

TIME ORIENTATION AND SUBJECTIVE WELL-BEING:

A DEVELOPMENTAL ANALYSIS

by

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(Under the Direction of Douglas Kleiber)

ABSTRACT

Time orientation (TO) can be thought of as the “psychologic past, present, and future as they exist for and influence the individual” (Fink, 1957, p. 414). More specifically, TO is a cognitive process that can affect a vast array of decisions and attitudes. The present study examined TO cross-sectionally, using a sample of undergraduate students, graduate students, community-residing elders, and elders living in retirement homes, in an attempt to clarify its susceptibility to the influence of life circumstances. Attention also was given to the relationship between TO and subjective well-being as a function of life circumstances. Results indicated that TO is a relatively dynamic construct, appearing to differ between individuals on the basis of environmental and developmental demands, and that the specific adaptive or maladaptive influences of various TOs for an individual’s well-being are largely situation-dependent.

INDEX WORDS: time orientation, subjective well-being, time, age differences, environmental demands, development

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CHAPTER 1

Introduction

A cursory examination of the time orientation (TO) literature reveals a host of studies that have linked TO to a wide variety of behaviors and outcomes. For example, drug use (e.g., Apostolidis, Fieulaine, & Soule, 2006), sexual behavior (e.g., Rothspan & Read, 1996), and academic performance (e.g., Teahan, 1958; Zimbardo & Boyd, 1999) all seem to be reliably related to TO. However, the developmental nature of TO is still unclear. Do these individual differences in behavioral outcomes exist due to underlying trait differences in TO, or would orientation be better conceptualized as being more malleable and adaptive? Single moment “snapshots” of TO and its correlates do not permit us to draw conclusions regarding TO’s ontology. The present study examines TO’s association with subjective well-being and how that association might change depending on the time-relevant demands of the environment. In other words, is TO an attitude that is capable of changing situationally, or can TO be better conceptualized as a part of one’s personality and therefore more resistant to change? Does this adaptation or non-adaptation with regard to orientation influence one’s subjective well-being? These are the primary questions to be addressed in the present study.

Time orientation is comprised of five unique dimensions: past-positive, past-negative, present-fatalistic, present-hedonistic, and future orientation (Zimbardo & Boyd, 1999). Individuals are thought to be generally biased toward one of these dimensions, though it is possible to favor multiple dimensions. TO might best be conceptualized as an attitude that appears to assign value to a variety of decisions based upon their temporal implications. For

example, the decision to study rather than watch TV might be made because one values the future-oriented gains associated with studying more than the present-hedonistic gains associated with television. Or perhaps an individual is more prone to believe that “what is meant to be will be”, a decidedly present-fatalistic attitude, and thus tends not to take as many steps to control and influence his or her own outcomes. Individuals with a highly past-negative orientation might find many of their thoughts and decisions being influenced by persistent recollections of negative life events. By influencing our behavior in this manner, TO might be associated with a wide variety of day-to-day decision-making, which is why TO is typically considered an individual-difference trait that is central to the self.

Indeed, TO appears to be related to a variety of different behavior and outcomes. For example, a future TO is related to higher academic achievement (e.g., Teahan, 1958; Zimbardo & Boyd, 1999) and a lower risk of drug abuse (Keough, Zimbardo, & Boyd, 1999; Wills, Sandy, & Yaeger, 2001), whereas a present TO is associated with riskier driving behavior (Zimbardo, Keough, & Boyd, 1997), leisure activity preferences (Shores & Scott, 2007), and sexual practices (Rothspan & Read, 1996). Ostensibly, these associations exist because individuals with a relatively high future orientation place greater value on the long-term benefits of academic achievement, abstaining from drug use, or engaging in safe sex. These studies provide evidence that our decisions and attitudes are framed by our TO, emphasizing the consequences of our actions for the future (future TO) or the immediate benefits of our actions (present-hedonistic TO), for example.

Because the seemingly broad influence of the construct, TO is often thought of as one aspect of an individual’s personality. This interpretation is supported by findings that the various dimensions of TO do correlate with other aspects of the self (e.g., future orientation is positively

correlated with conscientiousness [Zimbardo & Boyd, 1999]), suggesting that TO also may share a degree of stability with these traits.

Time Orientation: A Personality Trait?

On the other hand, although TO may be a stable, foundational aspect of the self, it is important to acknowledge situational factors that do appear to influence TO. For example, seniors in school tend to have higher future orientation scores than freshman (Zimbardo & Boyd, 1999). And the longer one lives in homelessness the more likely he or she is to have a high present-orientation (Epel et al., 1999), suggesting that the circumstances of living from day-to-day and having to focus primarily on immediate needs result in a stronger orientation toward the present. Fink (1957) found that elderly individuals living in the community focused more on the future on projective tests than did institutionalized elders, suggesting that the circumstances of being institutionalized may have altered their association to time. Similarly, individuals who are terminally ill tend to have lower future orientations and endorse behavior that is present-oriented in nature (Carstensen, 1991); in fact, even just the thought of nearing death, as induced through the use of mortality salience manipulations, can decrease one's future-oriented concerns, shifting one from a concern with knowledge-focused interactions to more association-focused interactions (e.g., Kennedy et al., 2001). Thus, it is well recognized that situational influences such as status, poverty, or mortality salience can have an effect on TO.

TO appears to be somewhat flexible, at least in the face of significant environmental forces. This does not rule out the possibility that TO is actually a relatively stable trait, remaining unchanged unless situational influences such as those mentioned previously act upon the individual. Unfortunately, based on our current understanding, any answers that might be given regarding the status of TO as a trait-like construct would remain equivocal, at best. Past

developmental research on TO conceptualized TO in a way that is no longer consistent with how contemporary researchers think about TO (e.g., Cameron, 1972). More specifically, these studies often operationalized TO by directing their inquiries at what dimension of time the participants thoughts were focused on at that moment, rather than asking which dimension of time was the *motivation* for behavior (a more contemporary viewpoint [c.f., Zimbardo & Boyd, 1999]). This disparity in conceptual and operational definitions of TO is severe enough to warrant reconsideration of previous findings, as well as new studies to explore the issue of the ontological nature of time-orientation.

Some of the most ambitious developmental studies on age-related changes in TO were conducted by Cameron (1972) and Cameron et al. (1977). In both cases large, cross-sectional samples were employed. The overall trend observed in these studies was a generally high focus on the present across the life-span, with a decreasing focus on the future beginning at age 11. Also surprising was that older adults did not tend to think about the past more than younger adults, challenging typical conceptions of the tendency toward reminiscence as a part of growing old.

However, as noted, the results of these studies are difficult to interpret in the context of contemporary definitions of TO. As defined by Cameron (1972) and Cameron et al. (1977), TO was measured by what each individual reported that he or she was thinking about at the time just prior to the researcher approaching them. Thus, the temporal aspect of each individual's thoughts served as the measure of TO. However, contemporary conceptualizations of TO are more complex, focusing instead on the temporal motivations that underlie behavioral or thought content. In fact, it is possible that an individual whose thoughts are more often focused on present tasks could still be future-oriented, for example, if he or she typically chooses these tasks

because of their benefit toward the achievement of future goals. As a case in point, when a researcher writes the introduction to his or her most recent study, he or she is deeply focused on the immediate goal of authoring the document. However, the reasons for choosing to focus on this task are likely related to future-oriented concerns such as gaining employment, finishing a degree, securing tenure, or adding to the body of knowledge related to his or her research interests. Examples such as this underscore the primary difference between Cameron's TO and more recent conceptualizations: the discrepancy lies between the *what* and the *why* of an individual's behavior in determining the relative importance he or she places on their various TOs. As a result, contemporary researchers are more likely to ask participants about general behavior that speaks more directly to the reasons behind the behavior (e.g., the Zimbardo Time Perspective Inventory [Zimbardo & Boyd, 1999]). Therefore, although our recent thoughts are consistently focused on the present across the life-span (Cameron, 1972; Cameron et al., 1977), it is still possible that observable shifts in TO (as defined as the predominant temporal motivation for action) exist, and that the prevalence of a future TO is significantly higher beyond early adolescence than Cameron's work suggests.

There is, however, one piece of longitudinal evidence that may speak more directly to the stability of TO. Mischel, Shoda, and Peake (1989) report that planfulness and academic achievement in adolescence are positively correlated with delay of gratification at 4 years of age. Because behavior driven by delay of gratification and a future TO both favor long-term over short-term gains, and because academic achievement also is positively related to a future TO (e.g., Zimbardo & Boyd, 1999), this research might be taken as evidence that TO is relatively stable, at least from childhood to adolescence.

Taken as a whole, the existing body of literature does not definitively suggest whether TO might best be conceptualized as a personality trait variable, part of a highly flexible cognitive decision-making mechanism, or something in between these two extremes that varies with circumstances. Thus, the primary aim of the present study is to add new evidence which might enhance our understanding of this aspect of TO by conducting a cross-sectional analysis of TO.

Adaptation and Time Orientation

As has been suggested, an individual's TO may be flexible in the face of changing circumstances. However, wherever the opportunity for adaptation exists, the possibility of non-adaptation also must exist. Therefore, if having a relatively strong future orientation under a particular set of circumstances is considered adaptive, having a low future orientation could be considered maladaptive.

If this is the case, and the various environmental demands that we might face as we develop favor some TOs over others, then one question we might ask is, what are the specific consequences for maladaptive TOs? Furthermore, under what circumstances could we expect to observe adaptive or maladaptive TOs?

With regard to the former question, one way in which maladaptive TOs may have an impact is through subjective well-being. Previous research in TO has focused primarily upon outcome variables such as those described above (e.g., academic success; Teahan, 1958). However, it is very possible that TO also might influence indicators of subjective well-being such as life satisfaction, stress, depression, or self-acceptance. There is a paucity of research examining how TO might be related to subjective well-being, and none that has been conducted recently enough to include contemporary measures of TO. However, studies do exist that are related to TO and are suggestive of possible associations. For example, although Greaves (1971)

did not measure TO specifically, he did find that patients with suicidal ideation were more likely to spend time thinking about the present than the future. Similarly, Strack, Schwarz, and Gschneidinger's (1985) study on life satisfaction found that ratings of general life satisfaction were closely tied to the valence of one's present or most recent memories. Thus, there is reason to believe that at least some indices of well-being could be tied to how we relate to time.

Psychological well-being, as defined by Ryff and Keyes (1995), is comprised of six different dimensions (self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, personal growth), and although not all necessarily share predictable associations with TO, some aspects of psychological well-being appear germane to a discussion of TO and subjective well-being. Specifically, the position taken here is that depending on the demands of the environment, certain dimensions of TO may not be adaptive. As a result, the time-relevant demands of the environment, when sufficiently in conflict with one or more dimensions of an individual's TO (e.g., a low future orientation in an environment that demands a high future orientation), may prompt a sense of loss of control or mastery in one's ability to manage life tasks, resulting in lower levels of environmental mastery. Furthermore, this lack of environmental mastery coupled with the difficulties that could result as a consequence of not being able to effectively meet time-relevant developmental tasks will result in lower degrees of self-acceptance among those experiencing an orientation-environment mismatch, relative to individuals who are better adapted.

A mismatch between TO and the environment also might result in lower levels of social integration (Keyes, 1998). Presumably, social norms govern the appropriate manner in which to deal with many of the developmental tasks that we face. For example, it is expected that in early adulthood individuals will start to consider a career and begin taking steps to eventually enter

into the working world. To the extent that an individual focuses primarily on the present, for example, and does not devote much attention to dealing with this developmental task, he or she would be ignoring the social norms governing this particular task. Mismatched individuals may feel less integrated with society if they are aware of their norm violations, and therefore perceive that they are not blending as well with the demands of their social world as others are. In this way, social norm violations via mismatches between TO and the temporal demands of the environment could lead to lower levels of social integration.

These same sorts of mismatches that could endanger an individual's self-acceptance, for example, also might affect life satisfaction in a similar manner. Levels of life satisfaction, if significantly influenced by the individual's ability to cope with the demands of their environment, might be greater when an individual endorses behavior or beliefs about time that are consistent with those demands. For example, an individual in a highly future-oriented environment that also endorses future-oriented behavior and beliefs might be more likely to experience greater life satisfaction.

Stress is another important indicator of subjective well-being that should share a predictable association with TO. Unlike some other indices of subjective well-being, however, stress levels could be reduced across all environments among individuals with a high present-hedonistic orientation. This would be the case because, by definition, behavior motivated by a present-hedonistic outlook is done for the sake of satisfying immediate desires. Such a pattern of behavior could mitigate stress levels regardless of situational demands if done so in a manner that helps to relieve stress rather than simply put off important tasks or goals.

In a similar manner, depression levels might be related to past-positive and past-negative orientation without regard to environment. Individuals who are prone to thinking about negative

memories and those who place great value upon their positive memories would be expected to experience more and less depression, respectively.

In other words, there is reason to suspect that life satisfaction, depression, stress, and other indicators of psychological and social well-being may be closely related to the various dimensions of TO, depending to some extent on the situation in question. This leads to the question alluded to earlier: what environments or scenarios should researchers focus on? Where can we expect to observe adaptive or maladaptive TOs?

It is possible to imagine specific circumstances in which some orientations would be more beneficial than others. Of course, there are numerous situations that an individual may face during his or her life that favor one orientation over another. In fact, it is the variety of these circumstances across the life-span that might threaten the search for developmentally predictable shifts in TO: there may simply be too many different lifestyles and environmental demands to find meaningful patterns according to age or period of the life-span. For example, the search for a developmental trajectory in TO associated with middle age becomes complicated when one considers the array of experiences and environmental demands that could be influencing TO during middle age. Some individuals may be nearing retirement while others are entering the peak of their careers and are years away from leaving the workforce. Still others may be adjusting to an empty house after having spent years raising their children, while others may still have children living with them or are otherwise involved in caring for their parents or the next generation of adults to follow. The implication here is that it may be more difficult to observe developmentally predictable shifts in TO than to attempt to understand how particular situations or types of environments influence TO, and that an individual's movement into or out of these environments might be the best predictor of changes in orientation as they age.

To that end, a closer examination of fewer, fairly well-defined circumstances (in terms of their time-relevant demands) might prove useful in examining how TO may help or hinder individuals in attempting to cope with their environment.

The Present Study

In order to examine the association between subjective well-being and TO, as well as gather preliminary evidence regarding situational influences on TO across the life-span, four different sets of circumstances (undergraduate freshman and sophomores, graduate students, community residing elders, and elderly individuals living in retirement homes) were chosen as focal points for this study. In examining the association between TO and subjective well-being, five indices of well-being were assessed: psychological well-being, depression, stress, general life satisfaction, and social integration. The expected associations between these factors and TO in each sample are outlined below. For all predictions, present-hedonistic and future TO were the focus because these two dimensions of TO are thought to be of the greatest theoretical importance. The groups sampled in this study are thought to differ from each other with regard to their present- and future-oriented environmental demands, hence the present and future TO of individuals within those environments is the most relevant to study.

Predictions

College freshman and sophomores, although working toward a distant future goal, are also presumably still less future-oriented than their peers who are seniors and are graduating within a year. Previous research comparing the TO of freshman to seniors in a military academy corroborates this assumption (Zimbardo & Boyd, 1999). Among these younger college students, we might expect that a present-hedonistic TO will be positively correlated with life satisfaction, because of the relative importance of focusing on enjoyment of the college experience.

Furthermore, it is expected that stress will share a negative association with present-hedonistic orientation because individuals who are more likely to engage in activities motivated by present desires also should experience less stress because of such behavior.

As with the other samples to be used in this study, a past-positive TO and a past-negative orientation are predicted to be positively and negatively related, respectively, to life satisfaction for college undergraduates. Past positive and negative orientation are also predicted to be associated with depression in this sample, with past- positive orientation being negatively related to depression and past-negative orientation being positively related to depression. That is, the extent to which an individual tends to place importance upon and readily recall positive or negative memories from his or her life will influence his or her current well-being. In keeping with previous research (e.g., Zimbardo & Boyd, 1999), it is predicted that students with a higher future orientation will perform better in school as assessed by their grade point average. Thus, among college freshmen and sophomores, future orientation is predicted to be related to the outcome variable of GPA, but none of the subjective well-being measures such as life satisfaction, depression, or stress.

In contrast to younger undergraduate students, graduate students might be expected to have many more aspects of their lives be associated with a strong future orientation. Because a relatively large number of daily tasks in graduate school are driven by long-term goals, it is predicted that students with a lower future orientation will have lower life satisfaction, lower environmental mastery (the feeling that they are capable of handling the demands of the environment), and lower self-acceptance. These predicted associations are based upon the assumption that individuals in an environment with greater future-oriented demands, who are themselves not future-oriented, will be less able to cope with their surroundings (environmental

mastery), are likely to partially blame their difficulties in coping on themselves (lower self-acceptance), and are more likely to feel unsatisfied in their lives overall because of these issues. Just as with the undergraduate sample, it is expected that individuals with higher present-hedonistic orientations will experience less stress.

Similar to the undergraduate sample, a high future orientation is expected to predict socially-prescribed outcomes. In this sample, the number of years taken to complete the degree is predicted to be negatively related to future orientation.

The environmental demands on an elderly individual living in a retirement community pose a unique set of circumstances with regard to TO. Previous research would suggest, for several reasons, that a more present-hedonistic orientation will be the most suitable to adapting to the developmental demands of this time period. For example, Socioemotional Selectivity Theory posits that, as an individual perceives that he or she is nearing an end-point in his or her life (e.g., death), a greater focus on the present will result (e.g., Baltes & Carstensen, 1999; Carstensen, 1991; Carstensen, Isaacowitz, & Charles, 1999). Likewise, Tornstam (1992) has suggested that as individuals age, the ideal adaptation will involve a shift away from future-oriented productivity values. It is possible that a devaluing of such future-oriented ideals might then lead into a greater appreciation of the present, especially when the findings of research based on Socioemotional Selectivity Theory are taken into consideration. Under these circumstances, a present-hedonistic orientation is predicted to be correlated with greater life satisfaction, whereas a high future orientation is predicted to be related to lower life satisfaction. Just as with the other samples, a negative association between a present-hedonistic orientation and stress was predicted for the elderly sample.

Erikson's (1956) proposed task of Ego Integration emerges in this stage as an important aspect of development; the struggle to come to terms with the events of one's life and ascribe meaning and value to one's life as a whole (as opposed to a feeling of failure and meaninglessness) must be confronted. Life satisfaction during this period is, in many ways, tied to retrospective judgments of one's life. As a result, a past orientation, or at least a positive past TO would be more strongly related to life satisfaction and depression than in the other samples because of the increased importance of evaluations of the past among the elderly.

Finally, many of these predictions regarding associations between TO and subjective well-being in the retirement home group are shared with community-residing elders. The primary difference expected between these two elderly groups is that for the community-residing elders, value of and planning for the future is still expected to be well-represented. Previous research (Fink, 1957) has found that community-residing elders are more likely to focus on the future than are elders who have been institutionalized. This may be especially true of the community-residing elders represented here. The sample gathered for the present study was comprised of members of the Learning in Retirement (LIR) group. The LIR is a non-profit organization that sponsors classes and other forms of continuing education for its members. As such, these individuals are actively involved in growth and self-improvement, and it was expected that this growth and meaning would be linked to placing high value on and continued concern for the future due to the forward thinking and progressive nature of these activities in which group members are involved. For this group, a future TO was expected to be positively related to finding continued purpose in life as well as personal growth. Additionally, a present-hedonistic orientation was predicted to be important for life satisfaction and less stress, just as it was predicted for the retirement home group. Finally, Erikson's (1956) concept of ego integrity

was expected to apply equally to the community-residing elders and, as such, a positive association between past-positive TO and purpose in life, as well as life-satisfaction, were predicted. A summary of the specific predictions outlined above for the relation between TO and subjective well-being can be found in Table 1.

In addition to examining how TO interacts with the environment to predict various subjective well-being outcomes, the present study also was able to make cross-sectional observations of TO across the life-span. Existing research tends to point to the possibility that TO is a relatively stable trait (e.g., Zimbardo & Boyd, 1999). If this is, in fact, the case, we would not expect to find between-group differences in TO, because individual differences would be the largest source of variance in TO. However, if TO is less rigid than postulated, a lack of stability should be detected in the form of between-group differences, in which case environmental time-relevant demands might be the presumed cause.

Developmental life tasks relevant to the study of TO (e.g., having and raising children, which should create an environmental demand to focus on the future) provide a second possible source for instability in TO by acting upon the individual in a similar way that a specific environment might. Thus, if particular dimensions of TO (e.g., future) were significantly related to certain tasks (e.g., raising children), such an association would provide evidence for a general developmental trajectory for TO as individuals face new tasks as they age. Whether the apparent source of group differences is the environment or a developmental task, the present study was designed to provide a preliminary test of changes in TO by situation using a contemporary measure of TO.

Summary

The present study examined the role TO plays in the subjective well-being of individuals in four different circumstances across the life-span. Cross-sectional comparisons were made between the four groups as a preliminary query into whether TO appears to shift adaptively between groups, which would suggest a highly-flexible system, as group differences could be taken as evidence that individuals adapt their TO to the variety of environmental demands they face. On the other hand, if TO appears highly variant within the groups, such a pattern suggests an individual difference, personality trait, interpretation.

CHAPTER 2

Method

Participants and Design

The present study utilized four age groups representing four distinct sets of environmental demands across the life-span. The youngest group (M age = 18.88, SD = 1.04) consisted of 40 college freshman and sophomores (34 women, 6 men) who were part of an environment that requires special consideration for the future on many levels (life as a university student), but also involves a strong appreciation for the present. These students were given course credit for their participation.

The second sample (M age = 28.25, SD = 3.20) consisted of 40 graduate students (27 women, 13 men) from the same university representing a variety of disciplines. Participants in this sample were recruited through a graduate student listserv and were compensated for their time with \$10 gift certificates to an online retailer. This group was distinguished by the high environmental demand on focusing on long-term over short-term goals.

Two different elderly samples are represented in the present study. The first sample of 40 participants (30 women, 10 men) was drawn from the Learning in Retirement (LIR) group (M age = 70.26, SD = 7.48), a local non-profit organization comprised of community-residing elders at least 62 years of age who choose to take courses at the same university that the two younger samples were drawn from. This sample was recruited via the LIR listserv; participation was completely voluntary. The LIR, while sharing some demographic characteristics of the

second elderly group described below, was distinguished by their high cognitive functioning and continued focus on the future and self-improvement.

The second elderly sample (M age = 74.45, SD = 7.48) consisted of 21 individuals (13 women, 8 men) who were residing in retirement communities in Athens, GA at the time of data collection. These participants were recruited through the distribution of fliers in the retirement centers and were paid \$20 for their participation. Developmentally, the demands of individuals in this environment should be focused more strongly on the present than other periods of the life-span, with less consideration of the future. One individual who did not appear to understand the questions and displayed erratic response patterns to conceptually similar items was dropped from the study after it was determined that he suffered from dementia, resulting in a final sample for this group of $N = 20$ (13 women, 7 men).

Measures

Participants in all conditions completed the same nine instruments (see Appendix C for all measures used). However, due to complaints regarding the length of the survey, participants in the retirement home sample responded to a shortened version that did not include measures for depression, social well-being, or activity restriction.

Time orientation. The Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999), provided the measure of TO used in the present study, allowing for the assessment of 5 domains of TO: past-negative (Cronbach's $\alpha = .81$), past-positive ($\alpha = .70$), present-fatalistic ($\alpha = .73$), present-hedonistic ($\alpha = .70$), and future ($\alpha = .75$) orientation. Participants are asked to indicate how true each statement is for them (e.g., "I make decisions on the spur of the moment.") by responding on a 1 (very untrue) to 5 (very true) scale.

Depression. A 20-item measure of depression, the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977; $\alpha = .87$) also was included. Participants were asked to indicate how many days over the past week they had experienced twenty different emotions or behavior (e.g., “I had crying spells”). Response options range from rarely or not at all (less than 1 day) to most or all of the time (5-7 days).

Life satisfaction. A measure of general life satisfaction also was included. Diener’s (1985) Satisfaction with Life Scale ($\alpha = .85$) includes 5 items (e.g., “The conditions of my life are excellent.”) that are responded to on a 1 (strongly disagree) to 5 (strongly agree) scale.

Psychological well-being. Psychological well-being (Ryff & Keyes, 1995) is composed of 6 different dimensions: autonomy ($\alpha = .49$), environmental mastery ($\alpha = .34$), personal growth ($\alpha = .30$), positive relations with others ($\alpha = .66$), purpose in life ($\alpha = .40$), and self-acceptance ($\alpha = .56$), and is designed to assess positive psychological functioning. Measures of well-being on each of these dimensions were assessed with a 5-point scale ranging from strongly disagree to strongly agree for each of them. The present study utilized a short version (Marks & Lambert, 1996) of the original well-being instrument (Ryff, 1989) that includes three items per dimension (e.g., “I like most parts of my personality,” a self-acceptance dimension item).

Social well-being. Respondents also completed the social integration subscale ($\alpha = .72$) of the Social Well-Being Scale (Keyes, 1998). This measure focuses on feelings of social or communal belongingness. Participants responded to 3 questions (e.g., “I don’t feel I belong to anything I’d call a community”) on a 1 (very untrue) to 5 (very true) scale.

Stress. The Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) also was used to assess stress levels for participants in all samples. The PSS is a 10-item scale ($\alpha = .32$) in which the respondent indicates on a 5-point scale (1 = never, 5 = very often) the

frequency that they felt various emotions or had particular thoughts over the past month (e.g., “In the past month, how often have you felt things were going your way?”).

Developmental time relevant tasks. Based on the writings of Erikson (1956), Levinson (1978), and Havighurst (1953), a list of time-relevant tasks (e.g., “I save for the future.”) was developed to probe for the existence of general developmental issues that individuals face, sometimes in periods other than expected, which may be related to changes in their TO. Participants responded to each statement on a 1 (never) to 5 (all of the time) scale, indicating how often they engaged in or thought about the various life tasks listed. All of the tasks listed were conceptualized as being mutually exclusive, separate developmental life tasks, and therefore the inter-scale reliability was predictably low ($\alpha = .39$). The purpose of this instrument was to allow the exploration of group differences in environmental demands. Some developmental life tasks require a greater focus on the future, present, or past, in order to be accomplished. To the extent that these time relevant tasks are more salient for an individual, we might conclude that their environment demands a greater focus on the past, present, or future, depending on the task in question. This scale was useful therefore in assessing the assumption of between-group differences in environmental demands, which is important to the interpretation of the data.

Data Collection

All measures were presented in the following order: Zimbardo Time Perspective Inventory, Developmental Time Relevant Tasks Scale, “Manipulation” Check Items, Diener’s Life Satisfaction Scale, Ryff Psychological Well-Being Scale (Short-form), Social Well-Being Scale, Perceived Stress Scale, Activity Restriction Scale, Center for Epidemiologic Studies – Depression Scale. For the retirement home group, participants completed the measures in the

same order but, as mentioned previously, did not complete the social well-being, activity restriction, or depression scales.

The procedures for the undergraduate, graduate student, and Learning in Retirement samples were identical. Following recruitment, participants were directed to a website (web hosting and survey management provided by *surveymonkey.com*) where they viewed the consent document and completed the survey.

Because of the difficulty of providing the elderly adults living in retirement homes with an internet-connected computer, participants in this sample were provided with a laptop presenting the aforementioned shortened version of the survey given to the other samples. This ensured that all samples completed the survey in the same medium (electronically), although, in the case of the elderly participants, it was done offline as opposed to online. For this group, the author was present during all interviews to ensure that participants understood the questions and were able to complete the survey using the laptop. In two cases where manual dexterity was limited, the author registered the participant responses.

In the case of the online surveys, a short debriefing form was automatically displayed following the completion of the final question, explaining the purpose of the study. For the retirement home sample, a debriefing was given verbally using the same form as a template.

Data Analysis

Initially, all measures used were tested for internal reliability using Cronbach's α to ensure the consistency of the scales was equivalent to what has been reported by previous researchers. This was the case, and all α levels are reported above in the description of the measures.

The primary question of whether group differences in TO would be found was initially tested using a multivariate analysis of variance, with subsequent one-way ANOVAs being performed for each dimension of TO in order to determine the source of any differences detected.

All post-hoc comparisons were made using Scheffé tests due to this method's suitability for working with unequal sample sizes, in addition to the fact that it is considered to be very conservative, greatly reducing Type I Error rates (Hays, 1994).

The second major question examined was how the association between present-hedonistic and future orientation and subjective well-being varied by sample. For this set of analyses, regression equations were created using the various measures of subjective well-being as the criterion variables and present-hedonistic and future TO together as the two predictor variables.

Most secondary analyses were accomplished using simple ANOVA or regression analyses. One secondary analysis of interest was the test of the hypothesis that the association between past-positive TO and life satisfaction would be significantly stronger for the retirement home group than for the two student samples. In order to examine this possibility, a Pothoff Analysis (Pothoff, 1966) was conducted. This was accomplished by creating a regression equation with life satisfaction as the criterion variable and including past-positive TO, group status, and the interaction between past-positive TO and group status as predictor variables. In the simplest case, the Pothoff Analysis is conducted by checking the interaction term for significance. In this case, a significant interaction would indicate that the association between life satisfaction and past-positive orientation differs across one or more levels of group status.

CHAPTER 3

Results

No gender differences were found for any of the variables under study; therefore gender was excluded from all further analyses.

Correlations between the different scales of the ZTPI and between all measures of subjective-well being used in this study are shown in Tables 1 and 2, respectively. No predictions were made regarding these associations. Few of the time orientation scales were related, and the associations that did exist were moderately strong at best. This stands in contrast to previous research that has found the scales to be highly interrelated (Zimbardo & Boyd, 1999). The subjective well-being indices were associated in predictable ways (e.g., higher stress was related to more depression and less life satisfaction).

Group Differences in Time Orientation

The first major question addressed in this study asks whether differences in TO might exist between age groups. If differences exist, this suggests that TO is relatively more flexible and possibly open to influence from factors associated with age, the different sets of life circumstances, or environmental demands that might be encountered throughout the life-span. However, if TO should be conceptualized as an individual difference variable, then we would expect within-subject variance to exceed between-group variance.

Table 4 presents the group means for the five dimensions of TO. Initially, a MANOVA was performed using the five dimensions of TO as the dependent variables. Results of preliminary analysis indicated that there may be differences between the groups on one or more

of the dimensions of TO (Wilks' lambda = .86, $F(3, 136) = 1.71$, $p = .06$). Based on the results of the MANOVA, we proceeded to test for differences between groups for individual dimensions of TO in order to identify the source of the effect.

As indicated in Table 4, several group differences emerged. Group differences were found for past-positive TO, $F(3, 136) = 4.09$, $p < .01$; post-hoc tests using Scheffé's method revealed that the retirement home group had significantly higher scores than the graduate student group.

Group differences also emerged for present-hedonistic TO, $F(3, 136) = 3.62$, $p < .01$. Post-hoc comparisons revealed that the undergraduate student sample reported greater endorsement of present-hedonistic items than both the graduate student sample and the Learning in Retirement sample. The undergraduate sample and the retirement home sample reported equivalent levels of present-hedonistic attitudes and behaviors.

Group differences also were observed for present-fatalistic TO ($F(3, 136) = 2.69$, $p < .05$). Although all of the groups were roughly the same in their endorsement of these items, the undergraduate and retirement home samples had nominally higher average scores than the graduate and LIR groups.

No group differences were found for future ($F(3, 136) = 1.00$, $p > .05$) or past-negative ($F(3, 136) = .641$, $p > .05$) TOs. Individuals in the retirement home group reported the highest levels of future TO; the other groups were nearly equivalent to one another. Finally, the undergraduates endorsed past-negative scale items slightly more than the other three groups, though these differences did not reach significance.

The Association Between Time Orientation and Measures of Subjective Well-Being

The second major question this study attempted to address was whether the associations between certain dimensions of TO and the measures of subjective well-being included in this study vary depending on the set of environmental demands in place. In particular, this study was primarily concerned with how both future and present-hedonistic TO might influence well-being, as the samples were expected to differ with regard to their future and present-centered environmental demands. The overall prediction was that differences would be observed in the associations between TO and indices of well-being. Specific hypotheses are reiterated in Table 5.

For each of the four samples, future and present-hedonistic TO were entered into regression equations predicting stress, life satisfaction, depression, self-acceptance, environmental mastery, autonomy, purpose in life, personal growth, positive associations with others, and social integration. Table 6 presents a summary of the findings from this analysis. As can be seen, the association between future and present-hedonistic TO and the various measures of subjective well-being varied depending upon the sample being examined.

It was predicted that for graduate students, environmental demands related to the future would engender circumstances in which individuals with a high future TO would be better equipped to meet these demands and thus experience greater subjective well-being as a result. Likewise, undergraduate students and older adults should benefit more from a high present-hedonistic orientation, as their environmental demands should place more emphasis on appreciating the present.

These predictions were partially supported. The majority of subjective well-being measures were not predicted by either present-hedonistic or future TO. However, where significant associations did exist, these correlations were consistent with the overall predictions.

Specifically, for graduate students, life satisfaction, personal growth, and self-acceptance, were all positively related to a future TO. In contrast, for undergraduates, life satisfaction was positively related to present-hedonistic orientation, and self-acceptance was negatively related to future TO. Also among the undergraduate students, depression was positively correlated with a future orientation, and social integration was positively related to present-hedonistic orientation, but negatively related to future TO.

The two elderly samples displayed similar patterns of relations between TO and subjective well-being. Individuals in the retirement home group were more likely to endorse personal growth items positively if they were also highly present-hedonistically oriented. Furthermore, feelings of autonomy were related positively to present-hedonistic TO, and positive associations with others were less likely among those with a higher future TO. Finally, among the Learning in Retirement group, autonomy also was positively related to a high present-hedonistic orientation. Interestingly for the LIR group, purpose in life was positively related to future TO, a finding that was inconsistent with predictions, but logical in other respects.

Important to interpreting these data is the assumption that the four groups differ in their present- and future-oriented environmental demands. For example, as a result of their shared experiences in academic preparation programs, graduate students were expected to focus on the future more than individuals living in a retirement home. This assumption is important in helping to interpret why the relation between TO and subjective well-being would vary between groups. We attempted to measure these demands by assessing the salience of ten life tasks on the Developmental Time-Relevant Tasks (DTRT) scale.

Environmental demands check. Evidence that individuals in these groups were faced with different sets of environmental demands might be found by examining group differences in time

relevant developmental tasks¹. The DTRT assesses the importance or salience of 10 different developmental tasks in an individual's life, and group differences would tend to indicate that temporal environmental demands, which might result from consideration and investment in these developmental tasks, exist between the groups.

One-way ANOVAs testing for group differences in endorsement of each of the 10 developmental tasks served as a check to corroborate the assumption that the groups differed in their environmental demands. Developmental tasks that would typically imply greater pressure to consider the future, such as "I think about having a family" ($F(3, 136) = 95.50, p < .01$), "I think about my career plans and opportunities" ($F(3, 136) = 70.10, p < .01$), and "I think about getting married" ($F(3, 136) = 52.32, p < .01$) all showed the predicted group differences with undergraduate and graduate students showing significantly higher investment in these tasks than either of the elderly samples (see Table 8).

No differences existed between the groups for the more present-oriented task, "I try to relax and enjoy the present" ($F(3, 136) = 1.28, p > .05$). The DTRT item, "I spend time reflecting on my past and who I am," inspired by Erikson's concept of ego integrity, showed the lowest levels of endorsement from the retirement home group and the LIR group, whereas the highest levels of endorsement were among the graduate student and undergraduate samples. The retirement home group's relatively low endorsement of the "...reflecting on my past" item compared with the other three groups ($F(3, 136) = 5.71, p < .01$) was opposite of what was theoretically predicted.

Thus, the assumption that groups would differ in their perceived need to focus on the future was supported, but the assumption that undergraduate students and older individuals living in retirement homes would show a great inclination to focus on the present was not supported.

All groups reported an equal need to focus on the present, although the trend was for individuals in retirement homes to report a greater need to be present-centered, on average. Finally, the assumption that elderly individuals, particularly those living in a retirement home, might feel a greater need to focus on the past was not supported; in fact, the trend appeared to be reversed among these samples, with undergraduate students reporting a greater need to reflect upon their past. Again, meeting these assumptions is important to helping to clarify how the association between TO and subjective well-being in the different samples (discussed below) should be interpreted.

Other Analyses

Past-positive/past-negative orientation and life satisfaction/depression. Another a priori prediction was that past-positive and negative TOs would be related to both life satisfaction and depression, and that the association between life satisfaction and these orientations would be stronger for the two elderly groups than for either of the two younger groups. This prediction was confirmed; life satisfaction ($r = .62, p < .01$) was related positively to past-positive ($\beta = .29, p < .01$) and negatively to past-negative TO ($\beta = -.55, p < .01$), for all groups combined. Furthermore, depression ($r = .46, p < .01$) was related positively to past-negative TO ($\beta = .45, p < .01$); past-positive TO did not significantly predict depression ($\beta = -.05, p > .05$).

The prediction that past-positive and past-negative TOs would account for significantly greater levels of variance in life satisfaction among the retirement home group than among the younger samples was deduced from Erikson's (1956) concept of ego integrity. For an older adult, it would be expected that conceptions of one's past would play a larger role in life satisfaction than for younger adults due to the theoretical value of the past in addressing and finding satisfaction with one's life as a whole. In order to test this prediction, a Potthoff Analysis was

performed. This set of analyses (Pothoff, 1966) is appropriate when one wishes to determine if the association between two continuously distributed variables (e.g., past-positive TO and life satisfaction) differs across levels of a categorical variable (e.g., undergraduate students versus individuals in a retirement home). Results of the analysis indicated that no differences existed between the samples in the strength of the association between either past-positive ($t(139) = -.04, p > .05$) or past-negative TO ($t(139) = .23, p > .05$) and life satisfaction.

However, exploratory regression analyses revealed that past-positive TO did predict purpose in life among both the LIR group ($r = .55, p < .01$) and the retirement home group ($r = .46, p < .05$), but not for the undergraduate ($r = .10, p > .05$) or graduate student ($r = .03, p > .05$) groups. An additional Pothoff Analysis revealed a significantly stronger association between past-positive TO and purpose in life among the two elderly groups than the two younger groups, $t(139) = 2.50, p < .05$, corroborating the results of the regression analyses. Thus, some support was found for Erikson's (1956) view that positive evaluations of the past (in this case assessed by past-positive TO) are more critical in later life.

Future orientation and positive outcomes. Previous research suggests that a future orientation should be positively related to more positive outcomes in an academic setting (e.g., Zimbardo & Boyd, 1999). This hypothesis was tested here by asking undergraduate students to report their GPA, and graduate students to report how many years it will have taken them to complete their degrees. It was expected that undergraduates with a higher future TO will also have a higher GPA; this prediction was not supported by the data ($r = .15, p > .05$). However, further analyses revealed that GPA was negatively associated with present-hedonistic TO ($r = -.39, p < .05$) among undergraduates. Likewise, it was predicted that graduate students with a high future orientation would report graduating in a fewer number of years than their less future-

oriented peers. However, the opposite association was found, as future TO was positively correlated with years taken to graduate ($r = .33, p < .05$) among the graduate student sample.

CHAPTER 4

Discussion

The present study focused on two major questions of interest: (1) does TO appear to be trait-like or malleable; and (2) how does the association between TO and subjective well-being change depending upon the context in which it is examined? Even if little variation in orientation is found across different life circumstances, making a case for TO being more trait-like, the traits may be more or less adaptive in response to developmental or environmental demands. Hence, these questions are related but quite distinct.

Group Differences in Time Orientation

Because of the equivocal nature of existing research, no strong predictions could be made regarding group differences in TO. TO appears to be linked to personality variables such as conscientiousness and risk taking (Zimbardo & Boyd, 1999), and some evidence exists to suggest that future TO is stable from childhood to adolescence (Mischel, Shoda, & Peake, 1988). Such associations hint at the possibility that TO is trait-like in nature. In contrast, other researchers have found reason to believe that an individual's TO may be open to change, as cross-sectional analyses have revealed differences in TO between underclassmen and officers at a military academy (Zimbardo & Boyd), and individuals who have been living in homelessness for longer periods of time tend to have higher present-hedonistic orientations relative to their peers who were homeless for shorter periods of time (Epel et al., 1999). These mixed findings, coupled with the fact that some of the best available cross-sectional data (Cameron, 1972;

Cameron et al., 1977) conceptualized and measured TO differently than it often is today, begged further research.

The present study hints at the fluid nature of TO. Analyses revealed group differences for three of the six dimensions of TO (i.e., past-positive, present-hedonistic, future-worry). Individuals living in retirement homes reported greater endorsement of attitudes and behavior consistent with a past-positive TO (e.g., “it gives me pleasure to think about my past”) than all other groups, though the difference was only significant for the comparison with the graduate student sample. Furthermore, undergraduates and elderly individuals in retirement homes were more present-hedonistic (e.g., “I make decisions on the spur of the moment”) than both the graduate student and LIR groups (who were equivalent to one another). Additionally, group differences also emerged for the third, newly created future-worry dimension. The retirement home sample reported significantly less worry over the future than all other groups. However, no differences between the groups were observed for the remaining three dimensions (past-negative, present-fatalistic, future), which is more suggestive of a trait interpretation of TO. Despite these mixed results, it is possible to draw some conclusions about the nature of TO from these data.

One surprising finding in the present study was the lack of between-group differences in future TO. This does not corroborate previous research (e.g., Cameron, 1972; Nurmi, 1991; Zimbardo & Boyd, 1999) suggesting that the importance or value of future considerations should change with age. One possibility is that the military academy environment reported on by Zimbardo and Boyd differs in important ways from the environments sampled in this study. Presumably, a military academy represents a more structured environment that is far more conducive to promoting and facilitating changes among those who are a part of it. In the present study, there may have been relatively fewer strong motivators for change in the sense that all of

the samples might need to focus on future to some extent. Undergraduates, graduate students, and elders who are active members of the Learning in Retirement group all have good reason to maintain a focus on the future; among the elders living in retirement homes, cohort effects related to work ethic might help maintain a high future orientation well beyond the point at which environmental demands for it cease. Another consideration is that for the samples used in this study, future TO was, in fact, predicted by three life-span developmental tasks on the DTRT. Two of these tasks (both about saving money for the future) were not related to group status at all, while the third task, “I think about getting married,” was endorsed more frequently by undergraduates. One possibility, then, is that among the samples in this study, differences in future orientation were associated with life circumstances or tasks that were either completely or relatively unrelated to group status in comparison to other DTRT items. Thus, between-group differences in future TO would not emerge, even though future orientation may still be influenced by external forces. In that case, the results of the present study do not completely conflict with earlier findings, although because of the lack of focus on environmental demands and tasks in previous studies, such a conclusion is speculative, at best.

Previous research has suggested that TO is somewhat adaptive in nature. Even the earliest writings on TO (Frank, 1939) speculated as to the social influences upon the construct. Cross-sectional research performed at a military college found that future orientation was significantly lower among freshmen than seniors (Zimbardo & Boyd, 1999). Likewise, individuals with a present-hedonistic orientation are more likely to remain homeless for longer periods of time than individuals with a higher future orientation (Epel et al., 1999). Among individuals who had remained homeless for longer periods of time, future orientation tended to be lower. Fink (1957) also provided evidence that elderly individuals living in institutions were less likely to focus on

the future than similarly aged individuals living in the community; in other words, there is reason to believe that situational influences can have an effect on TO. Only longitudinal research can truly inform us as to the nature of change in TO. However, studies such as those cited, in addition to the present study, suggest that some aspects of TO are amenable to change in the face of at least some sets of circumstances.

Taken together with the results of past research, the present study suggests the malleability of at least some dimensions of TO. It may be the case, for example, that past-negative orientation is relatively resistant to change due to a somewhat limited set of circumstances that might cause individuals to place a more enduring interpretation upon the negative or disappointing events from their past. Likewise, future orientation may vary relatively little between groups if there are few circumstances in which individuals might desire to devalue planning and consideration of future consequences for their actions, or the tasks that would engender a change in future orientation are not linked to group status. Such an interpretation is consistent with the present findings, as well as previous research such as Mischel, Shoda, and Rodriguez's (1989) longitudinal work that found stability of future-oriented thinking and behavior between childhood and adolescence. This, of course, is also a case for the TOs being relatively more trait-like and resistant to change.

In contrast, other dimensions of TO may be relatively more prone to shifts in importance between age groups or situation, such as present-hedonistic orientation. The present study found that the tendency to endorse present-hedonistic attitudes and behavior decreased between the undergraduate to graduate student population, remained unchanged between the graduate student and community-residing elders, and then increased to levels equal to the undergraduate students among elders living in a retirement home. Such a pattern of differences could emerge as a result

of differences in environmental demands (e.g., it is more socially acceptable to focus on enjoying the present under those circumstances), although other possibilities such as age and cohort differences must be considered as well. Past-positive orientation also may be more likely to vary between circumstances. In the present study, older adults living in a retirement home were more likely than other groups to positively endorse attitudes and behavior associated with valuing past experiences. This is consistent with Erikson's (1956) and others' contention that the past may become of greater value as one enters late adulthood. Such an interpretation is supported by the finding that past-positive TO is related to feelings of having a purpose in life among the two elderly groups but not the two younger groups. Thus, it may be that the different dimensions of TO fundamentally differ in the likelihood of change, not necessarily because of any differences in their structure or function within the self but rather because of how changes in environmental demands in our culture are likely to affect TO. One can interpret this as either an endorsement of the trait view of TO, with the qualification that some dimensions of orientation will be relatively more flexible than others. On the other hand, one can interpret these findings as an endorsement of the view that all dimensions of TO are flexible and open to adaptation, with the qualification that orientation will not change unless a sufficient external force acts upon the individual. Given the findings of the present study as a whole, however, it seems more likely that environmental demands or other external factors play a role in shaping TO. Thus, our view is that all dimensions of TO are responsive to developmental and environmental influences and that observing or not observing these differences is more a question of study design and sampling procedures. Such an interpretation appears to reconcile the mixed findings of previous research that have tended to demonstrate both stability and adaptability in TO. What does seem clear is

that TO appears relatively flexible and open to change, irrespective of speculation on the “true nature” of the construct.

The Association Between Time Orientation and Measures of Subjective Well-Being

The second important question this study attempted to answer was how mismatches between time-relevant environmental demands and an individual’s TO might affect subjective well-being. In other words, does the association between subjective well-being and TO differ according to the context? Is having a high future orientation beneficial in some environments and maladaptive in others? Based on the results of the present study, the tentative answer would be “yes”.

The predictions regarding adaptation and TO in the present study were centered around present-hedonistic and future orientation and how these two dimensions of TO would relate to well-being depending upon the environment in question. For undergraduates, it was predicted that present-hedonistic orientation would be positively correlated with life satisfaction. This prediction was confirmed. Additionally, having a high future orientation appeared to have deleterious effects in the undergraduate sample. More future TO was related to more depression, less self-acceptance, and less social integration. In contrast, present-hedonistic orientation was associated with more social integration among undergraduates. These results are consistent with the idea that the environmental demands of freshman and sophomore college undergraduates tend to favor individuals with a present-hedonistic orientation, and can even have aversive effects for those who are future-oriented. The fact that social integration was related to more present-hedonism and less future orientation suggests that environmental demands also may take the form of social norms, and being mismatched for the environment in this way can negatively affect peer associations.

Predictions for the graduate student sample paralleled those for the undergraduate students, only with the emphasis being placed on the benefits of a future orientation rather than a present-hedonistic one. Among this sample, it was predicted that a higher future orientation would be associated with increased life satisfaction, environmental mastery, and self-acceptance. Both predictions related to life satisfaction and self-acceptance were confirmed. However, no association between environmental mastery and future orientation was observed. Nonetheless, support for the idea that the benefits and implications of particular dimensions of TO are context-dependent seems evident in this study.

For both elderly groups it was predicted that greater endorsement of present-hedonistic values would be associated with more life satisfaction. However, because the community-dwelling elders were thought to be living in an environment that maintained a higher focus on the future relative to the retirement home group, it was predicted that future orientation would play a role in maintaining purpose in life, and this was predicted to be even more likely with the Learning in Retirement group members because they presumably have a focus on continual growth. These assertions are further supported by Fink's (1957) work that found that elderly individuals living in the community tended to focus more on the future in projective tests than institutionalized elders. The prediction that, among the LIR group, future TO would relate to greater purpose in life was supported; however, the predicted association with personal growth was not observed.

The elderly group predictions regarding the association between life satisfaction and present-hedonistic TO were only partially supported. Present-hedonistic orientation did not predict life satisfaction for either elderly group, nor was future orientation related to less life satisfaction for the retirement home group. However, the prediction that purpose in life would be

positively related to past-positive TO for both elderly groups, but neither of the younger groups was supported. For both groups, present-hedonistic orientation was positively related to autonomy, a finding that was not predicted. It is possible that individuals in these situations, in which a focus on the present is beneficial given their life circumstances, may feel more independent and capable of making their own decisions if they also are present-oriented themselves. Additionally, other elderly sample-specific findings, such as the fact that past-positive TO was positively correlated to purpose in life, further support the idea that context dependent demands may influence the association between TO and subjective well-being. The association between past-positive TO and purpose in life among the aged only is particularly important given the well-documented support for the idea that the past may increase in value as one ages (e.g., Antonovsky, 1990; Erikson, 1956).

What might be inferred from this collection of findings? Although most measures of subjective well-being did not relate to either future or present-hedonistic orientation, this might speak more to the lack of a association between many indices of subjective well-being and TO than it does to this specific hypothesis. Overall, where significant associations between well-being measures and orientation were found, they were always in the predicted direction. Thus, the present study lends support to the assertion that there are time-relevant demands specific to each individual's environment, and that the consequences of having a particular TO are context dependent. While some correlations, such as that between past-negative TO and life satisfaction, held across all samples, it seems that the majority of significant associations were specific to the sample in question in meaningful and predictable ways.

Important to interpreting these data was the attempt to confirm that the groups in fact differed in their environmental demands. In terms of future demands, the predicted group

differences were clearly supported. Group differences on future-centered DTTRT items showed a clear bias: the younger groups had greater environmental pressures to focus on the future than did the two elderly groups. However, it was predicted that graduate students would have greater future-oriented environmental demands than the undergraduate sample, and this was not the case. Therefore, despite the fact that the results were consistent with predictions that future TO would be beneficial for graduate students but less so for undergraduates, our measures of environmental demands would not have predicted this. At least two possibilities arise: that the methods used to assess environmental demands are not valid, or that these results cannot safely be interpreted as being associated with differences in these environmental pressures. Adding support to the idea that the measures of environmental demands were lacking in some way is the finding that none of the groups differed in terms of perceived pressure to focus on the present. No between-groups difference was found despite the fact that associations between measures of subjective well-being and TO among the undergraduates are suggestive of a culture or environment that heavily favors present-hedonistic attitudes, while at the same time creating a poor fit for individuals with a high future orientation. Similar associations also were found among the older adults, making it difficult to conceive that these groups did not differ from the graduate students or the LIR group in terms of present-centered environmental pressures. As such, it is possible to interpret these findings in terms of group differences in environmental demands, despite the failure of DTTRT items to fully confirm them.

These data extend previous research that typically has focused on a limited number of groups such as adolescents and college students (e.g., Rothspan & Read, 1996; Tismer, 1987), depressed individuals (e.g., Greaves, 1971), or alcoholics (e.g., Smart, 1968). Focusing research in this way has precluded the examination of TO across multiple contexts, and how the role of

TO in an individual's life might change depending on these situational influences. For example, the typical finding is that present-hedonistic orientation is associated with a variety of negative or maladaptive outcomes. Drug use (Aspostolidis et al., 2006; Keough, Zimbardo, & Boyd, 1999), unsafe sexual practices (Rothspan & Read, 1996), and in this study a lower GPA among undergraduate students, are all correlates of present-hedonistic TO. Studied exclusively in these contexts, we ultimately arrive at a limited view of the total influence of TO. For example a future orientation may be detrimental to the subjective well-being of a freshman college student, but important to increasing the subjective well-being of a graduate student, as was the case in the present study. Our results suggest that no TO is inherently adaptive or maladaptive and that only when understood within the context of the environment in which the individual is living, can we fully appreciate how particular dimensions of TO may be more or less beneficial.

Future Orientation and Behavioral Outcomes

Interestingly, future orientation was not related to GPA among undergraduates. This finding stands in contrast to previous research which generally supports the idea that a future orientation is associated with positive academic outcomes (e.g., Teahan, 1958; Zimbardo & Boyd, 1999). However, GPA among undergraduates shared a negative association with present-hedonistic TO, suggesting that, if not a strong focus on the future, a willingness to temper present-centered biases is necessary for maintaining high performance. This also serves to underscore the point that, although they are logically opposed, having a high future orientation and a low present-hedonistic orientation is not the same thing, at least in terms of their implications for behavioral outcomes.

The predicted association between future orientation and number of years taken to complete one's graduate degree was not supported. It was thought that a future orientation might

help to speed progress through graduate school by allowing individuals to constantly maintain a focus on their goals and what they needed to accomplish; and the increased value they placed on achieving those future goals would result in a fewer number of years being required to graduate, as they might be less prone to distraction. However, the opposite association was found. A positive association between future orientation and years to completion was found, possibly indicating that the more time one has spent in school, the more likely he or she is to be highly future-oriented. Such an interpretation would be consistent with the military academy research (Zimbardo & Boyd, 1999) described earlier in which senior officers displayed greater future orientation than younger cadets as well as the finding that increased time spent homeless decreases future orientation (Epel et al., 1999).

Limitations

One weakness of the present study is the inability to distinguish between differences in TO as a result of group status or environmental demands and individuals self-selecting into groups as a result of their TO. It is important to consider the possibility that elderly individuals, for example, may choose to remain in the community or move into a retirement center in part because of his or her TO. This interpretation would suggest that TO is very much a stable, individual-difference variable, and that group differences, where they are found, are simply the result of individuals who have self-segregated based on personality differences such as TO. For example, only an individual with a relatively low present-hedonistic orientation would opt to enter graduate school, given the understanding that one will often be required to sacrifice their immediate desires for the sake of meeting his or her responsibilities in that environment. Hence, group differences in TO could be an artifact of real individual differences resulting in systematic selection biases, rather than a result of any adaptation in TO to accommodate the demands of the

environment. Regrettably, because of the use of self-selected convenience samples the present study is unable to distinguish between these two interpretations. .

One difficulty in interpreting these data lies with the lack of certainty generated by not knowing the exact differences in environmental demands between the groups. Age and cohort differences are both confounded with the time-relevant environmental demands that I have argued are the basis for sample differences in the association between TO and measures of subjective well-being. For example, it is possible that age, rather than time-relevant demands, are the source of group differences in relations observed in this study. Thus, these data cannot demonstrate unequivocally that environmental demands are the source of the situation-dependent influence of TO on subjective well-being, and efforts should be made to develop a more exhaustive metric of time relevant environmental demands.

Another important limitation is the possibility that the samples observed in this study are not representative of the populations they were intended to represent. The idea that the environmental demands of undergraduate students, or of individuals living in retirement homes, are generally applicable is paramount to the external validity of this research. However, it is easy to imagine an undergraduate sample for which being future-oriented is not associated with less social integration, higher levels of depression, or less self-acceptance, for example. This could easily be the case not only for underclassmen at other institutions but also for upperclassmen at the university where this research was conducted. Thus, it is important to bear in mind that the time-relevant demands observed in this study may not apply to other groups with similar characteristics. As a result, more research examining the context dependency of demands and of the association between orientation and other variables of interest is recommended.

The use of a longitudinal or cross-sequential design seems to be the most obvious solution for addressing limitations of the present study.

In regards to being able to distinguish between self-selection biases and environmental demands as the source of group differences in TO, a longitudinal design tracking a group of individuals before and after a status change would be better able to determine which interpretation is most accurate. Additionally, using a longitudinal design to observe the same individuals in more than one situation (e.g., pre- and post-retirement), it should be possible to remove doubt as to whether time-relevant environmental demands are truly the basis for changes in the association between TO and subjective well-being. Therefore, future research employing these designs is recommended.

Conclusion

Currently, there is a paucity of developmental research involving TO. The present study was an attempt to employ a contemporary measure and conceptualization of TO within a cross-sectional design. Although the conclusions that we can reach regarding the two primary hypotheses are constrained by the limitations of this study, there appears to be evidence that TO is a fairly malleable construct. Not only do certain dimensions of TO appear to differ according to the age group or environmental demands, but also the association between TO and subjective well-being varies between samples. The construct itself appears to be more dynamic and less stable than previously thought. And while the pathway from TO to subjective well-being is not a simple or direct one, this line of research should help us better understand just how an individual's association with time influences the outcomes of his or her life, both in terms of behavior and wellness.

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APPENDICES

APPENDIX A

Footnotes

¹Preliminary analyses conducted with the LIR group found that some of the DTRT tasks should be reliably associated with age (see Table 7). Participants in the LIR group were asked to respond a second time to the DTRT items, forming their new responses based on how much they would have thought about each task when they were twenty years old (approximately the average age of the undergraduate sample). As can be seen in Table 7, significant differences in endorsement of the tasks were found for every DTRT task but items 6 (“I try to relax and enjoy the present”) and 8 (“I have a plan for where I want to be in five years”). Thus, in this set of analyses age-related differences in developmental tasks appear to be stronger than what was observed later in the cross-sectional analyses. This might be taken as additional evidence that the DTRT tasks can be used to detect age-related changes in important life goals and demands, as was intended in the DTRT’s design.

APPENDIX B

Table 1

Predictions For Group Differences in the Relation Between Present-Hedonistic and Future TO and Well-Being

TO Dimension	<u>Group</u>			
	Undergraduate	Graduate	LIR	Elder-Retirement
Present-Hedonistic	+life satisfaction -stress	+life satisfaction +environmental mastery +self-acceptance	+life satisfaction +Purpose in life +personal growth	+life satisfaction - stress -life satisfaction
Future				
+positive relation				
-negative relation				

Table 2

Correlations Between Time Orientation Scales

Scale	1	2	3	4	5
1 - Past-Positive	1				
2 - Past-Negative	.01	1			
3 - Present-Fatalistic	.15	.43**	1		
4 - Present-Hedonistic	.32**	.12	.22**	1	
5 - Future	.23**	-.02	-.14	.09	1

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

Table 3

Correlations Between Measures of Subjective Well-being

Measure	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
1 - Depression	1							
2 - Life Satisfaction	-.42**	1						
3 - Autonomy	-.32**	.35**	1					
4 - Positive Associations	-.15	-.14	.16	1				
5 - Purpose in life	-.32**	.19*	.14	.43**	1			
6 - Self-Acceptance	-.50**	.58**	.26**	.29**	.42**	1		
7 - Environmental Mastery	-.18*	.24**	.07	.29**	.33**	.43**	1	
8 - Personal Growth	-.20*	.17*	.17*	.44**	.40**	.34**	.32**	1
9 - Stress	.64**	-.59**	-.31**	.10	-.20*	-.41**	-.20*	-.20*

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

Table 4

Group Means and Standard Deviations for Time Orientation Scales

TO Scale	Group				F
	Undergraduate (N=40)	Graduate (N = 40)	LIR (N=40)	Retirement (N=20)	
Past Negative	2.82 (.80)	2.62 (.71)	2.68 (.63)	2.61 (.73)	0.64
Past Positive	3.52 (.45)	3.37 _a (.33)	3.59 (.55)	3.81 _b (.56)	4.09**
Present-Hedonistic	3.60 _a (.48)	3.34 _b (.38)	3.33 _b (.38)	3.57 _a (.46)	3.62*
Present-Fatalistic	2.34 (.58)	2.06 (.51)	2.14 (.61)	2.48 (.97)	2.69*
Future	3.50 (.46)	3.57 (.36)	3.57 (.48)	3.70 (.39)	1.00

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

_{ab} Group means with different subscripts differ significantly from one another.

Table 5

Supported Predictions For Group Differences in the Relation Between Present-Hedonistic and Future TO and Well-Being

TO Dimension	<u>Group</u>			
	Undergraduate	Graduate	LIR	Elder-Retirement
Present-Hedonistic	+life satisfaction -stress		+life satisfaction	+life satisfaction - stress
Future		+life satisfaction +environmental mastery +self-acceptance	+purpose in life +personal growth	-life satisfaction

+positive relation

-negative relation

Note: supported predictions bolded.

Table 6

Regression Equations Predicting Effects of Present-hedonistic and Future TO on Measures of Subjective Well-being

Variable	Undergraduate (N=40)		Graduate (N=40)		LIR (N=40)		Retirement Home (N=20)	
	β	R ²	β	R ²	β	R ²	β	R ²
Stress		0.3%		5.3%		6.3%		8.0%
Present-Hedonistic	-.01		-.04		.26		.28	
Future	-.06		-.24		-.09		-.02	
Life Satisfaction		11.2%		21.7%*		3.1%		9.4%
Present-Hedonistic	.34*		.12		.01		.06	
Future	-.04		.47**		.17		.31	
Depression		17.2%*		4.1%		5.2%		--
Present-Hedonistic	-.09		.06		.22		--	
Future	.42**		-.18		-.17		--	
Self-Acceptance		14.1%		19.8%*		2.4%		14.1%
Present-Hedonistic	.22		.18		-.11		-.05	
Future	-.33*		.45**		.15		-.38	
Environmental Mastery		8.7%		2.5%		9.1%		8.2%
Present-Hedonistic	-.15		.01		.01		-.02	
Future	.27		.16		.30		-.30	
Autonomy		1.7%		1.6%		11.8%		36.9%*
Present-Hedonistic	.13		-.09		.35*		.58**	
Future	-.02		.07		-.03		-.13	
Purpose In Life		1.7%		1.7%		17.8%*		9.8%
Present-Hedonistic	.05		-.13		.05		.30	
Future	.12		-.02		.40*		-.06	
Personal Growth		12.3%		13.9% ^a		3.4%		22.9%
Present-Hedonistic	.22		.28		.16		.48*	
Future	.24		.31 _a		.06		-.01	
Positive Associations With Others		3.6%		1.9%		6.1%		37.2%*
Present-Hedonistic	-.13		.13		.12		.36	
Future	.15		.08		.18		-.45*	
Social Integration		21.4%*		3.4%		13.7%		--
Present-Hedonistic	.39*		.19		.25		--	
Future	-.31*		.06		.21		--	

* $p < .05$. ** $p < .01$. ^aapproaching significance, $p = .06$.

-- Retirement home group did not complete these measures.

Table 7

Comparison of DTRT Scores Between “20 Years Ago” and “Today” for the LIR Group

Developmental Task	"20 Years Ago"	"Today"	<i>t</i>
I think about having a family.	2.30	1.13	5.13**
I think about my career plans and opportunities.	3.50	2.43	5.20**
I think about getting married.	2.68	1.28	5.01**
I think about ways to invest my money.	2.03	3.25	-6.78**
I save for the future.	2.33	3.52	-4.51**
I try to relax and enjoy the present.	3.70	4.05	-1.98 ^a
I think about my death.	1.60	3.10	-8.22**
I have a plan for where I want to be in five years.	3.05	3.00	0.21
I spend time reflecting on my past and who I am.	2.23	2.95	-3.33**
I think about my child's/children's future.	2.15	3.80	-5.53**

** $p < .01$. ^a $p = .06$

Table 8

Group Means and Standard Deviations for the DTRT

Developmental Task	Group				F
	Undergraduate (N=40)	Graduate (N=40)	LIR (N=40)	Retirement (N=20)	
I think about having a family.	3.89 _a (1.04)	3.58 _a (1.20)	1.13 _b (.65)	1.00 _b (.00)	95.50**
I think about my career plans and opportunities.	4.53 _a (.60)	4.45 _a (.50)	2.43 _b (1.21)	1.90 _b (1.29)	70.10**
I think about getting married.	4.08 _a (.94)	2.53 _b (1.52)	1.28 _c (.85)	1.25 _c (.79)	52.32**
I think about ways to invest my money.	3.23 (1.14)	3.23 (1.21)	3.25 (.93)	3.05 (1.43)	0.15
I save for the future.	3.08 (1.21)	3.53 (1.20)	3.53 (1.43)	3.25 (1.59)	1.07
I try to relax and enjoy the present.	3.80 (.76)	3.83 (.68)	4.05 (.71)	4.10 (1.02)	1.28
I think about my death.	2.25 _a (1.24)	1.95 _a (.96)	3.1 _b (.87)	2.25 _a (.97)	9.22**
I have a plan for where I want to be in five years.	3.50 (1.24)	3.85 _a (.98)	3.00 _b (1.22)	3.10 (1.33)	4.01**
I spend time reflecting on my past and who I am.	3.30 _a (1.02)	3.43 _a (1.12)	2.95 _a (.96)	2.35 _b (.99)	5.71**
I think about my child's/children's future.	1.75 _a (1.41)	1.45 _a (1.15)	3.80 _b (1.16)	3.45 _b (1.32)	32.14**

* $p < .05$. ** $p < .01$._{abc} Group means with different subscripts differ significantly from one another.

APPENDIX C

Measures

Zimbardo Time Perspective Inventory

Read each item and, as honestly as you can, answer the question:

"How characteristic or true is this of you?"

Circle the appropriate number using the scale:

1 = Very Untrue -> 3= Neutral -> 5= Very True

1. I believe that getting together with one's friends to hang out is one of life's important pleasures.
1 2 3 4 5
2. Familiar childhood sights, sounds, smells often bring back a flood of wonderful memories.
1 2 3 4 5
3. Fate determines much in my life.
1 2 3 4 5
4. I often think of what I should have done differently in my life.
1 2 3 4 5
5. My decisions are mostly influenced by people and things around me.
1 2 3 4 5
6. I believe that a person's day should be planned ahead each morning.
1 2 3 4 5
7. It gives me pleasure to think about my past.
1 2 3 4 5
8. I do things on the spur of the moment.
1 2 3 4 5
9. If things don't get done on time, I don't worry about it.
1 2 3 4 5
10. When I want to achieve something, I set goals and consider specific means for reaching those goals.
1 2 3 4 5
11. Overall, there is much more good to recall than bad in my past.
1 2 3 4 5
12. When listening to my favorite music, I often lose all track of time.
1 2 3 4 5
13. Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play.
1 2 3 4 5
14. Since whatever will be will be, it doesn't really matter what I do.
1 2 3 4 5

15. I enjoy stories about how things used to be in the good old days.
1 2 3 4 5
16. Painful past experiences keep being replayed in my mind.
1 2 3 4 5
17. I try to live my life as fully as possible, one day at a time.
1 2 3 4 5
18. It upsets me to be late for appointments.
1 2 3 4 5
19. Ideally, I would live each day as if it were my last.
1 2 3 4 5
20. Happy memories of good times spring readily to mind.
1 2 3 4 5
21. I meet my obligations to friends and authorities on time.
1 2 3 4 5
22. I've taken my share of abuse and rejection in the past.
1 2 3 4 5
23. I make decisions on the spur of the moment.
1 2 3 4 5
24. I take each day as it is rather than try to plan it out.
1 2 3 4 5
25. The past has too many unpleasant memories that I prefer not to think about.
1 2 3 4 5
26. It is important to put excitement in my life.
1 2 3 4 5
27. I've made mistakes in the past that I wish I could undo.
1 2 3 4 5
28. I feel that it's more important to enjoy what you're doing than to get work done on time.
1 2 3 4 5
29. I get nostalgic about my childhood.
1 2 3 4 5
30. Before making a decision, I weigh the costs against the benefits.
1 2 3 4 5
31. Taking risks keeps my life from becoming boring.
1 2 3 4 5
32. It is more important for me to enjoy life's journey than to focus only on the destination.
1 2 3 4 5
33. Things rarely work out as I expected.
1 2 3 4 5
34. It's hard for me to forget unpleasant images of my youth.
1 2 3 4 5
35. It takes joy out of the process and flow of my activities, if I have to think about goals, outcomes, and products.
1 2 3 4 5
36. Even when I am enjoying the present, I am drawn back to comparisons with similar past experiences.
1 2 3 4 5
37. You can't really plan for the future because things change so much.
1 2 3 4 5

38. My life path is controlled by forces I cannot influence.
1 2 3 4 5
39. It doesn't make sense to worry about the future, since there is nothing that I can do about it anyway.
1 2 3 4 5
40. I complete projects on time by making steady progress.
1 2 3 4 5
41. I find myself tuning out when family members talk about the way things used to be.
1 2 3 4 5
42. I take risks to put excitement in my life.
1 2 3 4 5
43. I make lists of things to do.
1 2 3 4 5
44. I often follow my heart more than my head.
1 2 3 4 5
45. I am able to resist temptations when I know that there is work to be done.
1 2 3 4 5
46. I find myself getting swept up in the excitement of the moment.
1 2 3 4 5
47. Life today is too complicated; I would prefer the simpler life of the past.
1 2 3 4 5
48. I prefer friends who are spontaneous rather than predictable.
1 2 3 4 5
49. I like family rituals and traditions that are regularly repeated.
1 2 3 4 5
50. I think about the bad things that have happened to me in the past.
1 2 3 4 5
51. I keep working at difficult, uninteresting tasks if they will help me get ahead.
1 2 3 4 5
52. Spending what I earn on pleasures today is better than saving for tomorrow's security.
1 2 3 4 5
53. Often luck pays off better than hard work.
1 2 3 4 5
54. I think about the good things that I have missed out on in my life.
1 2 3 4 5
55. I like my close associations to be passionate.
1 2 3 4 5
56. There will always be time to catch up on my work.
1 2 3 4 5

New future worry/rumination items included in the ZTPI measure

I worry a lot about the things that I need to get accomplished.

1 2 3 4 5

I worry about the future.

1 2 3 4 5

I get a little anxious sometimes when I think about all the things I need to get done.

1 2 3 4 5

Ryff Psychological Well-Being Short Scale

For each of the items below, read the statement carefully and indicate on a 1-5 scale how much you agree with the statement. Write the number that corresponds to your answer in the blank next to each question.

1 = strongly disagree 2=somewhat disagree 3=neutral 4=somewhat agree 5=strongly agree

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

Social Well-Being Scale

For each statement please indicate your level of agreement by circling the appropriate response.

Circle the appropriate number using the scale:
1 = Very Untrue -> 3= Neutral -> 5= Very True

1. I feel close to other people in my community.
 1 2 3 4 5
2. My community is a source of comfort.
 1 2 3 4 5
3. I don't feel I belong to anything I'd call a community.
 1 2 3 4 5

Life Satisfaction

For each of the items below, read the statement carefully and indicate on a 1-5 scale how much you agree with the statement. Circle the number that indicates your level of agreement.

1 = strongly disagree 2=somewhat disagree 3=neutral 4=somewhat agree 5=strongly agree

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

Manipulation Check Items

Read each statement and answer as honestly as possible using the following scale:

1 = Never 2 = Rarely 3 = Sometimes 4 = Often

5 = All of the time

Consider your day-to day life for a moment. How much do you feel that the circumstances of your life require you to focus on the present or the “here and now”?

1 2 3 4 5

Consider your day-to-day life for a moment. How much do you feel that the circumstances of your life require you to focus on the future or planning for future tasks and goals?

1 2 3 4 5

Consider your day-to-day life for a moment. How much do you feel that the circumstances of your life require you to focus on the past or the way things were before?

1 2 3 4 5

Developmental Time Relevant Tasks

Please read each item and, as honestly as you can, answer the question:

"How often do you do this?"

Circle the appropriate number using the scale:

1 = Never 2= Rarely 3= Sometimes 4= A lot 5= All the Time

1. I think about having a family.
 1 2 3 4 5 N/A (I already have a child/children)
2. I think about my career plans and opportunities.
 1 2 3 4 5
3. I think about getting married.
 1 2 3 4 5 N/A (I'm already married)
4. I think about ways to invest my money.
 1 2 3 4 5
5. I save for the future.
 1 2 3 4 5 N/A (I am currently unemployed)
6. I try to relax and enjoy the present.
 1 2 3 4 5
7. I think about my death.
 1 2 3 4 5
8. I have a plan for where I want to be in five years.
 1 2 3 4 5
9. I spend time reflecting on my past and who I am.
 1 2 3 4 5
10. I think about my child's/children's future.
 1 2 3 4 5 N/A (I don't have children)