Motivation, Construal, and the Temporal Span of the Present

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Abstract

The way humans perceive and interact with time is a largely overlooked influence on behavior. Temporal perspective is the partition of subjective time into the past, present, and future. Little attention has been paid to how the temporal span of these time zones, specifically the length of the present, affects temporal perspective and subsequent behavior. Past research has suggested a link between subjective distance, construal, and motivation, where events perceived as closer are construed more specifically and recruit greater motivation. The present study explored whether manipulating the temporal extension of the present would manipulate subjective distance, and in turn influence how the event was categorized, construed, and prepared for. Using a timeline manipulation, students thought of a future event as either falling in the present or future time zone, and were subsequently assessed on motivation and construal. Results revealed non-significant differences between groups, suggesting either the relative independence of temporal zones from one another, or an ineffective prime unable to manipulate extension. Methodological shortcomings as well as future directions are discussed.
Motivation, Construal, and the Temporal Span of the Present

Time is the context in which all living creatures operate. From the large scale changing of the seasons down to the small scale replication of cellular DNA, the proceedings of the world all function within this common framework. Time is the intangible, inescapable backdrop of daily life, continuously moving everything forward. Although all living creatures operate within the context of time, they do not experience time in the same way. The fundamental difference between the time sense of non-human animals and of humans is awareness of what exists outside of the present. Litchfield and Sattler (1968) characterize humans as “active” beings in time, which separates them from the nonhuman animals, who are “reactive” beings. Reactive beings are bound to the present, which is informed by the past, but have no orientation whatsoever towards the future. A reactive being’s action is largely habitual, reflexive, and unplanned. In contrast, an active being can operate simultaneously in the three time zones of the past, present, and future. Epstude and Peetz (2012) call this uniquely human capacity “mental time travel”, or the ability to reflect on the past, anticipate the future, and construct alternative realities while in the present. Hearnshaw (1956) agrees that this memory of the past, perception of the present, and expectation for the future is what separates humans from lower animals:

“About the hardest thing for an adult to do is to immerse himself wholly in the present; even in his relaxations, he tends to be goal-directed and time-conscious, to be imbued with some sense of both history and futurity” (pg. 17).

William James, one of the founding fathers of modern psychology, dedicated an entire chapter in his seminal text The Principles of Psychology to time, implying its importance to the human psychological condition. James (1890/1950) may have been the first to speculate about mental time travel, suggesting that a human’s knowledge of any part of the “stream” of time,
such as the past or future, is mixed with knowledge of the present. While non-human animals are ignorant to the passage of time and the continual flow from past, present, to future, humans are extremely conscious of the passage of time. Since the invention of the mechanical clock, humans have been able to harness the ephemeral, fluid concept that is time and turn it into something tangible, quantifiable, and measurable. Nowadays, clocks, watches, and calendars keep time. Humans operate according to what these objective time-keeping devices dictate, as they continually mark the passage of time. However, individual perceptions of time often diverge from what the clock on the wall dictates.

**Subjective Time**

The subjective experience of time, also known as psychological time, is not constrained by objective time-keeping devices in the way the Newtonian concept of time is. Consider the idioms “time flies when you’re having fun” and “time stands still.” The subjective perception of time is so common to the human experience that language has incorporated these temporal illusions. Melges (1982) suggests that feelings of *déjà vu*, of timelessness in dreams, and of reflection during “near death experiences” all are results of “inner time” and the subjective perception of time flow. Subjective temporal experience differs from person to person, and it is this human psychological capacity that is of most interest to the present study.

Hoornaert (1973) identifies four dimensions of subjective time: calculation, estimation, orientation, and perspective. Temporal calculation refers to the usage of standardized instruments, such as watches and calendars, for orientation in time. Temporal estimation is an individual’s capacity to judge the span of some defined time interval without the use of standardized instruments. In order for humans to accurately represent their surrounding environment and make judgments that will lead to successful behavior, time intervals need to be
judged accurately (Zakay & Block, 1997). Imagine trying to make a left turn in a vehicle without being able to judge how many seconds will pass before the oncoming vehicle is too close, or trying to successfully hit a baseball without judging the perfect time to begin the swing. The rate of one’s internal sense of time can differ from clock time, which subsequently affects one’s sense of temporal estimation. The estimated duration of a time period is computed by comparing one’s internal tempo, or the rate at which internal units of time pass, to the tempo of standard clock time. In general, people are good at estimating and reproducing the duration of short time intervals, but tend to underestimate the duration of longer time intervals (Eisler, 1976). Many factors have been shown to affect accurate temporal estimation. For example, emotional distress and increased temperature have been shown to increase one’s internal tempo: speeding up internal rate produces a greater number of internal changes per unit of standard clock time, thus making clock time seem longer than it really is (Melges & Fougerousse, 1966).

The remaining two dimensions of subjective time, temporal orientation and temporal perspective, have been used interchangeably in the literature, resulting in a misunderstanding of these two distinct constructs (Hoornaert, 1973). In the 1950s, the study of temporal behavior shifted focus from estimation and duration to subjective orientation and perspective. The resulting research had no clear consensus on how to operationalize or measure either construct. According to Nuttin (1985), this avalanche of studies caused great terminological confusion. For clarity, the working definitions of these constructs for the present study are presented below.

Temporal perspective, as it applies to the present study, generally stems from Lewin’s (1951) field theory. According to Lewin, behavior is expressed as a function of the life space, or the interaction between person and environment. Behavior depends not only on the present situation, but also on “the totality of the individual’s views of his psychological future and his
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psychological past existing at a given time” (Lewin, pg. 75). Zimbardo (1999) defines temporal perspective as, “the often non-conscious process whereby the continual flow of personal and social experiences is assigned to temporal categories, or time frames, that help to give order, coherence, and meaning to those events.” The ability for humans to “mentally travel through time” (Epstude & Peetz, 2012) is accompanied by the conceptualization and categorization of time in a certain way. Humans have a natural tendency to categorize (Rosch & Lloyd 1978) and this also holds true when considering temporal experience. Although time exists as a continuous entity, humans choose to break it up into discrete chunks, which gives the vast expanse of a lifetime a sense of continuity and coherence. A lifetime is typically partitioned into one’s past, present, and future; these concepts are so prevalent and useful to humans that one might forget they are social constructs. Temporal perspective can be regarded as a means to quantify and simplify the great expanse of time that defines an individual’s lifetime. In the same way that the perception of time is subjective, the way an individual categorizes time around him or herself is subjective as well. Temporal perspective is integral to the human experience, as it allows humans to experience and relive past events through memory, use information from the past to influence the present, and conceive of scenarios that direct action towards the future.

According to Lasane and O’Donnell (2005), temporal orientation is the behavioral-by-product of temporal perspective, resulting in certain tendencies and predispositions in response to time. Temporal orientation is referred to as “dominance” by Cottle and Klineberg (1974), “directionality” by Hoornaert (1973), and as a “temporal bias” by Zimbardo and Boyd (1999). It involves a predominant emphasis on one time-zone over another: for instance, think about the common descriptor “future-oriented” and what it implies about that individual. When this tendency becomes chronic, Zimbardo argues that temporal biases become stable individual
differences, capable of predicting how one would react in certain situations and when faced with certain pressures related to time.

**Measuring Temporal Perspective and Orientation**

In order for researchers to understand how these constructs might influence behavior, it was first necessary to devise reliable, valid, and standard methods for measuring an individual’s temporal perspective and orientation. However, as discussed earlier, the sheer number of studies published in the early years of perspective and orientation research produced many different, unstandardized operational definitions and methods of measurement, which has added great confusion to the field. Although these constructs are theoretically different, orientation and perspective have nevertheless been lumped together in the majority of past research, and therefore will be used interchangeably in this review of the methodology in the field. Any one method intended to measure orientation can also be argued to assess perspective as well.

Attempts to measure temporal perspective and temporal orientation can be divided into intentional and incidental methods (Lasanne & O’Donnell, 2005). Intentional and incidental methods of measurement differ in the subject’s ability to discern what is being assessed. With incidental measures, the purpose of the measure is generally disguised, and subject’s responses are used as indirect indicators of their temporal experience. In contrast, intentional measures are obvious in what they are measuring, and generally take the form of self-report inventories, directly assessing a subject’s temporal experience.

**Incidental methods of assessing temporal experience.** Hoornaert (1973) has defined five dimensions of temporal perspective: extension, directionality, coherence, density, and attitude. Extension refers to the length of a particular time zone, density the amount of content within that zone, coherence the organization and connectedness of the three zones, directionality
one’s preference towards a particular zone, and finally attitude, the affective valence towards a given time zone. Incidental methods of assessing temporal perspective place an emphasis on these internal factors.

The majority of incidental methods of assessing temporal experience are projective in nature (Nuttin, 1985). The underlying rationale of projective techniques is that the way in which individuals respond to ambiguous test materials will reflect fundamental aspects of their psychological functioning (Anastasi & Urbina, 1997). Respondents presumably “project” their characteristic thought processes and conflicts onto the test, and these can be interpreted based on one’s answers. Certain projective measures measuring temporal experience involve quantifying the “objects” that exist within an individual’s temporal frames and using quantities as indicators of internal temporal factors (i.e. density, directionality, etc.) For example, both Cottle’s (1969) experimental inventory and Rapaport’s (1990) timeline method involve taking a participant’s report of the most important events in their lifetime, situating them in the past, present, or future, and then coding density and orientation based on the temporal category in which the greatest number of events occur. Other projective measures use characteristics of responses, such as verb tenses or length of a circle drawn, as indicators of an individual’s temporal experience. One of the most commonly used methods is the Thematic Apperception Test (TAT; Murray, 1938; Wohlford, 1966) which asks a subject to make up stories about ambiguous pictures; responses are then coded for various themes as well as the frequency of verb tenses. For example, a person who uses a high frequency of future tense verbs may score as future oriented. Story completion tasks (Leshran 1952) have also been used, in which the content provided by a participant is coded for time interval and time references. The Circles Test (Cottle, 1967) assesses temporal dominance and relatedness by having participants draw three circles corresponding to their past,
present, and future, and assessing the relative size and location of these circles on a timeline (Appendix A). For example, a participant might be future-dominant (Figure A1) or present-dominant (Figure A2), according to the differing degrees of overlap between the time zones. Both the Duration Inventory (Cottle & Howard, 1969; Appendix B) and the Lines Test (Cottle and Pleck, 1969; Appendix C) examine how participants naturally delineate the boundaries between their personal past, present, and future, and can be used to assess the extension of each time zone.

Although incidental measures afford a wide range of information to researchers and are less susceptible to faking than intentional measures, problems resulting from a lack of standardization in administration and scoring procedures greatly lower the reliability of these measures (Anastasi & Urbina, 1997). Most rely on content analysis rather than predetermined coding schemes and suffer from low reliability and validity. Consequently, the field has moved towards more direct measures (Lasanne & O’Donnell, 2005). Incidental measures are best suited to measure the cognitive dimensions of temporal experience (the internal factors of extension, coherence, etc.) and do not tap into behavioral components. Intentional measures of temporal experience have been more successful at assessing how one’s subjective experience with time is manifested behaviorally.

**Intentional methods of assessing temporal experience.** Intentional methods involve asking participants in a straightforward manner about their time related experiences, and generally take the form of self-report paper-and-pencil inventories. The Heimberg Future Time Perspective Inventory (unpublished, cited in Lessing, 1972) and the Consideration for Future Consequences scale (CFC, Strathman et al., 1994) are inventories that measure future-orientation, while Zuckerman’s (1994) sensation-seeking scale characterizes present-orientation.
These and other inventories have been shown to lack reliability and validity, and tend to be one-dimensional (i.e. focusing on only one temporal frame for the purpose of simplification).

Zimbardo and Boyd (1999) took note of this shortcoming and developed the Zimbardo Time Perspective Inventory (ZTPI) as a means to assess the multidimensional nature of time. This is the most reliable and widely used tool to measure temporal perspective and orientation today. The ZTPI consists of 56 questions intended to encompass an individual’s temporal experience; the items are divided into five subscales, each reflecting differential attitudes towards the time zones. Past-Negative reflects a generally negative view of the past, assessed with items such as, “I often think of what I should have done differently in my life” and “the past has many unpleasant moments that I prefer not to think about.” Present-Hedonistic reflects an orientation toward present pleasure and enjoyment, assessed with items like, “taking risks keeps my life from becoming boring” and “I do things impulsively.” Future reflects a future orientation, assessed with statements like, “I complete projects on time by making steady progress” and “I am able to resist temptation when I know there is work to be done.” Past-Positive reflect a warm, sentimental view towards the past, with items like, “I get nostalgic about my childhood” and “it gives me pleasure to think about the past.” Finally, Present-Fatalistic reflects a helpless and hopeless attitude towards time in general, characterized by statements like, “my life path is controlled by forces I cannot influence” and “often luck pays off better than hard work.”

Respondents rate how well each statement characterizes their experience on a Likert scale (1 = very uncharacteristic, 5 = very characteristic) and upon completion, receive a personalized time profile based on the five independent factors. While the ZTPI focuses on the directionality and attitude components of temporal perspective to the exclusion of extension, density, and
coherence, the individualized time profiles that it affords have proven to be strong predictors for behavior. For example, future orientation is consistently linked with academic achievement, higher social class, and higher motivation, while present orientation is correlated with more risk-taking, more substance abuse, and lower achievement (Boyd & Zimbardo, 2005).

Temporal perspective and temporal orientation have received much theoretical and empirical attention, but gaps in the literature still exist. In previous work, the concept of extension is very restricted and begs further investigation. Extension typically refers to how far into the past and how far into the future one’s time perspective extends, without much attention on the span of the present. For example, Nuttin (1985) focuses on time extension solely as the central dimension of future time perspective (FTP), which is intricately linked to motivation and achievement. According to Nuttin, the time-related features of one’s goals and plans that exist within an extended FTP influence motivational intensity of present behavior. In this way, the present is only considered as a “stepping stone” for the implementation of future goals. When examining how extension into the future affects motivation, Nuttin fails to take into consideration what extension of the future does to the temporal span of the present, and how extension of the present may also influence behavior. Does having a long FTP imply a short present extension? Does having an extended present imply a shorter future? These questions have thus far gone unanswered because extension is typically treated as the dependent variable in empirical work and never as the independent variable. Cottle (1969) focused on how temporal extension may differ between individuals in samples of interest, for example as a function of gender, age, or socioeconomic status. He argues that, “even the most rudimentary estimations of extension are intriguingly contaminated by subjective predispositions” (Cottle & Pleck, 1969). But how might pre-existing differences in extension of time zones affect behavior? Furthermore,
if extension can be manipulated, will creating differences in extension, and therefore the
temporal length of zones, affect an individual’s temporal perspective, judgments, and behavior?
Before addressing this question, it is first important to understand the concept of psychological
distance. Manipulating the extension of a time zone involves moving the boundaries that define
its beginning and end, resulting in either an extended or shortened time frame, therefore affecting
the psychological distance that spans that zone.

**Construal-Level Theory of Psychological Distance**

*Psychological Distance.* In general terms, distance is a spectrum that ranges from near
to far. Relative to the present, an object or event can be close or it can be distal, each to varying
degrees. Four dimensions of psychological distance have been identified: spatial distance,
social distance, hypotheticality, and temporal distance (Liberman, Trope, & Stephan, 2007).
Generally, when distance is referred to, spatial distance is the intended dimension. Spatial
distance is the physical space between two objects, measured by some spatial “unit”. For
example, the distance between Philadelphia and New York City is about 100 miles. Social
distance refers to the degree of familiarity an individual has with another, with less familiarity
implying more distance and more familiarity implying less distance. For example, there is
relatively little distance between in-group members, but more distance between in-group and
out-group members. Differences in social distance also occur between individuals of different
social ranks or status, for example between employees and their bosses. The spectrum of
hypotheticality ranges from real to imaginary, or from likely to unlikely. If something is highly
hypothetical, the probability of it actually happening is small, whereas something low in
hypotheticality is quite real and probable. Situations or events that are imaginary are considered
“father” in terms of distance, while likely or probably events and situations are “proximal”. The
final dimension of psychological distance is temporal distance. This dimension is akin to spatial distance because of the common objective units used to communicate the passage of time (seconds, minutes, days, etc.). Events such as “tomorrow” are temporally close, while others such as “ten years from now” are temporally distant.

**Construal-Level Theory.** Physically, humans can only experience the present. But mentally, humans have the capacity to re-experience and remember the past, as well as visualize and imagine the future. Anything that is remembered or imagined is in some way psychologically distant from the current self and is only experienced through mental representation. Construal Level Theory (CLT; Liberman & Trope, 1998; Trope & Liberman, 2003) was developed to explain the patterns in mental construal of events and objects that exist outside of the current moment. According to Trope and Liberman, all dimensions of distance are anchored in the direct experience of the present moment, and anything existing outside of this moment is a mental construal. In this way, mental construal and psychological distance are intimately tied: anything that is distant from the self is automatically construed to a certain extent.

How and why can objects be construed in more than one way? Every object has central features and incidental features. While the central features are important to the definition of the object, incidental features are the subordinate details that don’t constitute any major part of the object. When focusing on the central features of an object, thoughts are very abstract and generalized. For example, consider a birthday cake. When focusing on central features, a birthday cake is mentally represented as a baked good conventionally made and eaten to celebrate someone’s birthday. This general description doesn’t inform anyone about the specifics of the cake, but relates it to the abstract categories it occupies. Thinking of the
incidental features of that same object makes the object more specific and concrete. The cake is no longer just a dessert conventionally eaten to celebrate, but it’s a very large, moist, chocolate cake with raspberries. Without all of these details, the object would still be a cake, but so much less would be known about this specific one.

Action identification theory (Vallacher & Wegner, 1987) posits that behaviors and actions can also be construed in more ways than one, in the same way that objects can. Just as for every object there are central and incidental features, for every action there is a means and an end. Why is an action performed, and how is it performed? These questions get at different features of the action: the ultimate reason for that action, and the specifics of actually performing it. Vallacher and Wegner call these “why” features of an action the high-level identities, and the “how” features of the action the low-level identities. Consider the birthday cake example. “Baking the cake” can be considered a high-level identity if it is compared to low-level identities of the same action, like “buying ingredients” and “pre-heating the oven”. However, “baking a cake” can become the low-level identity of the action if it is compared to an even higher level identity like “celebrating a birthday.”

**Distance and mental construal.** How might psychological distance interact with mental construal? Consider the example of spatial distance provided earlier about the distance to New York City, and imagine a man is driving this distance. When the car is on the highway, the driver might be able to make out the skyline of the city in the distance as he approaches. From far away, it looks like a giant cluster of silver skyscrapers nestled on an island. As the driver gets closer, he can make out specific buildings: The Empire State building, the Chrysler building, the Freedom Tower, etc. Once he has made it through the Lincoln Tunnel, he is as close to New York City as he can get: driving the streets of NYC. He could count the windows on a building
or the number of yellow taxis in the street. This examples demonstrates how psychological distance, not just in terms of spatial distance but all types of distance, affects construal. Steadily approaching the object moves its representation from very generalized to very specific.

Although this example uses direct experience (the driver is seeing and entering New York rather than mentally construing it), the mental construal of objects outside of the here and now follows the same pattern. As psychological distance increases, mental construal becomes increasingly abstract and general. As psychological distance decreases and an object or event moves closer, construals become increasingly specific and concrete.

This pattern has been demonstrated for each of the four dimensions of psychological distance: as distance increases, construals become increasingly higher-level and abstract. For example, in a study by Fujita, Henderson, Eng, Trope, and Liberman (2006), New York University students watched and later described a video of two other NYU students conversing. In one condition, participants were told the interaction took place in New York City (a proximal location), and in the other condition, at the NYU Florence, Italy campus (a distal location). Content analyses of the descriptions revealed that participants formed more abstract representations of the same social event when its location was said to be distant rather than near.

Some of the most well-documented social psychological phenomena can be explain in terms of social distance. For example, the actor-observer effect (Jones & Nisbett, 1972) is the tendency for individuals to attribute their own behavior (which is psychologically very proximal) to concrete situational factors, and attribute the behavior of others (which is psychologically more distant from the self) to stable, general, dispositional traits. The out-group homogeneity effect is the tendency for individuals to perceive similarity between the members of an out-group but variability within their own in-group (Jones, Wood, & Quattrone, 1981). When this
phenomenon is viewed through the lens of CLT, it becomes clear that representations of socially distant groups (out-groups) are more abstract, de-contextualized, and general, whereas representations of socially close groups (in-groups) are more specific, diverse, and concrete.

Research also suggests that this relationship between psychological distance and construal is bi-directional: higher-level, abstract construals lead to perceptions of increased psychological distance, just as increased distance leads to higher levels of construal. The way in which a hypothetical event is described, whether very abstractly or very concretely, has been shown to affect how probable people perceive its occurrence to be. For example, Sherman, Cialdini, Schwartzman, and Reynolds (1985) asked students to estimate the likelihood of contracting a disease that was supposedly spreading through campus. For some students, the symptoms were described abstractly (disorientation, a malfunctioning nervous system), and for others, the symptoms were described specifically (severe headaches, low energy). As predicted, students thinking of concrete symptoms estimated a higher likelihood of contracting the disease than did students thinking of the general symptoms.

Of particular interest to the current study is the dimension of temporal distance. The amount of time between the current self and an event at some psychologically distant point, either in the past or future, has consistently been shown to affect how that event is mentally construed. Participants in one study were asked to imagine themselves engaging in some activity ("moving into a new apartment") either tomorrow or next year, and to then describe the activity (Liberman & Trope, 1998). Participants in the near future condition described events on a lower level ("packing and carrying boxes"), while participants in the distant future condition described events on a higher level ("starting a new life"). Similarly, Wegner, Vallacher, and Kelly (1983) asked couples getting married either in one month or in the next two days what was involved in
the act of “getting married”. Individuals who were to be married in the next two days were more likely to provide low-level identities (saying “I do”, hiring the photographer, reading vows) than individuals with a more distal wedding date who provided high-level identities (expressing love, starting a life together).

Psychological distance influences not only the construal of events but also the construal of remembered and future selves. Wakslak and colleagues (2008) investigated how individuals’ self-representations systematically differ as a function of temporal distance. Since distal representations are more generalized and broad than proximal representations, Wakslak predicted that distant selves, such as one imagined a year from now, would be less complex, more coherent, and decontextualized. Conversely, proximal selves, such as one imagined this time next week, would be more complex, consisting of contextualized specific characteristics that differ across situations. This study utilized an adapted version of Linville’s (1985) self-complexity sorting task. Participants were provided with 40 cards on which 40 different attributes and character traits were written. Their task was to group the traits into as many categories as were meaningful in order to describe oneself to someone else. Subjective distance was manipulated between conditions: participants were told they would meet the person to which they were describing themselves in the near future or in the distant future. Analyses revealed that participants in the distant future condition created fewer independent categories that were more distinct from one another than participants in the near future condition, suggesting their levels of self-complexity were lower, and their representations of the “self” in the distant future were more coherent, abstract, and de-contextualized.
Factors Influencing Psychological Distance

As discussed, psychological distance has an effect on the mental representation of events existing outside of the here and now. The type of construal, whether low or high level, depends on how near or far away the event is in time. This doesn’t just occur for events at objective distances, but also at subjective distances. Two events that occur at the same objective point in time can feel near or far to the present self to differing degrees. Research has suggested that subjective distance can be influenced by a variety of factors, and subsequent feelings of distance have the power to influence judgments about an event and behavior in relation to that event. Temporal Self-Appraisal theory (TSA; Wilson & Ross, 2001) suggests that the subjective distance of an event or object depends on the implications that object has for evaluating the current self. In addition, how a length of time is demarcated by temporal landmarks, or significant temporal events, separating the current self from a target self sometime in the past or future has an effect on judgments of temporal distance. These factors will ultimately influence an individual’s perceived psychological distance, which in turn will have some effect on judgment and behavior.

Temporal Self-Appraisal Theory. An individual’s identity is informed by the past, present, and future (Ross & Buehler, 2004). For example, a man’s current concept of who is he is not complete without considering who he used to be and who he will be. The present self can be viewed as a product of memory, and memories of past selves serve as points of comparison to inform present self-knowledge (Albert, 1977). Future selves are hypothetical images of who one can become, is likely to become, or one is afraid of becoming. Future selves thus serve to help people evaluate and motivate their current self in order to attain or avoid a certain future self (Markus and Nurius, 1986).
According to Wilson and Ross (2001), psychologically close selves (existing in the near past and near future) have direct implications for present identity, due to their proximity to the present, more so than distant selves. It is well-established that people in Western cultures are motivated to think highly of themselves (Baumeister, 1998; Higgins, 1996). It follows that people should be motivated to praise psychologically close selves more so than psychologically distant selves. This tendency is the central tenant of Temporal Self-Appraisal theory (TSA; Wilson & Ross 2001). The present self benefits from positive evaluations of temporally proximal selves and also from negative evaluations of temporally distant selves. Downward temporal comparison, comparing oneself to an inferior, unfavorable distant past self, can make people feel good about their favorable and improved current self (Albert, 1977; Wilson and Ross, 2001). In their first empirical study of TSA, Wilson and Ross (2001) induced students to feel either temporally close or distant from the beginning of the academic term, and asked them to evaluate their earlier self at the start of the semester. As predicted, students in the distal condition were more disapproving of their earlier selves than those in the proximal condition.

TSA theory also posits that an individual’s subjective perception of distance between the current moment and an event in the past or future will be affected by that event’s implications for current self-identity. In this way, subjective distance can be treated as either the independent variable (i.e. manipulating distance to influence evaluation) or the dependent variable (manipulating evaluation to influence subjective distance). Wilson and Ross (2002) found that individuals feel subjectively farther from personal failures than successes, even when the objective distance is the same. University students who recalled feeling socially successful in high school reported high school as feeling closer than students who recalled feeling socially unsuccessful (study 1). This pattern of distancing also holds true for future events: students who
expected to perform poorly on an upcoming midterm reported feeling psychologically farther from the exam than did students who expected to do well. The TSA literature suggests that, as a means to protect current positive self-regard, humans are able to shift the subjective distance to and from events (supposedly below the level of consciousness) that have either positive or negative implications for the self.

**Temporal Landmarks.** Research has suggested that the way an interval of time is demarcated by intervening temporal landmarks will affect the estimated duration of that interval. A temporal landmark is a date that “stands in marked contrast to the seemingly unending stream of trivial and ordinary occurrences” (Shum, 1998, pg. 423). Examples of temporal landmarks include holidays (i.e. New Years Day, 4th of July) and personally relevant dates (i.e. first day of school, birthdays). Increasing the presence of temporal landmarks has been shown to affect estimates of subjective distance between two points in time, with more landmarks leading to feelings of greater distance. This effect is similar to the filled-duration illusion (Ornstein, 1969), in which the perception of a short duration is influenced by it’s composition. For example, an interval filled with 60 words is perceived to be longer than the same interval filled with 30 words (Block, 1974). Zauberman et al. (2010) asked participants to report how far in the past a certain cultural event felt, and estimate how many related events that have occurred in the elapsed time since the target event were triggered by the memory. Results showed that feelings of elapsed time grew as more and more intervening events came to mind related to the target event. For example, the first generation of iPhones being sold, which occurred in June of 2007, feels very far away because of the many related, intervening events that have happened since that date (iPhones becoming increasingly popular, new models being released every year, etc.). In addition, Zauberman et al. (2010) manipulated the number of follow-up emails a participant
received after an in-person lab session (from 0-4 emails). When rating feelings of elapsed time one month after the study, participants who received four follow-up emails (more intervening temporal landmarks) reported feeling more distant from the experimental session than participants who received no follow-up emails.

Temporal landmarks not only have an effect on feelings of psychological distance but also on feelings of connectedness between temporal selves. Since more distal selves feel less similar to the current self than proximal selves, and temporal landmarks increase feelings of elapsed time, it follows that temporal landmarks should further exaggerate feelings of disconnect between temporally distant selves. Peetz and Wilson (2012) showed that people will perceive less similarity between two selves separated by a landmark than between two equally distant selves not separated by a landmark. This finding applied to not only personally relevant dates like New Years Day and birthdays but also for arbitrary dates with no implications for personal change. In fact, in line with Temporal Self-Appraisal theory, research suggests that people will selectively focus on temporal landmarks that regulate psychological separation between temporal selves, depending on their implications for the present self (Peetz & Wilson, 2013). When confronted with negative past or imagined future selves, people prefer intervening landmarks between that event and the present, potentially as a means to psychologically distance oneself from those negative events.

Motivation

Temporal perspective, psychological distance, and construal level all have implications for judgment and behavior in many domains, but the topic of particular interest to the present study is motivation and goal-oriented behavior. Just as possible future selves can serve as desired states to work towards (Markus and Nurius, 1986), future events also serve to direct
present behavior towards the accomplishment of a given goal. Goals and events that an
individual feels motivated to work towards are inherently psychologically removed from the
current self in some near or distant future location. Time and subjective feelings of time’s
passage are largely unrecognized forces that greatly influence one’s estimation of how far away a
deadline is and when it is best to begin preparing for it. When temporal distance is considered as
a factor in motivation, objective distance is typically considered. The classic “goals loom larger”
effect is the tendency for motivational strength to increase as the distance from the goal
decreases (Lewin, 1935; Miller, 1944). Does this effect also hold for subjective distance? How
might feelings of either proximity or distance to an event contribute to attitudes, motivation, and
goal-oriented behavior? Considering the fact that subjective distance affects construal level
(Trope & Liberman, 2010), it is possible that a certain type of construal is better suited for
prompting goal-oriented behavior.

**Construal level as a mediator.** As was discussed earlier, high-level construals concern
the “why” of an event, while low-levels concern the “how”. It’s been suggested that, because
concrete construals map onto specific behaviors needed to work towards a goal, these construals
are more likely to facilitate goal pursuit. For example, the act of “taking a psychology course”
when construed on a low level breaks down into “attending lectures, taking notes, and reading
the textbook”, while this action’s high level construal might be “acquiring knowledge.”
Breaking an event down into steps allows for the assessment of its feasibility. When something
seems feasible, an individual will be more likely to start working on it. Trope and Liberman
(1998) experimentally showed that feasibility and desirability concerns are dependent on the
distance to a deadline. When choosing an assignment to be due in the distant future (one year),
students use desirability information to make the decision (i.e. which topic is most interesting)
regardless of how hard or easy it might be. In contrast, students choosing an assignment to be due in the near future (in one week) use feasibility information to make their decision (i.e. how plausible completion of the project is) at the expense of desirability.

Gollwitzer’s (1990) action phase theory proposes a difference between the pre-decisional “deliberation” phase and post decisional “implemental” phase when an individual is deciding and acting. A deliberate mindset is comparable to construing on a high-level, focusing on desirability, and weighing the pros and cons of a task, while an implemental mindset is characterized construing on a low level, action orientation, and goal commitment. Implemental mindsets seek information about how something can be accomplished, which leads to earlier task initiation, less procrastination, and earlier goal completion (Gollwitzer & Brandstatter, 1997). It can therefore be argued that individuals are more likely to adopt a deliberative mindset when they are psychologically distant from an event, and an implemental mindset when they are psychologically close to the event due to the way these events are construed (Tu & Soman 2014).

**Experimental evidence.** The concrete construals that accompany a temporally proximal event have been demonstrated as the link between distance and motivation. An event in the future that feels psychologically close prompts an increase in motivation and goal-oriented behaviors due to it’s concrete, specific representation. In contrast, events that are psychologically distant are mentally represented in abstract, generalized ways, and dampen motivation and make goal pursuit less likely. Research in the fields of psychological time, achievement, and consumer behavior have all arrived at this conclusion, albeit calling it by names other than “construal level”. The basic principle remains the same: events that are proximal are broken down into specific, concrete steps, and these step-by-step representations reflect the behaviors necessary to work towards a goal, thus prompting goal-oriented behavior.
Peetz, Wilson, and Strahan (2009) investigated subjective distance, construal level, and motivation in undergraduate students by manipulating subjective distance to upcoming events such as graduation and an aptitude test. Manipulating subjective distance does not alter objective distance or what is left to accomplish before an event; it only changes how a person perceives the distance. Participants were induced to feel either near or far from graduation by marking “graduation” on a timeline extending from either today to 5 years in the future (distant condition) or today to 25 years in the future (proximal condition). For all students, graduation was 3.5 years away, but looked remarkably closer to the present moment on a timeline scaled for 25 years than on a timeline scaled for 5 years. Participants were then asked to elaborate on desired and feared selves they could become by the time of graduation as well as strategies they planned to use to achieve their desired state. The results showed that students feeling psychologically closer to graduation reported more motivation to work hard currently than students feeling psychologically distant, and feelings of closeness also prompted more specific strategies for achieving graduation goals. The next study investigated whether greater feelings of motivation and specific action plans that accompany feelings of temporal closeness would predict goal-oriented behavior. Students voluntarily signed up for an aptitude test that would take place in two weeks, and were presented with the opportunity to practice for that test in the meantime. During session 1, participants learned what the test would cover and reported their subjective feelings of temporal distance from the upcoming test. Self-report levels of motivation were collected, and practice behavior for the next two weeks was monitored using an online practice tutorial. The results revealed that temporal closeness played a powerful role in influencing motivation and in turn increased practice behavior prior to the test. Participants feeling farther from the test felt less motivated to prepare and subsequently practiced less. In addition, people
who felt closer to the upcoming test were more likely to take immediate steps to pursue the goal, presumably due to their greater feelings of motivation.

Psychological distance to long term, collective goals has also been demonstrated to influence motivation and goal pursuit. When induced to view future climate change consequences as temporally proximal, people report and display greater pro-environmental motivation and behavior than if they feel distant from the consequences (Bashir et al., 2014). When polled one week after the experiment, participants in the proximal condition reported performing more pro-environmental behaviors (i.e. carrying reusable water bottles, recycling) in the last week than participants in the distal condition. Temporal proximity leads to a low-level construal of the event, and specific concrete steps encourage goal-oriented behavior. Jiga-Boy, Clark, and Semin (2010) suggest that more effortful events feel psychologically closer in time than non-effortful events, in part due to their mental representation. A high-effort event with a deadline demands earlier enactment than does a low-effort event, because of the time needed to realize it. For example, the maid-of-honor in a wedding could put off buying a wedding present until the last minute (low-effort), but must begin planning the wedding (high-effort) much earlier. High effort events require many steps in order to fulfill them. Because of this, high-effort events are automatically construed at a low-level, meaning the mental representations of them are concrete and specific. Low level construal makes earlier enactment possible. It has been demonstrated that “unpacking” a future event into the necessary sub-tasks, in other words bringing its representation from a high to low level construal, leads to earlier task initiation than if the event remains “packed” (Kruger & Evans, 2004). Action-identification theory (Vallacher & Wegner, 1987) also distinguishes between easy activities, performed most effectively when construed at a high level, and hard activities, performed most effectively when construed at a low
level. For an easy activity, like walking, the low-level identities of the act aren’t of any concern (lifting the leg, bending the knee…). In contrast, difficult activities need to be broken down into specific steps in order to complete them successfully. For example, Vallacher, Richard, and Wegner (1982) tested the hypothesis that “rearing a child” would be done more successfully by people who identify the act in terms of its details, and indeed found that lower level identification was predictive of child-rearing success.

**Identification.** Studies have also implicated identification with the future self as playing a role in how distance affects motivation and goal-pursuit. The self is composed of various temporally removed selves (i.e. past selves, future selves) that have different implications for the current self. TSA theory suggests individuals will be motivated to praise and think positively about temporal selves that have direct implications for current identity, and thus temporally close selves will be praised to a higher extent than distal selves. In support, Perunovic, Gorman, and Wilson (2006) asked participants to rate how closely identified they felt with a future self from 1- future self feels like myself today to 4- future self feels like a stranger. Participants feeling subjectively close in time to their future selves felt more identification with these selves, while those feeling subjectively remote felt less identification with and less familiarity with their future selves.

According to Perunovic and Wilson (2008), identification plays a large role in the motivation to pursue goals because of the inherent costs and benefits associated with either pursuing a goal now (in the present) or putting it off (waiting until the future). Pursuing a future goal in the present often involves sacrificing pleasures and enduring temporary hardship: for example, to achieve the goal of health in the future, one needs to exercise regularly and eat a healthy diet, both behaviors involving some sort of sacrifice in the present (i.e. free time, taste).
Perunovic and Wilson suggest that, if one feels closely identified with their future self, they are more likely to take on these present hardships. If one feels a great degree of disconnect and instead perceives their future self as a stranger, he or she will be less willing to take on present hardship, and will more likely to put off goal-pursuit. To test this idea, Perunovic and Wilson (2006) reminded students about the benefits of physical exercise in the present for future health (i.e. “in your mid thirties, you will have healthier joints and muscles, and will have decreased risk of heart disease”) and measured each student’s subjective distance from the current moment to their future self at age 35. Results showed that students who felt psychologically close to their future self reported greater identification than students feeling psychologically remote, and planned to devote more hours to exercising in the next two months. This suggests that distance promotes feelings of disconnect, and greater feelings of disconnect can negatively affect motivation and goal-pursuit behavior.

The Present Study

It is well-established that psychological distance influences construal level, that distance influences motivation, and that construal level and identification somehow mediate the relationship between distance and motivation. It is less well understood how extension plays into this model of behavior. The goal of the present study is to address extension and its effect on subjective distance, construal, and motivation. Extension will be treated as the independent variable, in contrast to past research which has treated extension only as a dependent variable (i.e. Cottle, 1969). Specifically, the span of the present time zone will be extended, in order to complement the existing work on extension into the future time zone (i.e. Nuttin, 1985). Theoretically, expanding or shrinking the present time zone impacts the subjective span of time contained within that time zone, which influences feelings of psychological distance between
two points in time. Manipulating extension will also affect how and where events in time are categorized. Humans naturally categorize events as being in the past, present, or future (a central tenant of temporal perspective) and manipulating these pre-existing categories will alter the categorization of some events. Very few studies examine how temporal categorization, specifically the boundaries between the perceived temporal frames of the past, present, and future, affects subjective distance to that event. Through manipulating the temporal extension of the present, events at a set objective distance in the future will be differentially incorporated into the present time zone for some and the future time zone for others. It is well established that as a deadline approaches and temporal distance (both objective and subjective) decreases, the likelihood of initiating a task will increase (Lewin, 1935; Miller, 1944; Peetz, Wilson, and Strahan, 2009). Following this logic, how might the categorization and incorporation of an event into a particular time zone, and the presence or absence of a temporal boundary, affect subjective distance from the event, and subsequent motivational behavior?

**Temporal category boundaries.** Categorization has been shown to affect subjective perception and judgment in many domains outside of time. Henri Tajfel’s pioneering work on prejudice and social identity began with investigating the natural tendency of humans to categorize, and how categorization subsequently affects judgment. Tajfel and Wilkes (1963) determined that categorical labels can increase the judged magnitude of distance between two stimuli, even if the categories are arbitrary. Tversky (1992) demonstrated a similar phenomenon: the actual distance between two points in the same category is remembered as being smaller than the same distance between two points in different categories. Category boundaries have also been shown to affect judgments of spatial distance. Burris and Branscombe (2005) found that participants consistently overestimated the distance between two physical locations when one
was domestic and the other foreign compared with equally distant locations both within the same domestic category. Relatedly, Mishra and Mishra (2010) demonstrated that humans underestimate the potential risk of natural disasters (i.e. hurricanes, earthquakes) when they occur in a different state than their own, even if the objective distance between the individual and the location of the disaster is kept constant. The simple presence of a state boundary gives the person a false sense of security, as if the boundary were a physical barrier. Finally, ending an item’s price with a 9 over any other number (for example, $39 instead of $40, or $9.99 instead of $10) makes the item seem significantly less expensive, a well-known marketing technique called charm pricing (Gabor, 1977). Humans read prices left to right, and will automatically round down to the number they perceive first, making $9.99 seem closer to $9 than $10. Anderson and Simester (2003) showed that the use of a $9 price ending for a product, as opposed to any other numerical ending, increases demand for that product.

Across a variety of domains, differential categorization has been shown to increase feelings of subjective distance between two objects. The one domain that has received relatively little attention is time. Very little work has investigated how temporal categorization affects perception, judgment, and behavior. As noted earlier, some studies have examined how temporal landmarks affects judgments and behaviors. Research has suggested that temporal landmarks have an effect on the way time is categorized. According to Peetz and Wilson (2012), a landmark falling between the present moment and a future point in time can cause the spontaneous creation of temporal categories. As outlined above, categorization tends to lead to exaggerated distance between stimuli in separate categories. Hence, events existing in two separate temporal categories should be perceived as more dissimilar and subjectively more distant than two stimuli from the same category. Similarly, studies on identification and
psychological distance suggest that distal future selves are viewed more as strangers, suggesting they exist in a separate category distinct from the present moment.

Tu and Soman (2014) investigated how the categorization of time influences task initiation, specifically in terms of consumer behavior. In a series of five studies, participants were given a task with a precise deadline. The researchers then highlighted a categorization cue that resulted in the categorization of the deadline for some into the “like-the-present” category and for others into the “unlike-the-present” category. Categorization cues included temporal landmarks (before New Years Eve and after New Years Eve), temporal units (the current month and next month), and coloring (weekdays and weekends in different colors). Across the five studies, it was found that participants were more likely to initiate a task and work towards its completion earlier when the deadline was incorporated into the “like-the-present” category than in the “unlike-the-present” category. If categorization of temporal events influences feelings of subjective distance, then it is highly likely to affect construal as well. CLT (Trope & Liberman, 1998) suggests that with increasing distance, mental representation becomes more abstract and generalized, both for events and representations of the self (Wakslak et al., 2008). Indeed, Tu and Soman (2014) found that categorizing the deadline as “in the present” versus “unlike the present” resulted in stronger implemenal mindsets (Gollwitzer, 1990), corresponding to low level construals (Trope & Liberman 1998).

With this in mind, the present study aims to extent the past literature by manipulating temporal category boundaries (i.e. extending or shrinking the present), and thereby manipulating feelings of subjective distance. The method most commonly used in the literature for manipulating subjective distance is to ask participants to imagine temporally near and distant events and make judgments about them (Wilson & Ross 2001). The present study will instead
utilize extension as a novel method of varying temporal distance in hopes of arriving at similar findings and demonstrating the importance of extension and temporal categorization. Past research suggests that differential categorization of two objects increases the perceived distance between them, so two events existing in the different frames of the present and future should feel subjectively further apart than two events in the present. In theory, this manipulation of subjective distance should subsequently influence construal of the future event and self as well as motivation and goal-oriented behavior.

**Methodology and Hypotheses**

These various issues are addressed in a design in which the temporal span of the present is manipulated via explicit instruction and a visual timeline, and a specific goal in the future is thought about and addressed. During the month of February, participants were asked to imagine their “present” time zone as spanning one week (short present condition) or spanning one semester (long present condition). Depending on the span of the participant’s present time zone, a specific event three months away was categorized into the temporal frames of the present or the future. Specifically, a final exam that he or she would take during the first two weeks of May was either incorporated into the temporal categories of the present or future. For those with a “short” present, the event fell in the future, whereas for those with a “long” present, the event fell in the present. Past research suggests that incorporating the final exam into the future category, a separate category from the current moment, will increase how far away it feels, whereas incorporating the final exam into the present category will decrease how far away it feels.

Manipulating subjective distance should have predictable effects on construal and motivation. Dependent measures of special interest to the present study are how participants construe themselves in the future (at the time of the final), how motivated they are to work
towards the final, the type of action plans participants have to capitalize on that motivation, and how similarly or dissimilarly they view their current vs target future self (level of identification). It is expected that participants feeling psychologically close to their final exam will be more motivated to work towards it and have more specific action plans to complete this goal (low-level construal). In contrast, greater feelings of psychological distance will decrease motivation and lead to more generalized study plans (high-level construal). When imagining their future selves at the time of the final, participants feeling distant from the exam should have more generalized, de-contextualized views of the self, interpreted from the creation of fewer, less distinct categories using the Linville (1985) sorting task described in Waksłak et al. (2008). These participants feeling temporally distant should also perceive a higher degree of disconnect between the present and target self because of the intervening category boundary between the present moment and time of the final. Temporal category boundaries appear much like temporal landmarks, interjecting in a span of time and increasing feelings of distance, which has been shown to lead to decreased feelings of identification and similarity (Perunovic & Wilson, 2006). In contrast, the present self and the self at the time of the final exist in the same temporal category for the short present condition, so these participants should perceive a higher degree of similarity between selves. Overall, psychological distance is expected to mediate the relationship between extension and construal, and construal and identification are expected to mediate the relationship between psychological distance and motivation. The expected results from manipulating the temporal extension of the present between conditions can be summarized as follows:
H1: Participants in the short present condition will report greater subjective distance to the final exam than participants in the long present condition.

H2: When thinking of themselves at the time of the final exam, participants in the short present condition will exhibit low self-complexity and thus high-level construal of the self, whereas participants in the long present condition will exhibit high self-complexity and low-level construal.

H3: Participants in the short present condition will report less motivation and exhibit less goal-oriented behavior than participants in the long present condition.

H4: Participants in the short present condition will report more high-level study plans (abstract, general), whereas participants in the long present condition will report more low-level study plans (specific, concrete).

H5: Participants in the short present condition will perceive a greater degree of disconnect between the self currently and the self at the time of the final, whereas participants in the long present condition will perceive a higher degree of similarity.

Methods

Design and Participants

The study is a single factor between-subjects design with two levels of temporal extension of the present. Subjects in the first condition were asked to imagine their “present” as spanning one week (i.e. short present condition) and subjects in the second condition were asked to imagine their “present” as spanning one semester (i.e. long present condition).
Forty-eight undergraduates from an introductory psychology course at Haverford College were recruited to participate in the study for course credit. No selection criteria were imposed and all students were welcome to participate.

**Apparatus**

The present study was administered on Dell Dimension 4500 computers, and the web-based survey platform Qualtrics was used to create and administer the survey, as well as for data collection.

**Stimulus Materials**

One of the dependent measures in this study, construal of the self, was assessed using an adapted version of Linville’s (1985) sorting task. Prior to the study, a pre-test was conducted online in which an independent sample of 19 Haverford students were asked to think about themselves in different situations (i.e. school, work, home) and report traits they would use to characterize themselves. A final list of 35 character traits was compiled by selecting those that were mentioned at least twice by participants, as well as selecting traits that have been used for this task in prior literature (Woolfolk et al., 1995; Wakslak et al., 2008) that also appeared in the responses to the pre-test. The traits were individually presented in a set of 35 index cards (see Appendix F).

At the end of the study, participants were provided a packet of study tips assembled from the Office of Academic Resources at Haverford College. The materials are all available online (www.haverford.edu/oar) and describe strategies for time management, test-taking, and avoiding procrastination (see Appendix J).
Procedure

The study took place during February 2016. Upon arrival, participants (n = 48, 17 male) signed in and were told they would be answering questions and completing tasks related to time perception. After giving informed consent, participants were randomly assigned to one of two conditions, either the short present or long present condition.

The first phase of the experiment was the manipulation of the temporal span of the present. On the computer screen, participants saw the following text (the bolded text referring to the wording that differed between conditions):

“In our society, we like to think of time as linear, which we divide into the past, the present, and the future. When categorizing time, many students consider the span of one week/one semester to be their ‘present.’ Imagine the span of this week/this semester is your present; everything before is your past, and everything after is your future. It may be helpful to represent this information visually.”

Participants then turned to the first page of the packet to find a drawing of a timeline (Appendix D, Part 1). They were asked to draw three non-overlapping circles on the timeline representing their past, present, and future and label each as such. This task was intended to both help the participant internalize the prime and to serve as a manipulation check. Participants in the short present condition were expected to draw a relatively smaller present circle compared to participants in the long present condition (Appendix D, Part 2A and B).

Next, participants were asked to think of a final exam they would be taking at the end of the current semester. Participants provided the name of the class in which the final would take place and estimated the date for that final. Participants then marked on the timeline where this final exam fell in relation to the dates provided (Appendix D, Part 2). The timeline stretched
from August 2015 to August 2016, with February 2016 (the current month at the time of the experiment) exactly in the middle. It was anticipated that all finals would fall in the first two weeks of May 2016, which corresponds to finals week for the spring semester. Therefore, objective distance is kept constant for all participants, regardless of condition.

The next phase of the experiment was the assessment of each participant on subjective distance, construal of the self, motivation, construal of motivation, and the perceived degree of dissimilarity between the present and target self. Participants were first asked to rate their feelings of subjective distance from the target event (the final exam to take place during finals week). Adapted from Peetz, Wilson, and Strahan (2009), participants reported on a 9-point Likert scale ranging from “feels like tomorrow” to “feels far away.” Construal of the self was assessed using Linville’s (1985) self-complexity sorting task, in the same way it was used by Waksler et al. (2008) to assess the relationship between self-representation and psychological distance. Participants were provided with 35 index cards each containing a different character trait, and asked to sort them into meaningful categories that they would use to describe themselves to another person at the time of their final (instructions for the task and traits used in Appendix F). Next, motivation was assessed in a self-report fashion by asking each participant to rate how motivated they feel on a 9-point scale (1 = less motivation, 9 = more motivated) to work towards this final exam. Participants were asked to provide the date on which they planned to start preparing for the final exam. Additionally, participants were asked to report in an open-ended format their plans for studying. Lastly, participants were asked to judge the perceived degree of similarity between the current self and the self at the time of the final exam on a 100-pt scale (0 = not at all similar, 100 = extremely similar) and by circling one of six Venn diagrams.
(adapted from Aron, Aron, & Smollan 1992, Appendix E) which best represented the degree of overlap between their current and future selves.

At this point, participants were told the experiment was over, thanked, and dismissed. On their way out, participants were offered a packet of study tips (Appendix J) from the Office of Academic Resources on campus, and experimenters discreetly coded whether or not a participant accepted the packet. Participants were tested in groups of 1-4 individuals and the total duration of each experimental session ranged between 20-40 minutes.

Data Scoring

As described above, participants were assessed on subjective distance, self-construal, and motivation using eight different dependent measures. Subjective distance and motivation were self-reported using a 9-point scale, with lower scores indicating less distance and lower motivation. Motivation was also assessed using a frequency count based on who did and did not take the OAR packet at the end of the study. The perceived degree of similarity between current and future selves was assessed using both a rating from 0 (very dissimilar) to 100 (very similar) and the selection of one of six Venn diagrams (1- very dissimilar, 6- very similar).

Participants were also asked to report the date on which they planned to start studying for their final exam. The date of the exam was also provided. Using these provided dates, the number of days that students gave themselves to prepare for the final was calculated by subtracting the start date from the exam date. For example, a student with an exam on May 5th, 2015 who planned to start studying on April 29th was given a “date difference” score of 7. Date difference scores also served to assess motivation, with an earlier start date (and thus, higher date difference score) indicating greater motivation.
Open-ended study plans were evaluated by a set of 6 impartial graders, blind to both condition and hypotheses of the study. Graders were provided with the 48 study plans generated by the participants in the experiment and asked to rate each plan on a 9-point scale ranging from “general” to “specific” (Appendix H). Grader reliability was calculated using the intraclass correlation (ICC) and was high ($r = .81$). An average construal-level score was calculated for each of the 48 participants. The higher the score, the lower the construal, meaning a high score reflected a very specific study plan. Construal scores ranged from 1.58 to 7.83, with a mean of 4.57. Examples of a high scoring (low construal) and low scoring (high construal) study plan are provided in Appendix H.

Self-complexity was assessed using Linville’s (1985) self-complexity sorting task. Using 35 character traits provided to them on index cards, participants sorted traits into as many meaningful categories to describe aspects of themselves as they wished. Not all traits had to be used, and any one trait could be used as many times as they saw fit. Based on the groups that each participant formed, the number of unique group combinations (UGCs) were calculated, along with the number of attributes in each UGC. If an individual forms three self-aspect groups (Group 1, Group 2, and Group 3), any given trait will belong to one of the following categories: Group 1 only, Group 2 only, Group 3, Groups 1 and 2, Groups 1 and 3, Groups 2 and 3, Groups 1, 2, and 3, or no group. This participant has 8 UGCs. Next, an $H$ statistic was calculated for each participant, which reflected his or her level of self-complexity. As $H$ increases, self-complexity increases, indicating a larger number of self-aspect groups with unique characteristics. A low $H$ value indicates either few self-aspect groups or many groups that are highly redundant. Self-complexity and construal are inversely related, meaning high self-
complexity reflect low construal, and low self-complexity reflects high construal. $H$ was calculated for each participant using the following formula from Lineville (1985):

$$H = \log_2 n - (\sum n_i \cdot \log_2 n_i) / n$$

where $n$ is the total number of attributes ($n = 35$), and $n_i$ is the number of attributes that appear in a given UGC. An example of how to calculate a participant’s self-complexity score is given in Appendix G. Scores in the present study ranged from 1.11 to 3.05, with a mean of 2.14.

**Results**

**Descriptive Analyses**

Descriptive analyses were first performed to examine the variability of the data as well as any outliers or extreme responses. Using recommendations by Keppel (1991), any score more than 2 standard deviations above or below the mean of a particular dependent measure was treated as missing data. The means for each condition on all seven interval variables, as well as the number of data points missing, are presented in Table 1 (pg. 43).

**Hypothesis Testing: Effects of the Present Condition**

This study assessed seven dependent measures based on an interval scale. Performing an individual ANOVA on each would result in an overall probability of a Type 1 error of 35% ($0.05 \times 7$). Hence, to keep this probability constant at $p < .05$, a Multivariate Analysis of Variance (MANOVA) was conducted. The MANOVA relied on a 2 (present temporal extension) x 2 (subject sex) between-subjects factorial for the set of seven dependent measures. Given that SPSS is not able to compute a MANOVA with missing data, these cells were replaced with the mean for that particular dependent variable.

The overall MANOVA was non-significant for the combined set of measures, $F(7,40) = 1.42, p = .22$. The univariate analyses, however, revealed a significant effect of present
extension on self-complexity, $F(1) = 4.09, p = .023$, with participants in the short present condition having higher self-complexity ($M = 2.29$) than participants in the long present condition ($M = 1.99$).

<table>
<thead>
<tr>
<th></th>
<th>SHORT PRESENT</th>
<th></th>
<th>LONG PRESENT</th>
<th></th>
<th># MISSING DATA PTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUBJECTIVE DISTANCE</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Mean 6.73</td>
<td>Std. Deviation 1.27</td>
<td>Mean 6.61</td>
<td>Std. Deviation 1.47</td>
<td>2</td>
</tr>
<tr>
<td><strong>SELF-COMPLEXITY</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Mean 2.29</td>
<td>Std. Deviation 0.53</td>
<td>Mean 1.98</td>
<td>Std. Deviation 0.32</td>
<td>4</td>
</tr>
<tr>
<td><strong>SELF REPORT MOTIVATION</strong>&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Mean 7.09</td>
<td>Std. Deviation 1.68</td>
<td>Mean 7.18</td>
<td>Std. Deviation 1.43</td>
<td>2</td>
</tr>
<tr>
<td><strong>CONSTRAUL LEVEL OF STUDY PLANS</strong>&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Mean 4.95</td>
<td>Std. Deviation 1.59</td>
<td>Mean 4.16</td>
<td>Std. Deviation 1.03</td>
<td>0</td>
</tr>
<tr>
<td><strong>SIMILARITY RATING</strong>&lt;sup&gt;5&lt;/sup&gt;</td>
<td>Mean 78.49</td>
<td>Std. Deviation 13.08</td>
<td>Mean 78.84</td>
<td>Std. Deviation 15.43</td>
<td>4</td>
</tr>
<tr>
<td><strong>SIMILARITY OVERLAP</strong>&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Mean 5.50</td>
<td>Std. Deviation 0.65</td>
<td>Mean 5.39</td>
<td>Std. Deviation 0.71</td>
<td>3</td>
</tr>
<tr>
<td><strong>DATE DIFFERENCE</strong>&lt;sup&gt;7&lt;/sup&gt;</td>
<td>Mean 9.97</td>
<td>Std. Deviation 3.78</td>
<td>Mean 9.59</td>
<td>Std. Deviation 5.80</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 1: Means and standard deviations for the set of dependent measures as a function of short vs. long present

---

<sup>1</sup> Likert scale ranging from 1 (feels like tomorrow) to 9 (feels far away). Higher scores indicate greater subjective distance, responses ranged from 4-9.

<sup>2</sup> Calculating using Linville (1985) self-complexity formula. Higher scores indicate higher self-complexity. Responses ranged from 1.11-3.05.

<sup>3</sup> Likert scale ranging from 1 (less motivation) to 9 (more motivation). Higher scores indicate greater motivation, responses ranged from 4-9.

<sup>4</sup> Average scores based on ratings from an independent sample of graders ($n=6$) on Likert scale ranging from 1 (very general) to 9 (very specific). Higher scores indicate more specific study plans. Responses ranged from 1.58-7.83

<sup>5</sup> Sliding scale from 1 (very dissimilar) to 100 (very similar). Responses ranged from 39-95.

<sup>6</sup> Selected one of six Venn diagrams, that ranged from completely independent to completely overlapping. Higher scores indicate more similarity between current and future selves, responses ranged from 4-6.

<sup>7</sup> Calculated by subtracting the start date from the date of the exam. Higher scores indicate more time between the start date and the exam. Responses ranged from 1-23 days.
The univariate analyses also revealed a significant effect of present extension on the nature of the study plans (how general or specific they were), $F(1) = 4.09, p = .049$. Participants in the short present condition reported more specific plans ($M = 4.95$) than participants in the long present condition ($M = 4.16$).

A Pearson’s Chi-square test was conducted to examine the frequency of participants in each condition who took the OAR packet when it was offered at the end of the study. The test was non-significant, $X^2(1) = 2.44, p = .12$. Participants in the short present condition were no more likely to take the packet (68%) than participants in the long present condition (87%). This measure was intended to serve as a proxy for motivation, and is consistent with the null result for self-report motivation.

**Visual Prime Manipulation Check.** These results suggest that the visual prime was ineffective in altering the participants’ perceived span of the present. To test this hypothesis, we scored participant’s completion of the visual prime as either “correct” (what should have been drawn/marked, given the instructions) or “incorrect”, and then conducted a Pearson’s Chi-square test to examine whether participants in one condition were more likely to complete the prime incorrectly than participants in the other condition. The test was significant, $X^2(2) = 27.9, p < .005$ and indicated that participants in the long present condition were significantly more likely to complete the prime incorrectly (78%) than participants in the short present condition (12%).

Our original hypothesis was that the prime would affect subjective distance, which in turn would have an effect on the other dependent variables (motivation, construal, etc.). If the prime was indeed ineffective in manipulating subjective distance, it is still worthwhile to examine subjective distance in the absence of the prime. Treating subjective distance as the independent variable and disregarding the prime, we examined whether a participant’s reported subjective
distance from the final had an effect on the other dependent variables. We performed a median-split of subjective distance (median = 7, top half, N = 24, bottom half, N = 24) and conducted a 2x2 between-subjects MANOVA examining the effects of high vs. low subjective distance and subject sex on the set of dependent variables. The test was non-significant, \(F(6, 41) = .59, p = .74\), as were all univariate analyses.

**Bivariate Correlations.** Since all variables were expected to be associated with one another, we next examined bivariate correlations for all dependent measures. Subjective distance was significantly correlated with similarity rating, \(r = -0.35, p < .05\). As participants felt closer in time to the final, they reported more similarity between their current self and self at the time of the final. Subjective distance was also significantly correlated with similarity overlap, \(r = -0.34, p < .05\), with participants feeling closer to the final selecting more overlapping Venn diagrams. Unsurprisingly, similarity rating and similarity overlap were also significantly positively correlated, \(r = .42, p < .01\).

**Demographics.** Finally, we examined the effect of participant sex on the various dependent variables. The initial overall MANOVA revealed non-significant effects for this variable, \(F(7,38) = 1.74, p = .128\). However, the univariate analyses revealed a significant effect of gender on similarity overlap, \(F = 4.41, p < .05\), indicating men felt more similar to their future self (\(M = 5.7\)) than did women (\(M = 5.3\)). Univariate analyses also revealed a significant effect of gender on date difference, \(F = 4.68, p < .05\), with women reporting they would give themselves more time to study for the final (\(M = 10.87\) days) than men (\(M = 7.79\) days).

**Discussion**

The purpose of the present study was to introduce extension to the field of temporal perspective in a novel way: to examine whether manipulating the temporal span of the present
would in turn affect feelings of subjective distance, motivation, and goal oriented behavior towards a future event. The manipulation of extension was intended to differentially categorize a certain event in the future into either the present or the future, and this would have predictable effects on the construal of that event and one’s motivation to work towards it. It has been shown that objects separated by categorical or temporal boundaries are estimated as farther apart in distance, which led to the prediction that an event categorized as in the future would feel subjectively farther, be construed on a higher level, and promote less motivation than an event in the present. However, the results of the present study do not support the proposed hypotheses. Overall, there were no significant differences in feelings of subjective distance based on the extension of the present, and subsequently participants in the two conditions did not differ in terms of their motivation, self-construal, or goal-oriented behavior.

However, the univariate analyses and bivariate correlations run did reveal a few significant findings. Feelings of subjective distance correlated in the expected direction with feelings of similarity to the future self, implying that those feeling farther from their final exam reported less overall similarity between their current and future selves. This is consistent with research suggesting that as distance increases, identification with a future self decreases (Perunovic, Gorman, & Wilson 2006). This is also consistent with the construal level theory of social distance (Liberman, Trope, & Stephan, 2007), which suggests that as distance increases, familiarity decreases. There were also significant effects of present extension on self-complexity and the construal of study plans, but in the opposite direction of what was predicted. It was predicted that participants in the short present condition would feel subjectively farther from the final exam than participants in the long present condition, and would subsequently report more abstract study plans and higher self-complexity. Instead, participants in the short present
condition reported significantly lower self-complexity and more concrete study plans than did participants in the long present condition. While these results may be contradictory to the original hypotheses, the non-significant association between the prime and subjective distance might explain why the expected relationships between prime, construal, and self-complexity were not observed. If subjective distance isn’t moderating the relationship between extension and the various dependent measures, then the significant differences between prime groups on measures of self-complexity and construal may very well be spurious.

Gender was significantly associated with two of the dependent measures: males reported feeling significantly more similar to their future selves, and females reported significantly sooner dates on which they intended to begin preparing for the exam, thus exhibited greater motivation. The combination of these two findings make sense in light of Wilson et al. (2012). Wilson et al. suggest that feelings of similarity to a future self activate assimilation processes. Assimilation implies that a future self is incorporated into present identity, thus dampening motivation to actively pursue a future state. If males are feeling more similar to their future selves than females, it is consistent with them also having lower motivation than females. In addition, females show a consistent advantage in the educational literature in terms of educational achievement, internal locus of control, and motivation (Voyer & Voyer, 2014), consistent with our findings.

Unrelated Temporal Zones

Considering the overall non-significance of the present study, it is worthwhile to consider the possibility that extension may not be a reliable moderator of subjective distance, construal, and motivation because the temporal span of the present has no effect on the perceived distance to the future. By manipulating the span of the present, we expected a future event to either feel
subjectively proximal or distant. However, this prediction rests on the assumption that the past, present, and future are interrelated and will mutually influence each other when one is manipulated. Theoretically, the past, present, and future time zones could be autonomous constructs. Recall the Circles Test (Appendix A), used to assess temporal orientation (referred to as “dominance”) and relatedness. According to Cottle (1969), temporal relatedness is the degree of connectedness between the temporal zones, which ranges from temporal atomicity (totally unrelated zones) to temporal integration (total overlap). Cottle was interested in whether humans conceptualize subjective time as three distinct, unrelated time zones or rather as one large time zone comprised of all the past, present, and future. When he administered the Circles Test to a sample of 530 people, 60% of participants drew the atomistic configuration (Appendix A, Figure A1). This suggests that a considerable proportion of people perceive little relatedness between the temporal zones. Furthermore, the ZTI, the most reliable and commonly used measure of gauging temporal perspective, rests on the assumption that temporal zones are independent (Zimbardo & Boyd, 1999). Zimbardo warns against the assumption that low values on one factor, such as present-hedonistic, imply high values on another, such as future-oriented. Each factor of the inventory is independent of the others. This evidence suggests that the past, present, and future may operate independently of each other, which may explain why the temporal span of the present had no effect on subjective distance to the future in the present study.

**Alternative Explanations for Non-Significance**

Alternatively, the temporal span of the present may not have directly affected the perceived distance to the future in the present study due to methodological shortcomings. The most compelling is the failure of the prime to effectively manipulate temporal extension, thereby failing to mediate subjective distance, construal, and motivation. In addition, given that temporal
perspective can be considered a dispositional trait, extension may inherently be difficult to manipulate, which would have only been exacerbated by our homogeneous sample of future oriented students. These potential problems are each discussed in turn.

**Ineffective prime.** The lack of support found for the hypotheses of the present study could be attributed partly to the design and execution of the visual manipulation, designed to prime subjects into two conditions, short present and long present. The timeline manipulation was also intended to serve as a manipulation check. It was expected that participants in the short present condition would draw a timeline that included their final exam in the future bubble, and participants in the long present condition would draw a timeline that included their final exam in the present bubble (expected timelines are shown in Appendix D). This expectation was confirmed in an independent sample of 8 participants in a pre-test conducted prior to the main experiment. Unfortunately, a large portion of participants in the main experiment did not complete the timeline manipulation in the expected fashion. Timelines were scored for correctness and coded as incorrect if the marked final did not fall in the expected bubble. Typical errors included placing the final in the wrong bubble (for instance, a long present participant placing the final in the future bubble), the final not falling in either of the bubbles, or forgetting to mark the final on the timeline at all. All of these errors prevented the participant from seeing the intended visual manipulation. Interestingly, the long present group made significantly more errors with the timeline manipulation than the short present group. Not only did they more frequently place the final in the wrong bubble, but they also drew bubbles of unexpected lengths. Although they were explicitly told to consider their “present” as one semester, which should have taken up a significant portion of the timeline, participants
consistently drew small present bubbles that more resembled the bubbles of short present condition participants.

To address why the timeline manipulation was frequently completed incorrectly, particularly in the long present group, we administered an informal post-test to 40 Haverford College students. The post-test consisted solely of the timeline manipulation with slightly altered instructions, to examine whether changing the wording would improve accuracy (Appendix I). This time around, participants were explicitly told to draw the past, present, and future bubbles “proportional to the dates provided on the timeline”, in the hopes that long present participants would draw their present bubble up until May 14th (the end of the semester). A definition of the semester was also given (“from the first day of classes in January through the end of finals period”) to clarify the time frame that “one semester” referred to. The results of the post-test indicated that altering the instructions was helpful to a certain extent. Although a proportion of participants still completed the prime incorrectly, no one condition did so more than the other, as we had seen in the original study (Table 2).

The post-test demonstrated that additional instructions were helpful to better understand how to complete the prime, specifically with placing the final in the right bubble. However, 35% of post-test participants still had errors, most commonly placing the mark outside of any bubble and forgetting to mark the final on the timeline at all. This could be attributable to the basic human tendency to rush through and skim instructions, ultimately missing key pieces of information in order to finish a task faster. Unfortunately, this is a problem that plagues all research that uses humans as participants. Alternatively, if we consider that temporal zones may not be related as previously discussed, it could explain why a proportion of participants in the
experiment and post-test consistently drew autonomous time zones that didn’t touch and chose to place the final in between rather than in the zones.

<table>
<thead>
<tr>
<th>ORIGINAL STUDY</th>
<th>SHORT PRESENT</th>
<th>LONG PRESENT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td># CORRECT</td>
<td>22</td>
<td>5</td>
<td>27</td>
</tr>
<tr>
<td># INCORRECT</td>
<td>3</td>
<td>18</td>
<td>21</td>
</tr>
<tr>
<td>TOTAL</td>
<td>25</td>
<td>23</td>
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<table>
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<th>TOTAL</th>
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<td>13</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td># INCORRECT</td>
<td>7</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td>20</td>
<td>20</td>
<td>40</td>
</tr>
</tbody>
</table>

Table 2: Frequency of Correct/Incorrect Completion of the Prime, Original Study vs. Post-Test

The prime may also have been ineffective due to the narrow temporal window it addressed. Students were asked to think about a future event that was three months away; in the grand scheme of things, three months is an extremely short span of time. Other studies attempting to create significantly different groups based on subjective distance have used timelines spanning multiple years (Peetz & Wilson, 2009; Bashir et al., 2014). Three months may have been too short of a time frame to see significant differences in the subjective distance from “now” to the time of the final, regardless of what the participants were told to imagine as their present. There was not much variability in the subjective distances felt by participants: 41% of participants reported 7 on the 9-pt. scale. If the future event had been farther into the future, more variability between responses might have been seen. We predicted more motivation in the long present group in part based on Temporal Appraisal Theory, which predicts events
incorporated into current self-identity are more meaningful, and therefore more motivating. This prediction rests on the assumption that anything outside the “present” is too distant to have direct implications on current identity. It is possible that a three-month time span, in which the proposed “future self” is only three months away, is simply not objectively distant enough for the groups to feel differently about that “future self.” This could explain why there were no differences in motivation between the two conditions.

It may be useful to compare the methodology of the present study to methodologies used by past studies. Those which have successfully manipulated subjective time and seen significant differences in motivation and goal-oriented behavior will help highlight the shortcomings of the present methodology in hopes of future improvement. The majority of studies that have successfully manipulated subjective distance ask their participants to conceptualize time as a spectrum, rather than breaking it up into chunks, as we attempted to do in the present study. Both Strahan and Wilson (2003) and Bashir et al. (2014) successfully used timelines that, depending on condition, spanned a different number of years, created different visuals of proximity or distance to the current moment based on condition. Having only one task for the participant (placing the mark) rather than two (drawing the bubbles, placing the mark) left less room for error on the part of the participant. Placing oneself on a spectrum, rather than breaking the spectrum into chunks, may also have been easier for participants to conceptually understand. Additionally, these studies used a much larger span of time to differentiate the two conditions. As stated before, it’s possible the span of time tested was too short to produce significant differences between a “proximal” and a “distant” group.

The only study known to us to explicitly manipulate temporal categorization, and thus extension of the present, is Tu and Soman (2014). Across a series of five studies, the researchers
showed that participants were more likely to initiate a task when its deadline was categorized as "like the present" rather than "unlike the present," and that having a stronger implemental mindset (or lower construal level) mediated this relationship between cue and subsequent goal-oriented behavior. The categorization cues used by Tu and Soman were ecologically relevant and subtle, but still effective. For instance, a calendar with weekdays and weekends colored differently subtly differentiated Wednesday and Saturday into different categories. Pre-existing temporal landmarks, like the end of the month and end of the calendar year, also subtly reinforced categories. These cues were less obviously a "manipulation," and participants were never explicitly told to imagine their present or future as spanning a specific length of time, as they were in the present study. It's possible that the present method was too straightforward and unrealistic, and that a more understated, ecologically valid manipulation would have been more effective. Tu and Soman were able to successfully manipulate subjective time and temporal categorization across a variety of settings, tasks, and experimental populations (rural Indian farmers, business students, mTurk participants, etc.), suggesting their methodologies were not only more realistic, but applicable to a multitude of real world situations.

**Difficulty manipulating extension.** An assumption made by the present study was that, by manipulating extension of the present, subjective distance would in turn be manipulated. However, this relationship wasn't observed. Considering that past studies have successfully manipulated subjective distance, but few attempts have been made to manipulate extension, extension of the present may just be an inherently difficult thing to manipulate. For some, the categorization and span of the past, present, and future may be concretely set, making the explicit assignment of the "present" useless. Providing a definition of the "present" intended for the participant to adopt may be too weak of a method to change preconceived notions of what the
present means to a person. Even if participants accepted our proposed timeline as their own and completed the manipulation correctly, it may have not been internalized enough for it to carry through the experiment and significantly affect the dependent measures.

According to Zimbardo and Boyd (1999), although an individual’s temporal perspective may be affected by situational factors, it can also be a relatively stable dispositional characteristic. This “temporal profile” inherent to an individual is what the ZTPI aims to characterize. If temporal perspective is dispositional as a type of personality trait, then it is no wonder that the timeline manipulation was ineffective in shifting an individual’s inherent sense of time. In addition, the work of Cottle and Pleck (1969) was founded on the idea that extension is inherent to an individual, and differs based on factors such as gender, age, and socioeconomic status.

Additionally, the homogeneity of our sample may have exacerbated the negative effects of an inflexible temporal perspective, contributing to our lack of significant results. All participants were Haverford College students and can all be assumed to be relatively high achieving and future oriented. To ask someone who is future oriented to imagine his or her present as an entire semester may simply not work. In the future, it would be useful to administer the ZTPI as part of a similar study, to characterize the temporal profiles of the given sample and to examine motivation and goal-oriented behavior as a function of one’s inherent temporal profile.

**Addressing inflexibility of TP.** The inflexibility of temporal perspective has been discussed in the literature as potentially harmful. According to Zimbardo and Boyd, an inflexible temporal perspective tends to lead to temporal biases, where one particular time zone or attitude predominate one’s outlook. Zimbardo and Boyd stress that no one orientation is
better than another, but rather having “a bit of everything” is the most advantageous strategy. For example, while it is beneficial to be future oriented, being too future oriented may end up being detrimental to one’s quality of life. For instance, future orientation has been linked to higher educational and occupational achievement, lower risk taking (Zimbardo et al., 1999), and safer health practices (Guarino et al., 1999; Hutton et al., 1999), but may also lead to anxiety, preoccupation with the future at the expense of present enjoyment, and minimizing the need for social connection. Present hedonistic orientation, while associated with spontaneity and present enjoyment, is also linked to engaging in unsafe behaviors, such as unprotected sex, drug abuse, and risky driving (Hutton et al., 1999; Keough, Zimbardo, & Boyd, 1999; Zimbardo, Keough & Boyd, 1997).

Research has suggested that achieving a balanced time perspective (BTP) is the optimal strategy. A balanced time perspective is one that blends the various temporal orientations, and is malleable and flexible, allowing for the “switching” of temporal biases based on the constraints and expectations of the current behavioral setting (Bonwell & Zimbardo, 2004). As a student, it’s important to know when to prioritize work, but also when to give oneself a break and prioritize mental health and wellbeing. An over emphasis on the future may lead students to overwork themselves, while an over emphasis on the present may lead to habitual procrastination. Obviously, neither option is optimal for a student’s well being and academic standing. Blending the two orientations and knowing when to prioritize one particular time zone over another would no doubt help students function optimally when faced with the multifaceted pressure of achieving a work-life balance.

Temporal landmarks and identification. Categorical boundaries have been shown across disciplines to affect the perceived distance between two objects (Gabor, 1977; Burris &
Branscombe, 2005; Mishra & Mishra, 2010; Tajfel & Wilkes, 1963). It has also been shown that the estimated duration between two points in time is judged as longer if the interval is broken up by a temporal landmark (Zauberman et al., 2010). In the present study, we predicted that the categorical boundary between the present and future would act as a temporal landmark. Short present participants were supposed to see this category boundary as intervening between them and the final, whereas for long present participants, the category boundary would come after the final. Disregarding the fact that many people completed the prime incorrectly and didn’t see the intended visual, the boundary between present and future may not be a strong enough temporal landmark to supersede other landmarks at play. For students, the end of the semester is an important temporal landmark as it signals the transition to the next class year or graduation. If students were focused on the end of the semester as a salient temporal landmark (which for all involved would fall after the final takes place), it would make sense to not see any significant differences.

Another prediction we made, based on previous literature, was that an intervening temporal landmark would decrease motivation due to feelings of increased distance and disconnect between the present and future self. Although feelings of connectedness were not significantly associated with motivation in the present study, there was a significant bivariate correlation between feelings of connectedness with the future self and subjective distance. Since motivation was not significantly impacted by either subjective distance or feelings of connectedness, it’s possible an alternative phenomenon is at play. Peetz and Wilson (2012) propose that motivation may actually increase when faced with an intervening landmark, specifically when one is motivated to attain a certain desired future state, like being of good health or achieving good grades. As discussed previously, imagined or feared future selves can
stimulate us to either work towards achieving or avoiding that future self (Markus & Nurius, 1986). Peetz and Wilson (2012) propose that, by inducing greater feelings of disconnect and discrepancy between the current self and desired future self, people will be motivated to “close the gap” and will work harder to achieve the desired future state. In contrast, feeling too similar to one’s future self will activate assimilation processes, causing one to “bask in the glory of a rosy anticipated future” (Wilson, Buehler, Lawford, Schmidt, & Yong, 2012). Peetz and Wilson (2012) asked participants to describe a hoped-for future self, and then either made or did not make an intervening landmark salient. Following the manipulation, subsequent motivation to achieve that future self was reported. As predicted, participants in the landmark-salient condition reported more motivation to improve their health than participants in the control condition. Dai et al. (2015) also showed that landmarks associated with new beginnings caused people to engage in goal-initiating activities and report higher motivation to tackle them, in part by creating psychological disconnect between inferior past and current selves. These finding, contradictory to our original prediction, suggests that landmarks accentuate disconnect, and that disconnect in itself can motivate someone to reduce discrepancy between a current and desired self. In future studies, it may be helpful to measure participant’s feelings towards the future event to examine whether positive or negative attitudes towards the future self have an effect on motivation and subjective distancing.

**Alternative Frameworks for Increasing Motivation**

As discussed above, many issues were encountered in the present study when attempting to manipulate subjective time. This suggests that altering a person’s temporal perspective is not the easiest way, and maybe not the most effective way, to increase motivation and goal-oriented behavior. Disregarding temporal perspective, CLT still provides a conceptual framework
through which motivation can be examined. For example, in study 5 of Tu and Soman (2014),
participants were induced to adopt either an implemental (low level construal) or deliberate (high
level construal) mindset. Nothing was done to manipulate temporal categories or extension. By
simply having participants focus on the “how” of a goal (“what should I do to save money for the
future?”) or the “why” of a goal (“why should I save money for the future?”), significant
differences in how the future event was prepared for were seen between groups. Liberman,
Trope, McCrae, and Sherman (2007) performed a similar experiment where participants were
first asked to indicate either how or why a person would perform a certain action, and then
estimate how much time from now a person would do the activity. As predicted, participants
indicated more time (greater temporal distance) after focusing on the “why” rather than the
“how.” These studies suggest that time perception can be subtly altered simply by lowering a
person’s construal level, without the use of timelines or priming. Similarly, emphasizing the
amount of effort that will be needed to realize a task can have significant effects on task
initiation. More effortful events, which take more steps to complete, are automatically construed
at a lower level, thus increasing motivation to work towards them (Jiga-Boy et al., 2010).

The findings of these studies are readily applicable to the real world, and can be utilized
by both by people attempting to realize deadlines, and by people encouraging others to meet
deadlines, like teachers and bosses. For example, a giant assignment like a senior thesis will
seem much more reasonable to accomplish (and will likely be initiated sooner) if it is broken
down into parts and construed on a lower level. Breaking it down into multiple, smaller
deadlines along the way, like having a finished outline and a first draft that lead up to the final
deadline, is likely to help a student become and stay motivated. When we focus on the “how”,

what might seem like a huge effort is broken down into smaller, more manageable steps that can be tackled one by one.

**Future Directions**

Considering all the methodological issues that could have contributed to the lack of significant findings in the present study, future research addressing and correcting these issues is warranted to examine the effect of extension on construal and motivation. To sum up the major limitations of the present study, the prime may have been too unrealistic and straightforward to capture the subtleties of temporal perspective and may have not spanned a long enough time frame to see significant differences. In the future, a measure intended to manipulate extension should be ecologically valid, span a larger time window, and be administered to a more heterogeneous sample. In addition, administering established measures of temporal perspective, such as the ZTPI, would help characterize the sample’s inherent temporal biases going in.

Time is an often overlooked influence on our behavior, and extension of temporal zones has received the least attention of all aspects of temporal perspective. Future studies should continue to examine extension in contexts outside the realm of motivation and goal-oriented behavior. For example, something the present study touched on but didn’t investigate deeply was how time perception is intimately tied with one’s view of the self. According to TSA (Wilson & Ross 2001), humans unconsciously distance themselves from the past or the future, based on how events in those time zones impact self identity in the present. How might extension of any given time zone alter distance, and therefore affective judgments of the self in light of past and future events? In addition, how are extension and orientation related to one another? One construct refers to the length of one’s temporal zones, while the other refers to the dominance of one zone over the others. Does longer extension of a time zone automatically
confer greater importance? For instance, does an extended present imply present-orientation? The ZTPI does an excellent job addressing temporal orientation, but does little to address extension. For example, a high score on the Future factor reveals no information about how far into the future one projects him or herself, nor does it explore what that person conceptualizes as “the future” in terms of length. The ZTPI could potentially be revised to include more nuanced measures addressing the extension of a given orientation.

Conclusion

Although the present study failed in its efforts to manipulate subjective distance, construal, and motivation via the temporal span of the present, this does not invalidate the existing body of literature suggesting the malleability of subjective time. After all, there is a difference between manipulating the extension of a time zone and manipulating feelings of subjective distance. If manipulating extension is unrealistic, then we should focus our efforts elsewhere. The evidence that feelings of distance to an event in the past or future can shift based on factors like relevance for the current self or intervening landmarks is still strong. The implications that psychological distance holds for the mental construal of events and the self remain important. The potential for effecting change through the manipulation of subjective time is widely applicable, whether it be for personal goals like improving fitness and academics, or large scale collective goals, like preventing global warming. The way in which we conceptualize, plan for, and work towards these future events will be incomplete until time is taken into account. The uniquely human ability to mentally time travel, together with the flexibility of psychological distance, allow us to play an active role in our relationship with time.
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890]


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Appendix A


"Think of the past, present, and future as being in the shape of circles. Now arrange these circles in any way you want that best shows how you feel about the relationship of the past, present, and the future. You may use circles of different size. When you have finished, label each circle to show which one is the past, which one is the present, and which one the future."

Figure A1

![Circle Diagram](https://via.placeholder.com/150)

Past  Present  Future

Figure A2

![Circle Diagram](https://via.placeholder.com/150)

Past  Present  Future
Appendix B

The Duration Inventory, described in Perceiving Time, (Cottle, 1976), pg. 34-39.

“In the following sentences fill in the blank spaces with one of the words listed below. Indicate your choice by placing the number of the word in the blank space. Select only one word for each space.

1. Second
2. Minutes
3. Hours
4. Days
5. Weeks
6. Months
7. Years

1. The present, as I think of it, extends from _____ ago to _____ from now.
2. As I think of it, the distant past includes things and events which occurred _____ ago while the near past includes things and events which occurred _____ ago.
3. As I think of it, the distant future includes things and events which will occur _____ from now while the near future includes things and events which will occur _____ from now.
Appendix C

The Lines Test, described in *Perceiving Time*, (Cottle, 1976), pg. 102-130.

“Think of this line as representing the passage of time. Make four marks on the line to represent your moment of birth, your moment of death, and the boundaries of the present. In other words, mark where you feel the past ends and the present begins, as well as where you feel the present ends and the future begins.”

Figure C1

1. Birth
2. Past-Present Boundary
3. Present-Future boundary
4. Death

A. Historical Past
B. Personal Past
C. Present
D. Personal Future
E. Historical Future
Appendix D

Part 1: Blank timeline pre-manipulation, presented to each participant

<table>
<thead>
<tr>
<th>August 2015</th>
<th>Right Now February 2016</th>
</tr>
</thead>
</table>

Part 2: Post-manipulation, expected timelines for each condition

A. Condition 1: Short Present

<table>
<thead>
<tr>
<th>August 2015</th>
<th>Right Now February 2016</th>
<th>August 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Below</td>
<td></td>
<td>*Below</td>
</tr>
</tbody>
</table>

B. Condition 2: Long Present

<table>
<thead>
<tr>
<th>August 2015</th>
<th>Right Now February 2016</th>
<th>August 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Below</td>
<td></td>
<td>*Below</td>
</tr>
</tbody>
</table>
Appendix E

Assessing the perceived degree of overlap between current and future selves
Adapted from Aron, Aron, & Smollan, 1992

"Below are seven representations of the similarity or disconnect you may feel between your current self and yourself at the time of your final exam or paper in the future. Please circle which image best represents your perceived relationship between your current (blue) and future (red) self."

1 2 3

4 5 6

7
Appendix F

Construal of the self in the future
Directions (Adapted from Linville 1987) presenting on the screen:

In this part of the study we are interested in how you describe your future self, specifically your self at the time of your final. You should have been given 35 index cards. Each card contains the name of a trait or characteristic. Your task is to form groups of traits that go together, where each group of traits describes an aspect of you or your life at the time of your final. You may sort the traits into groups on any meaningful basis—but remember to think about yourself at the time of your final while doing this. Each group of traits might represent a different aspect of yourself. Form as many or as few groups as you desire. Continue forming groups until you feel that you have formed the important ones. We realize that this task could be endless, but we want only what you feel is meaningful to you. When you feel that you are straining to form more groups, it is probably a good time to stop.

Each group may contain as few or as many traits as you wish. You do not have to use every trait, only those that you feel are descriptive of yourself at the time of your final. You should not use traits that you feel do not apply. Each trait may be used in more than one group; so you may keep reusing traits as many times as you like. A natural way to perform this task is to form one group and record it, then mix up the cards and see if there are other groups that you wish to form and then record them. Repeat this procedure until you feel that you have formed the groups that are important to you.

Below is a text box for recording your answers as you go along. Every time you create a new group, start on a new line, number the group, and follow the group number with the traits you have chosen.

Example:
Group 1: (…)
Group 2: (…)

The order in which you record the groups is not important, nor is the order of the traits within a group. We are only interested in which traits you put together. Your responses are strictly anonymous and confidential. So be as honest as you can.

While completing this task, remember to think of aspects of yourself at the time of your final.

Traits (n = 35):

<table>
<thead>
<tr>
<th>Ambitious</th>
<th>Caring</th>
<th>Dependable</th>
<th>Humorous</th>
<th>Kind</th>
<th>Pessimistic</th>
<th>Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxious</td>
<td>Cheerful</td>
<td>Easy-going</td>
<td>Impulsive</td>
<td>Mature</td>
<td>Rebellious</td>
<td>Thoughtful</td>
</tr>
<tr>
<td>Arrogant</td>
<td>Competitive</td>
<td>Friendly</td>
<td>Independent</td>
<td>Patient</td>
<td>Reflective</td>
<td>Understanding</td>
</tr>
<tr>
<td>Assertive</td>
<td>Creative</td>
<td>Generous</td>
<td>Intellectual</td>
<td>Organized</td>
<td>Relaxed</td>
<td>Unique</td>
</tr>
<tr>
<td>Athletic</td>
<td>Curious</td>
<td>Hard-working</td>
<td>Introverted</td>
<td>Open-minded</td>
<td>Reserved</td>
<td>Warm</td>
</tr>
</tbody>
</table>
Appendix G

Calculation of self-complexity score ($H$), adapted from Lineville (1987)

UGC = Unique Group Combination

UGC #1 (Group 1 only): athletic, assertive ($n_1=2$)
UGC #2 (Group 2 only): creative, patient, organized, intellectual, curious ($n_2=5$)
UGC #3 (Group 3 only): thoughtful, responsible, relaxed, rebellious, open-minded, mature, kind, independent, humorous, generous, friendly, easy-going ($n_3=12$)
UGC #4 (Groups 1 and 2): hard-working, competitive, ambitious ($n_4=3$)
UGC #5 (Groups 1, 2, and 3): unique ($n_5=1$)

$$H = \log_2 35 - (2 \log_2 2 + 5 \log_2 5 + 12 \log_2 12 + 3 \log_2 3 + 1 \log_2 1) / 35$$

$$H = 5.13 - (2 + 11.5 + 42.9 + 4.74 + 0) / 35$$

$$H = 5.13 - 1.74 = 3.39$$
Appendix H

Post-Test: Construal of Study Plans
Instructions provided to impartial graders (n = 6), blind to condition

“In this survey, you will be presented with 48 separate responses from students (either in paragraph, numbered, or bulleted form) describing study plans to prepare for a final exam. The study plans vary in terms of how **general** or **specific** they are. For each plan, please rate on the provided 9 point scale each study plan on how specific or general you think it is (an example of the scale is provided below). For example, selecting the 1st dot on the far left implies the study plan is extremely generalized, while selecting the 9th dot on the far right implies the study plan is extremely specific. Selecting the 5th dot in the center implies the study plan lies somewhere in between general and specific.

Please take your time reading each plan. While evaluating each plan, keep in mind that there are no right or wrong answers- we are simply interested in your judgment of the extent to which a plan is general or specific. Also keep in mind that the students who provided the responses are not all taking the same exam- each response varies in terms of what class or subject matter the exam is based on.

When you are finished with the survey, you will be redirected to a page where you can enter your email. Once we have your email, we will contact you about payment. You will be paid $15 for completing this survey.

Thank you in advance for participating! You may begin the survey by clicking the red arrow below.”

**Example study plans with calculated construal scores:**

1. Participant 33, construal = 1.58 (very abstract, high construal)
   
   “Complete all the assignments on time, keep a regular schedule, reduce the time of, procrastination, keep in shape”

2. Participant 35, construal = 7.83 (very specific, low construal)

   “I will make sure to get my final paper out of the way as soon as I can so I can start preparing for my final, even if the paper isn't due for several weeks. I will make sure to stay on top of all my readings for class and to take extensive notes on them (typically in the margins) so that I am not scrambling to do all the readings while preparing for my final. 3 weeks before the final I will start reviewing my notes on the readings and papers I have previously submitted and my notes in class, and create timelines of important dates, artists, and themes in order to collect and organize my thoughts on topics of the class she might test us on during the exam either via multiple choice or via essay prompts.”
Appendix I

Post-Test: Alternative Instructions for Visual Prime
Instructions provided to volunteers (n = 40)

“In our society, we like to think of time as linear, which we divide into the past, the present, and the future. When categorizing time, many students consider the span of (one week/one semester) to be their ‘present.’ Imagine the span of (one week/one semester) is your present, everything before is your past, and everything after is your future. (A semester is defined as the first day of classes in January through the end of finals period.) It may be helpful to represent this information visually.

On the second page of this packet, there is a timeline representing one year. Using a pen, draw three non-overlapping ovals on the timeline to represent your past, present, and future, proportional to the dates provided. Remember to imagine your present as spanning (one week/one semester). Please label each oval with its respective name (past, present, or future).

When you have finished this task, continuing reading the instructions below.

At the end of this semester, you will probably have a final exam in at least one of your classes. Pick one of your classes that has a final exam and imagine that exam. (It is okay to choose an exam that will not be given during finals week, as long as it is the last exam in the class and will be given at the end of the semester.)

What is the date of this exam? Please use the calendar on the third page of this packet for reference. If you are unsure of the actual date, make your best guess. Please write the exam date on the line below.

Using your pen, place a mark labeled “final” on the timeline on page two where you best estimate it will fall in relation to the dates provided.

When all of these tasks are complete (past, present, future ovals drawn, exam date reported, exam marked on the timeline), you are finished and may turn your packet in. Thank you for your help!”
TIME MANAGEMENT

In college, students spend only a fraction of their day in classes and are largely left on their own to structure their day in a way that will be productive. The greater freedom afforded to students also presents a greater number of choices. How does one choose which and how many activities to participate in, when and how to do schoolwork, and how to ensure that study time is used as efficiently as possible? There are many different strategies that can be employed to enhance time management. The ones listed here are a good start, but to truly maximize your time management skills, we strongly encourage you to attend an OAR time management workshop, or some in and meet one-on-one with an OAR staff member to develop an individualized approach to managing your time.

Time Management Strategies

Plan for support
Build time into your schedule to reach out to faculty for clarification, to attend recitations, office hours, and review sessions, or visit the Writing Center for extra support.

Study immediately after class
Edit your notes and start your assignments while the material is still fresh in your mind. This makes it easier to transfer information from short-term to long-term memory.

Trade time – don’t steal it
If something comes up that causes you to miss a study period, reschedule it immediately. It’s okay to adjust your schedule when other opportunities arise, but don’t allow them to rob you of valuable study time.

Use your waiting time
There are likely many times throughout the day when you have a few minutes of blank space. Be prepared and use that time productively.

Plan for productivity
Schedule study sessions in times and places where you are most productive. You will probably get more done at 10 am in the library than in your bed while your roommate watches House of Cards on Netflix.

Don’t use planning as a procrastination tool
It is wise to spend some time planning out your week to maximize your efficiency. However, too much time spent on this activity could just be procrastination.

Organize your physical space
Keep your books, notes, and other class materials neatly organized. Don’t waste time searching for these things.

Make a not-to-do list
Determine what habits of activities are wasting your time and avoid them.

Stick to your system
Commit to your time management strategy – just make sure it is flexible enough to handle unforeseen circumstances.

Take the “so and even so” approach
Instead of saying, “I only have 10 minutes before I leave, so I can’t make any progress on my paper”, say, “I only have 10 minutes, and even so I can ______.” You can apply this philosophy in a wide variety of situations.

Develop a repertoire of little breaks
Those little breaks can last for hours and turn into agents of procrastination. Develop a set of short, refreshing activities you can use to break up longer study sessions – take a nap, take a walk, read a novel, do the dishes, etc. Make sure breaks are short (long enough to be restorative) and close-ended.

Schedule your homework during office hours
If possible, do the work near your professor or office. That way, if you have questions, you can drop in and get help. If possible, start about 30-60 minutes before office hours start so that you can identify any issues you might want to cover.
TEST-TAKING STRATEGIES

SHOW WHAT YOU KNOW. MAXIMIZE YOUR CHANCES FOR EXAM SUCCESS.

Test time can be stressful. The hard work you have done, the knowledge you have accumulated, and the lessons you have learned in your courses will be assessed, evaluated, and quantified. The stakes are high but – just like any other skill – test-taking strategies can be studied, learned, and practiced. Mastering the strategies below may be one avenue to improve your test-taking performance. Additionally, the OAR has a number of resources available to help you enhance your test-taking abilities. You can find the Reducing Exam Stress handout in our office or on our website. We also have a number of books available in the OAR that offer detailed exam strategies. For more assistance in developing individualized test-taking strategies, schedule an appointment with an OAR staff member on our website, or send us an email.

GENERAL TEST TAKING TIPS

• Be prepared. Organizing yourself, staying on top of your coursework, and studying early on in the semester are the best predictors of exam success.

• Arrive early. Sprinting to get to the classroom just as the exam begins will cause you physical and mental stress that can hinder your test performance.

• Don’t cram. Cramming is an inefficient method of study that is unlikely to significantly increase your performance. It is, however, likely to cause you detrimental anxiety.

• Avoid negative energy. Some people may stress out around exams. Maintain your calm, and avoid conversations that will leave you unnecessarily anxious.

• Budget your time. Dividing up the exam will keep you from spending too much time on one item, and thus leaving yourself without enough time to respond to other questions.

• Answer the easiest questions first: Answering the easier questions first will both give you confidence going forward and ensure that you do not leave easy points on the table.

ESSAY EXAM TIPS

• Brainstorm possible questions before the test. Having a sense for what questions might be asked will increase the likelihood that you will be prepared with a good answer, and also help you identify which topics you should devote time to studying.

• Read the instructions carefully. Make sure that you respond to all parts of the question.

• Create an outline. Taking a moment to plan out your argument and supporting facts will allow your write faster and more clearly than simply responding in stream of consciousness.

• Support your argument. Focus on the facts you are supplying and the logical connections between them. You will rarely get points for your opinion – it’s how you justify it that matters.

• Write neatly. If you are writing with pen and paper be sure to write neatly. In a study, professors graded identical papers more generously when the handwriting was tidy rather than sloppy.

Cited and adapted from: How to Study in College, Paul and Owens, 10th edition; studygs.mn: University College; and Essential Study Skills, Linda Wang, 6th edition

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PROCRASTINATION

There are many reasons we procrastinate. One common reason is fear - either of failure or success. We may avoid tasks in belief that we cannot complete them successfully. Putting the work off prevents us from confronting any possible difficulties that we may have to encounter. We may also procrastinate to put off success because we want to avoid added scrutiny, responsibility, choices, envy, or resentment from peers. Sometimes, procrastination comes down to poor organization and time management. It can also stem from impulse control issues - we often struggle with the temptation of checking our Facebook notifications or watching one more hour of Netflix. Additionally, procrastination can stem from personal problems, such as issues with finances, family, friends, or romantic relationships. Various issues may cause us to be more susceptible to distracting activities. So what can we do? There are several techniques you can use to break through the wall of procrastination! The advice in this handout is a good place to start - but check out the OAR’s procrastination workshops or meet with a staff one-on-one for a more personalized conversation.

PROCRASTINATION-BUSTING TACTICS

• Use the 5-minute plan: Commit to spending five minutes on the task. After five minutes, you can choose whether to continue working on the project or not. Telling yourself that you only have to work five minutes will allow you to get past the specter of a seemingly daunting task – and once you get started, you may find yourself doing more and more. The hardest part is often starting.

• Use your momentum: If you have just completed a project you enjoyed or were eager to finish, use that energy to get started on the next task you’re facing.

• Be specific: Break down large, complex tasks into smaller parts. For instance, instead of sitting down to work on your “20 page paper”, devote your time to writing a thesis, identifying sources, gathering evidence, creating an outline, or brainstorming.

• Write about writing: If you can’t seem to get off the ground, spend 10 minutes writing about why that is. You may loosen your thoughts or realize you need an aspect of the assignment clarified.

• Commit yourself: If you struggle with procrastination, decide that it’s time for a change. This is especially effective during moments of substantial change, such as starting as a first year, starting a new semester, or deciding on a major. Reinvent yourself as someone who does not procrastinate, and commit to that goal. Enlist others to support you in this endeavor and to hold you accountable.

• Address the root of the problem: Seek out campus resources to deal with issues that you are struggling with. For instance, if you are dealing with distracting personal issues, visit CAPS. If you’re not sure where to find help, speak to your dean or an OAR staff member – they may be able to point you in the right direction.

• Begin before you feel ready: If you put off work until you “feel” ready, you are not likely to begin at all. If a task is daunting or potentially unpleasant, you may never feel ready, so attempts to “prepare” yourself to tackle the task are, more likely, simply stalling techniques. Start working on the task, even if you don’t feel ready.

• Unschedule: If you find that you just can’t get everything done, consider paring back your obligations.