

THESIS

THE TIME OF YOUR LIFE: TIME CONGRUENCE AND ITS RELATIONS TO
AUTHENTICITY AND MINDFULNESS

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Jaime Ascencio

Department of Psychology

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Fort Collins, Colorado

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Master's Committee:

Advisor: Kathryn Rickard

Zinta Byrne

Melissa Wdowik

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ABSTRACT

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Integrity has been proposed as a new way of conceptualizing time use by examining the ways a person's actual time use reflects the individual's values and preferences. Evidence from previous studies shows numerous benefits from experiencing congruence between actual and ideal time use. In this study, I examined authenticity and mindfulness as potential precursors to integrity, and perceived choices as a potential control variable. Correlations were confirmed between the three variables. Due to the incorrect completion of the daily diary by the majority of participants, I was unable to create a diary-based measure of integrity. However, a single-item measure of integrity was included, which was used for time-related analyses. It was found that mindfulness, authenticity, and perceived choice had positive correlations with integrity, but that mindfulness accounted for these correlations when they were entered into a model together. These results suggest that mindfulness could be further researched as an intervention to improve people's levels of integrity. Key suggestions for improving the daily diary entries include using daily reminders, reformatting the entry template, and implementing a training day for participants before they complete the entries.

Keywords: integrity, time use, mindfulness, authenticity, perceived choice

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INTRODUCTION

In media and research alike, there is currently a significant amount of attention directed toward understanding how to balance all of life's demands. These sources report ways for people to better schedule their time so that all areas of their lives have equal room to flourish. For millennia, great minds have deemed balance as a way to maximize human potential (Pentland & McColl, 2008). It is, therefore, expected that people with excellent balance flourish, while those who dedicate significant time to one area of life struggle. However, consider the two following illustrative examples. While watching tightrope walkers, jugglers, and unicyclists use perfect balance, audiences see inward-focused attention, a serious expression, and an effort to ignore the surroundings. This inward focus is reflected within people's daily lives as they must focus on their schedule or their internal monologue to ensure they are moving through their day in a way conducive to optimal balance. In contrast, Olympians, renowned authors, and spiritual leaders spend decades of their lives dedicated to a single, narrow subject area, yet they often exude fulfillment. These illustrations contradict the current idea that people need to have balance in their lives across many domains to experience well-being. Balance among one's roles, activities, and time use is merely an outer organization of behaviors that may or may not reflect the inner values of the person (Pentland & McColl, 2008). Instead of only examining the way people use their time and the balance thereof, researchers need to delve deeper by also understanding how people *want* to use their time. This will allow researchers to look at time use holistically and individualistically.

The ideas of integrity and congruence can be used to move beyond the traditional idea of balance. In the context of time use, integrity is defined as the extent to which a person lives out

his or her values, strengths, and meaning (Pentland & McColl, 2008). Unlike balance, which typically prescribes a one-fits-all formula for time use, integrity allows for flexibility, individualization, and personal fulfillment within people's time uses. One way to determine whether people are living with integrity is to examine the congruence between their reported actual time use and ideal time use. If people are living with integrity, their actual and ideal time uses should be highly aligned.

Although balance and time use have been conceptualized and examined in a number of ways, very few studies have looked at the congruence between an individual's actual and ideal time use (see Chen, Lee, Pethtel, Gutowitz, & Kirk, 2012; Reich, Kessel, & Bernieri, 2013; Sheldon, Cummings, & Kamble, 2010). The congruence between actual and ideal time use was termed "life balance" by Sheldon et al. (2010) and will be referred to in this paper as "time congruence." This relatively new concept of time congruence resembles Rogers' concept of actual-ideal self-congruence, which is viewed as an advanced stage of a person's development that results in a variety of health benefits (Akrivou, 2013). Previous studies about time congruence have focused on the result of experiencing congruence, but none have examined what variables may create time congruence.

This study will examine mindfulness and authenticity, traits that are related to present-moment awareness and self-awareness (Allan, Bott, & Suh, 2014; Wood, Linley, Maltby, Baliouis, & Joseph, 2008), to explore whether these constructs may relate to the level of time congruence that a person experiences and the amount of integrity with which people live their lives. These constructs are important to examine because little is known about what factors contribute to a person's experience of integrity. By understanding what creates integrity, people will be able to make adjustments in order to experience integrity and reap the benefits it offers.

Time Use

One relatively new area of study that examines the effects of how people use their time incorporates the examination of therapeutic lifestyle behaviors and their effects on mental and physical health. Different areas of lifestyle behaviors, such as exercise, relationships, recreation, relaxation, spiritual involvement, being in nature, and service to others all improve people's mental, emotional, physical, and spiritual health (Walsh, 2011). In a study conducted with representative populations in 33 countries in 2007, Wang and Wong (2014) showed that specific time uses such as reading books, shopping, attending cultural events, getting together with relatives, listening to music, and attending sporting events all correlated positively with happiness (as assessed by the answer to the question "How happy or unhappy are you in general these days?"), whereas other time uses, such as time on internet, correlated negatively with happiness. DeGreeff, Burnett, and Cooley (2010) coded authenticity levels in a convenience sample of 598 holiday letters from people within the United States and determined that people also tend to have more positive experiences when they are with friends and family and experience lower authenticity when they lead busy, technology-laden lives. These studies cumulatively indicate the way people spend their time is important to their health and happiness. This was confirmed by Wang and Wong (2014) who stated that how time is spent is more important than how much free time one has.

The Sustained Happiness Model (SHM: Lyubomirsky, Sheldon, & Schkade, 2005), expanded on the idea that specific time uses affect well-being. The authors stated that the most promising means of improving happiness was via intentional activities. The authors examined the architecture of sustainable happiness by examining internal and external factors (personality, genetics, circumstances, and demographics), in addition to factors that people can actively

change and pursue, such as how they use their time. The authors recounted that previous studies have found approximately fifty percent of one's happiness to be explained by genetics and ten percent by circumstances, meaning that up to forty percent of one's happiness and well-being is controlled by the activities in which one engaged. These percentages illuminate the large portion of a person's happiness which is within the individual's control and is influenced by time use decisions. According to the Sustained Happiness Model, increasing the amount of time spent in beneficial activities may improve well-being (Chen et al., 2012; Lyubomirsky et al., 2005). These studies demonstrate the importance of how people use their time, but they do so without consideration of how people prefer to use their time. By learning about how people want to spend their time and how well those desires align with actual time use, clinicians can gain a more comprehensive understanding of time use and its effects and how it impacts people's well-being.

Integrity

Balance, having long been considered the ideal when it comes to time use, prescribes a one-schedule-fits-all mentality, suggesting that if people follow a certain formula of time use, they will experience happiness and fulfillment (Pentland & McColl, 2008). Balance breaks lives into categorical options, where each segment of time fulfills one niche area of need. Balance implies a correct answer, indicating that there is an ideal way to use one's time and that such an ideal will remain fairly constant over time. This ideal involves a careful allocation of time between certain activities, projects, and roles that are all observable behaviors (Pentland & McColl, 2008). Because of this view, people constantly ask themselves how they can find more balance, indicating that they are attempting to reallocate their time among the same tasks and roles in which they previously engaged themselves.

A proposed concept to replace balance is “integrity” (Pentland & McColl, 2008).

Integrity takes into account an individual’s values, preferences, and autonomy in designing his or her life (Pentland & McColl, 2008). Integrity is the “extent to which a person designs and lives [...] [wholly and completely] with his or her personal values, strengths, and attribution of meaning” (Pentland & McColl, 2008, p. 136). As opposed to balance, integrity allows each person to live a uniquely arranged life that holds significant meaning for that individual. Integrity is an intimate and non-replicable living of one’s life in a way uniquely tailored to the individual.

Time Congruence

One way to assess integrity is to examine an individual’s level of time congruence. The idea of studying congruence between self and ideal has been incorporated into many psychological theories (Akrivou, 2013); the most relevant to this study seems to be Rogers’ theory of selfhood. This theory states that self-ideal congruence exists when there is harmony between one’s ideal self and one’s real (or true) self. One’s real self is considered the actual or social self. One’s ideal self is understood in a variety of ways, including one’s conception of who one “really” is, one’s “inner self,” and one’s hypothetical or possible self (Akrivou, 2013; Reich et al., 2013). The ideal self is said to stem from three main components: (1) cognitive imagery of a desired future, including one’s dreams, aspirations, and fantasies; (2) hope stemming from optimism and expressing self-efficacy; and (3) one’s core identity that underlies and connects one’s visions and autobiographical themes (Akrivou, 2013). Individuals then contrast this multi-faceted ideal self with their real self to form an evaluation of their self-ideal congruence (Akrivou, 2013).

Other theories expand on self-ideal congruence in a few key ways. Specifically, the Piagetian view states that self-ideal congruence is a stage of mental reasoning that is characterized by the self being integrated and free of ego conflicts and the ability to act in the world based on ideals and values (Akrivou, 2013). Kegan's theory, as described by Akrivou (2013), defines self-ideal congruence as a sense of self-authorship, where people strive for and consolidate their identities by self-actualizing; it is the beginning of the highest phase of development and includes becoming open, non-defensive, and interactive in society (Akrivou, 2013). Chen et al. (2012) state that self-concordance is the degree to which one's chosen initiatives match and represent one's interests and values instead of reflecting adherence to external pressures. Lastly, self-ideal congruence is seen as a sign of psychosocial and cognitive maturation (Akrivou, 2013). Combined, these theories consistently emphasize the idea that self-ideal congruence is the highest emotional/mental state a person can attain, a state that allows the individual to live out his or her values and become an integrated whole.

It seems that experiencing self-ideal congruence has many benefits, including a clear, efficient course of action within their lives, a phenomenological quality of feeling whole and united, commitment to and satisfaction with one's roles, and psychological health and adjustment. Rogers emphasized that discrepancies between a person's actual and ideal self results in feelings of vulnerability, dejection, inauthenticity, and agitation (Akrivou, 2013; Reich et al., 2013). While these congruency findings relate to a person's actual and ideal self, not specifically to a person's actual and ideal time use, recent studies have begun examining actual-ideal congruence within the lens of a person's time use (Haines, 2014; Sheldon et al., 2010).

Ideal Time Use

One can conclude from previous studies and scholarly writings that the way in which people spend their time is the very essence of their lives, the canvas they design and fill with their choices and actions. Because of the implied importance of congruency between ideal and actual time use, it is essential that researchers move beyond the simplistic approaches of counting hours toward a more comprehensive look at how people feel about their time use (Sheldon et al., 2010). Time congruence, or experiencing congruence between actual and ideal time uses, takes into consideration the actual, real way that people spend their time throughout the day in various activities and compares those hours to the hours that people report as the ideal way they would like spend their time. The comparison between actual and ideal time use provides a measure of level of time congruence.

Because a definition of ideal time use has not yet been created, one has been created for this study that is based on the components of the ideal self as described by Akrivou (2013) and on the concept of time integrity as described by Pentland and McColl (2008). Ideal time use is defined as: the way people aspire to spend their time so that it fits their values, interests, and goals; expresses their identity; and uses their strengths. Chen et al. (2012) theorize that ideal time use may reflect goal-congruent intentional activities that are not constrained by reality, suggesting that people may have overly optimistic expectations of their time use. While this may be true, people's ideals remain relevant to this study because they desire to use their time differently than their current use, and they compare their ideal to their present reality.

Preliminary studies have examined time congruence and found benefits similar to those of self-ideal congruence. For example, Sheldon et al. (2010) found that when participants were asked to strive to achieve a higher time congruence level (to live closer to their ideal time uses)

for one month, the participants reported higher levels of subjective well-being than those who were not asked. Similarly, in their study of eighty Midwestern undergraduate students, Reich et al. (2013) found that when participants reported believing they spent the “right amount” of time in their various roles, they endorsed higher levels of life satisfaction than those who reported they did not spend the right amount of time. Participants also experienced increased life satisfaction when they had high levels of self-ideal congruence.

In contrast to previous studies, Chen et al. (2012) used a different perspective on time congruence by studying older adult and young adult participants’ reports of actual and ideal time use within ten categories. The authors found that in both groups, wanting to spend time in spiritual activities correlated with high levels of personal well-being. Additionally, Chen et al. suggested that many people may not know what activities actually contribute to their personal well-being. For example, though many people believe working long hours is detrimental to their well-being, Chen et al. found a positive relationship between amount of time at work and personal well-being. Additionally, though old and young participants reported wanting more recreation time, it was found that more time spent in recreational activities correlated with lower levels of personal well-being. The results from their study suggest that pursuing categorical, balance-focused approaches to time uses may result in individuals engaging in behaviors they believe should be beneficial, but may not reflect their genuine needs. Because of the extensive literature about self-ideal congruence and the preliminary research on time congruence, researchers are beginning to understand the benefits of congruence. Although this literature has moved the field forward, the question remains as to what causes congruence in the first place.

In this study, I examine authenticity and mindfulness as potential precursors for time congruence. Several studies within a review by Akrivou (2013) showed that reducing

discrepancy between one’s actual and ideal self can be done within a behavior change intervention. This reduction is accomplished through increasing self-awareness, which results in increased levels of congruence. Akrivou (2013) also reported that change is a function of a person’s ability to maintain awareness of the difference between a person’s ideal and actual self. This indicates that constructs relating to self-awareness, such as authenticity and mindfulness, may affect the actual-ideal time congruence levels people experience. Previous studies on time congruence have only included the outcomes of time congruence, and not the causes. To understand how to develop time congruence and obtain the benefits it offers, it is important to look at the potential precursors of authenticity and mindfulness.

Authenticity

Authenticity is knowing one’s true self and acting in line with this self in a genuine manner (Allan et al., 2014; Haines, 2014). One of the most comprehensive conceptualizations of

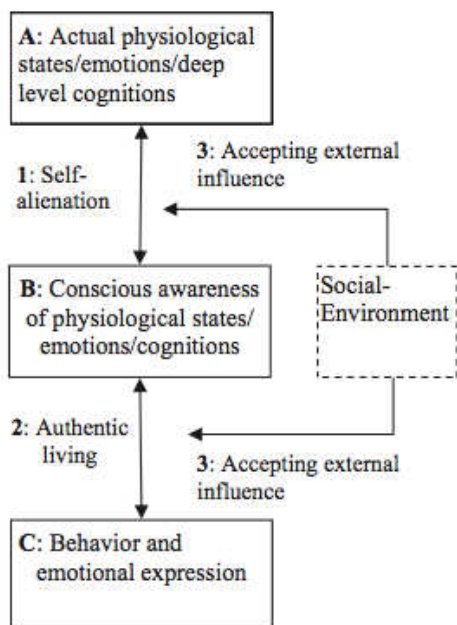


Figure 1: Person-centered model of authenticity

authenticity is based on Roger’s theory, described in his book *On Becoming a Person: A Therapist’s View of Psychotherapy*, which uses a tripartite model to describe authenticity (see Figure 1; White, 2011; Wood et al., 2008). This person-centered view of authenticity involves having congruence between three levels, which are one’s (a) experience, (b) awareness, and (c) behavior. The three interactions between these levels include self-

alienation, authentic living, and accepting external influences. Self-alienation (1) is the

relationship between one's actual experiences and the way the experiences are represented in conscious awareness. Authentic living (2) involves being true to oneself by having congruence between one's conscious perceptions and behaviors. Accepting external influences (3) involves the extent to which one is true to oneself in most situations or conforms to the expectations of others. Roger's tripartite model of authenticity addresses the internal and external aspects of authenticity and comes from the same framework of self-ideal congruence on which the idea of time congruence is based, so it is the model used in this study.

Authenticity has been measured as both a trait and a state, with trait authenticity being the focus of this study in order to understand how a person's consistent level of authenticity influences their time use decisions (Lenton, Bruder, Slabu, & Sedikides, 2013). A trait is a person's base-rate propensity toward or away from a set of cognitions emotions, or actions. Compared to states, traits are more enduring over time, more continuous, and more abstract (Lenton et al., 2013). Therefore, when people exhibit trait authenticity, they act, to varying degrees, in line with their values, preferences, beliefs, and motivations (Lenton et al., 2013) and have an awareness and unbiased processing of their true selves (Heppner & Kernis, 2007).

While many agree that authenticity is essential to well-being (Haines, 2014), Wood et al. (2004) state that authenticity is the very essence of well-being, not just a precursor or component. Having a higher level of trait authenticity correlates with greater life satisfaction, self-esteem, subjective well-being, mental health, and mindfulness. It also correlates with less stress, less depression, and less verbal defensiveness (Allan et al., 2014; Haines et al., 2014). A sense of authenticity is essential for human flourishing and fulfillment (Allan et al., 2014).

Feelings of authenticity come from many sources. Because authenticity involves knowing oneself, it is assumed that person should feel more authentic when acting in line with

who they are (Lenton et al., 2013). However, the state-content significance hypothesis suggests that some actions feel more authentic due to the characteristics of the actions themselves, not because they reflect the person enacting them (Lenton et al., 2013). For example, people often feel authentic when acting extraverted, agreeable, open, and conscientious, even when those descriptors do not match their disposition. Results have also found that people feel authentic when with friends or doing activities that involve fun, achievement, helping, or creativity. One explanation of why people feel more authentic in specific activities is that they are acting in a normative way, or what society believes is a psychologically well-adjusted way (Lenton et al., 2013). To maximize congruence between actual and ideal selves, many people may integrate socially normative values and behaviors into their ideal self-image, making it more likely for them to experience congruence and authenticity in a way that is socially desirable.

However, there is another explanation as to why people feel more authentic when engaging in specific activities that do not align with their actual selves. It states that people feel most authentic when they are acting in line with their ideal selves (Lenton et al., 2013). For example, if some people are extroverted, always hosting get-togethers, but want to be introverted and spend hours alone reading books, they would feel most authentic when behaving in an introverted manner because that aligns with their ideal selves. A person's ideal self may be influenced by social norms, but social norms do not inherently determine what a person's ideal self can be. Therefore, this explanation of people feeling most authentic when aligning with their ideal selves better fits the definition of authenticity than the explanation of acting socially normative, and it is the explanation that is most relevant to this study.

Only two studies have looked at the correlation between authenticity and how people use their time. Haines (2014) surveyed fifty-one college students and found that high levels of

authenticity correlated with a high number of hours doing homework and hours spent with friends and a low amount of time spent playing video games. The study also found participants with higher levels of authenticity were more likely to rate homework and volunteering as important and less likely to rate playing video games as important (Haines, 2014). In their study of 238 Japanese college students, Ito and Kodama (2008) found that students with high scores of authenticity tended to report extracurricular activities as important, whereas students with low authenticity often cited cramming for examinations as important experiences, indicating that authenticity levels may affect what people view as important time uses. These studies demonstrate that authenticity varies across time uses and the importance that people place on those activities. These studies support the idea that authenticity relates to self-congruent behavior (as evidenced by how people spend their time) (Lenton et al., 2013).

Mindfulness

Mindfulness is a quality of open, nonjudgmental awareness involving “receptive attention to and awareness of present events and experience” (Allan et al., 2014). Mindfulness can be conceptualized as a trait, a state, or a skill to be improved, depending on the context, and will be looked at in its trait form within this study (Park, Reilly-Spong, & Gross, 2013). Trait mindfulness is the innate level that people have, state mindfulness is the fluctuating levels people experience throughout their day, and mindfulness as a skill refers to the fact that people can alter their trait and state levels by practicing focusing on their senses, the present moment, and their thoughts (Park et al., 2013). Mindfulness incorporates three natural functions: awareness, attention, and receptiveness. Awareness acts as the “radar” of consciousness, monitoring the surroundings. It differs from the awareness component of authenticity in that mindfulness’ awareness involves in-the-moment focus on experiences and their immediate effect whereas

authenticity's awareness involves overall knowledge of one's experiences and their impacts. Attention is the pinpointed focus of awareness, bringing heightened observation to a specific experience (Brown & Ryan, 2003). Receptiveness, better known as acceptance, is the third component of mindfulness and encompasses the quality of one's relationship to the present experience, such as feeling open and curious (Park et al., 2013). An example of these three components is as follows: As people walk through a park, they are *aware* of their surroundings, the trees, grass, running dogs, laughing children, and the blowing breeze. They then *attend* to one specific feature of their choosing, such as the blue bird sitting on a branch in the tree nearest them, noticing its small feathers, yellow beak, and eight toes. They then incorporate *acceptance* by being open to the moment exactly as it is, wondering what the bird is looking at and not ruminating on their annoyance at the noisiness of other park-goers. For the purposes of this study's focus on time use, it is key to understand that mindfulness involves being "awake" to one's experiences as opposed to acting in a habitual, automatic way.

Mindfulness offers many benefits to those who practice it, both mental and physical. Increasing levels of mindfulness is commonly used as an effective intervention for a variety of health concerns such as cancer, chronic medical conditions, and psychological disorders. It has been found to have small to medium treatment effects for conditions such as stress, anxiety, and depression (Park et al., 2013). High levels of mindfulness relate to higher and more stable self-esteem (Allan et al., 2014; Heppner & Kernis, 2007). High levels of mindfulness also correlate with optimism, pleasant affect, life satisfaction, immune responses, well-being, and vitality (Allan et al., 2014; Park et al., 2013). Additionally, Brown and Ryan (2003) found that practicing mindfulness can improve people's well-being by helping them to end their habitual, unhealthy patterns and begin engaging in self-endorsed behaviors. This finding indicates that

with mindfulness training, people may be able to stop spending their time in ways that are detrimental to them and begin spending time in ways that are important to them, which may in turn improve their levels of integrity.

Trait mindfulness correlates with trait authenticity, both of which correlate positively with being open and non-defensive and correlate negatively with self-reported aggression (Heppner & Kernis, 2007; Lenton et al., 2013). When people act mindfully, they are more likely to be functioning in an integrated, authentic way (Heppner & Kernis, 2007), indicating that mindfulness may be a moderator of the relationship between authenticity and time congruence. Theorists propose that as mindfulness increases, people are more likely to act in ways that are congruent with their true, or authentic, selves (Allan et al., 2014). Furthermore, mindfulness has been found to correlate with increased authentic functioning over time (Allan et al., 2014).

Because mindfulness incorporates individuals' focus on present experiences and awareness of how they are spending their time, it is likely that it will directly influence whether people live with integrity, as people must be able to notice how they are using their time in order to make adjustments to better align their actual time use with their ideal time use. Similarly, mindfulness is also likely to moderate the relationship between authenticity and integrity, as it is unlikely that people's knowledge of their authentic selves will affect their levels of integrity if they are not aware of how they are spending their time.

Self-Determination

Self-determination is a theory of motivation and personality that examines extrinsic and intrinsic motivations and needs (Ryan & Deci, 2000). It posits that extrinsic motivation often results from the social context of the individual, and that individuals are active organisms who have a natural tendency toward growth and self-directed action (Ryan & Deci, 2000). Within

Self-Determination Theory, research has looked at mindfulness being a foundation for individuals being able to engage in self-regulation of their behaviors (Self-Determination Theory, 2017). Because self-determination incorporates whether individuals feel as if they have control over their decisions, it was examined as a control variable within this study to determine whether people's perceptions of their ability to choose their activities influences the effects that authenticity and/or mindfulness have on integrity.

Summary

To understand what influences the experience of time congruence and using one's time with integrity, one must delineate the different components that comprise time use. Studies have found that the way people spend their time affects their health and happiness, and actual-ideal congruence of the self has been shown to have many benefits as well (Akrivou, 2013; Reich et al., 2013). Combining actual and ideal time use results in time congruence, or experiencing congruence among actual and ideal time use. Few studies have examined time congruence (see Chen et al., 2012; Reich et al., 2013; Sheldon et al., 2010), yet time congruence has been linked to many important factors such as subjective well-being and life satisfaction (Reich et al., 2013; Sheldon et al., 2010) indicating that it is an area in need of further exploration.

Furthermore, previous studies examined the outcomes of having high and low time congruence (Chen et al., 2012; Reich et al., 2013; Sheldon et al., 2010). However, these studies did not attempt to explain what leads a person to experience time congruence. Because mindfulness and authenticity consist of awareness of the present moment and awareness of one's true self, respectively, it is likely that mindfulness and authenticity will affect whether people experience integrity.

Hypotheses

Hypothesis 1: Authenticity will have a positive correlation with levels of integrity.

Research suggests that when people have higher levels of authenticity, they may be more likely to behave in line with their authentic selves (Lenton et al., 2013). This indicates that they may be more likely to use their time the way they want to.

Hypothesis 2: Mindfulness will have a positive correlation with levels of integrity.

Because mindfulness involves one's attention to and awareness of present experiences (Brown & Ryan, 2003), people who are high in mindfulness are more likely to be aware of whether or not their current time use is in line with the way they would like to spend their time. When people are low in mindfulness, time passes them by without awareness or checking in with themselves as to whether they are doing activities they desire.

Hypothesis 3: Mindfulness will moderate the relationship between authenticity and integrity.

It is proposed that mindfulness will moderate the relationship between authenticity and integrity because regardless of people's levels of authenticity, they must be aware of how they are spending their time in the present moment in order to adjust their time use and live with integrity.

METHOD

Participants

A power analysis was conducted before data collection and determined that a minimum of 89 participants were needed to run the proposed analyses ($df=86$, critical $t = 1.988$). One hundred eighty-nine Introductory Psychology students at Colorado State University were recruited to participate. Of those students, 163 completed Time 1's surveys (MAAS, Authenticity Scale, Self-Determination Scale, and demographics form) and were then given access to the full study. Students who missed this first time point were excluded from the study ($n=26$). Therefore, a total of 163 students participated in this study. All students received course credit for their participation. Institutional Review Board approval was obtained on 12/21/2015 for up to 5.5 hours of work per student, although actual time required totaled approximately 3.5 hours. Participants were between the ages of 18 to 45 with the average age of 19.72 years. Participants were 75% Caucasian, 3% African/African American, 6% Asian/Asian American, 6% Latino/a, and 11% multiple races. Participants were 20% male, 78% female, and 1% trans/aseexual. This sample was based on convenience and was a nonprobability sample.

Exclusionary criteria included participants reporting more than one of their daily diary entries to be "atypical" or non-completion of the first set of mindfulness, authenticity, and self-determination surveys.

Measures

Day Reconstruction Method

A brief version of Day Reconstruction Method (DRM) (used in Sheldon et al., 2010) was used at the beginning of each daily diary entry to prompt accurate memory and increase the

probability of accurate reporting. The DRM has been shown to reduce recall bias and is highly correlated with data collected in real time (Sheldon et al., 2010) (Appendix A).

Actual Time Use Diary

Measuring time congruence is a way to examine whether or not a person is living with integrity. Time congruence consists of the comparison between how people actually spend their time and how they would ideally spend their time.

Actual time use was measured using a web-based 24-hour light diary format, with pre-defined activity categories used to assess time use (Appendix B). Light diary formats have been used in many countries' national time use surveys, including the United Kingdom, Ireland, Denmark, Sweden, and Finland (Task Force, 2013). Conducting 24-hour surveys is a more reliable method than asking participants to report the number of hours dedicated to various activities during a week, because the more time that elapses between the moment a person engages in an activity and the survey question about the activity, the less reliable the person's report (Task Force, 2013). Using a pre-defined activity list results in minimized participant and researcher burden, as it requires less time for the participants to complete and little to no time for the researcher to code the data. However, the disadvantages of the light format include using fewer time-use categories than if participants wrote in their own categories and the possibility of people understanding categories differently from each other. These disadvantages are acceptable for this study because the main focus is on whether people experience time congruence, not on what their specific time uses are.

The pre-defined activity list was created by expanding the list used by Sheldon et al. (2010). The activity list was altered from its original list of sleeping, school, paid work, household chores, community, recreation, commuting, personal relationships, health and self-

maintenance, and spirituality or religion. Specifically, some of the categories (e.g., community, spirituality, health, and recreation) were expanded to capture a few of the main categories within each. For example, community was split between volunteering and group involvement to capture the difference between giving back and inclusion. Health was split into exercising and meditative activities to differentiate between activities that primarily focus on the physical and mental. Lastly, recreational activities were divided into technology and artistic activities to look at the differences between endeavors that involved consuming versus expressing.

The United Nations' Task Force on Time-Use Surveys' (2013) recommendations were followed with regard to what other items the time use survey should capture. In particular, the United Nations' Task Force on Time-Use Surveys (2013) recommended that participants should be able to report one parallel activity, or an activity being done while the main activity is occurring (e.g., "preparing supper" as a main activity with "listening to radio" as a parallel activity). This parallel reporting allows for time use to be more accurately captured. To enable parallel reporting, the instructions on the daily time use journal stated that participants' hour report did not need to equal 24 hours because some time uses, such as homework and technology use, may occur simultaneously (e.g., doing homework on the computer).

At the end of each day, participants were asked whether it was a typical or atypical day. This question was added to establish whether the data could be used. For example, if more than one day was "atypical" for the subject due to serious illness, vacation, or other similar atypical events, the data were excluded from analyses.

Ideal Time Use

Two weeks after the daily time use entries, participants were asked to go through the same pre-defined activity list that was used to collect actual time use data during the daily diary

entries and indicate the number of hours per day and the number of days per week that they would ideally spend on each activity. This was similar to methods used by Sheldon et al. (2010) who asked participants to allocate 24 hours to 10 different time use activities which matched the 10 activities participants had completed actual time use data about previously. The ideal time use measure in this study was modified from the one used by Sheldon et al. (2010) by remaining consistent with the actual time use diary used in this study (e.g., same categories, allowing reports of over twenty-four hours per day, and spanning one week instead of one day). This collection of ideal time use data after collecting actual time use data was included to assess the congruence within time uses. To further assess the congruence, participants were provided a single Likert-scale question asking whether they spent their time in the way they wanted (Appendix C).

Authenticity Scale

The Authenticity Scale, developed and validated by Wood (2008), was used to assess participants' trait authenticity levels as conceptualized by Rogers' tripartite model of authenticity (Appendix D). Originally, 25 items were developed by two field experts. These items were then factor analyzed based on 200 undergraduate students' responses, from which a three-factor structure was derived. The items were then pared down to 12 items by using the four highest loading items on each factor. Wood (2008) reported internal consistency ratings of .69 for Authentic Living, .78 for Accepting External Influence, and .78 for Self-Alienation for the specific sample. Wood (2008) confirmed in a second study that the three-factor model was robust to sample, gender, and ethnicity. Furthermore, the measure's test-retest reliability was .78-.91 for two- and four-week retests. The measure did not correlate significantly with social desirability measures. Discriminant validity was demonstrated by analyzing the correlations

between the Authenticity Scale and the Big 5 personality traits. The Big 5 factors (e.g., Conscientiousness, Agreeableness, Neuroticism, Openness, and Extraversion) were found to significantly account for only 11-13% of the variance in authenticity. Furthermore, the Authenticity Scale was demonstrated to have convergent validity with significant correlations to self-esteem, subjective well-being, and psychological well-being.

The Authenticity Scale included 12 items on a 7-point Likert scale ranging from 1 (“does not describe me at all”) to 7 (“describes me very well”). The measure included 4 items from each of the 3 subscales. Example items include: from the self-alienation subscale, “I feel as if I don’t know myself very well,” from the authentic living subscale, “I always stand by what I believe in,” and from the accepting external influence subscale, “I usually do what other people tell me to do.”

Mindful Attention Awareness Scale (MAAS)

The MAAS (Brown & Ryan, 2003) measures mindfulness as a trait by focusing on the present-centered attention-awareness that people experience in their daily lives (Appendix E). It was designed to operationalize mindfulness as a single construct, which most subsequent studies confirmed as an accurate depiction (Park et al., 2013). The scale has 15 items about the participants’ experiences, all rated on a 6-point Likert Scale ranging from “Almost Always” to “Almost Never.” Participants completed this scale one week after the time diary by following the scale’s directions.

Previously reported internal consistency scores among a sample of 1,179 university participants was good (Cronbach’s alphas ranging from 0.78-0.92, as is test-retest reliability (ICC = 0.81) (Park et al., 2013). The correlations between the MAAS and other mindfulness instruments were weak to moderate ($r = .14-.51$) (Park et al., 2013). The MAAS has been

positively correlated with measures of openness to experience, internal state awareness, positive and pleasant affect, life satisfaction, vitality, self-actualization, well-being, and physical health, and negatively correlated with neuroticism, depression, anxiety, stress, and rumination (Brown & Ryan, 2003; Park et al., 2013). When looking at whether participants had meditation experience, Park et al. (2013) reported that the MAAS had different scores between meditators and non-meditators, but only when the meditators were above a novice level. Because of its good psychometric properties, the MAAS was one of the seven instruments that Park et al. (2013) recommended in their study of twenty different mindfulness scales.

Self-Determination Scale

Self-determination was assessed as a trait that includes two subcomponents: Awareness of Oneself, or being aware of one's feelings and sense of self, and perceived choice, or feeling a sense of choice in how one behaves (Sheldon & Deci, 1993). This scale is comprised of ten items with five items for each subscale. Each item is written with two opposing statements and a 5-point Likert scale from "Only A feels true" to "Only B feels true." An example of a perceived choice item is, "A. I always feel like I choose the things I do. B. I sometimes feel that it's not really me choosing the things I do." I found the self-determination scale (SDS; Appendix F) online, but the study in which it was created was unpublished. This scale was chosen over other self-determination options because of its focus on whether participants feel like they choose how they use their time, (rather than looking at feelings of choice over several domains of their lives), which was an important potential control variable for this study. Before including the scale in full analyses, the scale was examined for reliability and for normality via histograms, skew, and kurtosis, and these results are reported within the Results section below.

Procedures

Participants completed the study at different time points throughout the semester, with start dates ranging from the beginning of February to the beginning of April. Participants logged into the online survey system a total of nine times (see Table 1). At Time 1, participants completed the demographics form (Appendix G), Authenticity Scale, MAAS, and SDS. Participants completed all measures using an online internal survey system. Online time use measures are not yet extensively researched, so there is the possibility of the modality changing the output (Task Force, 2013). Specifically, when examining the web-based time-use measures in countries outside of the United Nations, the United Nations' Task Force on Time-Use Surveys (2013) found that some aspects of the online data collection system produced statistics comparable to elements of the Harmonized European Time Use Survey (a paper survey created by the United Nations to have comparable time-use data among fifteen European Countries), but not with others paper versions, suggesting that online instructions need to be more explicit in order to ensure accurate time reporting (Task Force, 2013).

Time 2 occurred two weeks after Time 1, with Times 2-8 occurring daily for one week. During this time, participants completed the daily diary portion of the study which looked at actual time use. The daily diary was offered for one week because the participants are students, whose schedules typically repeat weekly, and because the aim of this study was to select a time frame in which ideal and real time use could be compared. Using one week provided enough of a variety to compare time uses because it included the work week and weekend, and diary studies have been deemed appropriate to use for whatever length of time is required to answer the research question (Gunthert & Wenzel, 2011; Iida et al., 2012).

Time 9 occurred two weeks after Time 8, the end of the week-long daily diary data collection, and occurred a total of five weeks after Time 1. At this time, participants answered questions about their ideal time use by using a form nearly identical to that of the daily diary form, and filled out the MAAS, Authenticity Scale, and SDS again. The MAAS, Authenticity Scale, and SDS were completed twice because it is unknown whether the time use diary influences responses on these scales, so they were completed twice to assess reliability both before and after the time use diary. Upon completion of all measures, participants read the debriefing information (Appendix H).

RESULTS

Analyses began with assessing the reliability via Cronbach's alpha of the authenticity, mindfulness, and self-determination scales. The study included 163 participants at Time 1, with 6 participants being excluded from SDS and authenticity analyses ($n=157$) and 7 being excluded from MAAS analyses ($n=156$) due to not completing all items within the respective measures. The three scales were tested for reliability at Time 1 and Time 9. The 12-item Authenticity Scale and 15-item MAAS were found to be reliable at both time points (see Table 2 for all reliability statistics) (Tavakol & Dennick, 2011). The 10-item SDS showed poor reliability when checked as a single scale, but because the two 5-item subscales of "Awareness of Oneself" and "perceived choice" can be used as stand-alone scales, their reliability was checked separately. The perceived choice subscale was the subscale of interest for this study and was determined to be reliable (Table 2). Histograms were run on the Authenticity Scale, MAAS, and perceived choice subscale of the SDS for Time 1 and were determined to appear normal. All three measures were normally distributed, as determined by skew and kurtosis being within limits of -1 to 1, at Time 9 (see Table 3).

Because mindfulness, authenticity, and perceived choice measures at Time 1 and Time 9 showed equivalent reliability, Time 1 was used for further analyses. Pearson Correlations were run on the Authenticity Scale, MAAS, and perceived choice subscale of the SDS, all of which were found to correlate significantly with one another (see Table 4 for Time 1, Table 5 for Time 9). For simplicity of understanding, the total scores of the perceived choice subscale were reverse-coded so that a higher number reflected a higher level of perceived choice. Authenticity and mindfulness were already scored so that higher numbers indicate higher levels of the

construct. The Authenticity Scale had a significant positive correlation with MAAS and the perceived choice Scale. The MAAS had a significant positive correlation with the perceived choice subscale (Tables 4 and 5).

I could not include the daily diary time use scales in the analyses for several reasons. Of the 163 total participants, only 53 completed all 7 days of the daily diary study, and of those 53 very few completed the daily diary study correctly, indicating there would not be enough power to proceed with analyses. The number of daily diary entries completed by participants is shown in Figure 2.

Further reducing the amount of viable data within the 53 daily diary studies completed, the accuracy of hours reported for each 24-hour period were often far outside of the acceptable range (range=0-111, mean=22.76, median = 22.5, mode=24). Thus, although participants were instructed that hours did not need to perfectly equal 24 hours, if they were equally engaged in two activities (e.g., exercising while watching TV) hours reported were often too far from 24 to be reasonable. Specifically, a reasonable range was determined to be within approximately 4 hours of the 24-hour mark, meaning that hour reports ranging from approximately 20-28 were acceptable and hours outside of that range should be further examined. If total hours reported were below 19.2, the data were excluded because 20% or more of the day was unaccounted for. If total hours reported were within 28-40, the DRM qualitative description was examined for plausible overlap. For example, high hour totals often involved a high number of hours with friends, which was determined as plausible since people could do most of the categories of activities with other people. Unlikely overlaps often involved a high number of hours reported in nearly every category and poor DRM qualitative descriptions, indicating the person likely selected hour totals at random. A similar accuracy issue occurred within the reports of ideal

number of hours, which should be near 7 days, or 168 hours (range=3-474, mean= 158.5, median=146, mode=166).

Another area of inaccuracy occurred when participants' DRM qualitative description of their day did not match their quantitative daily hour reports. Because participants were not required to use specific language in the DRM and were instead prompted to name their daily activities in a way that made sense to them, the precise frequency with which descriptive inaccuracies occurred cannot be determined. Nonetheless, it was clear that several participants made this mistake. The following is a representative example: a participant reported "3 hours, 0 minutes" of education-related activities in the qualitative daily diary study. However, the participant reported in the DRM description, "Accounting 9-9:50am [...] Philosophy 10-10:50am [...] Study for Research Methods quiz 11:30-1:45 [...] Research Methods Quiz 2-2:40," which equaled 4 hours, 35 minutes of education-related time, indicating that the participant has a 1 hour, 35-minute discrepancy between the two time reports. Similarly, many imprecisions occurred across participants, such as most not reporting what they did for the 10 minutes between classes. The importance of these small chunks of time is debatable, as participants may not consider that time when imagining their ideal time use, and therefore may not feel incongruent when that time is lost, but it does demonstrate a lack of accuracy when completing the measures.

Finally, useable data was further reduced due to falsely inflated reports of "atypical" days. If a participant indicated that a day was atypical, that day met exclusionary criteria and the participant would have been excluded from further analyses. However, an atypical day was intended to capture truly irregular days, such as being on vacation, being sick in bed all day, or other activities that happen very rarely and dramatically alter the course of the day. Instead, of

693 total daily diary entries, 197 of them (28.4%) were reported as “atypical” by participants, and many did so for very small reasons (e.g., “lab [is only] one day a week,” “I only go to [the bar] every other week,” “I had a nap,” “It’s Friday,” “class cancelled”). Most of these reasons were ones that occurred with consistency (e.g., weekly lab, bi-weekly bar visits, etc.), and many seemed to have minimal impact on the day (e.g., a nap, one class being cancelled), indicating that days were falsely reported as meeting the exclusionary criteria of atypical. Because of the open-ended method in which participants were able to explain why their day was unusual, I was unable to determine reliably which days were altered dramatically and which were only slightly altered, and therefore those data points could not be used.

Post-hoc Analyses

Although I could not test the hypotheses by examining or comparing actual and ideal time uses, which were completed in the daily diary studies (Times 2-8) and at Time 9, due to the unreliability of reports and low response rate, I was able to analyze a single question that also examined congruence. This question was completed by 145 participants at Time 9 and will be referred to as “single-item congruence.” The question, “In your opinion, do you spend your time in your ideal way?” was scored on a 6-point Likert scale ranging from “always” to “never.” Of the 145 participants who responded, participants indicated they were 0% “always,” 28% “very frequently,” 55% “occasionally,” 12% “rarely,” 5% “very rarely,” and 1% “never” spending their time in their ideal way.

It is unknown how well people’s single-item congruence reports match their congruence levels as calculated via a diary study—it is possible people’s single-item congruence matches their daily-diary congruence levels, or they could be very inaccurate in their perceptions.

Nonetheless, the single-item congruence question was used in further time-related analyses as a preliminary method to address the hypotheses.

The single-item congruence variable was reverse-coded so that higher levels corresponded with higher numbers. Single-item congruence was negatively skewed and leptokurtotic (Table 3). Correlational analyses examining whether authenticity, mindfulness, and perceived choice were related to single-item congruence revealed significant positive relationships between all variables (Table 5). A general linear model was then run to test the effects of authenticity and perceived choice on single-item congruence, as moderated by mindfulness, tested through an interaction term. In this model, the relationship between authenticity and congruence was non-significant, but mindfulness was found to positively relate to congruence (see Table 5). While there had been a significant correlation between authenticity and single-item congruence, once mindfulness was added to the model, authenticity and single-item congruence no longer related. This demonstrated that the correlation was likely due to the overlap between authenticity and mindfulness. Once that overlap was accounted for, only mindfulness continued to relate to congruence. The interaction term between mindfulness and authenticity was not significant, indicating mindfulness did not moderate the relation between authenticity and single-item congruence (Table 3). Perceived choice did not significantly impact single-item congruence.

DISCUSSION

Evaluation of Daily Time Use Data Collection Methods

To explain the issues encountered with data collection and reevaluate the methods used, additional literature was explored. Methodological choices I used that were well-supported in the literature included using a 7-day daily diary study, requiring entries every 24 hours, doing different start times throughout the semester for different groups of participants, and determining the study to be minimal risk.

Using a daily diary was an appropriate choice because this data collection format reduces systematic recall bias (Iida et al., 2012; Gunthert & Wenzel, 2011) and increase compliance over other commonly used methods such as ecological momentary assessments (EMAs), which have the participant enter data throughout the day when prompted by a reminder (Gunthert & Wenzel, 2011). Furthermore, daily diaries are preferred over less frequent measures when recall will interfere with the accuracy of reporting and are preferred over more frequent measures when behaviors occur predictably at certain times of the day and/or are measuring discrete behaviors (Gunthert & Wenzel, 2011). These preferences strongly reflect the life of college students, as they are usually on semi-structured, repetitive schedules. The length of the daily diary study (7 days) was appropriate because it was able to capture the item of interest (a typical week). The length of one week was also appropriate because it was designed with the recognition that college students experience weekly cycles of experiences, which helps to minimize inaccurate findings that occur when weekly cycles are not considered (Liu & West, 2015). Additionally, most daily diary studies fall within the range of 7-30 days, with the modal being 14 days, indicating that this study fell within typical parameters (Gunthert & Wenzel, 2011; Iida et al.,

2012). While optimal lengths of daily diary studies have not yet been assessed, there is anecdotal support for under 10 minutes (Gunthert & Wenze, 2011). The daily diary entry for this study takes approximately 10-15 minutes, meaning it was a bit longer than recommended, but likely not too high over the recommended maximum of approximately 10 minutes. Participant burden was determined to be within recommended levels for this study, as it is measured by examining the length of the diary entry, frequency of diary entries, and length of the diary period, and this study complied with typical daily diary study administration (Iida et al., 2012). Daily diary literature also supported using several “start times” for running participants, as nested data is acceptable for the analyses needing to be run because the study did not need to compare interactions of time points with other predictors (e.g., feelings before vs. after an event) (Iida et al., 2012). While repetitive assessment is theorized to discourage participation or result in a sampling bias for motivated and conscientious personalities, compliance rates across diary studies tend to be high (Gunthert & Wenze, 2011), so the choice to not add additional screens for personality was appropriate. Finally, this study was appropriately determined to be of minimal risk, as some qualitative studies suggest that participants may even benefit from the regular self-reflection introduced by daily diary studies (Iida et al., 2012).

Methodological choices that could have been improved, according to the literature, include providing a specific time for completing the diary entry and training participants. While many diary studies provide participants with flexibility regarding when they complete their daily entry, fixed-interval schedules using specific times or time windows are also common (Iida et al., 2012). Due to low consistency with daily entry completion, more structure may increase compliance. Additionally, participants coached with an if-then script are found to better remember the daily entry (e.g., If I brush my teeth, then I will do the diary entry) (Iida et al.,

2012). Though research is limited in understanding the nuances of measurement reactivity in daily diary studies, it is possible that participants may change their behavior, notice their behavior more accurately, increase their complexity of understanding of the topic, and/or simplify their understanding to fit within the confines of the study (Iida et al., 2012). To increase understanding of the diary entries and increase the likelihood of reliable and valid data, participants can complete a training session before beginning the daily diary entries (Iida et al., 2012). Training for this study could have included giving participants an example of what a “typical” versus “atypical” day would look like and have them read some examples and practice categorizing them in order to increase their accuracy with reporting this variable. An example of this training could be, “If Joe went throughout his usual routine, attending classes, eating meals with friends, etc., but he took a one-hour nap, which he only does once a month, would this day be unusual?” (Answer: no). Furthermore, training could explain how to fill out the DRM and hour report sections of the daily diary study and answer questions of where different activities would fit into provided categories.

Additional improvements that could be made to this study include reformatting the daily diary entry, adding automatic prompts if reported information seems implausible, and including a social desirability or perceived normality scale. The methods for this study involved completing the DRM, then going to the next screen and selecting the amount of time from a drop-down menu for each of the provided categories. Instead, the format could be altered to promote accuracy so that all of the information is on one page and involves less counting of hours. One example is in Figure 3, where the participant would describe what he or she did and at what time in the first column, much like required for the DRM, completing the first column in its entirety before continuing to the other columns. Then, in the second column the participant would

indicate the number of hours and/or minutes that this activity took (alternatively, a survey system could be programmed to calculate this for the subject). Finally, the participant would select a category from a drop-down menu in the third column, with descriptions of the categories at the top of the page for easy reference.

Another method for addressing methodological issues would be to increase the prompts provided by the survey system. For example, if the total number of hours for a 24-hour period or for the ideal number of hours reported fell outside of a pre-determined acceptable range, the survey could prompt, “It seems that you have indicated participating in activities for an unusually low/high number of hours (##). Please double-check your hours reported for accuracy, or if there was time you did not account for, as your total should be close to 24.” The system could also highlight any skipped questions (e.g., within the MAAS scale) and prompt the participant to complete them. Finally, a prompt could appear if the participant marks a day as “atypical” (Figure 4).

Finally, if future studies are concerned that participants will skew their responses to fit their perception of how they “should” be spending their time, a social desirability scale and/or a time survey of how they perceive others spend their time could be included.

Mindfulness, Authenticity, and Perceived Choice

Mindfulness, authenticity, and perceived choice all positively correlated with each other. Based on previous literature, these correlations were anticipated due to the overlapping nature of their content. Authenticity and perceived choice correlated with the number of daily diary entries completed. Authenticity encompasses people’s perceptions of themselves and their behaviors, indicating that they may have responded with frequencies related to their levels of self-congruence. For example, while completing frequent assignments is part of college, the

students who are accurate in considering the assignment-completing portion of their self-perception may have been more likely to respond consistently to the daily entries. In contrast, participants with lower levels of authenticity may be explained by the opposite argument—their experiences of not completing the entries were not matching their perceptions of themselves as responsible college students. The correlation between perceived choice and daily diary completion could be explained by participant’s emotional reactions to their perceived choice. Participants who felt less control over their time may have felt resistant to completing required daily surveys, whereas participants who experienced more control over their time may have perceived the daily surveys as a voluntary activity they chose, and therefore felt more willing to complete them.

Integrity

When integrity was assessed via participants’ single-item reports of their time congruence, only mindfulness was found to correlate with levels of congruence. Therefore, Hypothesis 1 was rejected and Hypothesis 2 was supported. It makes sense that participants who are aware of their in-the-moment experiences are better able to modulate their time to fit their desires since they are not relying on “auto-pilot.” However, in contrast, authenticity did not correlate with congruence. This lack of significant relationship between authenticity and congruence may be explained by the state-content significance hypothesis (Lenton et al., 2013), which posits that people report feeling authentic even when they are not doing actions that are true to who they are (e.g., introverts engaging in extroverted behavior). Therefore, participants’ levels of authenticity may not have been able to predict congruence because some participants were not being true to themselves, whereas others were, yet they felt equally authentic. Similarly, participants’ varying levels of authenticity may not predict whether they act on their

self-knowledge, suggesting that there could be a mediator or moderator that influences people's likelihood of altering their behavior (e.g., mindfulness, social influence, situational or financial limitations).

Hypothesis 3 was also rejected because the moderation analysis of mindfulness on authenticity and congruence did not reach significance. This was to be expected because authenticity's relationship with single-item congruence was explained by the relationship between mindfulness and single-item congruence. Therefore, mindfulness would be unable to moderate a relationship between two variables that do not correlate.

Perceived choice was not found to act as a control variable for congruence, which may reflect that people's level of congruence depends more on their awareness of how they are spending their time than whether they think they can control their time. Another explanation could be that participants' level of congruence is affected by other factors (e.g., their set schedules, their levels of mindfulness) so that, by chance, some participants have schedules conducive to their ideal time use, while others do not, regardless of whether they feel like they chose those schedules.

Limitations

The primary limitation to this study was attrition rate. Because participants needed to fill out online surveys nine times, 110 of the 163 participants did not complete all of the surveys necessary to examine the hypotheses. Within the 53 participants that did complete the daily diary entries, several limitations exist around the accuracy of completing them (e.g., the number of hours reported, qualitative descriptions not matching qualitative reports, determining whether a day met the "atypical" exclusionary criteria). Another limitation is that the results of this study may not be generalizable to the population as a whole due to the use of a university sample.

Subjects will be, on the whole, more highly educated, younger, and more likely to be European American than the general population.

CONCLUSIONS

When talking about how people spend their time, much of the literature discusses “balance.” This discussion focuses on the idea that a careful allocation of one’s time across a variety of areas will result in optimal well-being. However, this model is behaviorally-focused and does not account for the variability of how individuals want to spend their time. Integrity, measured by the congruence of one’s actual and ideal time uses, is able to honor the uniqueness of each individual and what allocation of time best fits their needs and desires. While the concept of integrity has been sparsely examined, previous studies have only focused on the outcomes of experiencing integrity. This study looked at potential predictors of integrity such as mindfulness, authenticity, and perceived choice.

While a time use diary measure of integrity was unable to be obtained due to completion attrition and errors, a single-item measure (“In your opinion, do you spend your time in your ideal way?”) was used instead within post-hoc analyses. It was found that mindfulness positively related to the levels of integrity participants reported, likely because mindfulness is a trait which allows people to be aware of their present experiences, meaning that they are better able to alter their behaviors to better represent how they wish to spend their time. When mindfulness was included in the model, authenticity and perceived choice did not have a significant influence on participants’ levels of integrity.

Future Directions

Future studies should continue examining predictors and results of experiencing integrity within one’s time uses. Also, mindfulness should be examined as an intervention for improving individual’s levels of integrity. Studies should finally examine the relationship between

participants' diary-based and single-item congruence. If single-item reports are congruent with diary-based reports, it would greatly reduce the amount of participant burden in future studies of integrity. In order to best examine diary-based of congruence, future studies should continue using a 7-day, 24-hour diary format for college-aged populations, but improve upon it by adjusting the formatting, including computer prompts, and training the participants before they complete the daily entries.

TABLES AND FIGURES

Table 1: Data Collection Time Points

| | | | | | | | | |
|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--|
| Time 1 Day 1 | Time 2 Day 15 | Time 3 Day 16 | Time 4 Day 17 | Time 5 Day 18 | Time 6 Day 19 | Time 7 Day 20 | Time 8 Day 21 | Time 9 Day 35 |
| -MAAS -Authenticity Scale -SDS -Demographics | Daily Diary with DRM | Daily Diary with DRM | Daily Diary with DRM | Daily Diary with DRM | Daily Diary with DRM | Daily Diary with DRM | Daily Diary with DRM | -MAAS -Authenticity Scale -SDS -Ideal Time Use -Debriefing |

Table 2: Descriptive Statistics and Reliability of Authenticity, Mindfulness, Self-Determination, and perceived choice Measures

| | Time 1 | | | | Time 9 | | | |
|---------------------------|----------|------|-----------|--------------------------|----------|-------|-----------|--------------------------|
| | <i>n</i> | Mean | Std. dev. | Reliability (α) | <i>n</i> | Mean | Std. dev. | Reliability (α) |
| MAAS | 156 | 3.87 | .879 | .908 | 134 | 3.85 | .886 | .914 |
| Authenticity Scale | 157 | 5.18 | .880 | .856 | 142 | 5.30 | .901 | .845 |
| Self-Determination Scale | 157 | 3.07 | .447 | .453 | 135 | 3.11 | .389 | .308 |
| Perceived Choice Subscale | 160 | 2.88 | .750 | .788 | 145 | 2.102 | .751 | .799 |

Table 3: Distributions of scales

| | Skewness | | Kurtosis | |
|-----------------------------------|-----------|------------|-----------|------------|
| | Statistic | Std. Error | Statistic | Std. Error |
| Authenticity Scale, Time 1 | -.375 | .194 | -.169 | .385 |
| | -.705 | .217 | 1.007 | .430 |
| MAAS, Time 1 | -.052 | .194 | -.013 | .386 |
| | -.288 | .217 | .508 | .430 |
| Perceived Choice Subscale, Time 1 | -.302 | .192 | -.445 | .386 |
| | -.355 | .217 | -.506 | .430 |
| Congruence | -1.088 | .201 | 1.732 | .400 |

Table 4: Regression Table

| | B | Std. Error | Significance (2-tailed) | Bootstrap | |
|------------------------------|-------|------------|----------------------------|-------------------------|-------|
| | | | | 95% Confidence Interval | |
| | | | | Lower | Upper |
| Intercept | 3.118 | .072 | .001** | 2.971 | 3.250 |
| Perceived Choice Subscale | .044 | .132 | .741 | -.220 | .297 |
| Authenticity Scale | .080 | .129 | .537 | -.181 | .325 |
| MAAS | .223 | .093 | .020* | .042 | .422 |
| Authenticity Scale x MAAS | -.202 | .085 | .059 | -.380 | .064 |

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

Table 5: Pearson Correlations for Time 1 Measurements

| | Mindfulness | perceived choice |
|---------------------------------|------------------------------|------------------------------|
| Authenticity Scale | $r = .375^{**}$ $n = 153$ | $r = .417^{**}$ $n = 154$ |
| MAAS | -- | $r = .382^{**}$ $n = 153$ |
| Perceived Choice Subscale | -- | -- |

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

Table 6: Pearson Correlations for Time 9 Measurements

| | Mindfulness | perceived choice | Single-Item Congruence |
|---------------------------------|--------------------------|--------------------------|-------------------------------------|
| Authenticity Scale | $.555^{**}$ $n = 131$ | $.624^{**}$ $n = 135$ | $.282^{**}$ $n = 142$ |
| MAAS | -- | $.462^{**}$ $n = 128$ | $.347^{**}$ $n = 134$ |
| Perceived Choice Subscale | -- | -- | $.229^*$ $p = .007$ $n = 138$ |

**= $p < .001$, *= $p < .05$

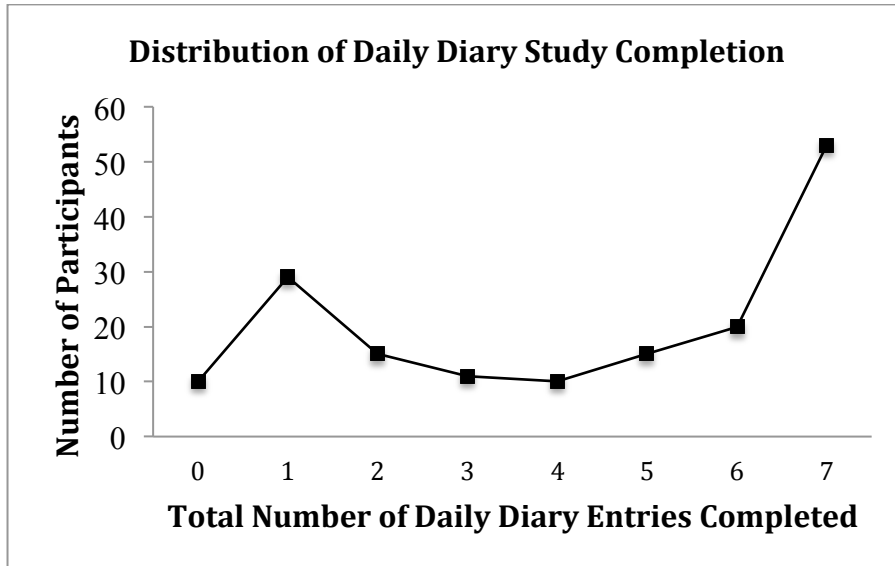


Figure 2: Number of daily diary entries completed by participants, with 7 indicating completion of all daily diary entries

| Description (activity & time) | Amount of Time | Category of Activity |
|-------------------------------|----------------|----------------------|
| I ate breakfast 8-8:15 | 15 minutes | Chores & Necessities |
| Studied for my exam 8:15-9 | 45 minutes | Education |
| Went on a run 9-9:45 | 45 minutes | Exercise |
| etc. | ... | ... |

Figure 3: An example of the formatting of an alternative layout for the daily diary entry

You marked a day as atypical. An atypical day consists of an activity that occurs rarely and dramatically alters the course of your day.

Here are a few “atypical” day examples:

- Being on vacation
- Attending a one-time conference
- Being very sick and not attending any usual activities

Here are a few examples of days that are still considered typical:

- If you took a nap for one hour, which you usually only do once per month
- If you went to the bar, which you only do every other weekend
- If you spent a couple of extra hours at a friend’s house
- Having a cold so you skipped your morning class

Please select “yes” if you still believe your day was atypical or “no” if you would like to change your response.”

| | |
|-----|----|
| Yes | No |
|-----|----|

Figure 4: An example of a computer prompt for if a day is marked “atypical”

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APPENDIX A: Day Reconstruction Method

Instructions:

Please ensure that you have approximately 20 minutes to complete this. On the last day (you will be reminded that day as well), plan for approximately 30 minutes.

On the next screen, you will see questions about how you spent your time today. Before moving on, please fill out the following text box. This box is to help you reflect on your day so that you will have an accurate report.

Think of your day as a continuous series of scenes or episodes in a film. Give each episode a brief name that will help you remember it (for example, “commuting to work,” or “at lunch with ____.” Write down the approximate times at which each episode began and ended. The episodes people identify usually last between 15 minutes and 2 hours. Indications of the end of an episode might be going to a different location, ending one activity and starting another, or a change in the people you are interacting with.

Please take your time to write your response here.

Once you have completed your reflection in the box above, please proceed to the next section. You may click back to this screen from the next screen if you would like to reference what you wrote.

APPENDIX B: Actual Time Use Daily Diary

These are questions about how you spent your time today (from the time that you woke up until the time that you go to sleep). In the table below there are different areas of life. Please write the number of hours that you spent in each activity in the space provided. Use the previous page if you would like, then allocate these hours how you actually spent your time as accurately as possible. Indicate the number of hours by choosing from the drop down options. Because all possible activities are not listed here, you may find that your hours for the day do not equal 24—that is okay! If you did more than one activity at once (ie. watched TV and exercised for 1.00 hour) please carefully consider whether you were actively engaged in both activities. If you were equally engaged, note both time uses (1.00 hour for technology use, 1.00 hour for exercise, but if one activity was not actively engaged in (ie. the TV was on in the background and you mostly ignored it), please only note the one you were involved with (ie. exercising).

| Activity | Hours you spent doing the activity <u>today</u> |
|--|---|
| Education (class, homework, studying) | |
| Commuting (to school, to work) | |
| Sleep (at night, naps) | |
| Paid Work | |
| Chores and Necessities (cooking, cleaning, buying food, eating, commuting, doctor appointment, etc.) | |
| Volunteering | |
| Club/Group Involvement (on campus, in the community. Ie. a book club, Biology Club) | |
| Spiritual/Religious Activities (ie. worship class, discussion group, prayer, holiday celebration, etc.) | |
| Time with close others (ie. friends, family, significant other) | |
| Exercising (ie. sports, walking, biking) | |
| Meditative activities (ie. yoga, tai chi, mediation, journaling, letter writing) | |
| Using technology (watching TV, on computer-not for homework, playing video games, using phone) | |
| Artistic activities (painting, playing an instrument, creative writing, knitting, etc.) | |

Would you consider this day to be a fairly typical day?

- Yes
- No

If no, please explain why in a few words (ie. on vacation, at a one-day conference, missed activities due to illness): _____

(Last day only:)

Would you consider this week to be a fairly typical week?

- Yes
- No

If no, please explain why in a few words (ie. on vacation, at a conference, missed activities due to illness): _____

Reminder: Please keep in mind that in two weeks you will be asked to take approximately one hour to complete a few more surveys. It is good to make a reminder for yourself on your phone, with a sticky note, or in your planner. **To receive full research credit, you must do next week's survey.**

APPENDIX C: Ideal Time Use

You will recognize this list of activities from last week’s questionnaires. However, this week I would like you to indicate the number of hours you would ideally spend doing the activity per week. “Ideally” includes spending your time in a way that fits your values, interests, and goals. It also includes expressing your identity and using your strengths. (This is NOT how you think others want you to spend your time. It is what you want.) Then, type in the number of hours, in decimal format (ie. 2.5, 4.25, 0) you would like to spend in the blank next to the corresponding activity.

Keep in mind that this is in a weekly format, not a daily one, so if you would like to spend one hour per day volunteering, you should type “1” into the “number of hours per day” and “7” into the “number of days per week” boxes.

| Activity | Hours you wish you would ideally spend doing the activity per day | Number of days you would ideally spend doing the activity per week |
|--|--|---|
| Education (class, homework, studying) | | |
| Commuting (to school, to work) | | |
| Sleep (at night, naps) | | |
| Paid Work | | |
| Chores and Necessities (cooking, cleaning, buying food, eating, commuting, doctor appointment, etc.) | | |
| Volunteering | | |
| Club/Group Involvement (on campus, in the community. Ie. a book club, Biology Club) | | |
| Spiritual/Religious Activities (ie. worship class, discussion group, prayer, holiday celebration, etc.) | | |
| Time with close others (ie. friends, family, significant other) | | |
| Exercising (ie. sports, walking, biking) | | |
| Meditative activities (ie. yoga, tai chi, mediation, journaling, letter writing) | | |
| Using technology (watching TV, on computer-not for homework, playing video games, using phone) | | |
| Artistic activities (painting, playing an instrument, creative writing, knitting, etc.) | | |

In your opinion, do you spend your time in your ideal way?

- | | |
|-----------------|-------------|
| Always | Rarely |
| Very Frequently | Very Rarely |
| Occasionally | Never |

APPENDIX D: Authenticity Scale

Below are 12 statements which may or may not describe you. Using the 7-point scale ranging from "does not describe me at all" to "describes me very well", please click on the number which best describes you for each of the following statements. There are no right or wrong responses, so please answer honestly.

(For example, for the first question, numbered responses of "1", "2", or "3" would indicate the statement "I think it is better to be yourself than to be popular" does not describe you, with the numbered response of "1" indicating this most strongly. A numbered response of "4" would indicate a neutral stance for this statement. Numbered responses of "5", "6", or "7" would indicate that the statement does describe you, with the numbered response of "7" indicating this most strongly.)

1 = does not describe me at all

7 = describes me very well

1. I think it is better to be yourself than to be popular.
1 2 3 4 5 6 7
2. I don't know how I really feel inside.
1 2 3 4 5 6 7
3. I am strongly influenced by the opinions of others.
1 2 3 4 5 6 7
4. I usually do what other people tell me to do.
1 2 3 4 5 6 7
5. I always feel I need to do what others expect me to do.
1 2 3 4 5 6 7
6. Other people influence me greatly.
1 2 3 4 5 6 7
7. I feel as if I don't know myself very well.
1 2 3 4 5 6 7
8. I always stand by what I believe in.
1 2 3 4 5 6 7
9. I am true to myself in most situations.
1 2 3 4 5 6 7
10. I feel out of touch with the 'real me'.
1 2 3 4 5 6 7
11. I live in accordance with my values and beliefs.
1 2 3 4 5 6 7
12. I feel alienated from myself.
1 2 3 4 5 6 7

APPENDIX E: Mindfulness Attention-Awareness Scale (MAAS)

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 some time 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 really being 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 what I’m doing. | 1 | 2 | 3 | 4 | 5 | 6 |
| 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 F: Self-Determination Scale

Instructions: Please read the pairs of statements, one pair at a time, and think about which statement within the pair seems more true to you at this point in your life. Indicate the degree to which statement A feels true, relative to the degree that Statement B feels true, on the 5-point scale shown after each pair of statements. If statement A feels completely true and statement B feels completely untrue, the appropriate response would be 1. If the two statements are equally true, the appropriate response would be a 3. If only statement B feels true and statement A feels completely untrue, the appropriate response would be 5. And so on.

1. A. I always feel like I choose the things I do.
B. I sometimes feel that it's not really me choosing the things I do.

Only A feels true 1 2 3 4 5 Only B feels true

2. A. My emotions sometimes seem alien to me.
B. My emotions always seem to belong to me.

Only A feels true 1 2 3 4 5 Only B feels true

3. A. I choose to do what I have to do.
B. I do what I have to, but I don't feel like it is really my choice.

Only A feels true 1 2 3 4 5 Only B feels true

4. A. I feel that I am rarely myself.
B. I feel like I am always completely myself.

Only A feels true 1 2 3 4 5 Only B feels true

5. A. I do what I do because it interests me.
B. I do what I do because I have to.

Only A feels true 1 2 3 4 5 Only B feels true

6. A. When I accomplish something, I often feel it wasn't really me who did it.
B. When I accomplish something, I always feel it's me who did it.

Only A feels true 1 2 3 4 5 Only B feels true

7. A. I am free to do whatever I decide to do.
B. What I do is often not what I'd choose to do.

Only A feels true 1 2 3 4 5 Only B feels true

8. A. My body sometimes feels like a stranger to me.
B. My body always feels like me.

Only A feels true 1 2 3 4 5 Only B feels true

9. A. I feel pretty free to do whatever I choose to.
B. I often do things that I don't choose to do.

Only A feels true 1 2 3 4 5 Only B feels true

10. A. Sometimes I look into the mirror and see a stranger.
B. When I look into the mirror I see myself.

Only A feels true 1 2 3 4 5 Only B feels true

APPENDIX G: Demographics

Age: _____

Year in College: 1st 2nd 3rd 4th 5th other: _____

Gender: male male-to-female transgender
 female female-to-male transgender other: _____

Ethnicity: (you may select more than one)

Caucasian African or African American Asian or Asian American
Latino/a Native American or American Indian`
Native Hawaiian or Pacific Islander Other: _____

Personal yearly income: _____

Parents' combined yearly income: _____

Relationship Status: single divorced/widowed in a relationship married

Before coming to CSU, where did you last live?

United States: Which state? _____

Outside of United States: Which country? _____

APPENDIX H: Debriefing

Thank you for participating in this study! I know how valuable your time is, and I am grateful that you took the time to participate in this research. This study's purpose was to look at whether people who exhibit high levels of authenticity and mindfulness use their time differently than people who exhibit low levels of authenticity and mindfulness. Several different surveys were used to assess time use, authenticity, and mindfulness. The data will be examined by checking assumptions, then using polynomial regression. The results will be used to inform interventions that will help people spend their time the way they want.

This study relates to Module 23 of the introductory psychology textbook. This study, like the chapter, relates to meditation, social support, subjective well-being, and different activities such as exercise. You can learn more about these topics by reading these two articles:

Pentland, W. & McColl, M.A. (2008). Occupational integrity: Another perspective on “life balance.” *Canadian Journal of Occupational Therapy*, 75(3), 135-138. doi: 10.1177/000841740807500304

Sheldon, K. M., Cummings, R., & Kamble, S. (2010). Life Balance and Well-Being: Testing a Novel Conceptual and Measurement Approach. *Journal of Personality*, 78. doi: 10.1111/j.1467-6494.2010.00644.x

Once the collected data is analyzed and interpreted, the results will be available. You may contact jaime.haines@colostate.edu with any questions. While negative consequences were expected to be minimal for this study, if you experience any (ie. sadness, dissatisfaction, etc.), please contact CSU's Counseling Services at 970-491-6053.