications to the field of clinical psychology. Upon the development of the ZTPI, Boniwell and Zimbardo (2004) stated that, "an understanding of Time Perspective can be a useful tool in counseling psychology" (p. 175). This study has helped clarify how mindfulness is positively correlated to various aspects of the subjective experience of time (current focus, future focus, time-expansiveness). This knowledge can help clinical and counseling psychologists conceptualize practical interventions for their clients. With a greater understanding of a clients' subjective experience of time, clinicians can help identify temporal biases and create a starting point in their therapeutic explorations.

Gaining a deeper understanding of your individual subjective experience of time requires reflective and self-awareness skills. Our study found that mindfulness is positively correlated to a future time perspective in both Webster's Balanced Time Perspective Scale and Zimbardo's Time Perspective Inventory. Additionally, mindfulness was negatively correlated to a Past Negative Time Perspective. An exploration of an person's subjective experience of time can be included within other interventions that require these skills (Dialectical-Behavior Therapy, Cognitive Behavioral Therapy) by helping clients facilitate positive future thinking, create new optimistic future scenarios and positive future goals, and help the client identify positive past and/or future

perspectives in order to increase their level of mindfulness. For example, we often have difficult accurately observing our present moment because we are not fully considering our past and future experiences. A student with test anxiety may fear for their future grade, but is so anxious that they are unable to draw on previous positive school experiences. By increasing their level of time-expansiveness, they can plan for a positive future and learn from their previous mistakes.

Vowinckel (2012) expressed that Zimbardo's definition of the present, "is a shortcoming, when aiming at defining an optimal health promoting architecture of time perspective" (p. 4). Our results build on that statement as there is no Time Perspective that clearly represents what it means to be in the present moment. As stated earlier, in the beginning Zimbardo and Boyd included a 'present-holistic' sub-scale, but rejected it due to lack of intercultural validity (Zimbardo & Boyd, 2008). As mindfulness-based interventions become increasingly popular, there is a greater demand for identifying a client's degree of 'present-holistic' time perspective. One way of correcting this issue is for clinicians to explore this concept and to study Webster's (2011) notion of a Balanced Time Perspective. The current study found that Time-Expansiveness was highly correlated with mindfulness.

Limitations of this Study

The current study does have several limitations. While conceptualizing this study, we reviewed many different measures concerning the subjective experience of time. The study narrowed these down to the Zimbardo Time Perspective Inventory, Balanced Time Perspective Scale, Temporal Focus Scale, and Temporal Depth Index. While each scale was shown to have acceptable internal consistency overall, some may not have been ideal

to include for this study. For example, the TDI (Bluedorn, 2002) was constructed to measure an individual's future, past, and total temporal depth. Although the TDI had acceptable internal consistency (.79), the Past Depth sub-scale showed poor internal consistency (.60).

In future studies it will be important to include a greater age range of participants. Additionally, the age of our current participants could explain the future focus in many of the respondents. University students are in an environment that rewards people that have future oriented goals and those that consider future outcomes. Additionally, they do not have enough experience to have developed a deeper level of temporal depth Therefore it is unclear if our results are generalizable as we have only considered a university population. Future studies including a wider age range will help us identify any developmental differences in how people subjectively experience time.

Another limitation of this study is its reliance on self-report measures. The majority of participants were recruited with the reward of course credit. Out of the 245 participants that responded to the survey, only 142 responses were usable due to incomplete or problematic responding. The responses were completed online and there was no incentive for the participants to take the survey seriously and honestly.

Conclusion

This study has increased our knowledge on how being mindful involves present attention, future perspective, time-expansiveness, and positive attitudes and behavioral preferences about the past, present, and future. The results suggest that although being mindful primarily concerns the present, it is equally important to possess a mental flexibility regarding the past and future. Existing research has shown how specific

temporal biases (e.g., Past Negative) are correlated with depression, anxiety and low self-esteem (Zimbardo and Boyd, 1999). Our results indicate that being mindful means having positive attitudes and behavioral preferences about each temporal dimension. Mindfulness entails having positive rather than negative attitudes about the past, healthy rather than risk-taking or submissive approach to the present, and an optimistic outlook about the future. Therapeutic techniques involving the exploration of a client's subjective experience of time can be integrated with current mindfulness-based techniques in order increase awareness and to reshape or remove a temporal bias. Clinicians can utilize subjective time to help clients be more proactive and engaged in their day-to-day lives and help form stronger relationships not only to the present, but to the past and the future as well. Mindfulness represents a balanced and holistic subjective experience of time.

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Appendix A: Demographic Information

Instructions: Please provide a response to the following statements.

1. Age: _____

2. Gender: Male or Female

3. Ethnicity:

_____ White/Caucasian

_____ Black/African-American

_____ Hispanic

_____ Native American

_____ Asian American

_____ Hawaiian or Pacific Islander

_____ Multi-ethnic

_____ Other

4. Year in School

_____ Freshman

_____ Sophomore

_____ Junior

_____ Senior

_____ Graduate

5. Academic Major: _____

Appendix B: Mindful Attention Awareness Scale

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1	2	3	4	5	6
Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost Never

I could be experiencing some emotion and not be conscious of it until sometime later.	1	2	3	4	5	6
I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	1	2	3	4	5	6
I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
It seems I am "running on automatic," without much awareness of what I'm doing.	1	2	3	4	5	6
I rush through activities without being really attentive to them.	1	2	3	4	5	6
I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	1	2	3	4	5	6
I do jobs or tasks automatically, without being aware of	1	2	3	4	5	6

what I'm doing.

I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6
I drive places on 'automatic pilot' and then wonder why I went there.	1	2	3	4	5	6
I find myself preoccupied with the future or the past.	1	2	3	4	5	6
I find myself doing things without paying attention.	1	2	3	4	5	6
I snack without being aware that I'm eating.	1	2	3	4	5	6

Appendix C: Zimbardo Time Perspective Index

Instructions: Read each item and, as honestly as you can, answer the question: "How characteristic or true is this of you?" Check the appropriate box using the scale. Please answer ALL of the following questions on both sides.

1	2	3	4	5
Very Untrue		Neutral		Very True

1. I believe that getting together with one's friends to party is one of life's important pleasures.
2. Familiar childhood sights, sounds, smells often bring back a flood of wonderful memories.
3. Fate determines much in my life.
4. I often think of what I should have done differently in my life.
5. My decisions are mostly influenced by people and things around me.
6. I believe that a person's day should be planned ahead each morning.
7. It gives me pleasure to think about my past.
8. I do things impulsively.
9. If things don't get done on time, I don't worry about it.
10. When I want to achieve something, I set goals and consider specific means for reaching those goals.
11. On balance, there is much more good to recall than bad in my past.
12. When listening to my favorite music, I often lose all track of time.
13. Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play.
14. Since whatever will be will be, it doesn't really matter what I do.
15. I enjoy stories about how things used to be in the "good old times."
16. Painful past experiences keep being replayed in my mind.
17. I try to live my life as fully as possible, one day at a time.
18. It upsets me to be late for appointments.

19. Ideally, I would live each day as if it were my last.
20. Happy memories of good times spring readily to mind.
21. I meet my obligations to friends and authorities on time.
22. I've taken my share of abuse and rejection in the past.
23. I make decisions on the spur of the moment.
24. I take each day as it is rather than try to plan it out.
25. The past has too many unpleasant memories that I prefer not to think about.
26. It is important to put excitement in my life.
27. I've made mistakes in the past that I wish I could undo.
28. I feel that it's more important to enjoy what you're doing than to get work done on time.
29. I get nostalgic about my childhood.
30. Before making a decision, I weigh the costs against the benefits.
31. Taking risks keeps my life from becoming boring.
32. It is more important for me to enjoy life's journey than to focus only on the destination.
33. Things rarely work out as I expected.
34. It's hard for me to forget unpleasant images of my youth.
35. It takes joy out of the process and flow of my activities, if I have to think about goals, outcomes, and products.
36. Even when I am enjoying the present, I am drawn back to comparisons with similar past experiences.
37. You can't really plan for the future because things change so much.
38. My life path is controlled by forces I cannot influence.
39. It doesn't make sense to worry about the future, since there is nothing that I can do about it anyway.
40. I complete projects on time by making steady progress.
41. I find myself tuning out when family members talk about the way things used to be.
42. I take risks to put excitement in my life.

43. I make lists of things to do.
44. I often follow my heart more than my head.
45. I am able to resist temptations when I know that there is work to be done.
46. I find myself getting swept up in the excitement of the moment.
47. Life today is too complicated; I would prefer the simpler life of the past.
48. I prefer friends who are spontaneous rather than predictable.
49. I like family rituals and traditions that are regularly repeated.
50. I think about the bad things that have happened to me in the past.
51. I keep working at difficult, uninteresting tasks if they will help me get ahead.
52. Spending what I earn on pleasures today is better than saving for tomorrow's security.
53. Often luck pays off better than hard work.
54. I think about the good things that I have missed out on in my life.
55. I like my close relationships to be passionate.
56. There will always be time to catch up on my work.

Appendix D: Balanced Time Perspective Scale

Instructions: Please rate the following statements using the scale below. Clearly print the appropriate number in the space provided before each question.

1	2	3	4	5	6
Strongly Disagree	Slightly Disagree	Slightly Disagree	Slightly Agree	Slightly Agree	Strongly Disagree

1. Reviewing events from my past helps give my life meaning.
2. I Look forward to my future.
3. I get a renewed sense of optimism when I remember earlier life experiences.
4. Looking ahead really gets me energized.
5. Reminiscing about my past gives me a sense of purpose in life.
6. I enjoy thinking about where I'll be a few years from now.
7. Seeing how the pieces of my past come together gives me a sense of identity.
8. I have many future aspirations.
9. The joy of life is strengthened for me when I recall the past.
10. Achieving future dreams is something that motivates me now.
11. Reliving earlier times in my life helps give me a sense of direction.
12. I get excited when I think about the future.
13. The pattern of my life makes more sense to me when I reflect on my past.
14. Anticipating my later life fills me with hope.
15. Tapping into my past is a source of comfort to me.
16. Imagining my future makes me feel optimistic.
17. Remembering happier times from my past helps energize me in the present.
18. I like to fantasize about what is down the road for me.

19. I feel my past is a resource upon which I can draw.

20. Creating a positive future is something I often think about.

21. Thinking about when I was younger helps me understand my life story.

22. My future development is something I frequently think about.

23. Reflecting on earlier triumphs helps me identify personal strengths.

24. I enjoy thinking about goals that are yet to come.

25. Recalling previous successes helps motivate me now.

26. I have some very specific future goals.

27. Important memories fill my past.

28. The kind of person I want to be is brought into focus when I think about the future.

Appendix E: Temporal Focus Scale

Instructions: Please rate the following statements using the scale below. Clearly print the appropriate number in the space provided before each question.

Never		Sometimes		Frequently		Constantly
1	2	3	4	5	6	7

1. I think about things from my past.

2. I live my life in the present.

3. I think about what my future has in store.

4. I focus on what is currently happening in my life.

5. I focus on my future.

6. I replay memories of the past in my mind.

7. I imagine what tomorrow will bring for me.

8. My mind is on the here-and-now.

9. I reflect on what has happened in my life.

10. I think about where I am today.

11. I think back to my earlier days.

12. I think about times to come.

Appendix F: Temporal Depth Index

Instructions: This set of questions concerns how you typically consider the past and the future when you make plans or decisions. Please use the following choices to respond to items 1-6 by writing the appropriate number on the blank line in front of each statement. If you use choice 15 to respond to any of the items, also write the specific number of years on the blank after the item.

1 = One day	6 = Six months	11 = Ten years
2 = One week	7 = Nine months	12 = Fifteen years
3 = Two weeks	8 = One year	13 = Twenty years
4 = One month	9 = Three years	14 = Twenty-five years
5 = Three months	10 = Five years	15 = More than twenty-five years

1. When I think about the *short-term future*, I usually think about things this far ahead.

(If response 15, please write the specific number of years: ____ years)

2. When I think about the *mid-term future*, I usually think about things this far ahead.

(If response 15, please write the specific number of years: ____ years)

3. When I think about the *long-term future*, I usually think about things this far ahead.

(If response 15, please write the specific number of years: ____ years)

4. When I think about things that happened *recently*, I usually think about things that happened this long ago.

(If response 15, please write the specific number of years: ____ years)

5. When I think about things that happened a *middling time ago*, I usually think about things that happened this long ago.

(If response 15, please write the specific number of years: ____ years)

6. When I think about things that happened a *long time ago*, I usually think about things that happened this long ago.

(If response 15, please write the specific number of years: ____ years)