Ph.D. Dissertation of Joshua Fuller

Temporal Dynamics of Pleasure and Meaning

Effects of Durations of Time on Preferences and Behaviors

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Abstract

Pleasure and meaning are primary concerns when thinking about life, liberty, and the pursuit of happiness. Even with the substantial research in these domains over the last 50 years, we still struggle to explain common human behaviors in reference to happiness pursuits. Previous literature has demonstrated a distinction between types of happiness (i.e. pleasure and meaning). However, very little is known as to what factors are most relevant in distinguishing these often highly correlated types of happiness. The present study aims to address this gap in our understating by investigating how durations of time influence decisions with respect to pleasure and meaning oriented activity choices. This study contributes to the literature by examining durations of time and their effect on decisions in 5 studies. First, participants indicated a clear preference for pleasure or meaning focused activities in a 1 day (short) or 6 months (long) duration condition (Study 1). This effect becomes increasingly pronounced as durations are extended (i.e. 10 minutes, 1 day, 1 week, 1 month, 6 months, 1 year) (Study 2). In an implicit association task, participants demonstrated an association between pleasure related words with short durations, and meaning related words with long durations (Study 3). When considering durations of time as a perspective on life (i.e. “life is short” or “life is long”), these perspectives were associated with the frequency of real world pleasure and meaning oriented behaviors (Study 4). Finally, in a priming study short, long, and neutral perspectives demonstrated the primed short duration condition intended to give less to a charitable cause relative to the long duration condition (Study 5). Taken together, these studies demonstrate broad domains in which durations of time have a measurable effect on preferences and behaviors.

Keyword : duration, pleasure, meaning

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Chapter 1. Introduction

1.1. Study Background

The debate in positive psychology between the relevance of pleasure and meaning is at a critically decisive moment.[①] Historically, positive psychology has treated pleasure and meaning as rivals (Delle Fave, Massimini, & Bassi, 2011; Grinde, 2012). Some researchers argue that attempting to distinguish these two notions of well-being is potentially harmful to scientific research and their categorical study should be abandoned altogether (Kashdan, Biswas-Diener, & King, 2008). However, there is mounting evidence that the pleasure and meaning constructs of well-being are discernable, independent, and contribute to our understanding of distinct aspects of well-being (Baumeister, Vohs, Aaker, & Garbinsky, 2013; Huppert & So, 2013; Joshanloo, 2015; Vittersø & Søholt, 2011; Waterman, 2008). Research by Huta and Ryan (2009) supports the notion that pleasure and meaning are not rivals but occupy both overlapping and distinct aspects of well-being, and also indicates the combination of both may be associated with the highest levels of well-being. People most often desire the benefits of both pleasure and meaning (commonly referred to as flourishing) and in various contexts act in accordance toward fulfilling that

① In line with current psychological conceptualizations of well-being, we align hedonic well-being with pleasure and eudaimonic well-being with meaning.

desire (Huppert & So, 2013; Huta & Ryan, 2009). However, surprisingly little is known about how pleasure and meaning interoperate and what might differentiate their prioritization.

King, Hicks, Krull, and Del Gaiso (2006) attempted to reconcile the differences between key factors of pleasure (measured by positive affect) and meaning (measured by meaning in life). They found that pleasure and meaning are highly correlated but relate to differing systems and that pleasure does not always track meaning. However, questions remain as to how the prioritization of pleasure and meaning differ, what mechanism drives their differentiation, and what is the relationship between pleasure and meaning with judgement and decision-making?

Where previous research has focused on either pleasure (Kahneman, Diener, & Schwarz, 1999) or meaning (Ryff, 1989; Waterman, 1993), the current research aims to investigate the temporal dynamics of pleasure and meaning. I propose the possibility that time is a key factor through which to contextualize the differences in pleasure and meaning pursuits. More specifically, I propose that shorter durations of time are associated with pleasure whereas longer durations of time are associated with meaning.

There are several reasons to expect that pleasure might be associated with shorter durations and meaning might be associated with longer durations. First, reward systems in the brain engage to promote the frequency and intensity of useful behaviors and are responsible for feelings

of pleasure and positive emotional states (Schultz, Tremblay, & Hollerman, 1998). From eating to gambling to sexual activity, triggers in the rewards systems of the brain are immediate though the effects are often brief, we feel a heightened sense of pleasure (Linden, 2011). Given that pleasure often operates at a biological level, there is reason to believe that perceptions of durations of pleasure and/or meaning based activities may be understood implicitly (Sackett, Meyvis, Nelson, Converse, & Sackett, 2010).

Second, Construal Level Theory (CLT) researchers found that pleasure reflects a low level construal, whereas meaning is considered as a high level construal (Kim, Kang, & Choi, 2014). In this study pleasure was found to be more associated with a time point in the near future whereas meaning was associated with a time point in the distant future. They also found that participants favored common activities high in pleasure, relative to high in meaning, and a pleasurable life (without meaning) when near in temporal distance. On the other hand, activities high in meaning or a meaningful life (without pleasure) was preferred when the time horizon was more distant.

In the present research we investigate (a) duration based decision making of pleasure and meaning oriented activity preferences in a variety of time increments (studies 1 & 2), (b) implicit beliefs about pleasure and meaning activity durations (study 3), (c) the influence of duration based perspectives on life in common activities (study 4), and finally (d) causal

links between time perspectives and prosocial behavioral (study 5).

The Nature of Happiness

We must first address the issue of the nature of happiness in order to understand the complexities of happiness in contemporary psychology. Happiness might be better understood in terms of ways of life and what they do for people. The philosophical traditions that have epitomized the modern perceptions of happiness were the ancient Greeks. Socrates understood better than most the importance of examining and understanding what we in modern times refer to as well-being. As recorded by Plato in the Republic, Socrates stresses the significance of questioning *how one should live one's life* (Peterson, 2011).

Many philosophers have taken to this question and formulated their own interpretations; however, disagreement arose even at the outset of the discussion. Hedonia and eudaimonia are the two main philosophical perspectives around which most of current debate revolves (Delle Fave et al., 2011). A complete review of the philosophical traditions is beyond the scope of the current paper, however an overview of pertinent philosophies and their contributions is essential in providing a basis for this discussion. The eudaimonic tradition is most often attributed to Aristotle but can also be linked to other ancient philosophers such as Plato and Zeno of Citium (Grinde, 2012). Aristotle posited that eudaimonia constituted living a life

of nobility in a way that was true to one's authentic nature (Aristotle., 1985). This meant leading a life that was good for the person with virtue and full functioning, in other words a meaningful life. Aristotle emphasized virtuous living through justice, kindness, courage, and honesty as the path to well-being (Norton, 1976). He disparaged hedonism as a debauched ideal that enslaved people to their desires and warned of the pursuit of hedonic pleasure purely for pleasure's sake (Waterman, 2008). Positive emotions on the other hand were not considered entirely immoral, as they often resulted from eudaimonic actions (Kashdan et al., 2008). As such, Aristotle advocated that developing one's potential in the pursuit of meaningful goals epitomized a good life (Keyes & Annas, 2009).

Conversely, contemporaries of Aristotle viewed living a good life as one consisting of hedonism emphasizing that the only thing good for a person is pleasure. The hedonistic tradition from the philosophers Epicurus, Bentham, Lock, and Hobbes general equate well-being with emotional states (Waterman, Schwartz, & Conti, 2008) that accompany the satisfaction of obtaining one's desires (Diener, 2009). According to the hedonic tradition the path to well-being involved pleasure, carefreeness, and enjoyment. Both philosophical traditions agreed on the importance of living a good life but fundamentally disagreed on the substantive way of life best for human beings. The hedonic view asserts the supremacy of pleasure whereas the eudaimonic view emphasizes meaning.

Distinctions in Happiness Research: Pleasure and Meaning

Psychological research tends be unilateral in its approach and ultimately highlights a single philosophical perspective (Fredrickson, 2001; Kahneman et al., 1999) or pits two the perspectives against one another (Kashdan et al., 2008; Ryan & Huta, 2009). This trend in psychological research has enhanced our understanding of pleasure, and to a lesser extent meaning, a great deal but ignoring the distinctions between pleasure and meaning.

A series of factor analysis support the contention that hedonic and eudaimonic happiness are related but distinctive (Compton, Smith, Cornish, & Qualls, 1996; Keyes, Shmotkin, & Ryff, 2002; McGregor & Little, 1998; Ryan & Deci, 2001). Recent advances in exploratory structural equation modeling (ESEM) have yielded further evidence for the distinction between pleasure and meaning (Joshanloo, 2015, 2016). ESEM allows for more accurate inter-factor correlations by allowing for non-constrained cross-loadings of well-being measures. The reported experience of pleasure and meaning are qualitatively different from each other and root in two distinguishable factors namely hedonic and eudaimonic well-being.

Huta and Ryan (2009) demonstrated how pleasure oriented and meaning oriented activities relate to short-term and long-term benefits respectively. These results were most pronounced when adding meaning

to an otherwise pleasurable life and pleasure to an otherwise meaningful life. It appears that a combination of both hedonic pleasure and eudaimonic meaning cumulatively contribute for the greatest and most diverse increases in well-being (Peterson, Park, & Seligman, 2005). This seems to indicate that timeframes are important factors when evaluating the preference and benefits of pleasure and meaning.

The experience of pleasure is a relatively simple automatic process governed by obtaining, or failing to obtain, basic biological needs in the present moment (Baumeister & Vohs, 2002). Biological needs dictate the lives of all living creatures. These needs originate at the most basic level and become more complex in parallel with the complexity of the creature. Reward systems in the body and brain engage to promote the frequency and intensity of useful behaviors and are responsible for feelings of hedonic pleasure and positive emotional states (Schultz et al., 1998). Motivations impel us to pursue and enjoy these needs and the satisfaction from their obtainment often produces positive emotional states (Baumeister et al., 2013). On the other hand, negative emotions often result from the absence or failing to obtain basic needs. Therefore, the balance of positive and negative emotions depends to some degree on whether basic needs are being satisfied. From the perspective of hedonistic philosophy and positive psychology, pleasure is in part a direct result from the fulfillment of immediate needs and is often measured by SWB (Diener, Suh, Lucas, &

Smith, 1999; Kahneman et al., 1999). The classic experiences of pleasure result from stimulation through the 5 senses (Biswas-Diener et al., 2015; Frijda, 2010), are implicitly associated with short durations of time (Sackett et al., 2010), preferred now rather than later (Kim et al., 2014), and decrease in potency over time (i.e. hedonic adaptation) (Frederick & Loewenstein, 1999). This suggests that the experience of pleasure is the result from fulfillment of physiological needs, experienced relatively briefly, and most potent in the present moment.

Meaning, on the other hand, is a complex cognitive culmination of past, present, and future events as it relates with personal valued goals (Baumeister & Vohs, 2002; Baumeister et al., 2013; Taylor, 1983). The experience of meaning requires the use of cognitive effort, in addition to emotional assessment, in order to distill significance from our actions (Baumeister et al., 2013). Research has supported the view that meaning integrates across time (Vallacher & Wegner, 1985, 1987). Vallacher & Wegner found that as perspectives become more focused on time beyond the present, they also shift toward more abstract and meaning oriented perspectives.

The pursuit of valued goals, which is the primary driving force behind meaning in life, involves integrating the past, present, and future, rather than the present moment alone. The majority of valued goals are long-term projects, and advancement of a goal can be assessed from the

long duration perspective. For example, preparing a meal for a child may not be pleasurable in the present moment. However, a parent could experience meaning from the knowledge that providing nourishment to their child has the possibility to contribute to their long term health and development. By contrast, the same parent can experience pleasure on the basis of the current state of emotions without a long duration or future perspective.

Even with the intuitive importance of meaning, there has been a lack in its conceptual clarity and academic attention relative to pleasure (Leontiev, 2016). Though psychological research has only recently begun to investigate meaning, it has been a longstanding topic in philosophy. The German philosopher Wilhelm Dilthey asserted that meaning arises from consistency across time and context (Dilthey, 1977) and building on this premise other theorists have developed the criterion of meaning as structurally congruent temporal extension of the self (Heintzelman, Trent, & King, 2013; Little, 1993; McGregor & Little, 1998). Durations of time help in the identification of experiential states in pleasurable and meaningful events. For instance, how meaningful a personal project is rated depends on how consistent it is with core aspects of self and identity (McGregor & Little, 1998). McGregor and Little (1998) contend that when people act with integrity, engage in activities that are congruent with their core values and principles, they imbue life with meaning. Additionally, Thomas and

Schnitker (2016) demonstrated that people are likely to exhibit more patience and effort when pursuing long-term projects they find personally meaningful. Essentially, their findings suggest that people might be more patient when personal projects require more effort and the increased patience results in increased effort which in turn contributes to the overall meaningfulness of the project. This feedback loop seems to explain an aspect of how long-term activities and valued goals relate to meaningfulness.

However, it's important to note that the experiences of pleasure and meaning may be intercorrelated rather than independent. Several studies have supported the notion that pleasure and meaning were intercorrelated (Baumeister et al., 2013; King et al., 2006). In one study the correlations between pleasure and meaningfulness were substantial, .63 and .70 (Baumeister et al., 2013), while in another study they were only moderately correlated, ranging from .38 to .53 (King et al., 2006). The considerable overlap where pleasure and meaning often originate may give insight into their intercorrelation. The experience of pleasure may originate in physical sensation but the sense of meaning may be more tied to a sense of accomplishment or growth. That said, an experience initially pleasure focused could become more meaning focused over time. A popular assessment measure of pleasure in positive psychology studies, the Positive and Negative Affective Schedule (PANAS; Watson, Clark, & Tellegen, 1988), includes items such as "strong", "proud", "inspired" and

“determined”, all of which are closely related to pleasure and meaning. Research has shown that affirming one’s positive traits over time can increase both pleasure and meaning based well-being (Nelson, Fuller, Choi, & Lyubomirsky, 2014).

In addition to a correlational relationship, research suggests that the relation between pleasure and meaning might be causal (King et al., 2006). Hicks, Trent, Davis, and King (2012) found that PA becomes increasingly associated with meaning in life as perception of time becomes more limited. Their findings suggest that the relationship between pleasure and meaning changes as a function of life’s perceived duration. Also, a series of studies by King et al. (2006) revealed that positive affect was strongly related with meaning in life, and that boosting positive affect could enhance meaning in life.

Temporal Dynamics of Pleasure and Meaning

Thinking about the present has been shown to relate to pleasure (as measured by positive and negative emotional states) and is arguably a natural biological need (Baumeister et al., 2013). The immediacy and swift tapering of a pleasurable physiological state gives an indication as to the brevity of such an emotional experience. Pleasure suffers from diminishing returned benefits as described by the hedonic treadmill and adaptation theories (Brickman & Campbell, 1971; Diener, Lucas, & Scollon,

2006; Frederick & Loewenstein, 1999). To attain the benefits of a pleasurable experience, one must continually increase the frequency and intensity of that experience as the pleasurable sensation decreases at an increasing rate. Hedonic adaptation can be understood as a psychological process by which people become accustomed to a positive or negative stimulus, as a result the emotional effects of that stimulus are attenuated over time (Lyubomirsky, 2010). This adaptation can occur in a variety of contexts and over relatively brief periods of time (Uglanova & Staudinger, 2013). For example, eating ice cream for every meal would soon become ordinary and less gratifying as a result, not to mention a serious health risk. Hedonic adaptation only explains part of the story; however, construal level theory offers a larger framework from which to view the effects of duration on goals and decision-making.

Construal level theory (CLT; Trope & Liberman, 2010) posits that immediacy is an indication of a low level construal. An object or event that is physically or temporally near or is concrete, clear, and detailed are aspects of a low level construal. Previous research has found that as perspectives oriented toward concrete ways of thinking, people became more focused on the present moment (Vallacher & Wegner, 1985, 1987). In an example of a wedding ceremony, the experience can be described both as ‘making a commitment to love’ and as ‘saying some words in a church’ (Baumeister et al., 2013). The first description brings to mind a longer

duration of time and relates more to meaning than the second description. More specifically, 'saying words in a church' is concrete and reflects a low level construal.

Regarding the abstract and long duration of meaning (Trope & Liberman, 2003, 2010), CLT suggests that meaning would be considered a high level construal. Kim et al. (2014) demonstrated that participants favored common activities high in meaning, relative to high in pleasure, and a meaningful life (without pleasure) when far in temporal distance. While this study explored present versus future time points as components of pleasure and meaning, the effect of durations of time on preferences and behaviors have yet to be explored (Ariely & Carmon, 2003).

Time Durations in Well-Being Research

Accounting for explicit and perceived durations of time when making decisions has been largely overlooked and understudied in cognition and behavioral research. The sparse literature that discusses duration merely mentions its absence in scientific study (Ariely & Carmon, 2003), or estimates duration as an aspect of time perception (Faro, 2010) ignoring explicit durations of time altogether. Specifically identifying duration as a much needed area of research, Ariely and Zakay (2001) discussed the higher weight decision-makers place on features of an experience (i.e. peak and ending) thus failing to accurately integrate duration. This phenomena has

been labeled by Fredrickson and Kahneman (1993) as “duration neglect”. When comparing or assessing hypothetical events, insensitivity to duration is often observed. However, this phenomena fails to emerge when events are common and familiar (e.g. a telephone ring) or have other comparison information (e.g. a label) (Morewedge, Kassam, Hsee, & Caruso, 2009). In our modern lives durations of time are increasingly salient. It has become substantially more important to examine time durations and their influence on decision making when durations are explicitly expressed.

Most common events, beyond the mundane, require our attention and deliberation on a continual basis. These activities often evoke pleasurable or meaningful emotional states as well as a myriad of other cognitions. Baumeister et al. (2013) identified differentiating aspects between pleasure and meaning, as well as common events that distinctly evoke each emotion. Over the last 25 years positive psychology has established the concept and importance of pleasure and meaning as vital components to life (Diener et al., 1999; Peterson et al., 2005; Seligman, 2002).

Given the vast amount of literature concerning time related decision making (see Kahneman, 2011 for review) and personal well-being (Lyubomirsky, King, & Diener, 2005), surprisingly little research has examined how durations of time effect decision making in relation to common pleasure and meaning oriented activities. The literature

concerning duration that does exist is either outdated (Michon, 1965), or focuses on the subjective duration of events (Block, George, & Reed, 1980; Galinat & Borg, 1987). In these studies, participants were asked to approximate how much time has passed since the beginning of the current project. Not only does this not address participants state-of-mind, it also neglects duration as an informative component of the decision making process. The need for research examining duration in relation to decision making is crucial for a more complete understanding of human behavior (Ariely & Zakay, 2001). This is especially true in the area of pleasure and meaning in life, where duration of time could be a polarizing factor. Existing research has focused on the effects of duration within the context of pleasure and pain (Ariely, 1998; Kahneman, Fredrickson, Schreiber, & Redelmeier, 1993), while ignoring other pertinent aspects of life (i.e., meaning in life). In the mentioned studies of durations of time, little or no attention is given to actual decisions people make concerning pleasure and meaning oriented activities. Also, very little attention has been paid to how durations of time, or as a perspective on life, might influence the decision making process.

1.2. Purpose of Research

Incorporating durations of time with pleasure and meaning allows for the examination of several important research areas within the decision-

making domain. First, we explore how durations of time influence decisions between pleasure and meaning oriented activities. Second, we test the notion that associations between durations of time and pleasure and meaning oriented activities are implicitly known. Third, we investigate the influence of duration as a perspectives of life on the reported frequency of common activities. Lastly, we examine the role of duration based perspectives on life as they relate to behavior. In all of the explored contexts, we predict that shorter durations relate to pleasure while longer durations relate to meaning.

Chapter 2. Body

2.0 Studies

Incorporating durations of time with pleasure and meaning allows for the examination of several important research areas within the decision-making domain. First, we explore how durations of time influence decisions between pleasure and meaning oriented activities. Second, we test the notion that associations between durations of time and pleasure and meaning oriented activities are implicitly known. Third, we investigate the influence of duration as a perspectives of life on the reported frequency of common activities. Lastly, we examine the role of duration based perspectives on life as they relate to behavior. In all of the explored contexts, we predict that shorter durations relate to pleasure while longer durations relate to meaning.

Study 1: Pleasure is Short and Meaning is Long

Previous research has been divided in terms of the nature and pursuit of pleasure and meaning based preferences (Grinde, 2012) and the debate continues as to which is more important for future study (Kashdan et al., 2008; Waterman, 2008). As an extension of the current research in

the understanding of pleasure and meaning, we incorporate both concepts of well-being simultaneously and identify time as a bifurcating factor. Shorter timeframes facilitate thinking about basic needs and desires, whereas longer timeframes allow for aspirational thinking (Baumeister et al., 2013). As such, shorter durations should relate to the desire for pleasure based activities while longer durations should relate to the desire for meaning based activities. This effect should be stronger for Americans as opposed to South Koreans whom typically possess weaker preference structures (Park, Choi, Koo, Sul, & Choi, 2013).

Participants. Ninety-seven undergraduates (53 female, M_{age}= 23.65) at Seoul National University participated in either for pay or partial fulfillment of a course requirement. Sixty-one people (29 female, M_{age}= 35.83) were recruited from Amazon Mechanical Turk (MTurk) for participation in this study and paid $1 for their time. Two participants in the USA sample neglected to complete portions of the questionnaire and therefore were excluded, leaving 156 in the following analysis. Participants in the USA sample were significantly older than the Korean sample[②] $t(154) = 7.31$, $p < .001$, and although cultural samples didn't differ by gender $t(154) = -.54$, $p = .592$, both gender and age were controlled for in the subsequent analysis.

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② The logistic regression model failed to demonstrate any interaction between culture, age and project preference $\chi^2(5) = .546$, p = .460, indicating that the significant difference in age between cultural samples did not influence project preference.

Procedure. Participants were randomly assigned to one of two conditions and presented with one of the following statements. The statements were, "Imagine that you're going to begin an activity that lasts for 1-day [6-months]," with the only exception being the duration of time that the activity would take to complete (i.e. 1-day or 6-months). Participants then selected their preference for either a "pleasure/fun activity" or a "meaning/valuable activity".

Results and Discussion. We found no interaction between culture, (USA, South Korea) condition (1 day, 6 months) and activity preference (pleasure/fun, meaning/valuable) $\chi^2(5) = 2.395, p = .122$. Participant's condition predicted activity choice for both the USA ($\chi^2(3) = 7.751, p < .01$), and marginally for the South Korean sample ($\chi^2(3) = 3.025, p = .082$)[③] shown in Figures 1a & 1b. There was a marked difference in preference for short duration activities (i.e. 1-day) to contain pleasure while longer duration activities (i.e. 6-months) preferably contained meaning.

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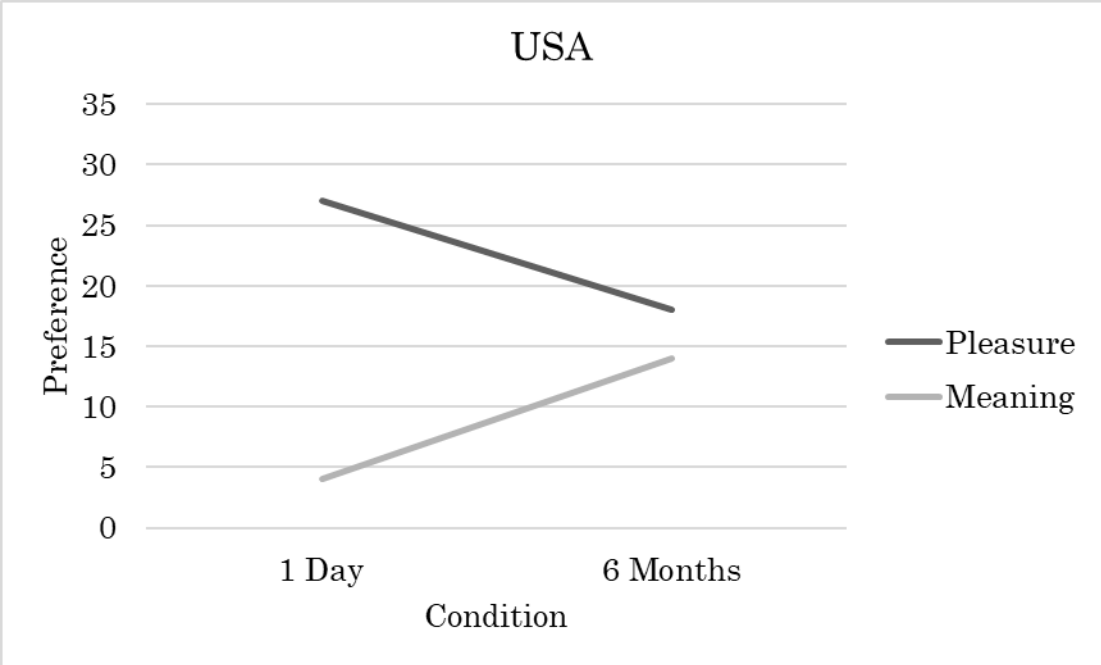
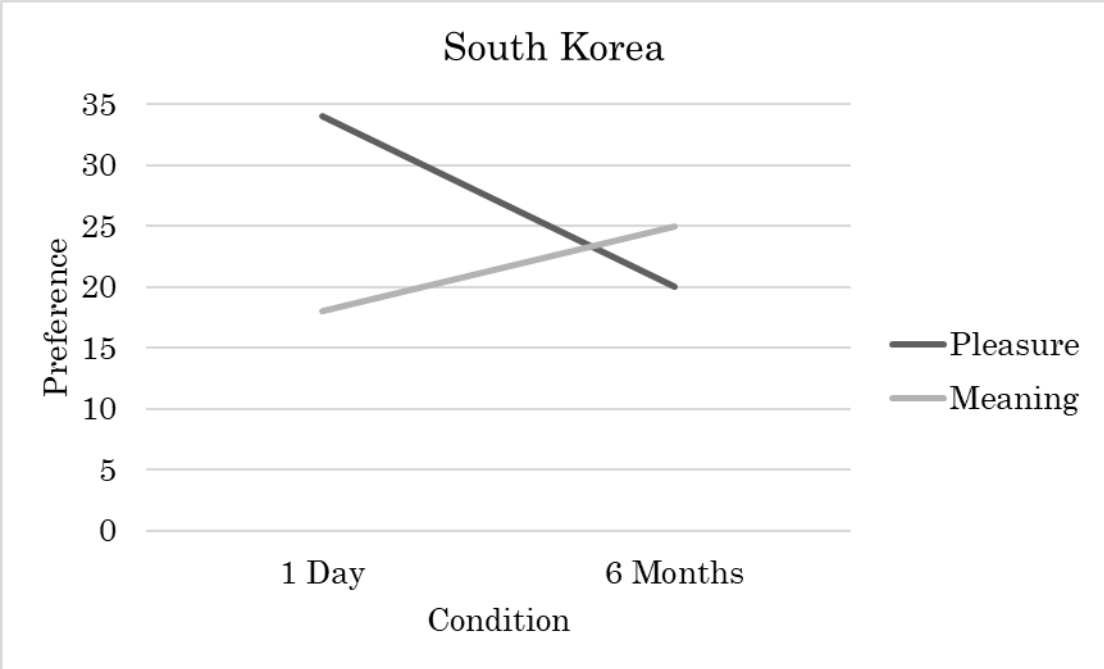
③ The South Korean sample had a similar pattern to the USA sample but demonstrated a weaker relationship between condition and project preference. This may be due to South Koreans uncertain internal coherence preference structures compared to Americans (Park et al., 2013).

Figure 1a. Preferred activity for given durations of time.



Note, N = 59.

Figure 1b. Preferred activity for given durations of time.



Note, N = 97.

Study 1 provides preliminary evidence for the association between pleasure and meaning based preferences with short and long durations respectively. As such, Study 1 suggests that duration based preferences might be culturally robust based on the similarity in patterns displayed. But, conclusions drawn from Study 1 would be premature; specifically, there may be reasons as to why these results are evident at specific times (namely 1-day and 6-months). Interventions focused on meaning oriented activities over multiple months may be more ideally suited for eudaimonic well-being but not hedonic well-being (Cheavens, Feldman, Gum, Michael, & Snyder, 2006; Feldman & Dreher, 2012). Conversely, research has shown a 10-day intervention can increase hedonic well-being but fails to increase eudaimonic well-being (Howells, Ivtzan, & Eiroa-Orosa, 2016).

Preferences for pleasure or meaning may only exist in durations that are relatively far apart in temporal proximity or may exhibit range constraints in relation to duration. Furthermore, the effects of behaviors and associations to pleasure and meaning may show complex effects as a result of the duration of an intervention (Nelson et al., 2014). For these reasons, there is a need to investigate varied durations of time and their relationship to pleasure and meaning oriented options.

Study 2: Proximal Time Points

The previous study was limited to only two time points (1 day and 6 months), as such, the effects of perceived durations of time are potentially limited by range constraints or potentially disparate durations of time. Decisions are often made with greater temporal specificity (Ariely & Zakay, 2001; Kahneman, 2011, p.371). We predicted that the pattern from Study 1 wouldn't differ if more durations of time were considered. In Study 2, we extend the experimental framework of Study 1 using a more intricate set of durations of time and a within-subjects design. The purpose was to investigate the influence that brief and extended durations of time have on preferences. Six time durations ranging from 10 minutes to 6 months, assessed differences between time durations that are more comprehensive reflections of durations of time.

Participants. Seventy-two undergraduates (37 female, M_{age}= 23.87) at Seoul National University participated in either for pay or partial fulfillment of a course requirement. Thirty-two people (11 female, M_{age}= 41.21) were recruited from MTurk for participation in this study and paid $1 for their time.

Procedure. Participants were presented with the same instructions as in Study 1 with the addition of 4 additional varied durations of time. The timeframes ranged from 10 minutes, 1 hour, 1 day, 1 week, 1 month, and 6 months which were then converted to minutes as a single unit of

measure. Participants from the USA and South Korea differed in age $b = .52$, $t(101) = 10.52$, $p < .001$, which was then controlled for in the subsequent analysis. As there were marginal differences in gender between countries χ^2 (1, N = 104) = 2.789, p = .095, gender was also controlled for in the model.

Results and Discussion. To test the hypothesis that durations of time would impact preferences of pleasure and meaning oriented activities and to accommodate for binary repeated measures, generalized estimating equations (GEE) analysis was utilized (Ballinger, 2004; Liang & Zeger, 1986; Zeger & Liang, 1986).

There was no relationship between culture and time based preferences of meaning and pleasure activities χ^2 (5, N = 104) = 1.22, p = .27, suggesting both South Korean and USA samples demonstrated similar activity preferences as a function of durations of time. Three models assessed the time based preferences of pleasure and meaning in culturally

Table 1. *Temporal Based Associations Between Pleasure and Meaning*

	Collapsed Model		Adjusted Model USA		Adjusted Model South Korea	
	B [95% CI]	Wald X^2	B [95% CI]	Wald X^2	B [95% CI]	Wald X^2
Time	.74 [.51, .97]	39.89***	.51 [.20, .82]	10.66***	.75 [.52, .98]	40.73***
Country	.58 [-1.24, 2.39]	0.39				
Country * Time	-.22 [-.61, .17]	1.24				
Goodness of Fit		728.42		242.15		488.37

Note, N = 104; All models adjusted for age and gender; Time coded in minutes (i.e. 1 day = 1440 minutes) log10 transformed; Country (1 = USA, 2 = KOR); CI = confidence interval.

***p < .001

collapsed, USA, and South Korean models (Table 1). Preference shifted from pleasure to meaning as activity duration increased in both cultures (Table 2 & Figure 2).

Holding the first duration (10 minutes) as the baseline for the model, each duration's variation is measured against the previous duration (e.g. 1 hour compared 10 minutes, 1 day to 1 hour, etc.). As seen in Table 3, duration significantly increased over the previous duration of time. As the duration of the activity increased, participant's preferred a meaning/valuable activity over a pleasure/fun activity in both USA and South Korean samples. There was neither an interaction effect of culture on time as a predictor of the model nor at any duration of time (all χ^2s < .827, *p*s > .363).

Table 2a. *Frequency of Pleasure and Meaning Preference by Time Collapsed*

	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6
Pleasure	88	80	70	56	35	23
Meaning	16	24	34	48	69	81

Note, N = 104.

Table 2b. *Frequency of Pleasure and Meaning Preference by Time (USA)*

	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6
Pleasure	26	22	21	17	12	9
Meaning	6	10	11	15	20	23

Note, N = 32.

Table 2c. *Frequency of Pleasure and Meaning Preference by Time (South Korea)*

	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6
Pleasure	62	58	49	39	23	14
Meaning	10	14	23	33	49	58

Note, N = 72.

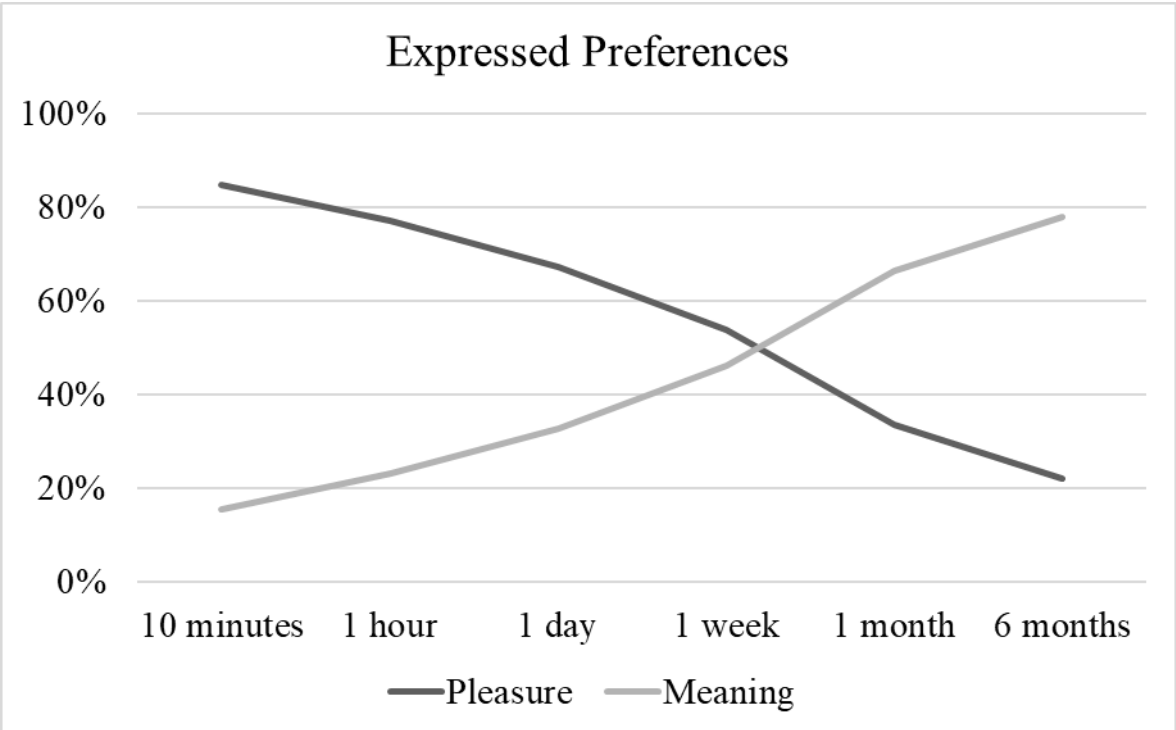


Figure 2. Proportional response between pleasure and meaning activity preferences of increasing durations of time from shortest to longest.
Note, *N* = 104.

Table 3. Incremental Duration Analysis for Linear Change

Country		Hypothesis Test	
		B [95% CI]	Wald X^2
USA	6 months	2.40 [1.1, 3.71]	13.05***
	1 month	1.98 [.77, 3.19]	10.30***
	1 week	1.34 [.23, 2.45]	5.60**
	1 day	.82 [-.13, 1.77]	2.88†
	1 hour	.68 [.05, 1.31]	4.40*
	10 minutes		
KOR	6 months	3.25 [2.19, 4.30]	36.54***
	1 month	2.58 [1.72, 3.44]	34.70***
	1 week	1.66 [.89, 2.43]	17.88***
	1 day	1.07 [.38, 1.76]	9.24**
	1 hour	.40 [-.22, 1.03]	1.61
	10 minutes		

Note, USA, N = 32; KOR, N = 72.
†p < .09, *p < .05, **p < .01, ***p < .001

Durations of time appear to strengthen the effect of preferences for pleasure and meaning oriented activity choices. Specifically, durations of time that were proximally near significantly differed from each other indicating that even small differences in durations of time result in a divergence of preferences. Also, this demonstrates the absence of any floor or ceiling effect for the given time durations. Interestingly, Koreans are known for having a greater priority for eudaimonic well-being (Joshanloo, 2014; Suh & Oishi, 2002) but the current study shows no

differences between Korean and USA reported preferences. USA and Korean participants paralleled in their preferences as a result of durations of time as indicated in studies 1 and 2.

Pleasure likely operates at a physiological level (Baumeister et al., 2013). Given the frequency, immediacy, and salience of physiological pleasure, there is reason to believe that relationships between durations of time and pleasure and meaning are understood implicitly (Sackett et al., 2010). Additionally, further investigation requires assessing implicit associations as Koreans might have reported differences in meaning as a result of social pressures.

Study 3: Implicit Association Task

In Studies 1 & 2, we demonstrated short durations are associated with pleasure oriented activity preferences and that long durations are associated with meaning oriented activity preferences. It appears that time and the perceived duration we experience is a fundamental factor in the decision-making process. If the findings from the previous studies are robust, then they should also be true at an implicit level. Is there an implicit understanding that pleasure and meaning are associated with short and long durations respectively?

Participants. Eighty-seven undergraduates (46 female, M_{age}= 20.58) at Seoul National University participated in either for pay or partial

fulfillment of a course requirement. Seventy-nine people (38 female, M_{age}= 39.91) were recruited from MTurk for participation in this study and paid $1 for their time. Two participants in the American sample and one participant from the Korean sample were excluded due to failing to complete large portions of the experiment. This left 166 participants (79 Americans and 87 Koreans) to be included in the analysis.

Procedure. We assessed implicit evaluative associations for time durations and pleasure (vs. meaning) by modifying the standard Implicit Association Test (IAT) paradigm (Greenwald, McGhee, & Schwartz, 1998). Participants completed the experiment online via the PsyToolkit website (Stoet, 2010). We examined the implicit associative strength between pleasure and meaning based words and short and long duration based words (see appendix for word lists). Stronger associations between pairings (i.e. pleasure words and short duration words vs. meaning and long duration words) would indicate the belief that these pairings are more acceptable than their counterpart. A relatively weaker association between the counter pairing of pleasure and long duration words versus meaning and short duration words would indicate a less acceptable pairing. These associations are represented by the average reaction time or category assignment for a target word. Participants categorize a series of words presented one at a time in the middle of a computer screen and asked to assign it to the appropriate category as fast as possible. In this study,

participants were presented with words that fit in one of the four categories; short, long, pleasure, or meaning. We used a modernized 5 block procedure (Nosek, Greenwald, & Banaji, 2005). Over the course of 5 blocked trials participants were presented with 3 practice blocks to familiarize the words, orientation on the computer screen, categories, and testing procedure.

First, participants sorted pleasure words (e.g. enjoy, fun, laugh) and meaning words (e.g. charity, volunteer, work) into the most acceptable category. They pressed the left key (i.e. "E") for pleasure words and the right key (i.e. "I") for meaning words. Second, they sorted durations by short versus long. They pressed the left key for short durations (e.g. brief, curtailed, fleeting) and the right key for long durations (e.g. eternal, permanent, unceasing). Third, a data collection (compatible) block was presented where the two sorting tasks were combined. The participants were asked to press the left key for both pleasure words and short durations, and the right key for both meaning words and long durations. Fourth, the participants sorted pleasure and meaning words again, but with the response keys reversed from the assignments in the first step. Fifth, a data collection (incompatible) block was run where the reversed sorting task and durations were combined. The participants pressed the left key for both pleasure words and long durations and pressed the right key for both meaning words and short durations. In order to eliminate possible

confounding variables and potential order effects, two groups in each IAT experiment were created where blocks were presented in a counterbalanced order. This results in a counterbalanced block order where blocks are reorganized such that block 2 switches with block 1 and block 5 switches with block 3 as described by previous research (Greenwald et al., 1998; Greenwald, Nosek, & Banaji, 2003; Lane, Banaji, Nosek, & Greenwald, 2007; Nosek et al., 2005). Each practice block consisted of 50 trials and each data collection block consisted of 100 trials (25 words per category).

Implicit attitude was defined as the mean difference in response latency between the two data collection combination blocks (pleasure/short and meaning/long combination, vs pleasure/long and meaning/short combination). In line with previous research (Greenwald et al., 2003), we assessed the internal consistency of the IAT score (i.e. latency differences between the two data collection combinations) by computing a split-half reliability index. A correlation was computed between the IAT score derived from the first half of the trials in each of two critical blocks and the IAT score derived from the second half of the trials in the same blocks. Both cultural groups showed high levels of reliability; Americans: $r(79)=.90$, $p<.001$; Koreans: $r(87)=.78$, $p<.001$.

Results and Discussion. Following the protocol of previous research (Greenwald et al., 1998; Nosek et al., 2005), we (a) constrained correct answers to latencies within the lower (300 ms) and upper (3000 ms)

boundaries, (b) log-transformed them before averaging them within each block, and (c) computed *D* score based on the algorithm suggested by Greenwald et al. (2003). The resulting values were submitted to a 2 (Culture [Americans vs. Korean]) × 2 (Order [compatible first vs. incompatible first]) × 2 (Combination [compatible vs. incompatible]) ANOVA (analysis of variance) with culture and order as between-subjects factors and combination as a within-subjects factor.

We predicted that regardless of culture, Americans and Koreans would easily associate pleasure (meaning) words with short (long) durations, and/or associate meaning (pleasure) words with long (short) durations. This would be demonstrated by shorter response times in the compatible block versus the incompatible block.

The main effect of the block combination was significant, $F(1, 162) = 53.87$, $p < .001$, $\eta p^2 = .25$, suggesting that when cultural groups were collapsed, participants were faster in associating pleasure with short and meaning with long words ($M = 2.93$, $SD = 0.08$) than associating meaning with short and pleasure with long words ($M = 2.97$, $SD = 0.08$). The order did not interact with this effect, $F(1,162) = 0.33$, $p = .57$. Additionally, there were no differences in error rates, $F(1,162) = 0.58$, $p = .45$. Illustration of main effects are displayed in Figures 3a & 3b.

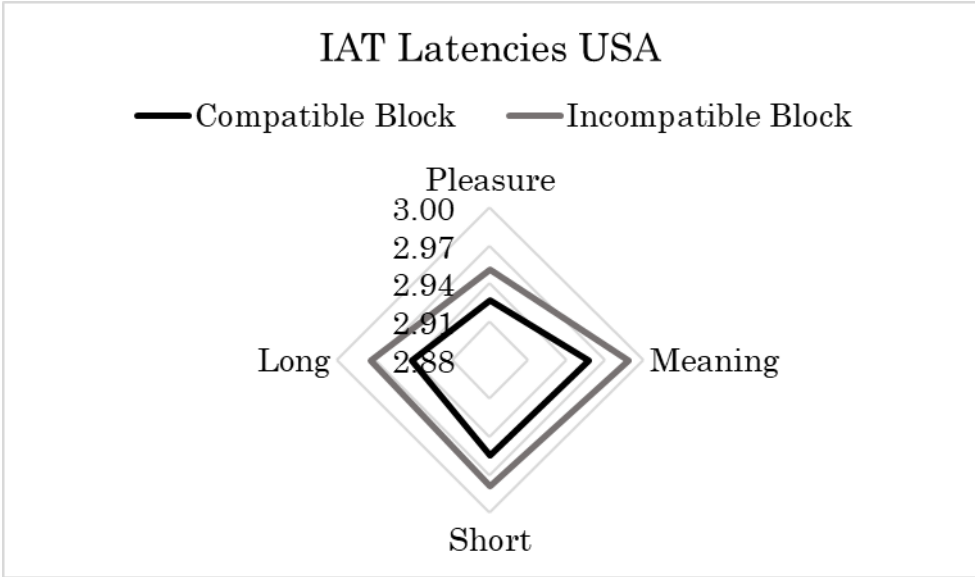


Figure 3a. *Note, N* = 79; scores toward the interior of the diamond reflect faster reaction times whereas scores toward the exterior reflect slower reactions times. The difference between the compatible block and incompatible block in each category was assessed.

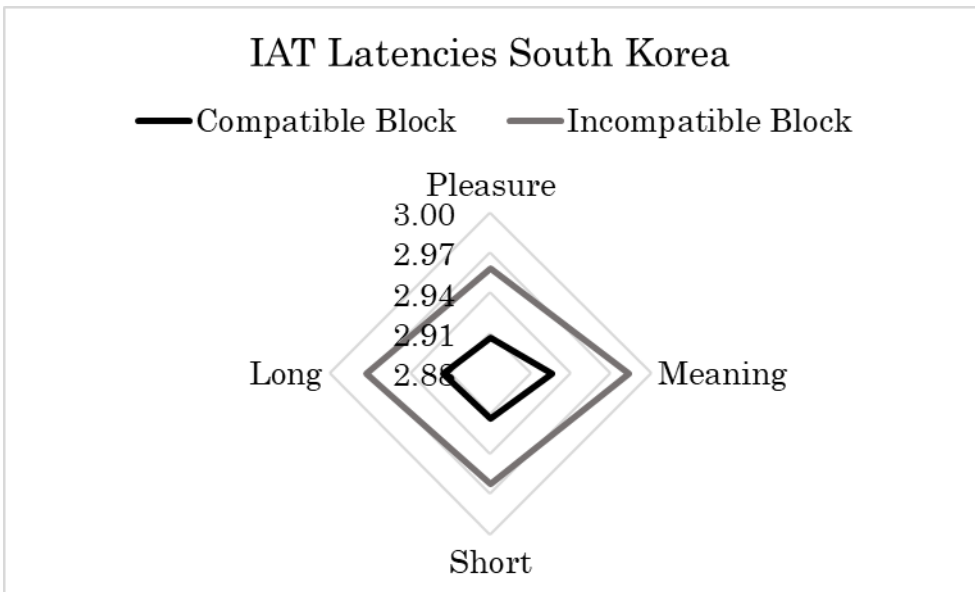


Figure 3b. *Note, N* = 87; scores toward the interior of the diamond reflect faster reaction times whereas scores toward the exterior reflect slower reactions times. The difference between the compatible block and incompatible block in each category was assessed.

Overall Koreans were marginally faster (M = 2.94, SD = 0.08) than Americans (M = 2.96, SD = 0.08), $F(1,162) = 1.89$, $p = .17$, as typically shown in cross-cultural work using relatively simple cognitive tasks (Ishii, Reyes, & Kitayama, 2003; Na & Kitayama, 2011; Park & Uchida, 2015). Koreans were faster in the compatible block (M = 2.92, SD = 0.07) than Americans (M = 2.95, SD = .09), $F(1,162) = 4.97$, $p < .05$, $\eta p^2 = .03$. However, cultural groups did not differ with incompatible block latencies $F(1,162) = 0.09$, $p = .77$. Importantly these effects were qualified by the expected Culture X Combination interaction $F(1,162) = 5.08$, $p < .05$, $\eta p^2 = .03$, suggesting that although Koreans were faster in the compatible block, culture only amplified the main effect. As would be expected from this pattern in the results, Koreans exhibited a stronger association between word pairings resulting in a greater difference in the main effect of block $F(1,85) = 47.25$, $p < .001$, $\eta p^2 = .36$, compared to Americans, $F(1,77) = 12.64$, $p < .001$, $\eta p^2 = .14$. Using the computed D measure, we found a consistent cultural difference. Koreans tended to show greater D score (M = .51, SD = .62) than Americans (M = .27, SD = .65), $F(1,162) = 5.05$, $p < .05$, $\eta p^2 = .03$.

In an additional analysis, we tested categorical word associations (see words within categories in the appendix). Specifically, we tested the effect of block with the averaged latencies of pleasure and short words, and meaning with long words. The effect of block combination was significant

for pleasure with short words, $F(1, 162) = 36.98$, $p < .001$, $\eta p^2 = .19$, indicating that when cultural groups were collapsed, participants were faster in associating pleasure with short words when presented together ($M = 2.92$, $SD = 0.09$) than when they were presented apart ($M = 2.96$, $SD = 0.09$). Meaning with long words showed a similar pattern, $F(1, 162) = 50.68$, $p < .001$, $\eta p^2 = .24$ when presented together ($M = 2.93$, $SD = 0.09$) versus being presented apart ($M = 2.99$, $SD = 0.09$). Taken together the results suggest that the familiarity and subsequent processing time of any one category need not fully explain the main effect of block *per se*, but both pleasure and meaning have associations with short and long durations respectively.

The IAT assumes concepts that are strongly associated are easier to categorize than concepts that are weakly associated resulting in faster or slower reactions times respectively. Scores are recorded in terms of latency (i.e. higher scores are slower reaction times). The difference in latencies was statistically significant between the compatible and incompatible block combinations. When pleasure oriented and short duration based words were paired on the same keystroke and meaning oriented and long duration words were paired on the same keystroke (i.e. the compatible block), participants categorized the target word in the middle of the screen more quickly than the reverse (i.e. the incompatible block). Isolating pleasure and meaning oriented words additionally demonstrated

that both word pairings significantly accounted for differences in reaction times. Importantly, cultural comparisons revealed relatively consistent patterns in word associations. These results demonstrate that associations between pleasure and meaning and their respective durations of time are not simply due to social pressures or response biases. At an implicit level, pleasure oriented words are associated with short durations while meaning oriented words are associated with long durations.

To extend generalizability beyond the laboratory setting, we investigated common behaviors in the real world. We conceptualized duration as a time perspective in the measure of perceived duration of life (i.e. “life is short” vs “life is long”). The previous studies have demonstrated the relationship of durations with notions of pleasure and meaning. As a result, we hypothesized time perspectives would also relate to reported frequencies of behaviors that were associated with pleasure or meaning.

Study 4: Common Real World Behaviors

Common pleasure and meaning based activities arguably represent prototypes of two aspects of well-being (Ryan & Deci, 2001). Based on this notion and evidence from the previous studies, we sought to assess the effect of perceptions of life’s duration and the frequency of pleasure or meaning oriented behaviors. We predicted that shorter perspectives on life

would relate to pleasure-type behaviors whereas longer perspectives would relate to meaning-type behaviors.

Participants. Two-hundred seventy-seven undergraduates (149 female, M_{age} = 20.6) at Seoul National University participated in either for pay or partial fulfillment of a course requirement. Eleven participants were excluded due to failing to complete large portions of the experiment. This left 266 participants to be included in the analysis.

Procedure. Participants were presented with a randomized list of 20 common activities and asked to indicate the frequency and desired frequency of each activity, as well as the category to which each activity belonged (i.e. pleasure/fun or meaning/valuable). They were then asked to indicate their perspective on life on a 100-point scale with lower scores reflecting shorter duration life perspectives (0 = life is short, 100 = life is long).

Due to their abstractness, pleasure and meaning type activities can be viewed at varying degrees and can even be categorically antithetical. Therefore, a need arose to gain categorical consensus for each activity. Each of the 20 items were categorically rated as either pleasure/fun or meaning/valuable. We then identified common activities with the greatest consensus for each category. For a reasonably high consensus that contained more than one variable we chose 85% for the pleasure/fun category. Notably, what constitutes as a meaning type activity is a more

abstract and nuanced concept (Baumeister et al., 2013; Kim et al., 2014) which invariable makes it more difficult to categorize. As no items reached a consensus above 85%, we chose 80% as the criteria for meaning/valuable type activities. Using this metric, 4 pleasure/fun type activities (singing/dancing, gambling, drinking alcohol, playing digital games) and 4 meaning/valuable type activities (religious activity, studying, donating money, attending a special lecture) were combined into pleasure oriented and meaning oriented indices respectively.

Results and Discussion. Prior to conducting the multivariate regression, a series of Pearson correlations were performed between all of the dependent variables in order to test the multivariate regression assumption that the dependent variables would be correlated with each other in the moderate range (Meyers, Gamst, & Guarino, 2006). As can be seen in Table 4, a pattern of correlations was observed amongst most of the dependent variables, suggesting the appropriateness of a multivariate regression.

We found mean differences between perspective on life and the actual, as well as desired frequencies of pleasure and meaning oriented behavior, Pillais' Trace = .11, $F(4, 262) = 2.651$, $p < .05$, $\eta p^2 = .04$. Table 5 shows a series of follow-up ANOVA's that reveal significant differences in reported activities according to one's perspective of life.

Table 4. *Pearson Correlations, Means and Standard Deviations Associated with Activity and Desired Activity Frequencies*

	M (SD)	1.	2.	3.	4.
1. # pleasure actual	2.48 (0.68)				
2. # meaning actual	3.04 (0.63)	-.19**			
3. # pleasure desired	2.72 (0.75)	.74***	-.16**		
4. # meaning desired	3.28 (0.76)	-.13*	.65***	-.06	

Note, N = 283;
*p < .05, **p < .01, ***p < .001

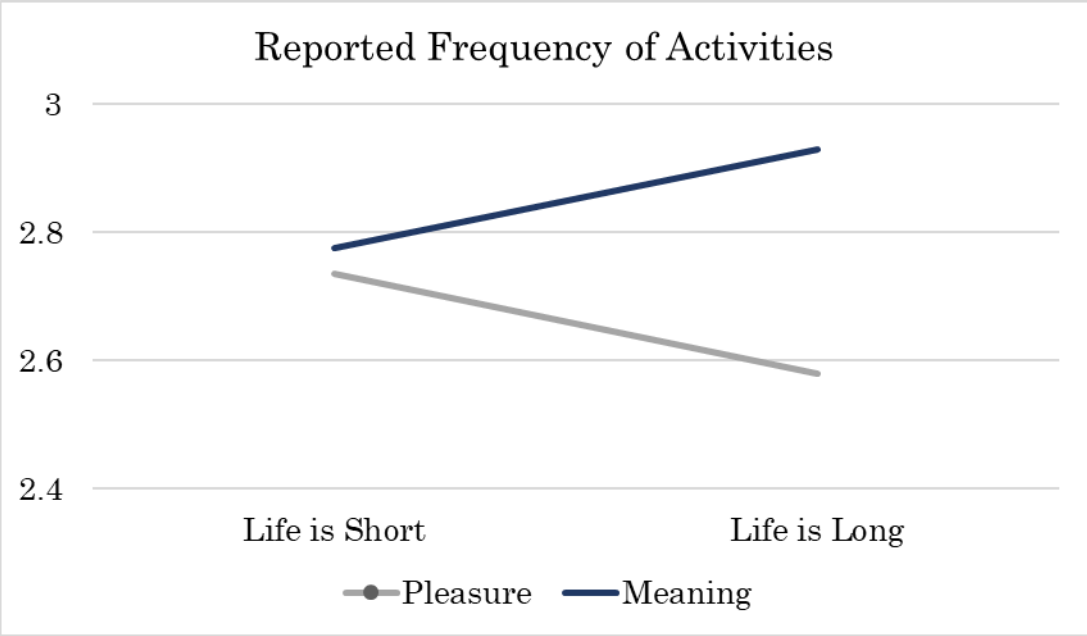
Table 5. *One-way ANOVA's with Activity Frequencies as Dependent Variables Predicted by Perspective on Life*

	ANOVA's		
	$F(1, 275)$	p	ηp^2
pleasure actual	3.89	.050	.014
meaning actual	4.22	.041	.015
pleasure desired	8.71	.031	.031
meaning desired	1.77	.184	.006

Note, N = 283.

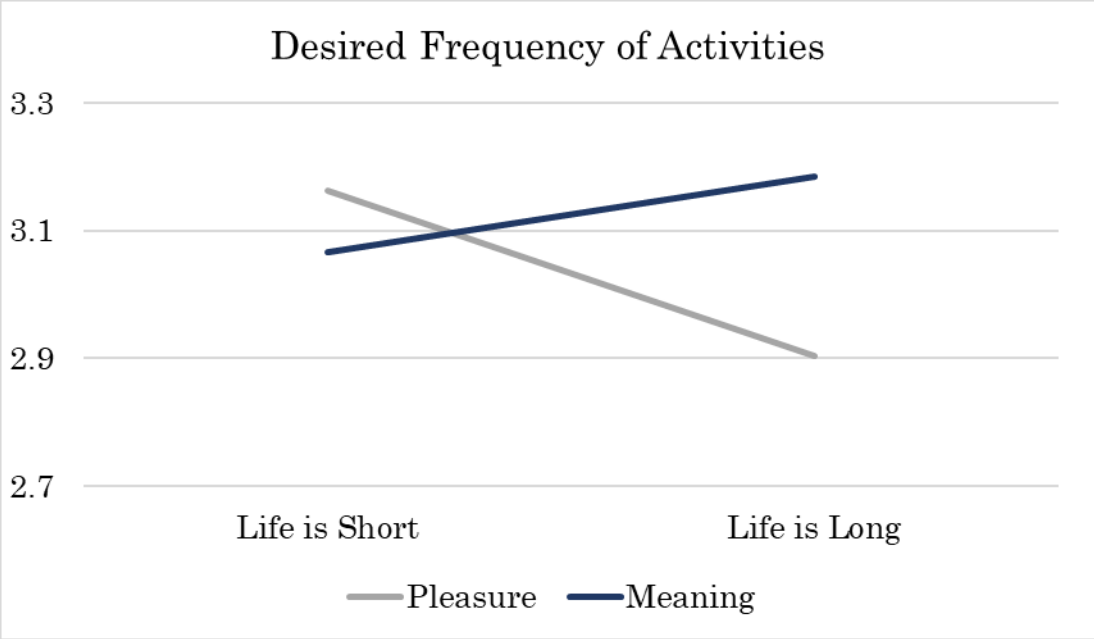
The results show the anticipated pattern of time perspective based preferences, such that scores in perspective of life from "life is short" to "life is long" significantly differed in the frequencies of reported pleasure oriented activities, meaning oriented activities; and desired pleasure oriented activities; however, desired meaning oriented activities did not reach a level of significance. As seen in Figure 4, those with the view of "life is long" report a higher frequency of meaning type activities and a lower frequency of pleasure type activities than those that view "life as short". A similar pattern can be seen in the desired frequency of activities (Figure 5).

Figure 4. Common Real World Activity Frequencies



Note, N = 79 (USA), *87* (KR); higher scores indicate greater frequency.

Figure 5. Common real world activity frequencies



Note, N = 79 (USA), *87* (KR); higher scores indicate greater frequency.

In this study, we investigated common behaviors outside of the confines of a traditional laboratory setting yet likely to have an impact on the individual. As the perception of life's duration increases, reported frequencies of pleasure oriented or meaning oriented activities significantly differentiate. Those that have the "life is short" perspective engage in pleasure type activities more frequently than those that have the "life is long" perspective. Conversely, those with a longer perspective of life, engaged in more meaning type activities than shorter life perspectives. This was also the case for the desired frequency of activities. Essentially, people are motivated to differentiate their behaviors based on perceived duration of time (i.e. life is short or life is long). Those that view the duration of life as short would understandably act differently than those that view the duration of life as long. Perceptions of life's duration captures an emphasis people place on the past, present, and future and involves the subjective prioritization they make when making decisions. In essence, these perspectives influence a person's goals, and preferences by becoming the temporal frame from which to view the world. Taken together with the previous studies, durations of time, as objective and as personal perspectives influence intended and actual behavior.

Study 5: Primed Duration for Donation Intention

In order to establish a causal link between durations of time and pleasure/meaning type behavior, we utilize an experimental priming method to influence perceived durations of time as a technique for manipulating behavior. Findings from extant research on prosocial behavior indicate that meaning and the long duration perspective may be linked to greater willingness to contribute to others. Willingness to donate is a common measure of prosocial behavior (Happ, Melzer, & Steffgen, 2015), selflessness (Savary, Goldsmith, & Dhar, 2015), and well-being (Aknin et al., 2013). As time perspectives have been shown to influence behavior, we sought to investigate the relationship between durations of time and prosocial behavior.

Participants. One-hundred fifty-five undergraduates (82 female, M_{age} = 20.76) at Seoul National University participated in either for pay or partial fulfillment of a course requirement. One-hundred eighty-three people (87 female, M_{age}= 38.95) were recruited from Amazon Mechanical Turk (MTurk) for participation in this study and paid $1 for their time.

Procedure. Participants were randomly assigned to one of three conditions. In two conditions (short duration and long duration), participants were reminded of durations of time; control participants were not reminded of time (adapted from Vohs, Mead, & Goode, 2006). All participants first completed a descrambling task, which activated neutral

concepts (control) or durations of time (duration prime). The descrambling task consisted of 30 sets of five jumbled words. Participants created sensible phrases using four of the five words. In the control condition, the phrases primed neutral concepts (e.g., "is green the sweater left" became "the sweater is green"). In the duration prime conditions, 15 of the phrases primed the concept of short (long) durations (e.g., "over was it quickly orange" became "it was over quickly"), whereas the remaining 15 were neutral phrases.

We assessed whether the duration prime heightened activation of the concept of time durations, relative to the control prime. Participants completed a fill-in-the-blank sentence completion task, which is a standard method of implicitly measuring cognitive activation (Anderson, Carnagey, & Eubanks, 2003). Participants completed 20 sentences by filling in the missing word or time, five of which could be completed as short or long duration words or numbers (e.g., "We waited _____ hours for the train.", or "I worked on the project for ____ days." Complete list in appendix). The sentences that could be completed as short or long durations were both measured by word choice or numerically. The five duration based questions were then summed to create an index for our manipulation check, which are referred to as *manipulation*.

Next, participants were given a charity request which described factual information taken from the Save the Children website

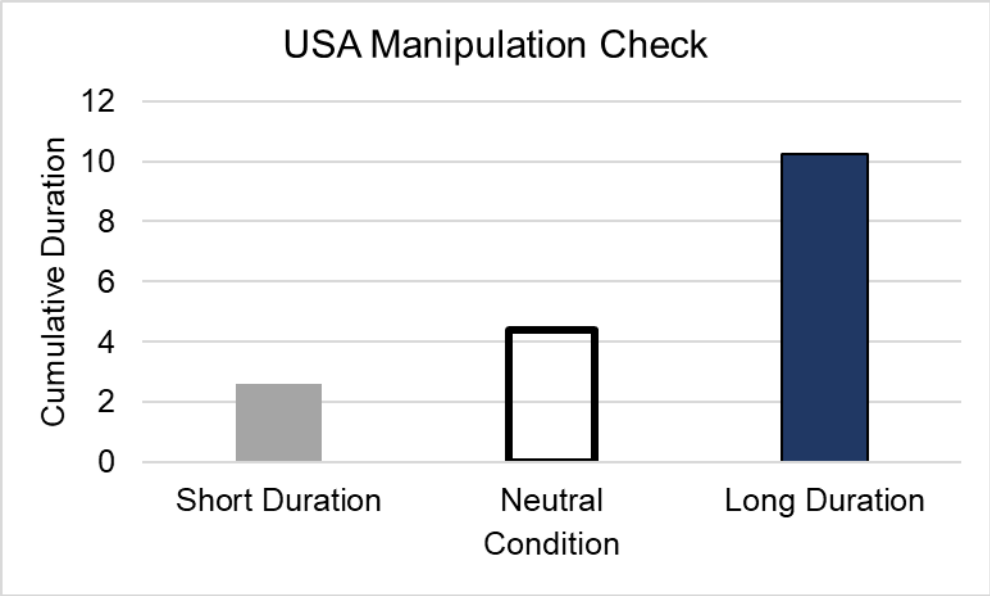
(http://www.savethechildren.org) about the problems of starvation in Africa. Participants saw a picture of a little girl and read a brief description about her situation. The picture and description were taken directly from the website. The following page asked participants to indicate the donation amount they were willing to give. Donation amounts were indicated in US dollars and Korean won (approximately $1 = 1,000 Korean won) and then transformed by Log10.

Given the potential affective impact of the identifiable victim effect (Small & Loewenstein, 2005; Small, Loewenstein, & Slovic, 2007), we sought to investigate how sympathy for victims might influence prosocial behavior. Participants were asked several questions about their affective and moral reactions to the situation described on a 5-point Likert-type scale ranging from 1 (Not at all) to 5 (Extremely). The questions included: (1) How upsetting is this situation to you? (2) How sympathetic did you feel while reading the description of the cause? (3) How much do you feel it is your moral responsibility to help out with this cause? (4) How touched were you by the situation described? and (5) To what extent do you feel that it is appropriate to give money to aid this cause? These five items were taken from Small et al. (2007), which are referred to as *feelings*.

Results and Discussion. Results from the USA sample showed the anticipated pattern of cognitive activation by *manipulation* (Figure 6). The short duration condition reported shorter durations of time (M = 2.60, SE

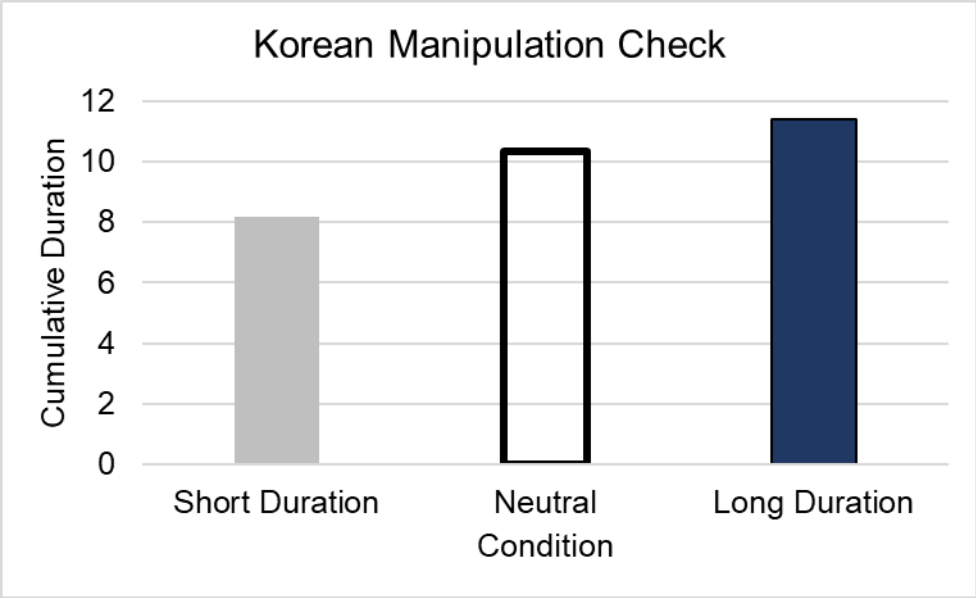
= .61) than did participants in the control (neutral prime) condition (M = 4.36, SE = .56) and participants in the long duration condition (M = 10.22, SE = .61; $F(2,178) = 43.59$, $p < .001$, $\eta p^2 = .33$). Results were similar in the Korean sample (Figure 7); participants in the short duration condition reported shorter durations of time (M = 8.15, SE = .67) than did participants in the control (neutral prime) condition (M = 10.34, SE = .65) and participants in the long duration condition (M = 11.41, SE =.64), $F(2,150) = 6.31$, $p < .01$, $\eta p^2 = .08$).

Figure 6. Cumulative duration of time fill-in-the-blank questions



Note N = 183, units of duration were transformed to hours.

Figure 7. Cumulative duration of time fill-in-the-blank questions



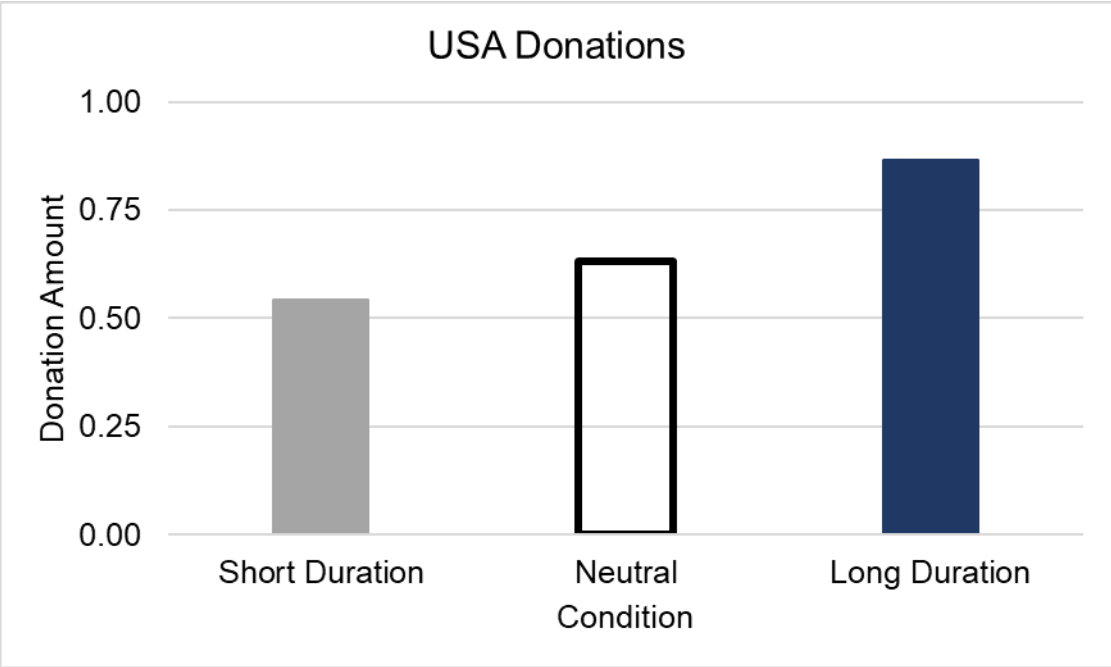
Note N = 155, units of duration were transformed to hours.

The following analysis controlled for *feelings*, gender, and age; there were no significant interactions from these factors, including culture, *F*'s <1 , *p's* > .05. In the USA sample, participants who were primed with long durations of time were willing to donate more (M = 0.87, SE = .05) than control (M = 0.63, SE = .04) and short duration condition participants, (M = 0.54, SE = .05), $F(2, 177) = 12.67$, $p < .001$, $\eta p^2 = .13$ (Figure 8). Follow-up tests revealed a significant difference between the short and long duration conditions, $F(1, 114) = 24.35$, $p < .001$, long duration and control: $F(1, 123) = 13.65$, p < .001, but not for short duration and the control condition: $F(123) = 1.95$, p = ns. Condition had no significant effect on

feelings for any condition [F's < 2, p's > .05].

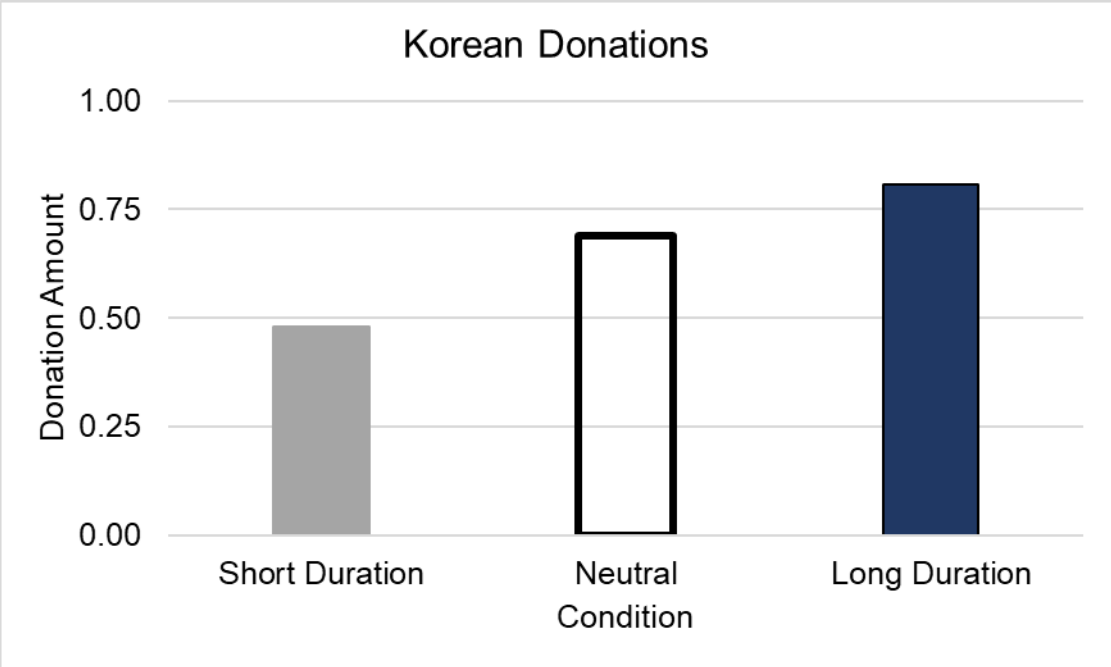
In the Korean sample, participants who were primed with long durations of time were willing to donate more (M = 0.81, SE = .04) than control (M = 0.69, SE = .04) and short duration condition participants, (M = 0.48, SE = .04), $F(2, 149) = 19.41$, $p < .001$, $\eta p^2 = .21$ (Figure 9).

Figure 8. Amount participants were willing to donate to savethechildren.org



Note N = 183, donations were log10 transformed.

Figure 9. Amount participants were willing to donate to savethechildren.org



Note N = 155, donations were log10 transformed.

Similarly, follow-up tests revealed a significant difference between the short duration and long duration conditions, $F(1, 101) = 31.04$, $p < .001$, long duration and control: $F(1, 104) = 4.18$, $p < .05$, and for short duration and the control condition, $F(1, 99) = 15.53$, $p < .001$. Condition had no significant effect on *feelings* for any condition [F's < 2, p's > .05]. In both countries, feelings as the dependent variable revealed no significant main effects for any condition [F's < 2.23, p's > .05].

These results are consistent with the previous research suggesting that time perspectives are associated with prosocial behavior (Nordhall &

Agerström, 2012). On average, those who were primed with long durations were willing to donate more than control and short duration conditions. Notably, these results were demonstrated while controlling for aspects of emotional reaction to the prime, age, and gender which may otherwise explain prosocial behavior. The extent to which effect sizes differ between South Korean and USA samples may be due to cultural, geographical, policy differences (Hay & Muller, 2014). Even with these objective differences, perceived durations of time predicted donation intention in both countries.

Chapter 3. Conclusion

3. Discussion

While the pursuit of happiness is a near universal, the approach to happiness and the forms of happiness can differ broadly across people and circumstances. As happiness can be conceptualized as the presence of positive feelings, the reduction of negative feelings, and a sense of satisfaction with one's circumstances, there seem to be unexamined aspects remaining (Ryff, 1989). Engagement in work, making valuable contributions to society, and living within one's moral framework, are a few among many features Socrates considered *the good life* that aren't characterized within the realm of positive affect and satisfaction. As a result, a contentious debate has encompassed much of well-being research (Disabato, Goodman, Kashdan, Short, & Jarden, 2016; Ryan & Deci, 2001; Waterman, 1993).

The aim of this dissertation was to shed light on the relationship between the two main conceptions of well-being (i.e. pleasure and meaning) and how durations of time clarify that relationship. Some support was found with regard to the set of associations between durations of time and conceptions of well-being.

We explored the role of duration as a factor influencing activity preferences for pleasure or meaning labeled options. Participants were

asked to indicate the type of activity they preferred in either a 1-day or 6-month (study 1) or six time durations ranging from 10-minutes to 6-months (study 2). We found that decisions are guided by the duration of time perceived. Specifically, shorter durations of time lead to a prioritization of pleasure, while longer durations of time resulted in a preference for meaning. In the context of unconstrained activities, participant's preferences are highly contingent on perceived durations of time. In study 2, time durations significantly differed from adjacent durations. Differences at multiple durations of time indicate that even small differences in durations of time demonstrate a significant difference between activity preferences. Also, this demonstrates the absence of any floor or ceiling effect for the given durations of time. Interestingly, although Koreans are known for having a greater priority for meaning in life (Joshanloo, 2014; Suh & Oishi, 2002), there were no differences between Korean and USA samples.

Further investigation required assessing implicit associations as Koreans might have reported differences in meaning as a result of social pressures. The implicit association task (IAT) assumes that concepts that are strongly associated are easier to identify (resulting in faster reaction speeds) than concepts that are weakly associated (resulting in slower reaction speeds). When pleasure oriented and short duration based words were paired on the same keystroke and meaning oriented and long duration words were paired on the same keystroke (i.e. the compatible block),

participants categorized the target word in the middle of the screen more quickly than the reverse (i.e. the incompatible block). Importantly, there were no significant differences in outcome between USA and South Korean cultures. Even at an implicit level, pleasure is associated with short durations and meaning is associated with long durations.

Venturing into actual reported behaviors, study 4 demonstrated the distinction between pleasure and meaning oriented behaviors based on duration as a perspective on life. As the perception of life's duration increases, reported frequencies of pleasure oriented or meaning oriented activities significantly differentiate. Those that have the "life is short" perspective engage in pleasure oriented activities more frequently than those that have the "life is long" perspective. Conversely, those with a longer perspective on life, engaged in more meaning type activities than shorter life perspectives. Furthermore, longer duration perspectives preferred meaning type activities over pleasure type ones. This pattern of results also held true for the desired frequency of activities. People are motivated to differentiate their goals based on their perceived duration of life (Carstensen, Isaacowitz, & Charles, 1999). Perceptions of life's duration capture an emphasis people place on the past, present, and future and involves the subjective prioritization when making decisions. These perspectives influence a person's goals, and preferences by becoming the temporal frame from which to view the world.

In the last section of duration as a perspective of time, we utilized experimental priming methods as a technique for influencing behavior. We were interested in causal links between duration and behavior. We found that prosocial behavior can be explained in part due to life's perceived duration. Longer durations of time are associated with greater donation intention while shorter durations of time are associated with less donation intention. While meaning oriented perspectives are very difficult to influence (Heintzelman et al., 2013), this study identifies a unique factor that relates to meaning in life and yet appears to be malleable. Subtle primes in durations of time change one's perspective to shorter or longer time frames. As a result, prosocial behavior can change as a function of duration.

Pattern of Results

The pattern of results supports an interactionist framework. Both person and situational factors influenced preferences and behaviors in this study. First, broad conceptualization of time, specifically durations of time, was shown to relate to activity choices. In addition, longer durations of time were related to more meaning oriented associations, higher lay beliefs about eudaimonic well-being, stricter rule obedience, as well as lower levels of depression and perceived stress. Shorter durations of time related to pleasure oriented associations, higher hedonic lay beliefs about well-being,

and more lenient judgement of others. These findings are consistent with (Kim et al., 2014) suggesting that pleasure is preferred in the present moment whereas meaning is preferred later. Building on previous research, this study provides insight into current debate of pleasure and meaning by investigating a temporal lens through which distinctions can be observed.

Implications for Eudaimonic and Hedonic Well-Being

As the distinctions between hedonic and eudaimonic well-being become increasingly popular research areas, providing key factors that can differentiate between them becomes progressively vital (Disabato et al., 2016; Heintzelman, 2018). Time has been repeatedly presented as a potential factor in well-being research (Ariely, 1998; Ariely & Zakay, 2001; Block et al., 1980; Heintzelman, 2018) but has largely been construed as a reference in time (Boyd & Zimbardo, 2005; Zimbardo & Boyd, 1999) rather than a duration. Whether advocating hedonic and eudaimonic well-being be held as a single construct (Biswas-Diener, Kashdan, & King, 2009; Disabato et al., 2016) or the dismissal of meaning oriented research altogether (Kashdan et al., 2008), there is considerable debate at the foundations of well-being research. Many proponents of eudaimonic well-being responded to claims of a single well-being construct with evidence of their distinctness (Joshanloo, 2016; Keyes et al., 2002; Ryan & Deci, 2001; Waterman, 1993). Findings from the studies in this dissertation clarify

important distinctions between philosophical and modern psychological traditions in hedonic and eudaimonic well-being. Namely, that aspects of hedonic and eudaimonic well-being are dynamically linked by a temporal component. While previous research has examined trait level differences in the two factor model of well-being (Compton et al., 1996), the current research provides an important component in their distinction.

Limitations and Future Directions

It's important to note that this study is not trying to define pleasure or meaning. Clinically detailing every aspect of what constitutes as pleasure or meaning is beyond the scope of the current research. Instead, we aimed to broadly understand the dynamics of lay beliefs about pleasure and meaning oriented preferences and behaviors. As with any study, there are a number of limitations that warrant discussion, as well as multiple interesting avenues for future research. First, while students and MTurk participants served as a useful initial sample, there is a possibility that their life circumstances may influence how they choose to use their time in a different way than do people in other phases of life. Future research would benefit from a larger field sample of diverse participants, and over longer periods of time. It would also be quite interesting to explore differences in durations based on the type of activities in which people are involved. Lastly, in Study 5 we only looked at the effects of duration on meaning

oriented behavior. It would be useful to explore the dynamics of pleasure oriented activities and durations in an experimental study.

Conclusion

The aim of this study was to further our understanding of hedonic and eudaimonic well-being by incorporating duration. Support was found linking durations of time preferences for meaning and pleasure oriented activities and behaviors. This study has attempted to address why previous research has been so divided and has aimed to move the discussion forward by integrating temporal dynamics into the equation.

Bibliography

Aknin, L. B., Barrington-Leigh, C. P., Dunn, E. W., Helliwell, J. F., Burns, J., Biswas-Diener, R., . . . Norton, M. I. (2013). Prosocial spending and well-being: Cross-cultural evidence for a psychological universal. *Journal of Personality and Social Psychology, 104*(4), 635.

Anderson, C. A., Carnagey, N. L., & Eubanks, J. (2003). Exposure to violent media: the effects of songs with violent lyrics on aggressive thoughts and feelings. *Journal of Personality and Social Psychology, 84*(5), 960.

Ariely, D. (1998). Combining experiences over time: The effects of duration, intensity changes and on-line measurements on retrospective pain evaluations. *Journal of Behavioral Decision Making, 11*(1), 19-45.

Ariely, D., & Carmon, Z. (2003). *Summary assessment of experiences: The whole is different from the sum of its parts*: Russell Sage Foundation.

Ariely, D., & Zakay, D. (2001). A timely account of the role of duration in decision making. *Acta psychologica, 108*(2), 187-207.

Aristotle. (1985). Nicomachean Ethics. (T. Irwin, Trans.). Hackett. In: Cambridge University Press Cambridge.

Ballinger, G. A. (2004). Using generalized estimating equations for longitudinal data analysis. *Organizational research methods, 7*(2), 127-150.

Baumeister, R. F., & Vohs, K. D. (2002). The pursuit of meaningfulness in life. *Handbook of positive psychology*, 608-618.

Baumeister, R. F., Vohs, K. D., Aaker, J. L., & Garbinsky, E. N. (2013). Some key differences between a happy life and a meaningful life. *The Journal of Positive Psychology, 8*(6), 505-516.

Biswas-Diener, R., Kashdan, T. B., & King, L. A. (2009). Two traditions of happiness research, not two distinct types of happiness. *The Journal of Positive Psychology, 4*(3), 208-211.

Biswas-Diener, R., Linley, P. A., Dovey, H., Maltby, J., Hurling, R., Wilkinson, J., & Lyubchik, N. (2015). Pleasure: An Initial Exploration. *Journal of Happiness Studies, 16*(2), 313-332.

Block, R. A., George, E. J., & Reed, M. A. (1980). A watched pot sometimes boils: A study of duration experience. *Acta psychologica, 46*(2), 81-94.

Boyd, J. N., & Zimbardo, P. G. (2005). Time Perspective, Health, and Risk Taking.

Brickman, P., & Campbell, D. T. (1971). Hedonic relativism and planning the good society. *Adaptation-level theory*, 287-305.

Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist, 54*(3), 165.

Cheavens, J. S., Feldman, D. B., Gum, A., Michael, S. T., & Snyder, C. (2006). Hope therapy in a community sample: A pilot investigation. *Social indicators research, 77*(1), 61-78.

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

Delle Fave, A., Massimini, F., & Bassi, M. (2011). Hedonism and eudaimonism in positive psychology. In *Psychological Selection and Optimal Experience Across Cultures* (pp. 3-18): Springer.

Diener, E. (2009). *The science of well-being: The collected works of Ed Diener* (Vol. 37): Springer Science & Business Media.

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

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

Dilthey, W. (1977). Descriptive psychology and historical understanding, trans. *Richard M. Zaner and Kenneth L. Heiges (The Hague: Nijhoff).*

Disabato, D. J., Goodman, F. R., Kashdan, T. B., Short, J. L., & Jarden, A. (2016). Different types of well-being? A cross-cultural examination of hedonic and eudaimonic well-being. *Psychological assessment, 28*(5), 471.

Faro, D. (2010). Changing the future by reshaping the past: the influence of causal beliefs on estimates of time to onset. *Journal of Consumer Research, 37*(2), 279-291.

Feldman, D. B., & Dreher, D. E. (2012). Can hope be changed in 90 minutes? Testing the efficacy of a single-session goal-pursuit intervention for college students. *Journal of Happiness Studies, 13*(4), 745-759.

Frederick, S., & Loewenstein, G. (1999). Hedonic adaptation.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*(3), 218.

Fredrickson, B. L., & Kahneman, D. (1993). Duration neglect in retrospective evaluations of affective episodes. *Journal of Personality and Social Psychology, 65*(1), 45.

Frijda, N. (2010). On the nature and function of pleasure. *Pleasures of the brain*, 99-112.

Galinat, W. H., & Borg, I. (1987). On symbolic temporal information: beliefs about the experience of duration. *Memory & Cognition, 15*(4), 308-317.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. (1998). Measuring individual differences in implicit cognition: the implicit association test. *Journal of Personality and Social Psychology, 74*(6), 1464.

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology, 85*(2), 197.

Grinde, B. (2012). *The biology of happiness*: Springer Science & Business Media.

Happ, C., Melzer, A., & Steffgen, G. (2015). Like the good or bad guy—Empathy in antisocial and prosocial games. *Psychology of Popular Media Culture, 4*(2), 80.

Hay, I., & Muller, S. (2014). Questioning generosity in the golden age of philanthropy: Towards critical geographies of super-philanthropy. *Progress in Human Geography, 38*(5), 635-653.

Heintzelman, Trent, J., & King, L. A. (2013). Encounters with objective coherence and the experience of meaning in life. *Psychological Science*, 0956797612465878.

Heintzelman, S. (2018). Eudaimonia in the contemporary science of subjective well-being: Psychological well-being, self-determination, and meaning in life. *Handbook of well-being. Salt Lake City, UT: DEF Publishers. DOI: nobascholar. com*.

Hicks, J. A., Trent, J., Davis, W. E., & King, L. A. (2012). Positive affect, meaning in life, and future time perspective: an application of socioemotional selectivity theory. *Psychology and aging, 27*(1), 181.

Howells, A., Ivtzan, I., & Eiroa-Orosa, F. J. (2016). Putting the 'app'in happiness: a randomised controlled trial of a Smartphone-based mindfulness intervention to enhance wellbeing. *Journal of Happiness Studies, 17*(1), 163-185.

Huppert, F. A., & So, T. T. (2013). Flourishing across Europe: Application of a new conceptual framework for defining well-being. *Social indicators research, 110*(3), 837-861.

Huta, V., & Ryan, R. M. (2009). Pursuing pleasure or virtue: The differential and overlapping well-being benefits of hedonic and eudaimonic motives. *Journal of Happiness Studies, 11*(6), 735-762.

Ishii, K., Reyes, J. A., & Kitayama, S. (2003). Spontaneous attention to word content versus emotional tone differences among three cultures. *Psychological Science, 14*(1), 39-46.

Joshanloo, M. (2014). Eastern conceptualizations of happiness: Fundamental differences with western views. *Journal of Happiness Studies, 15*(2), 475-493.

Joshanloo, M. (2015). Revisiting the Empirical Distinction Between Hedonic and Eudaimonic Aspects of Well-Being Using Exploratory Structural Equation Modeling. *Journal of Happiness Studies*, 1-14.

Joshanloo, M. (2016). Revisiting the empirical distinction between hedonic and eudaimonic aspects of well-being using exploratory structural equation modeling. *Journal of Happiness Studies, 17*(5), 2023-2036.

Kahneman, D. (2011). *Thinking, fast and slow*: Macmillan.

Kahneman, D., Diener, E., & Schwarz, N. (1999). *Well-being: Foundations of hedonic psychology*: Russell Sage Foundation.

Kahneman, D., Fredrickson, B. L., Schreiber, C. A., & Redelmeier, D. A. (1993). When more pain is preferred to less: Adding a better end. *Psychological Science, 4*(6), 401-405.

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

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

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

Kim, J., Kang, P., & Choi, I. (2014). Pleasure now, meaning later: Temporal dynamics between pleasure and meaning. *Journal of Experimental Social Psychology, 55*, 262-270.

King, L. A., Hicks, J. A., Krull, J. L., & Del Gaiso, A. K. (2006). Positive affect and the experience of meaning in life. *Journal of Personality and Social Psychology, 90*(1), 179.

Lane, K. A., Banaji, M. R., Nosek, B. A., & Greenwald, A. G. (2007). Understanding and using the implicit association test: IV. *Implicit measures of attitudes*, 59-102.

Leontiev, D. A. (2016). *Positive psychology in search for meaning*: Routledge.

Liang, K.-Y., & Zeger, S. L. (1986). Longitudinal data analysis using generalized linear models. *Biometrika*, 13-22.

Linden, D. J. (2011). *The compass of pleasure: How our brains make fatty foods, orgasm, exercise, marijuana, generosity, vodka, learning, and gambling feel so good*: Penguin.

Little, B. R. (1993). Personal projects and the distributed self: Aspects of a conative psychology. *The self in social perspective: Psychological perspectives on the self, 4*, 157-185.

Lyubomirsky, S. (2010). 11 Hedonic Adaptation to Positive and Negative Experiences. *The Oxford handbook of stress, health, and coping*, 200.

Lyubomirsky, S., King, L., & Diener, E. (2005). The Benefits of Frequent Positive Affect: Does Happiness Lead to Success? *Psychological Bulletin, 131*(6), 803-855. doi:10.1037/0033-2909.131.6.803

McGregor, I., & Little, B. R. (1998). Personal projects, happiness, and meaning: on doing well and being yourself. *Journal of Personality and Social Psychology, 74*(2), 494.

Meyers, L. S., Gamst, G., & Guarino, A. J. (2006). *Applied multivariate research: Design and interpretation*: Sage.

Michon, J. A. (1965). Studies on subjective duration: II. Subjective time measurement during tasks with different information content. *Acta psychologica, 24*, 205-212.

Morewedge, C. K., Kassam, K. S., Hsee, C. K., & Caruso, E. M. (2009). Duration sensitivity depends on stimulus familiarity. *Journal of Experimental Psychology: General, 138*(2), 177.

Na, J., & Kitayama, S. (2011). Trait-based person perception is culture-specific: behavioral and neural evidence. *Psychological Science, 22*(8), 1025-1032.

Nelson, S. K., Fuller, J. A., Choi, I., & Lyubomirsky, S. (2014). Beyond Self-Protection Self-Affirmation Benefits Hedonic and Eudaimonic Well-Being. *Personality and Social Psychology Bulletin, 40*(8), 998-1011.

Nordhall, O., & Agerström, J. (2012). Future-oriented people show stronger moral concerns.

Norton, D. L. (1976). Personal destinies. In: JSTOR.

Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2005). Understanding and using the Implicit Association Test: II. Method variables and construct validity. *Personality and Social Psychology Bulletin, 31*(2), 166-180.

Park, B. K., Choi, J. A., Koo, M., Sul, S., & Choi, I. (2013). Culture, self, and preference structure: Transitivity and context independence are violated more by interdependent people. *Social cognition, 31*(1), 106-118.

Park, J., & Uchida, Y. (2015). Cultural variation in implicit independence: An extension of Kitayama et al.(2009).

Peterson, Park, N., & Seligman, M. E. (2005). Orientations to happiness and life satisfaction: The full life versus the empty life. *Journal of Happiness Studies, 6*(1), 25-41.

Peterson, S. (2011). *Socrates and Philosophy in the Dialogues of Plato*: Cambridge University Press.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual review of psychology, 52*(1), 141-166.

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

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

Sackett, A. M., Meyvis, T., Nelson, L. D., Converse, B. A., & Sackett, A. L. (2010). You're Having Fun When Time Flies The Hedonic Consequences of Subjective Time Progression. *Psychological Science, 21*(1), 111-117.

Savary, J., Goldsmith, K., & Dhar, R. (2015). Giving against the Odds: When Tempting Alternatives Increase Willingness to Donate. *Journal of Marketing Research, 52*(1), 27-38.

Schultz, W., Tremblay, L., & Hollerman, J. R. (1998). Reward prediction in primate basal ganglia and frontal cortex. *Neuropharmacology, 37*(4), 421-429.

Seligman, M. E. (2002). Positive psychology, positive prevention, and positive therapy. *Handbook of positive psychology, 2*, 3-12.

Small, D. A., & Loewenstein, G. (2005). The devil you know: The effects of identifiability on punishment. *Journal of Behavioral Decision Making, 18*(5), 311-318.

Small, D. A., Loewenstein, G., & Slovic, P. (2007). Sympathy and callousness: The impact of deliberative thought on donations to identifiable and statistical victims. *Organizational Behavior and Human Decision Processes, 102*(2), 143-153.

Stoet, G. (2010). PsyToolkit: A software package for programming psychological experiments using Linux. *Behavior Research Methods, 42*(4), 1096-1104.

Suh, & Oishi, S. (2002). Subjective well-being across cultures. *Online readings in psychology and culture, 10*(1), 1.

Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist, 38*(11), 1161.

Thomas, R. M., & Schnitker, S. A. (2016). Modeling the Effects of Within-Person Characteristic and Goal-Level Attributes on Personal Project Pursuit Over Time. *Journal of Research in personality*.

Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review, 110*(3), 403.

Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review, 117*(2), 440.

Uglanova, E. A., & Staudinger, U. M. (2013). Zooming in on life events: Is hedonic adaptation sensitive to the temporal distance from the event? *Social indicators research, 111*(1), 265-286.

Vallacher, & Wegner. (1985). A theory of action identification.

Vallacher, & Wegner. (1987). What do people think they're doing? Action identification and human behavior. *Psychological Review, 94*(1), 3.

Vittersø, J., & Søholt, Y. (2011). Life satisfaction goes with pleasure and personal growth goes with interest: Further arguments for separating

hedonic and eudaimonic well-being. *The Journal of Positive Psychology, 6*(4), 326-335.

Vohs, K. D., Mead, N. L., & Goode, M. R. (2006). The psychological consequences of money. *Science, 314*(5802), 1154-1156.

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

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

Waterman, A. S., Schwartz, S. J., & Conti, R. (2008). The implications of two conceptions of happiness (hedonic enjoyment and eudaimonia) for the understanding of intrinsic motivation. *Journal of Happiness Studies, 9*(1), 41-79.

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

Zeger, S. L., & Liang, K.-Y. (1986). Longitudinal data analysis for discrete and continuous outcomes. *Biometrics*, 121-130.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology, 77*(6), 1271.

Abstract in Korean

선행 연구에 따르면 행복은 두 유형(즐거움과 의미)으로 구분될 수 있다. 그러나 어떤 요인으로 인해 상관관계가 높은 두 행복의 유형이 가장 명확하게 구분되는지에 대한 연구는 많이 이루어지지 않았다. 본 연구는 5가지의 실험을 통해서 시간의 지속성이 어떻게 즐거움과 의미 중심의 활동을 선택하는 과정에 영향을 미치는지 알아보았다. 먼저, 하루 (짧은 기간) 또는 6개월 (긴 기간) 조건에 따라 즐거움이 중심인 활동과 의미가 중심인 활동의 선호도가 다르다는 결과를 얻었다 (연구 1). 그리고 이러한 결과는 지속 시간이 길어질수록 더욱 명확했다 (연구 2). 내재적 연관검사(Implicit Association Task)에서는 시간의 지속성이 짧을수록 즐거움과 관련된 단어와 연관이 있는 반면, 시간의 지속성이 길수록 의미와 관련된 단어와 연관이 있다는 것을 보여주었다 (연구 3). 삶에 대한 관점 즉, 인생이 짧다고 생각할수록 즐거움을 지향하는 활동을 더 자주 했으며, 인생이 길다고 생각할수록 의미를 지향하는 활동을 더 자주 했다 (연구 4). 마지막으로, 시간의 지속성이 “짧다”, “보통이다”, “길다”라는 프라이밍 실험에서는 시간의 지속성이 길다고 프라이밍이 된 참여자보다 짧다고 프라이밍이 된 참여자일수록 자선단체에 기부를 덜 하는 것을 알 수 있었다 (연구 5). 따라서, 본 연구의 결과들은 시간의 지속성이 개인의 선호도와 행동에 미치는 영향을 보여주었다.