FUTURE TIME PERSPECTIVE IN

FIVE LIFE DOMAINS

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Abstract: Future time perspective is a key construct in many fields of study, but operational definitions and measurement instruments differ considerably. This has led to inconsistent findings in the literature. In the present investigation, various measures of future time perspective were compared. In addition, the relationship between future time perspective and behavior was examined in five specific life domains in which future time perspective has been shown to play an important role. These domains are: financial planning, career planning, health planning, social planning and leisure planning. Broad, context-free measures of future time perspective were successful in predicting five different future time perspective scales specific to particular contexts. That said, however, domain-specific future time perspective scales were more successful than general future time perspective scales in predicting behavior in each of the five life domains. The implications of these findings are discussed in terms of determining the best measure of future time perspective—which as it turned out, was dependent on the life domain being assessed.

TABLE OF CONTENTS

Chapter Page

LIST OF TABLES

LIST OF FIGURES

Figure Page

CHAPTER I

INTRODUCTION

St. Augustine once said, “What then, is time? If no one asks me, I know what it is. If I wish to explain it to him who asks, I do not know.” Time is relevant to just about every individual, situation, or context one might imagine. Despite this, from a scientific perspective time is hard to define and operationalize. It has been thought about, written about, and extensively discussed by psychologists, philosophers, sociologists, and economists, among others. Despite the significant amount of attention it has received, time, as a construct, is still poorly understood. The goal of the present investigation is to explore the concept of time from a psychological perspective, and in particular, individuals’ perceptions of the future. In doing so, this paper will focus on the various ways in which individuals’ perceptions of the future are related to their behaviors in the present. It is hoped that by examining these dimensions a more integrated understanding of time perspective in context will be achieved.

The scope and organization of this dissertation is as follows. First, the ways in which time has been operationalized will be discussed. Next, the importance of time orientation as a psychological construct will be explained, and measurement instruments and methods used to assess time orientation will be reviewed. Then, inconsistencies in the literature will be posited, and a series of empirical analyses will be carried out. The document will conclude by discussing the implications of the findings and ideas about how future time perspective should be measured.

Existence of and Perception of Time

The study of time is not a new concept. Ideas about the existence of time date back to early philosophers (Hawking, 1988), and debates about the understanding of time date back just as far. Price (1996) describes how the study of time is a very complex field. It is difficult to study because individuals are at one particular place in time, and therefore, may not have the capacity to fully understand time in its entirety. A second complexity is that the study of time spans many disciplines, and there is appreciable debate both between and within disciplines as to how the construct should be conceptualized.

Modern debates on time can be found in research in psychology, sociology, economics, education, physics, and philosophy, but the earliest of debates can be traced back to the fields of physics and philosophy (Price, 1996). Physics is primarily concerned with understanding aspects such as the direction of time, the symmetry of time, and whether or not distinctions between the past, present, and future can be identified irrespective of individuals' perceptions. Philosophy is primarily concerned with human patterns of thought and the subjective experience of time. Within the field of philosophy, research can be further decomposed into subfields. Two large subfields include the study of temporal orientations toward the past, present, or future, and the study of the flow and passage of time (Price, 1996). The focus of this investigation is related to the first of these two subfields. However, a brief review of the study of the flow and passage of time will precede in order to lay a suitable foundation for the discussion of temporal orientation.

The perception of time hinges on two key components: the succession of time—or series of events one experiences—and the duration time—the extent to which an individual perceives time as passing (Fraisse, 1984). Duration can be fast, slow, or any point in between and varies based on situations and conditions. Both the perception of succession (sequentially organized, distinct events) and duration (the interval between two successive events) are recognized very early in life. However, their joint functioning is not apparent until about age seven when a child becomes capable of logical thinking and imagining events at various future time points (Fraisse,

1984). Erikson (1956) corroborates that it is not until the stage of ego identity that individuals are fully able to exercise a sense of thinking about the future.

Previous research has suggested explanations for why duration sometimes seems longer or shorter at given times. One view, which takes into account the notion that time seems to move faster when one is actively engaged in a pleasant activity, suggests that the duration of time is shortest when the span of time is filled with events, and that the duration is longer when the span of time is less filled (Priestly, 1968). A second view focuses on how time can seem slower when many events take place in one time span. This view, which is in opposition to the first, suggests that the perceived duration of time seems longest when time is filled with events, and that duration seems shorter when the span of time is less filled (Ornstein, 1970). A third view suggests that these opposing views can be considered simultaneously if one takes into account stimulus complexity and preference differences based on personality (Hogan, 1978).

Among the views discussed above, both Priestly's and Orstein's explanations represent linear depictions of time, but they are competing viewpoints. Hogan's explanation encompasses both views, but differs in that it is a non-linear perspective. There are many differences of opinion regarding the perception of time, but all acknowledge that time is subject to human perceptions and that a variety of factors can influence the perception of time.

Culture and Time

Culture can influence individuals' attitudes about time. Time in different cultures may vary in terms of the way in which it is measured (such as in hours or the time that it takes for an event to occur) and it may also differ in terms of how culturally important it is to adhere to time (Jones, 1988). Different cultures have been shown to think about time in fundamentally different ways. Poole (2000), for instance, points out that in Western societies individuals tend to think of time as moving in a single linear direction. African-Americans also think of time as moving in a single direction, but their view differs from that of Anglo-Europeans in that they depict time as moving in a spiral fashion rather than linearly. This notion of a spiral conception of time can be

thought of as being akin to the cycle of different seasons or the cycles of the moon. The Hindu representation of time differs from both linear and cyclic perspectives and proposes that time moves in a circular fashion with no distinct beginning and end points. Native American views of time typically consider time as a circular representation of the seasons, yet the Hopi Indians see time as a blended, interwoven pattern that simultaneously unifies the past, present and future.

Furthermore, there is evidence that there are interactions between cultural perceptions of time and age, with different age groups of the same culture having different perceptions (Shannon, 1976). These various cultural views are likely to impact both how individuals perceive time, and also the broader context of future values. Culture can also have an influence on time perspective in more subtle ways. For example, the relationship between future goals and the perception of time may be moderated by whether a culture is individualistic or collectivist in nature (Seginer, 2008), or by how participants ethnically identify (Block, Buggie, & Matsui, 1996). Culture can also have broad implications for how time perspective relates to other variables. For example, in one study (Day, Borkowski, Punzo, & Howsepian, 1994) a group of Mexican-American children with poor academic performance were identified as a high-risk population for not completing school. An intervention was administered that was designed to increase their level of future orientation, with the hope that doing so would lead to clear and consistent future career goals. The intervention—having children generate possible future scenarios based on their individual situation—did lead to clearer future goals. In short, culture can influence time in both a broad, overarching sense (such as one's perception of the importance of time) and also in specific contexts (such as thinking of time in a linear versus circular fashion).

Experimental Manipulations of Time Orientation

Some research studies have identified time perspective as a variable that can be experimentally manipulated—that is, it can be manipulated based on assigned conditions. In one study (Kim, Rao, & Lee, 2009), participants were divided into two groups and given information about a political candidate. One group was told that a hypothetical election would be held the

following week and a second group was told the election would be held six months later. The purpose of this investigation was to determine whether messages delivered by political candidates are more influential when framed in the short-term verses framed in the long-term. Participants in the "six month" condition reported that the voting decision was not immediate and viewed the political decision as less important compared to participants in the "following week" condition, who reported that the decision was immediate and viewed the political decision as more important.

Another way to manipulate time perspective is to instruct one group of participants to think about events in the near future and instruct a different group to think about events far in the future. Using this manipulation, participants are considered more or less future oriented based on how far in the future they are instructed to think (Trope & Liberman, 2003). In a different study (Förster, Friedman, & Liberman, 2004), time perspective was experimentally manipulated by asking participants in one group to think of an event as happening that same day (present time perspective) and asking a second group to think of an event that would occur one year from today (future time perspective). Despite the fact that some participants may come into a study as naturally being more present-oriented or more future-oriented on the basis of their personality, it seems that experimental manipulations can be effective way to alter one's pre-existing orientation based on the requirements of the task.

Broad Conceptualizations of Time Perspective

In some instances, time perspective is conceptualized as one's attitude toward the future, notwithstanding attitudes toward the past or present (Carstensen & Lang, 1996; Hershey & Mowen, 2000; Nuttin, 1985; Rakowski, 1982). In other instances, time perspective is conceptualized as a multidimensional construct, with future orientation being only one of a number of different possible orientations to time. Zimbardo and Boyd (1999) have identified five personality-based time orientations which they refer to as: past-negative, present-hedonistic, past-positive, present-fatalistic and future. These categories are purported to reflect relatively stable

individual difference dimensions. The past-negative category describes individuals who are primarily oriented toward negative events that have happened in the past. The present-hedonistic category describes individuals who endorse risk-taking, impulsivity and an orientation toward enjoying the present moment, irrespective of future consequences. The past-positive category describes individuals who are oriented toward past events, but who focus on positive (rather than negative) events. The present-fatalistic category describes individuals who believe that the future holds no promise and are thus oriented (in a negative, fatalistic fashion) to the present. Finally, the future category describes individuals who are oriented toward thinking about the future and strive to achieve goals and rewards in the future. Zimbardo's time orientations have been widely used to explore a variety of topics including substance abuse (Keough et al., 1999), risky driving (Zimbardo, Keough, & Boyd, 1997), homelessness (Epel, Bandura, & Zimbardo, 1999) and environmental attitudes (Milfont & Gouveia, 2006).

In a subsequent line of work, Boniwell and Zimbardo (2003) explored the concept of a "balanced time perspective," which they defined as the ability to quickly switch between Zimbardo's five time perspectives as warranted by different situations. Webster (2011) suggested that a balanced time perspective could be conceptualized as an individual being equally oriented toward the past and future and he developed a scale to measure it. Unlike Zimbardo, Webster did not consider present orientation to be part of a balanced time perspective. Webster also conceptualized past orientation items only in a positive manner, whereas Zimbardo made a distinction between a focus on past-positive and past-negative events. In considering the various time orientations, future orientation remains the most widely used in experimental work. This is because considering the future is essential when it comes to proactive planning for one's life in the years to come (Braley & Freed, 1971).

Future Time Perspective

The focus of the present investigation is on the nature of future time perspective; it does not encompass issues related to the perception of time. As Rakowski (1979) notes, time

perspective and the perception of time are broadly related, but the two lines of study have developed independently of one another. Moreover, physics-based explanations of time and cultural differences in time will not be addressed. For the purposes of this document, the Western view will be adopted. Studies of experimentally induced future time perspective will not be included; rather, future time perspective will be conceptualized and discussed as a relatively stable, individual difference dimension. Finally, time orientations other than future—namely, past, present, or balanced—go beyond the scope of the present investigation.

Relevance of Future Time Perspective

There is no doubt that the study of future time perspective is important. Having a long future time perspective can lead to many benefits. Individuals who are future-oriented are more emotionally healthy, more self-satisfied and more in control than those who are not (Braley & Freed, 1971). Gjesme (1983a) discussed the challenges associated with studying future time perspective, but emphasized that it is an important construct to understand because time is a universal human experience related to many outcomes (Gjesme, 1979). Strathman, Gleicher, Boninger, and Edwards (1994) elaborated on that idea by developing a scale to measure future time perspective. These authors emphasized that the construct is important because individuals' feelings about the future govern their present decisions. Klahr (1994) noted that future time perspective is also related to effective problem solving and he proposed that increased levels of future-oriented thinking are needed to effectively solve complex problems.

Empirical studies have convincingly demonstrated that future time perspective plays a significant role in motivation and planning behaviors among members of a number of different populations. In one study (Oyserman & Markus, 1990), delinquent youth were guided to imagine different perceptions of themselves in the future, and by doing so, they learned to increase their future-oriented thinking. This intervention led them to make more proactive and adaptive decisions. In a different study (Greene & DeBacker, 2004), it was determined that future time orientation plays a significant role in motivation for both men and women and for individuals of

different ages. This held true even when different conceptualizations of future time perspective were used. Epel et al. (1999) found that time perspective was an instrumental variable in domains such as academic achievement, vocational maturity, career decision-making and family planning. Future time perspective has also been linked to environmental attitudes (Milfont & Gouveia, 2006) and risk taking (Zimbardo et al., 1997). Future time perspective has also been shown to be related to other planning variables and to be predictive of planning outcomes. Five life-planning domains in particular (discussed in the following section) have been shown to be strongly related to future time perspective. The body of literature on future time perspective recognizes that the variable is one that is deserving of attention, but the specific ways in which it has been operationalized and measured are indeed quite varied.

Future Time Perspective in Specific Life Domains

Time perspective plays a role in planning behaviors and as a construct, it has been linked to positive outcomes in a number of life domains. Five domains in particular have been shown to be especially relevant to future orientation: financial planning, career planning, health planning, social planning and leisure planning.

Financial Planning. A number of studies have been carried out on time perspective and preparation for retirement. In one study (Hershey, Henkens, & Van Dalen, 2010), path models were constructed to analyze the retirement planning practices of Dutch and American workers. Among the members of the Dutch sample, future time perspective predicted retirement goal clarity and perceived financial knowledge. Moreover, it indirectly predicted the outcome variable, perceived savings adequacy—a relationship that was mediated by retirement goal clarity, perceived financial knowledge and retirement planning activity level. Among members of the American sample, future time perspective predicted retirement goal clarity, perceived financial knowledge, and it also directly predicted perceived savings adequacy (the outcome variable in the investigation). These findings suggest that future time perspective is important both

independently and as a mediator, and that the role of future time perspective in financial planning can be generalized beyond the United States.

Also in the realm of financial planning, Antonides, Manon de Groot, and Van Raaij (2011) adapted two time orientation scales to examine individuals' mental budgeting and household finance decisions. Having a long-term orientation had a positive effect on financial decisions and having a short-term orientation had a negative effect. Evidence suggests that a lack of future orientation can have effects beyond the household level and also beyond the financial realm (McCullough, 2012). Among small business owners, it was found that when future time perspective scale items were reversed to create a latent variable called "Live for Today Personality," the variable negatively predicted goal clarity, suggesting that a lack of future orientation is associated with a lack of clear goals.

In another finance-related study (Howlett, Kees, & Kemp, 2008), future time perspective was measured using the Consideration of Future Consequences scale, which was originally developed by Strathman et al. (1994). Howlett et al. found a significant interaction between financial knowledge and future time perspective in predicting 401(k) plan enrollment. Jacobs-Lawson and Hershey (2005) found a similar 3-way interaction between financial knowledge, future time perspective and risk tolerance that predicted perceived financial savings adequacy. Knoll, Tamborini, and Whitman (2012) discuss the importance of taking a long term perspective on retirement savings and suggest that being married may help individuals to feel more connected with their older selves, and thus, increase one's level of future time perspective. Ellen, Wiener, and Fitzgerald (2012) used a broad conceptualization of future time perspective by asking participants to imagine how they might be in the future. Participants reported how detailed and vivid their visualizations were. Individuals who were successfully able to visualize their future selves were found to have previously engaged in more financial planning activities for retirement. This suggests that being able to think in a long-term time frame leads to benefits when it comes to long-term planning. In a review paper on financial planning, Hershey, Jacobs-Lawson, and Austin

(2013) note that future time perspective and other personality variables have been linked to savings tendencies and investment decisions in multiple empirical studies. In the finance domain, future time perspective has consistently been shown to have direct relationships with financial outcomes (e.g., amount saved for retirement) and in other cases it has been shown to be a partial mediator (e.g., by mediating the relationship between financial goals and financial outcomes). This suggests that future time perspective is related not only to financial planning outcomes, but also to other underlying constructs that are important in the process of financial planning.

Career Planning. Because work life precedes retirement, it is not surprising that there are also many studies that have been conducted on the relationship between time perspective and career planning. In one study (Das, 1987), participants listed events that were likely to happen in the future and how many years into the future each was likely to occur. Participants who listed a greater number of years were considered more future oriented and participants who listed a fewer number of years were considered more present-oriented. The authors suggested that one applied implication of this finding is that employees should be assigned to areas/tasks within a company that match the employee's time horizon. For example, present-oriented employees should be responsible for tasks that can be completed in a short time frame, whereas future-oriented employees should be responsible for tasks that are larger in scope and require a longer time frame to bring to completion.

In a different article on time perspective and career planning (Zacher & Frese, 2009), researchers modified a future time perspective scale to apply it specifically to the occupational domain. They found that work characteristics partially mediated the relationship between age and remaining opportunities at work, with remaining opportunities being a proxy for one's future time perspective toward work. The authors concluded that the findings suggest employees have longer and more engaged participation in the workforce if they have high levels of future time perspective in the context of work and career planning. In another study (Peetsma & Van der Veen, 2011), researchers queried students about their current investment in academics and how

that would relate to their careers in later life. As anticipated, they found that future time perspective was associated with a stronger investment in and commitment to learning.

In a study by Kooij, de Lange, Jansen, and Dikkers (2013), employees of a university and employees of a health care agency were surveyed about not only their attitudes toward time, but also their level of engagement and motivation toward their work. Two subscales of a measure of future time perspective (Carstensen & Lang, 1996; Lang & Carstensen, 2002) were employed. One measured opened-ended future time perspective (e.g., "many opportunities await me in the future") and the second measured limited future time perspective (e.g., "I have the sense that time is running out.") The results were analyzed in the context of a path model. Employees who were high on the open-ended subscale were likely to be high on growth motivation and esteem motivation attitudes toward their jobs. These motives predicted work engagement for both groups. Overall, the findings suggest that having high levels of future time perspective can lead to high levels of motivation and high levels of overall engagement with one's work.

Hesketh, Watson-Brown, and Whiteley (1998) conducted a study that examined how unemployed individuals' perception of time differed as a function of how much time they believed was remaining until they got a job, as well as how that waiting time was filled. Incentives and benefits of jobs were systematically varied across a series of experiments. The authors found that whether an individual opted for an earlier job opportunity that would not be enjoyable or a later opportunity that would be enjoyable varied as a function of one's level of anxiety, age, and how the waiting time was filled. The authors concluded that perceptions and attitudes toward time play an important role in the employment domain.

Marko and Savickas (1998) conducted an intervention study with high school and college students designed to help them be future-oriented when it came to making effective career choices and being competent in their chosen profession. Participants took part in structured lesson plans that included tasks such as using drawings to show how they felt about their life in the past, present and future, setting goals for the future, generating possible ideas about what they would

be doing in the future, listing events that are likely to happen in the future, estimating ages at which future events or future goals would be likely to happen, and making timelines showing past, present and future events. These activities were all designed to foster future-oriented thinking and help participants establish strong linkages between their own personal past, present and future lives. Both the experimental group in the high school sample and the experimental group in the college sample showed significant increases in future orientation as a function of completing these tasks compared to members in the (no manipulation) control groups. The authors concluded that increasing future orientation is likely to increase effective career planning.

Seijts (1998), in a review of future time perspective and work motivation, argued that having a clear sense of the future is of the utmost importance for employees to be motivated in their work and career planning. The author explained that a high level of future time perspective underlies goals for the future and he draws two propositions related to that perspective. The first is that individuals who are future oriented are more likely to set goals for the distant future. The second is that individuals who achieve their goals develop more strategies—and better strategies—for achieving additional goals. All employees, Seijts argued, even if not future oriented by nature, should strive to set goals for the near future, as these proximate goals serve as stepping stones for more distant and complex future goals. The author acknowledges that various measures of and definitions of future time perspective in the literature need to be addressed, and that future studies should examine how it develops and the other types of variables to which it is related. Seijts concludes by underscoring the need for more studies pertaining to careers and future time perspective, emphasizing the important role future time perspective plays in career planning.

Health Planning. Health planning is another life domain in which future time perspective plays an important role. In general, relative to individuals who are present oriented, individuals who are future oriented are more likely to take preventative health measures and live healthier lifestyles. In one study (Mahon & Yarcheski, 1994), adolescents completed a measure of

future time perspective and were queried about their current health practices. Higher future orientation scores were significantly correlated with health attitudes such as being conscious of nutrition, having adequate relaxation time, taking safety precautions and avoiding substance abuse. Brown, Muhlenkamp, Fox, and Osborn (1983) also assessed health attitudes and concluded that locus of control and future orientation influence individuals' broad health values. Hall and Epp (2013) considered both health attitudes and actual physical activity level and concluded that future time perspective influences both. Kooij and Van de Voorde (2011) analyzed a time orientation model based on developmental theory. They found that having good health was related to participants perceiving further future extension. In another investigation (Laran, 2010), participants' healthy eating behaviors were assessed. It was found that individuals were able to exercise better self-control when nutritional information was framed in a way that promoted thinking about future health. In a study designed to promote engagement in preventative health screenings, Orbell, Perugini, and Rakow (2004) hypothesized that individuals with a low future orientation would be less likely to take preventive health measures. Their hypothesis was supported and the authors demonstrated that manipulating information about time frames led to positive results; low future orientation individuals were more likely to engage in positive health behaviors when the negative consequences (as opposed to benefits of avoidance) were presented in a long-term frame.

Petry, Bickel, and Arnett (1998) focused not on positive heath behaviors, but on a population of individuals with substance abuse problems. Having a low future time perspective was identified as a risk factor for substance abuse, which was a finding that was consistent across different future time perspective measures. The health domain covers a wide range of behaviors (e.g., safety, healthy eating, exercise) and future time perspective has been linked to all of them.

Social Planning. Social relations is another important domain in late life, and future time perspective has been shown to have a strong influence in this area. In one study (Waite & Joyner, 2001), investigators examined social relations between couples. They defined future time

perspective as one's time horizon and found that a long time horizon was related to both social and sexual satisfaction in relationships, particularly for women. In another study on long term social relations between couples, Oner (2001) found that among the most satisfied couples, both individuals had high levels of future time perspective, with other variables serving as mediators of satisfaction. A related vein of work supported these findings and found that future orientation was adaptive in terms of romantic relationships (Oner, 2000).

Peetsma and Van der Veen (2011) found that long-term time perspectives in social relations had a positive effect on students' investment in learning. Trommsdorff (1983), in reviewing the importance of future time perspective as it relates to healthy social development, pointed out that future time perspective may be viewed differently by those in different social contexts. For example, delinquent youth or children who have disabilities may achieve the best outcomes if they focus on short-term goals, and youth who do not face these circumstances may achieve the best outcomes by focusing on long-term goals. In one study, delinquent teenage boys were found to be less future-oriented than their non-delinquent peers, which suggests that high levels of future time perspective should potentially be cultivated in different ways in different populations (Stein, Sarbin, & Kulik, 1968). The authors discussed how future time perspective is a key variable in healthy social development, but one that is complex, multi-dimensional and difficult to apply to all education practices—emphasizing the need for more research on the topic.

Leisure Planning. Leisure planning is another important life domain. Many individuals plan to spend time in retirement doing leisure activities, such as travelling and visiting with friends and family. In one study (Philipp, 1992), participants were divided into groups of past, present, or future oriented individuals. It was found that members of the future oriented group reported participating in the greatest number of leisure activities. On this basis, the authors concluded that more research should be done on future time perspective and leisure. They also noted that the findings were not surprising, because future time perspective is related to many human behaviors involving planning. In another study (Zalatan, 1996), it was found that

education and age were both positively correlated with time spent planning for vacation. Education and age have been found to be predictive of future time perspective in other studies (Glass & Kilpatrick, 1998; Padawer, Jacobs-Lawson, Hershey, & Thomas, 2007), which suggests that findings from previous studies that relate demographic indicators to future time perspective could be applied to the leisure domain.

The literature on future time perspective demonstrates that it is an instrumental variable in five life domains—financial planning, career planning, health planning, social planning and leisure planning—that influence a variety of behaviors and outcomes. Although as a variable, future time perspective has been shown to be robust across different fields of study, experimental tasks and measurement instruments have not always been robust, despite their evolution over the past few decades.

Approaches to the Measurement of Future Time Perspective

Future time perspective has been defined in a variety of different ways. Gjesme (1983b) determined that future time perspective could be thought of as a personality trait, as a feeling brought on by experimental manipulations, or as the valence of future goals. Rakowski (1979) related future time perspective to past and present perspectives. He proposed that time perspective was comprised of memories about the past, concerns about the present and expectations about the future. Nuttin (1985) defined future time perspective as a cognitive mechanism linking learning, intention, behavior and motivation. He divided the concept of "time perspective" into multiple categories: time perspective proper, time attitude, and time orientation. Time orientation refers to the linear direction individuals' thoughts and behaviors tend to take and it can be oriented toward the past, present, or future.

In addition to varying definitions of the construct, various ways of measuring future time perspective have emerged over the years. Early measures tapped general future time perspective, not specific to any one life context. The first researchers to measure time perspective often used tasks to manipulate it experimentally, and subsequent researchers sought to produce more valid

and reliable measures through the use of scales designed to tap general attitudes toward time. Subsequent to that work, domain-specific scales began to emerge in the literature (e.g., in the area of health), and since that time both domain-general and domain-specific scales have been widely used in studies that examine the relationship between time perspective and outcome behaviors.

Definitions of Future Time Perspective. In studies ranging from about 1950 through 1990, views of future time perspective tended to conceptualize the construct as being general and broad. Erikson (1956) acknowledged that the ability to think about the future is an aspect of human development that forms as children and adolescents advance cognitively. As mentioned previously, Rakowski (1979) related future time perspective to past and present perspectives. He proposed that time perspective was comprised of memories about the past, concerns about the present and expectations about the future. More recent studies have taken a broader view of future time perspective by conceptualizing it as a general ability to think about future events in one's life, notwithstanding distinctions and definitions offered by earlier researchers.

Domain-General Measures of Time Perspective. Prior to 1990, measures of time perspective—often operationalized as a task as opposed to a scale—were general in nature. More recent measures of time perspective have improved psychometric properties, but many still assess time perspective as a general, unitary construct that underlies attitudes toward the future. Some contemporary measures of time perspective are very broad. For example, in one study, participants were encouraged to use visual imagery to imagine their future lives, and accordingly, plan for the future (Pearlson & Raynor, 1982). In a different study (Day et al., 1994), Mexican children worked on a project in which they assembled a "Possible Me Tree." The branches of the tree children made represented different future events or future careers that might be possible. The results of the study suggest that increasing the valence and concreteness of the future is beneficial when it comes to enhancing children's planning behaviors. Finally, Markus and colleagues (Cross & Markus, 1991; Markus, 1983; Markus & Nurius, 1986) have developed a theory of future selves that suggests individuals can imagine multiple versions of themselves in

the future, with each being somewhat different and some being more favorable than others. The idea of future selves has been widely applied in research studies, ranging from topics such as predicting outcomes for delinquent youth (Oyserman & Markus, 1990), memory improvement (Kato & Markus, 1993) and ethnic identity (Fryberg & Markus, 2003).

Since the idea of future-focused thinking was introduced, a variety of tasks have been used to assess the extent to which individuals are future oriented. One task assumes that a person is oriented toward the future if they show more "density"—that is, a concentration of life events imagined in the future relative to life events recalled in the past or present. This density construct would be assessed by asking participants to list life events in the past, present and future and comparing the ratio of each (Rakowski, 1979). A similar task is to ask participants to list the three most important years of their lives, with individuals deciding for themselves how they defined "important." Participants who chose more recent years as the important ones were considered to be more future oriented (Rakowski, 1979). Another task (Giambra, 1977) deemed participants to be future oriented if they reported often daydreaming about the future.

Cottle (1967) developed a time perspective task called the Circles Test. For this task, participants are instructed to draw three circles: One for the past, one for the present and one for the future. The size and position of the circles are examined to determine which of the three time periods the participant is oriented to, as well as the participant's perceived integration of the past, present and future. Another task that has been used is to ask individuals about their hopes and fears for the future, which are then classified into categories according to how far each extends into the future (Nurmi, 1991). Complexity has also been taken into account in some of these tasks. Nurmi (1991) also notes that previous studies have used checklists or questionnaires about future worries or events one expects to experience. One of these tasks is the line marking task, in which participants are shown a line with the past anchored on one end and the future anchored on the other end. Participants make a mark on the line to show where they currently perceive themselves to be. They are considered to be more future oriented if they mark a point toward the

future anchor of the line. Another task that has been commonly used is the sentence completion task (Meade, 1971; Nurmi, 1991). With this task participants are given a sentence stem (e.g., "D. S. receives his degree_____") and asked to finish the sentence however they would like. Participants are considered to be future oriented if they make the sentence about an event far in the future and less future oriented if they make the sentence about the past or present. Yet another task involves having participants generate their goals. Experimenters then assess the number of goals in the future that were listed, and how far into the future each goal extends (Nurmi, 1991). Although not a task, per se, Nuttin (1985) developed a scoring system to differentiate among individuals of varying levels of future orientation based on a series of guidelines. One guideline is that goals can overlap in multiple future segments (e.g., one might have a goal to be achieved five years from now, as well as a goal that will take place ten years from now). A second guideline is that different coding schemes would be needed for people of different ages due to the developmental nature of future time perspective. A third guideline is that calendar units, social landmarks and biological landmarks could all be used as indicators of time. Nuttin collected qualitative data and then used his coding system to classify the content of what individuals said. All of these measures of time perspective discussed in this section have been used in research studies, but some have been difficult to standardize and interpret. More recent conceptualizations of the construct have helped to resolve these difficulties.

Contemporary views of future time perspective reveal that it is usually conceptualized in one of three ways: (i.) as a personality trait, or the extent to which one enjoys thinking about the future (Hershey & Mowen, 2000; Zimbardo & Boyd, 1999); (ii.) As thoughts about how present actions will lead to consequences in the future (Strathman et al., 1994); or (iii.) as time left until the end of one's life (Carstensen, Isaacowitz, & Charles, 1999). These contemporary conceptualizations of the construct have led to the development of more reliable measures, which usually take the form of a self-report questionnaire using a Likert-type response format. Some of these measures are domain-general—that is, they are not specific to any one life domain or

context. Examples of such measures include the Consideration of Future Consequences Scale (Strathman et al., 1994), the future subscale of the Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999), the Time Styles Questionnaire (Usunier & Valette-Florence, 2007) and the Future Time Perspective Scale developed by Carstensen and colleagues (Lang & Carstensen, 2002). There are numerous domain-general measures of future time perspective that have been used in psychological investigations and many have been shown to demonstrate sound psychometric properties.

Domain-Specific Measures of Time Perspective. Although there are a number of domain-general future time perspective scales available for use, some investigators felt that domain-general scales failed to meet their needs. Therefore, new scales were developed that were designed to be domain-specific—that is, suited for use in a particular context. Most utilize a similar response format—a Likert-type scale—and most published scales have better than adequate psychometric properties. However, one shortcoming is that because the scales are domain-specific, their use is restricted to a rather narrow range of life experiences.

One domain-specific scale is the Occupational Future Time Perspective Scale (Zacher & Frese, 2009). This measure is derived from an existing domain-general general scale, but the word "occupational" was added to each item with the goal of capturing variance in individuals' future time perspective levels in the areas of work and career development. Another domain-specific measure is the Time Perspective Questionnaire, Exercise Version (Hall & Fong, 2003). The same authors had developed and validated a domain-general measure of future time perspective, but revised the items to focus on physical activity, with the goal of assessing the relationship between future-oriented thinking and exercise. Peetsma and colleagues (Peetsma & Van der Veen, 2011; Stouthard & Peetsma, 1999; Van der Veen & Peetsma, 2011) also developed both domain-general and domain-specific future time perspective scales, but by way of a different approach. First, their (domain-general) Time Perspective Questionnaire was developed and validated (Stouthard & Peetsma, 1999). This broad scale could be divided into four subscales,

each of which represented a different life domain. In later articles, Peetsma and colleagues used the subscales as domain-specific measures of future time perspective. For example, in a study of adolescents' attitudes toward future social relationships and leisure plans, the social and leisure subscales were used and the other subscales were omitted (Peetsma & Van der Veen, 2011). As research expands into various fields of study that are relevant to future planning, there may be a need for additional domain-specific measures of future time perspective to accurately capture individuals' context-specific orientations to time.

Understanding Future Time Perspective in Context

Inconsistencies in Measures of Future Time Perspective. With all of these measures of future time perspective, the question of how they relate to one another arises. Rakowski (1982) explored this issue by using five different future time perspective tasks. Troublingly, he found inconsistencies in their relationships with one another. Some measures were found to be strongly correlated, such as imagining life events to occur in the future and imaging all life events at any time (r = .96), and the line marking task and line drawing task (r = .71). However, other measures of time perspective were found to be not at all correlated, such as the line marking task and imaging events in the future (r = -.01), and the line drawing task and imaging events in the future (r = .02).

Differences among measures of future time perspective are still evident in more recent investigations. In some studies, domain-general measures of future time perspective have been used and found to be correlated. For instance, Crockett, Weinman, Hankins, and Marteau (2009) measured time perspective in a study about health. Two measures were used, the future subscale of the Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999) and the Consideration of Future Consequences Scale (Strathman et al., 1994). The two measures of future time perspective were found to be significantly correlated with one another (r = .38). Furthermore, the present subscale of the Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999) showed a similar correlation with the Consideration of Future Consequences Scale (Stratham et al., 1994)

in the opposite direction (r = -.40), as would be predicted. In another study (Mahon & Yarcheski, 1994), two measures of future time were also employed, but one measure was a domain-general measure (the Future Time Perspective Inventory; Heimberg, 1963) and the other was a domain-specific measure pertaining to adolescent health (the Personal Lifestyles Questionnaire; Brown et al., 1983). The measures were found to be significantly correlated with one another (r = .20 for middle adolescents and r = .26 for late adolescents). However, these correlations between a domain-general and domain-specific measure of future time perspective are weaker than the correlation that Crockett et al. (2009) observed with two domain-general measures (r = .38). Yet another study (Hall & Epp, 2013) measured time perspective in an investigation that focused on health and exercise. They used both a domain-general measure (the Time Perspective Questionnaire; Fong & Hall, 2003) and a domain-specific measure (the Time Perspective Questionnaire, Exercise Version; Hall & Fong, 2003; Hall, Fong, & Cheng, 2012). Correlations between the measures of time perspective were not reported, but only the domain-specific measure was found to be related to other (health outcome) variables in the study. The domain-general measure yielded no significant predictive effects.

As illustrated in the investigations described above, some studies utilize a domain-specific measure of future time perspective that is designed to fit the context of the topic under study. For example, Hall and Epp (2013) used the Time Perspective Questionnaire, Exercise Version for a study on health. Similarly, Zacher and Frese (2013) conducted a study on work motivation and adapted an existing future time perspective scale to make a scale specific to the occupational domain.

In other instances, domain-general measures of time perspective are used. Some investigators are interested in future-oriented thinking in general terms and not viewed through the lens of a specific context (e.g., Dunkel & Weber, 2010; Lessing, 1968; Padawer et al, 2007). In other studies, a particular domain or context is identified, but the measure of future time perspective used is general in nature. For example, Zimbardo et al. (1997) measured time

perspective as it relates to risky driving practices. Time perspective was assessed using the Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999), which is not specific to risk-taking. However, significant effects were still observed. In another study, the goal was to assess forward-thinking attitudes toward heath behaviors and how message framing influenced responses (Orbell et al., 2004). Forward-thinking attitudes were measured using the Consideration of Future Consequences Scale (Strathman et al., 1994), which is a general measure not specific to the health domain. However, the Stratham et al. measure was successful at predicting positive health practices.

Specific and General Measures of Future Time Perspective. Is it more advantageous to use domain-specific or domain-general measures of time perspective? Some research suggests that domain-specific measures should be used. For example, Hall and Epp (2013) advocate for the use of a domain-specific measure of future orientation when predicting health practices. Other studies suggest that domain-general measures of time perspective are sufficient and have found effects in the expected direction when using domain-general measures to predict health practices (Crockett, et al., 2009; Kooij & Van de Voorde, 2011; Orbell et al., 2004). In a 1979 review paper, Rakowski suggested that "various indices of general perspective may be contrasted with measures of future time perspective in specific areas such as health, finances, and occupation" (p. 88). However, the extant literature gives no clear answers as to how domain-general and domain-specific measures are related to one another. Toward this end, holistic empirical investigations are needed to establish the relationships between domain-general measures, domain-specific measures and behavioral outcomes.

Present Investigation

The present investigation is designed to explore the following research questions:

(i.) To what extent are domain-general measures and domain-specific measures of future time perspective related, and do general scales predict specific scales?

(ii.) Does future time perspective predict behavior in each of the five domains, and are domain-specific scales more successful than domain-general scales in predicting behavior?

From an analytic perspective, the first question will be addressed through the computation of correlations and factor analyses. Strengths of intercorrelations will be compared among the set of domain-general future time perspective scales, domain-specific future time perspective scales, and behavioral outcome measures. The second question will be addressed through the development of regression-based path analysis models.

CHAPTER II

METHOD

Participants

Participants were recruited from Amazon Mechanical Turk (MTurk), a crowdsourcing website. MTurk is discussed more fully in the procedure section. Data were collected from 632 individuals. Of the participants, 62 were deleted because they failed to pass validity check items or they failed to report a confirmation code indicating they completed the entire questionnaire (see procedure). This left 570 participants who were included in the analyses. The sample was roughly half male (49.8%) and half female (50.2%). The majority were White (80.2%) and non-Hispanic (89.5%). Their average level of education was 14.92 years (*SD* = 2.06) and the average individual income was $37,867 (*SD* = $30,188). Participant ages ranged from 25 to 65 years (*M* = 40.21, *SD* = 11.69).

Overview of Measures

Several scales and measures were employed in this investigation (see Appendix). The measures can be divided into three broad categories: (i) domain-general measures of future time perspective, (ii) domain-specific measures of future time perspective and (iii) behavioral outcome measures. The measurement objectives of the domain-general and domain-specific future time perspective scales are self-evident. The five behavioral outcome measures, however, are designed to assess individuals' behavior in each of the five life domains under investigation. So for example, the retirement planning behavior outcome measure is designed to assess individuals' previous behaviors in the area of financial and retirement planning. In previous literature, these

scales have been measured using 4-point to 7-point Likert-type response scales. For the sake of consistency, unless otherwise noted, in this study all scales were administered using a 5-Point Likert-type scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*).

Domain-General Future Time Perspective Scales

Consideration of Future Consequences Scale (CFC). The Consideration of Future Consequences Scale was developed by Strathman et al. (1994) to assess "the extent to which people consider distant versus immediate consequences of potential behaviors" (p. 742). In the present investigation, the scale was found to have a single factor structure and a coefficient alpha of 0.87 (M = 3.57, SD = 0.65). The scale contains 12 items; a sample items is: "*I consider how things might be in the future and try to influence those things with my day to day behavior*." The total score on the scale is the mean of the 12 items.

Zimbardo Time Perspective Inventory (ZTPI), Future Subscale. The Zimbardo Time Perspective Inventory was developed by Zimbardo and Boyd (1999) to represent "propositions about individuals' beliefs, preferences, and values regarding experiences that are temporally based but are not descriptive of time-related demographic information" (p. 3). The full-scale measure is purported to have a five-factor structure. Each factor represents a different orientation to time (past-negative, past-positive, present-fatalistic, present-hedonistic and future). In the present investigation, only the future subscale was used. Coefficient alpha for the future subscale was found to be above threshold at 0.81 (M = 3.88, SD = 0.59). The scale contains 10 items; a sample item is: "*I believe that a person's day should be planned ahead each morning."* The total score on the scale is the mean of the 10 items.

Time Styles Questionnaire (TSQ), Orientation toward the Future Subscale. The Time Styles Questionnaire was developed by Usunier and Valette-Florence (2007) to assess time orientations, with time orientations being defined as "a mix of individual and socially constructed traits that have an impact on behavior" (p. 6). The scale has four main components: linearity and economicity of time, obedience to time, temporal persistence, and temporal orientation. Each of

these factors has two subdimensions. For temporal orientation, the subdimensions are orientations toward the past and orientation toward the future. In the present investigation, only the orientation toward the future subdimension was used. In the present investigation, the coefficient alpha was found to be 0.89 (*M* = 3.80, *SD* = 0.84). The orientation toward the future subdimension contains 4 items; a sample item is: "*I often think about the things I am going to do in the future."* The total score on the scale is the mean of the 4 items.

Future Time Perspective Scale. The Future Time Perspective Scale was developed by Hershey and Mowen (2000) and revised by Koposko and Hershey (2014) to measure the extent to which individuals think about the long term future. In the present investigation, the scale was found to have a single factor structure and a coefficient alpha of 0.90 (*M* = 3.62, *SD* = 0.89). The scale contains 5 items; a sample item is: "*It is important to take a long-term perspective on life.*" The total score on the scale is the mean of the 5 items.

Future Time Perspective Scale. A different Future Time Perspective scale was developed by Carstensen and colleagues (Carstensen & Lang, 1996; Lang & Carstensen, 2002) to assess individuals' perceptions of how long they have left to live. The scale has a two-factor structure, with one component pertaining to remaining opportunities in life and the second pertaining to remaining time in life. In the analyses, the two subscales were collapsed into one measure, as has been the case in prior investigations (e.g., Bal, Jansen, Van de Lange, & Rousseau, 2010; Lang & Carstensen, 2002). In the present investigation, the coefficient alpha was found to be 0.86 (*M* = 3.52, *SD* = 0.85). The scale contains 6 items (3 on each subscale). A sample item on the remaining opportunities subscale is: "*My future is filled with possibilities*." A sample item on the remaining time subscale is: "*Most of my future lies ahead of me.*" The total score on the scale is the mean of the 6 items.

Domain-Specific Future Time Perspective Scales

Financial Future Time Perspective Scale. The Financial Future Time Perspective Scale was newly developed for this study. It was designed to assess future time perspective as it relates

to financial planning for later life. In the present investigation, the scale was found to have a single factor structure and a coefficient alpha of 0.85 (M = 3.62, SD = 0.88). The scale contains 6 items; a sample item is: "*I enjoy thinking about and planning for my financial future.*" The total score on the scale is the mean of the 6 items.

Occupational Future Time Perspective. The Occupational Future Time Perspective Scale was developed by Zacher and Frese (2009) to assess future time perspective specifically in the career and occupational domain. The scale was based on a general, non-specific future time perspective scale developed by Carstensen and Lang (2002). The Occupational Future Time Perspective scale has a two-factor structure, with one subscale being remaining time at work and the second being remaining opportunities at work. In the present investigation, the coefficient alpha for the scale (both subscales combined) was 0.90 (M = 3.25, SD = 0.99). Each subscale contains 3 items. A sample item from the remaining time at work subscale is: "*My occupational future seems infinite to me.*" A sample item from the remaining opportunities at work subscale is: "*Many opportunities await me in my occupational future.*" The total score on the scale is the mean of the 6 items.

Health Future Time Perspective Scale. The Health Future Time Perspective Scale was newly developed for this study. It was designed to assess future time perspective as it relates to health planning. In the present investigation, the scale was found to have a single factor structure and a coefficient alpha of 0.88 (M = 4.37, SD = 0.63). The scale contains 6 items; a sample item is: "*It is important to engage in routine exercise because of the long-term benefits.*" The total score on the scale is the mean of the 6 items.

Time Perspective Questionnaire, Long-term Perspective in Social Relations. The Time Perspective Questionnaire, Long-term Perspective in Social Relations scale was developed by Peetsma and Van der Veen (2011) to assess students' levels of future orientation in the social domain when thinking about completing school. A sample item is: "*I hope to spend a lot of time with friends when I leave school."* In this study, each of the items in the scale were modified to

replace the words, "when I leave school" with "in the future." In the present investigation, it was found to have a single factor structure and a coefficient alpha of 0.78 (*M* = 3.69, *SD* = 0.76). The scale contains 5 items; a (modified) sample item is, "*I hope to spend a lot of time with friends years from now in the future.*" The total score on the scale is the mean of the 5 items.

Time Perspective Questionnaire, Long-term Perspective in Leisure. The Time Perspective Questionnaire, Long-term Perspective in Leisure scale was developed by Peetsma and van der Veen (2011) to assess students' levels of future time perspective in the leisure domain when thinking about completing school. A sample item is: "*I love dreaming about what I'll be able to do in my free time when I leave school.*" In this study, each of the items in the scale were modified to replace the words, "when I leave school" with "in the future" or "when I'm older." In the present investigation, it was found to have a single factor structure and a coefficient alpha of 0.82 (*M* = 4.06, *SD* = 0.72). The scale contains 6 items; a (modified) sample item is: "*I love dreaming about what I'll be able to do in my free time when I'm older.*" The total score on the scale is the mean of the 6 items.

Behavioral Outcome Measures

Retirement Planning Activities Scale. The Retirement Planning Activities Scale was developed by Stawski, Hershey, and Jacobs-Lawson (2007) to assess financial information seeking and instrumental behaviors related to planning for retirement. In the present investigation, the scale was found to have a single factor structure and a coefficient alpha of 0.89 (*M* = 2.88, *SD* = 1.03). The scale contains 9 items; a sample item is: "*I have identified specific spending plans for the future.*" The total score on the scale is the mean of the 9 items.

Work Behaviors Scale. The Work Behaviors Scale was newly developed for this study. It was designed to assess individuals' current level of engagement and participation in their career. In the present investigation, the scale was found to have a single factor structure and a coefficient alpha value of 0.82 (*M* = 3.45, *SD* = 0.81). The scale contains 7 items; a sample item

is: "*I like to think about ways to manage my career so that my job will continue to be fulfilling in the long run*." The total score on the scale is the mean of the 7 items.

Personal Lifestyles Questionnaire. The Personal Lifestyles Questionnaire was developed by Muhlenkamp and Brown (1983) to assess attitudes toward health and the frequency with which one engages in positive health practices. In previous studies, it has been used as a measure of future time perspective in the health domain. However, upon examination of the items, for the purposes of the present investigation it was determined to be more appropriate as a measure of health behavior outcomes. In a revised and extended version of the scale, the measure was found to have a two-factor structure (Mahon et al., 2002), with one factor labeled General Health Practices and the second factor labeled Substance Use. In the present investigation, the original version (which is assumed to have a single-factor solution) was used. The coefficient alpha for the scale was 0.59 (M = 3.25, SD = 0.48). The scale contains 6 items; a sample item is: "*I wear my seat belt while riding in an automobile.*" The items use a 4-point response scale, with 1 = *Never*, 2 = *Infrequently*, 3 = *Occasionally*, and 4 = *Regularly*. The total score on the scale is the mean of the 6 items.

Social Behaviors Scale. The Social Behaviors Scale was newly developed for this study. The items were modified from the time perspective questionnaire, long-term perspective in social relations subscale developed by Peetsma and Van der Veen (2011). The items are designed to assess one's level of engagement in social relations with friends and family. In the present investigation, the scale was found to have a single factor structure and a coefficient alpha of 0.80 (M = 3.65, SD = 0.84). The scale contains 5 items; a sample item is: "*I get along well with other people*." The total score on the scale is the mean of the 5 items.

Leisure Behaviors Scale. The Leisure Behaviors Scale was newly developed for this study. It was designed to assess individuals' current behaviors in terms of taking time to relax, engaging in hobbies and interests, and making time for leisure and recreation in life. In the present investigation, the scale was found to have a single factor structure; the coefficient alpha

was 0.87 (*M* = 4.26, *SD* = 0.67). The scale contains 6 items; a sample item is: "*I make adequate time for recreation, entertainment, and hobbies.*" The total score on the scale is the mean of the 6 items.

Procedure

Participants viewed a description of the study on a list of tasks offered on the MTurk website. After a participant clicked on the study link an informed consent form appeared. Then, the participant was linked to the survey (developed using Qualtrics). After the participant completed the survey, he or she viewed a thank you page and then was redirected back to the MTurk website in order to receive credit for their participation.

Buhrmester, Kwang, and Gosling (2011) and Mason and Suri (2011) have extensively reviewed the use and characteristics of MTurk for data collection purposes and concluded that it has several advantages over other crowdsourcing options. Strengths of MTurk include both a large subject pool (of about 500,000 people in the United States) and manageable data collection costs to the researcher. In addition, samples tend to more diverse in terms of age and cultural background than typical convenience-based or college student samples (Buhrmester et al., 2011; Mason & Suri, 2011).

Each participant was compensated fifty cents for completion of the questionnaire. In determining compensation rates, Mturk recommends that requestors (i.e., researchers) find posted surveys that are similar to the survey they plan to administer, both in terms of completion time and difficulty. Then Mturk recommends using the level of compensation offered in the "current marketplace" as a rule of thumb for determining the appropriate participant payment. Payments offered for most tasks taking fewer than 30 minutes on the "current" marketplace were lower than fifty cents, but the decision was made to give higher pay for this investigation because tasks of similar length did not require careful attention or particularly thoughtful responses.

To probe for inattentive responding, two different forms of validity checks were embedded in the questionnaire. The first was the 8-item Infrequency Scale, a measure that was

developed and used as a validity check for the Elemental Psychopathology Assessment (Lynam et al., 2011). A sample item from that scale is, "*I frequently forget my middle name*." Like the other items on the questionnaire, participants selected a response from a 5-point Likert-type scale (1 = *strongly disagree*; 5 = *strongly agree*). Participants were assigned 1 point per item if they endorsed the item from the midpoint of the response scale or higher (i.e., if the participant selected a response of 3, 4, or 5 on the 5-point scale). Participants who had a total of 4 points or greater across all eight items were deemed to be inattentive responders, and thus, were not included in further analyses. The second validity check used in the study involved the use of a confirmation code. At the completion of the questionnaire, each participant viewed a randomly generated, eight digit number. Instructions told the participant to enter the code number on the MTurk screen where they had originally clicked on the link for the survey. Participants who did not enter a code were presumed to not have completed the entire questionnaire and were therefore excluded from further analyses. A total of 62 participants were eliminated from consideration because they failed either one or both of the validity checks. For the remaining 570 participants, the average time to complete the questionnaire was just over 11 minutes.

CHAPTER III

PSYCHOMETRIC ASSESSMENT OF SCALES

Internal Consistency Reliability

Cronbach's alpha was computed for each scale in order to assess internal consistency reliability. Each of the domain-general future time perspective scales were found to have adequate reliability levels, with alpha values of .81 or higher. Each of the domain-specific future time perspective scales also demonstrated adequate internal consistency, with alphas being .77 or higher. One item on the Long-Term Perspective in Social Relations Scale, "*When I think about life years from now in the future, I'm not really bothered about how well I'll get along with my family (R),*" was eliminated to improve the alpha level from .74 to .78. Moreover, two of the five behavioral scales were revised in order to improve reliability. Specifically, three reverse coded items from the Personal Lifestyles Questionnaire were eliminated, bringing the initial alpha value of .47 to .59. Furthermore, one item from the Social Behaviors Scale, *"I'm not really bothered about how well I get along with my family (R),*" was eliminated to improve the alpha from .75 to .80. The remaining three behavioral scales had adequate alpha values (.82 and higher).

Factor Analyses

A factor analysis was performed for each future time perspective scale and each behavioral outcome measure. As recommended by Kaiser (1960) and Stevens (2009), new measures were subjected to an exploratory factor analysis using principal components analysis, with factors containing eigenvalues greater than one being retained. Factor analyses for

previously published scales were tested against the established factor structure using confirmatory factor analysis procedures. An analysis heuristic was adopted in which factor loadings for individual items were deemed acceptable at values of .30 or greater. According to Guadagnoli and Velicer (1988) low loadings (.40 or below) typically remain meaningful when the sample size is greater than 150. Items and factor loadings for all scales are displayed in Tables 1, 2 and 3.

Model fit indices for scales subjected to a confirmatory factor analysis are reported below. A chi-square to degrees of freedom ratio of less than 2:1 indicates good model fit, a ratio between 2:1 and 3:1 indicates acceptable model fit, and a ratio greater than 3:1 indicates poor model fit (Kline, 2005; Schermelleh-Engel, Moosbrugger, & Muller, 2003).

For the goodness of fit statistic (GFI), a value of .95 or higher indicates good model fit (Miles & Shevlin, 1998; Schermelleh-Engel et al., 2003), a value between .90 and .94 indicates acceptable model fit (Schermeleh-Engel et al.), and a value below .90 indicates poor model fit (Schermeleh-Engel et al., 2003). The value for the adjusted goodness of fit statistic (AGFI) indicates good model fit if it is .95 or higher (Miles & Shevlin, 1998), a value between .85 and .94 indicates acceptable model fit, and a value below .85 indicates poor model fit (Schemeleh-Engel et al., 2003).

Another statistic used to assess model fit is the Normed Fit Index (NFI). A value greater than .95 indicates good model fit (Schemeleh-Engel et al., 2003), a value between .90 and .94 indicates acceptable model fit (Schemeleh-Engel et al., 2003), and a value less than .90 indicates poor model fit (Bentler & Bonnet, 1980; Schemeleh-Engel et al., 2003). For the Tucker-Lewis Index (TLI) (also known as the Non-Normed Fit Index; NNFI), a value greater than .97 indicates good model fit, a value between .95 and .96 indicates acceptable model fit, and a value below .95 indicates poor model fit (Schemeleh-Engel et al., 2003).

For the confirmatory fit index (CFI), Hu and Bentler (1999) recommend that the value be .95 or higher for good model fit. However, Schemeleh-Engel et al. (2003) recommend that a

value be .97 or higher to indicate good model fit, and that values between .95 and .97 indicate acceptable model fit. Values below .95 indicate poor model fit.

In contrast to the other fit indices, the value for the root mean square error of approximation (RMSEA) should be low. A value of .05 or less indicates good model fit (Schemeleh-Engel et al., 2003), values between .06 and .08 indicate acceptable model fit (Schemeleh-Engel et al., 2003; Steiger, 2007), and values greater than .08 indicate poor model fit (Schemeleh-Engel et al., 2003).

The indications of good, adequate and poor model fit above should not be viewed rigidly, as Brown (2006) notes that criteria for determining model fit is a hotly debated issue. Many researchers have proposed rules of thumb for cut-off values to determine good, adequate, or poor model fit, but there is little consensus. Brown (2006) recommends that models should not be accepted or rejected based on model fit indices alone and that it is equally important to examine the model for expected and unexpected relationships, the strength of the parameter estimates, and statistical significance.

The criteria for determining model fit discussed here will be used to evaluate all models tested using the AMOS v. 19.0 software, including confirmatory factor analysis models, measurement models, and structural models.

Factor Analyses for Domain-General Future Time Perspective Measures. The factor analysis for the twelve-item Consideration of Future Consequences Scale followed the procedure described in Strathman et al. (1994) (p. 744) using the Analysis of Moment Structures (AMOS v. 19) structural equation modeling software (Arbuckle, 2010). In an effort to replicate the authors' previously published one factor solution, the Consideration of Future Consequences factor was cast as a latent variable and items from the scale were represented as manifest indicators. All item loadings were found to be adequate at .41 or greater. The model was statistically significant $\chi^2(54) = 424.241$, $p < .01$, and the chi-square to degrees of freedom ratio was 7.86. Fit indices were: *GFI* = .87, *AGFI* = .82, *NFI* = .84, *TLI* = .82, *CFI* = .85, and *RMSEA* = .11 (confidence

interval .10 to .12). However, these fit indices are poorer than those reported in the original paper that described the scale. In Stratham et al. (1994), fit indices were calculated for five different samples of participants who completed the measure. Across the five samples tested, the chi-square to degrees of freedom ratio was between 2.18 and 4.11, and *RMSEA* values ranged from .057 to .069.

Table 1

Factor Loadings for each of the Five Domain-General Scales used in the Study.

Measure and Item	Factor Loading
Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999)	
1. I believe that a person's day should be planned ahead each morning.	.59
2. If things don't get done on time, I don't worry about it. (R)	.37
3. When I want to achieve something, I set goals and consider specific means for reaching those goals.	.64
4. Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play.	.60
5. It upsets me to be late to appointments.	.58
6. I like meeting my obligations to friends and authorities on time.	.64
7. I take each day as it is rather than trying to plan it out. (R)	.51
8. Before making a decision, I weigh the costs against the benefits.	.52
9. I complete projects on time by making steady progress.	.57
10. I make lists of things to do.	.50
Future Time Perspective Scale (Carstensen & Lang, 2002)	
1. Many opportunities await me in my future.	.91
2. I expect that I will set many new goals in my future.	.85
3. My future is filled with possibilities.	.87
4. Most of my future lies ahead of me.	.87
5. My future seems infinite to me.	.74
6. As I get older, I begin to experience time in my future as more limited. (R)	.36
Time Styles Questionnaire (Usunier & Valette-Florence, 2007)	
1. I spend time thinking about what my future might be like.	.84
2. I think a lot about what my life will be some day.	.88
3. Many of us tend to daydream about the future. It also happens to me.	.73
4. I often think about the things I am going to do in the future.	.82

Consideration of Future Consequences Scale (Strathman et al., 1994)

1. I consider how things might be in the future, and try to influence those things with my day to day behavior.	.49
2. Often I engage in a particular behavior in order to achieve outcomes that may not result for many years.	.50
3. I only act to satisfy immediate concerns, figuring the future will take care of itself. (R)	.78
4. My behavior is only influenced by the immediate (i.e., a matter of days or weeks) outcomes of my actions. (R)	.71
5. My convenience is a big factor in the decisions I make or the actions I take. (R)	.49
6. I am willing to sacrifice my immediate happiness or well-being in order to achieve future outcomes.	.48
7. I think it is important to take warnings about negative outcomes seriously even if the negative outcome will not occur for many years.	.48
8. I think it is more important to perform a behavior with important distant consequences than a behavior with less important immediate consequences.	.41
9. I generally ignore warnings about possible future problems because I think the problems will be resolved before they reach crisis level. (R)	.48
10. I think that sacrificing now is usually unnecessary since future outcomes can be dealt with at a later time. (R)	.71
11. I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date. (R)	.71
12. Since my day to day work has specific outcomes, it is more important to me than behavior that has distant outcomes. (R)	.51

Future Time Perspective Scale (Hershey & Mowen, 2000)

1. I enjoy thinking about how I will live years from now in the future.	.90
2. I like to reflect on what the future will hold.	.90
3. I look forward to life in the distant future.	.85
4. My close friends would describe me as future oriented.	.67
5. It is important to take a long-term perspective on life.	.64

Note: (R) means the item is reverse scored.

Table 2

Factor Loadings for each of the Five Domain-Specific Scales used in the Study.

Measure and Item	Factor Loading
Long-term Perspective in Social Relations Scale	
(Modified from Peetsma & van der Veen, 2011)	
1. I like to think about getting along with people years from now in the future.	.72
2. I hope to spend a lot of time with friends years from now in the future.	.68
3. I hope I'll get along well with my family years from now in the future.	.42
4. I like to think about how my friendships with good friends will be years from now in the future.	.84
5. I don't spend a lot of time thinking about socializing with other people years from now in the future. (R)	.59
Long-term Perspective in Leisure Scale	
(Modified from Peetsma & van der Veen, 2011)	
1. My free time will be a very important part of my life when I'm older.	.89
2. Free time will be very important to me years from now in the future.	.90
3. I love dreaming about what I'll be able to do in my free time when I'm older.	.56
4. When I think about my life in old age, free time won't play a very important part in my life. (R)	.55
5. I don't think free time and holidays are very important when you're older. (R)	.39
6. I don't expect free time to be very important when I'm older. (R)	.51
Occupational Future Time Perspective Scale (Zacher & Frese, 2009)	
1. Many opportunities await me in my occupational future.	.93
2. I expect that I will set many new goals in my occupational future.	.91
3. My occupational future is filled with possibilities.	.95
4. Most of my occupational future lies ahead of me.	.87
5. My occupational future seems infinite to me.	.81
6. As I get older, I begin to experience time in my occupational future as more limited. (R)	.34

Financial Future Time Perspective Scale (Newly Developed)	
1. When planning for retirement, I take the perspective that it is important to save for a rainy day.	.80
2. I often think about how I will budget my finances throughout my retirement.	.75
3. I enjoy thinking about and planning for my financial future.	.79
4. I will start (or have already started) saving money for my retirement long before I retire.	.77
5. One goal I have in preparing for retirement is to acquire as much information as possible.	.75
6. I think that having a well thought out plan for retirement is a key to happiness in old age.	.74
Health Future Time Perspective (Newly Developed)	
1. In general, working out is a good way to avoid health problems.	.75
2. It is important to engage in routine exercise because of the long-term benefits.	.83
3. Healthy food options are a good way to ensure good health in late life.	.84
4. It is important to have routine health screenings to detect problems before they become serious.	.81
5. In order to ensure good health, it is important to eat right and get proper nutrition.	.83
6. Routine medical check-ups are a good way to ensure one stays fit.	.68

Note: (R) means item is reverse scored.

Table 3

Factor Loadings for each of the Behavioral Scales used in the Study.

Measure and Item	Factor Loading
Social Behaviors Scale (Modified from Peetsma & Van der Veen, 2011)	
1. I get along with other people.	.61
2. I spend a lot of time with friends.	.80
3. I get along well with my family.	.54
4. I have good relationships.	.84
5. I don't spend a lot of time socializing with other people. (R)	.58
Leisure Behaviors Scale (Newly Developed)	
1. I make adequate time for recreation, entertainment and hobbies.	.71
2. I think it's important to make time for hobbies and leisure pursuits in my life.	.82
3. I believe that it is critical to take regular time off from work to take vacations.	.75
4. Finding a balance between work and play is one of the keys to happiness.	.82
5. Developing ways to "play" in life is one way to stay young and vibrant.	.79
6. It's important to take opportunities to relax from time to time.	.81
Work Behaviors Scale (Newly Developed)	
1. I have represented my company at events or professional training that was not required for my job.	.54
2. I attend company functions and social events.	.70
3. I like to think about ways to manage my career so that my job will continue to be fulfilling in the long run.	.80
4. I seek out ways to position myself for promotions that will advance my career.	.83
5. My employer would describe me as a model employee who is committed to the organization.	.73
6. When it comes to work, I actively look for opportunities for advancement in the marketplace.	.73
7. I am satisfied with how I have managed my career at this point and time.	.61

Retirement Planning Activities Scale (Stawski et al., 2007)	
1. I have tuned into television or radio shows on investing or financial planning.	.66
2. I have read brochures/articles on investing or financial planning.	.79
3. I have read one or more books on investing or financial planning.	.74
4. I have visited investing or financial planning sites on the World Wide Web.	.78
5. I have gathered or organized my financial records.	.75
6. I have assessed my net worth.	.73
Personal Lifestyles Questionnaire (Muhlenkamp & Brown, 1983)	
1. Wear seat belts while riding in an automobile.	.29
2. Take time out to relax 5-10 minutes per day.	.33
3. Exercise regularly 3 times a week.	.54
4. Am careful to eat foods from each food group daily (protein, milk, breads, fruits, and vegetables).	.61
5. See a health care provider for a check-up yearly.	.43
6. Get together with friends.	.43

Note: (R) means item is reverse scored.

The ten-item Zimbardo Time Perspective Inventory, Future Dimension, followed the analytic procedure described in Zimbardo and Boyd (1999) (p. 4) in an attempt to replicate a one factor solution. The AMOS program was again used to analyze a confirmatory model in which the Future Dimension construct served as a latent variable. As with the previous analyses, the entire set of items were included in the analysis as manifest indicators. All item loadings were adequate at .37 or greater. The model was statistically significant $\chi^2(35) = 204.103$, $p < .01$ and the chi-square to degrees of freedom ratio was 5.83. Fit indices were as follows: *GFI* = .93, *AGFI* = .89, *NFI* = .85, *TLI* = .84, *CFI* = .87, and *RMSEA* = .09 (confidence interval .08 to .11). Zimbardo and Boyd (1999) determined that the model was an adequate fit based on an observed chi-square to degrees of freedom ratio of 2.30. In the present investigation, at 5.83, this measure of goodness-of-fit was appreciably poorer. This difference may be due to the fact that, in the original development of the scale, additional time perspectives and their indictors were included; only the future subscale was included in the present investigation.

The factor analysis for the four-item Time Styles Questionnaire, Orientation toward the Future Subscale followed the procedure used by Usunier and Valette-Florence (2007). All item loadings were found to be adequate at .73 or greater. The model was statistically significant $\chi^2(2) = 6.64$, $p < .05$, and the chi- square to degrees of freedom ratio was 3.32. Fit indices were as follows: *GFI* = .99, *AGFI* = .97, *NFI* = .99, *TLI* = .99, *CFI* = .99, and *RMSEA* = .06 (confidence interval .01 to .12). The fit indices from this study were better, in fact, than those reported in Usuriner and Valette-Florence (2007). Using multiple samples, they found that *GFI* values ranged from .960 to .972, *AGFI* values ranged from .915 to .951, and *RMSEA* ranged from .061 to .065. The difference may be due to the fact that Usunier and Valette-Florence tested the Orientation towards the Future items as part of a larger measurement model.

The structure of the five-item Future Time Perspective Scale (Hershey & Mowen, 2000) was originally reported as an exploratory factor analysis with a single-factor solution. In that study, the scale was entered into a confirmatory model with all of the other scales used in the

investigation. Given that the scale has consistently been shown to have a single-factor solution (e.g., Hershey et al., 2010; Koposko & Hershey, 2014), a factor analysis model was computed in which future time perspective was cast as a latent factor and all of the items were entered as manifest indicators. All item loadings were adequate at .64 or greater. The model was statistically significant $\chi^2(5) = 23.53$, $p < .01$, and the chi-square to degrees of freedom ratio was 4.71. Fit indices were as follows: *GFI* = .98, *AGFI* = .95, *NFI* = .99, *TLI* = .98, *CFI* = .99, and *RMSEA* = .08 (confidence interval .05 to .12).

The original factor analytic results of the six-item Future Time Perspective scale developed by Carstensen and Lang have not been published (see Carstensen & Lang, 1996), but several studies have replicated the proposed two-factor solution (Hicks, Trent, Davis, & King, 2012; Kooij, de Lange, Jansen, & Dikkers, 2008; Lang & Carstensen, 2002; Liu & Aaker, 2007; Zacher & Frese, 2009). A confirmatory factor analysis was performed in which the two subscales—remaining time and remaining opportunities—were operationalized as latent variables. Each item was entered as a manifest indicator, with three items designated to load on each subscale. All item loadings were found to be adequate at .36 or greater. The model was statistically significant $\chi^2(8) = 85.60$, $p < .01$; the chi-square to degrees of freedom ratio was found to be relatively high at 10.70. Fit indices were: *GFI* = .95, *AGFI* = .87, *NFI* = .96, *TLI* = .93, *CFI* = .96, and *RMSEA* = .13 (confidence interval .11 to .16).

Factor Analyses for Domain-Specific Future Time Perspective Measures. The six-item Financial Future Time Perspective Scale was newly developed for this investigation. An analysis was performed and eigenvalues greater than one were extracted using principal components analysis. The scale fit a single factor solution, so no rotation was applied to the model. Factor loadings were adequate at .74 or greater and the latent factor explained 58.25% of the variation in item scores.

The six-item Occupational Future Time Perspective Scale was analyzed according to the procedure described in Zacher and Frese (2009). A confirmatory factor analysis was performed

using AMOS v. 19.0 in which the two subscales—remaining time at work and remaining opportunities at work—were cast as latent constructs. Each item was entered as a manifest indicator in the analysis, with three items on each subscale. All item loadings were adequate at .34 or greater. The model was statistically significant $\chi^2(8) = 23.93$, $p < .01$; the chi-square to degrees of freedom ratio was 2.99. Fit indices were: *GFI* = .99, *AGFI* = .96, *NFI* = .99, *TLI* = .99, *CFI* = .99, and *RMSEA* = .06 (confidence interval .03 to .09).

The six-item Health Future Time Perspective Scale was newly developed for this investigation. Therefore, an exploratory factor analysis using SPSS was carried out and eigenvalues greater than one were extracted using principal components analysis. The scale fit a single factor solution, so no rotation to the component loadings was applied. All factor loadings were adequate at .68 or greater and the factor explained 62.67% of the variation in item scores.

The five-item Long-Term Perspective in Social Relations Scale was based on the scale developed by Peetsma and Van der Veen (2011). The factor analytic procedure from their original study was not reported, but the authors believed that the items formed a single factor structure. A confirmatory factor analysis was performed in which social relations was cast as a latent factor and each item was entered as a manifest indicator. All loadings were found to be adequate at .41 or greater. The model was statistically significant $\chi^2(5) = 55.99$, $p < .01$, and the chi-square to degrees of freedom ratio was high at 11.20. Fit indices were: *GFI* = .96, *AGFI* = .89, *NFI* = .93, *TLI* = .88, *CFI* = .94, and *RMSEA* = .13 (confidence interval .10 to .17).

The six-item Long-Term Perspective in Leisure Scale (Peetsma & Van der Veen, 2011) was analyzed following the same procedure as described above. All loadings were adequate at .39 or greater. The model was statistically significant $\chi^2(9) = 333.81$, $p < .01$ and the chi-square to degrees of freedom ratio was well beyond what is normally considered acceptable boundaries at 37.09. Fit indices were: *GFI* = .82, *AGFI* = .58, *NFI* = .78, *TLI* = .64, *CFI* = .79, and *RMSEA* = .25 (confidence interval .23 to .28). Compared to the other future time perspective measures examined, the psychometric properties of this particular measure were quite poor. However, for

theoretical reasons it was deemed important to retain the scale as part of the study, despite its less than desirable measurement properties.

Measurement Model for Domain-Specific Future Time Perspective Scales. After examining the factor structure of each domain-specific future time perspective scale, items from all five scales were used to develop a measurement model using AMOS. The five latent factors in the model were allowed to correlate with one another. The initial model fit was suboptimal, $\chi^2(367) = 1711.25$, $p < .01$, chi-square to degrees of freedom ratio = 4.66, *GFI* = .82, *AGFI* = .79, *TLI* = .84, *CFI* = .86, *RMSEA* = .08. Modification indices suggested that the fit could be improved by allowing some of the error terms for items to correlate with one another. It was decided that it was theoretically reasonable to correlate error terms for items within the same scale, but not between errors for items across different scales. Thus, fourteen intra-scale, intra-item covariances were added to the model: two on the Occupational Future Time Perspective Scale, four on the Health Future Time Perspective Scale, three on the Long-Term Perspectives in Social Relations Scale and five on the Long-Term Perspectives in Leisure Scale. This resulted in a substantially improved model fit, $\chi^2(353) = 994.38$, $p < .01$, chi-square to degrees of freedom ratio = 2.82, *GFI* = .89, *AGFI* = .87, *TLI* = .92, *CFI* = .93, *RMSEA* = .06. The final measurement model, which was deemed to be acceptable, is shown in Figure 1.

Factor Analysis for the Behavioral Outcome Scales. In this section of the document, the psychometric evaluation of the five behavioral outcomes scales is described, beginning with the Retirement Planning Activities Scale. The nine-item Retirement Planning Activities Scale was developed by Stawski et al. (2007). When developing the scale, the authors used a principal components analysis with oblique rotation, which resulted in a four-factor solution. However, based on the conceptual similarity of the factors and examination of the scree plot, the authors opted to combine the four factors into one. Accordingly, in the present investigation a confirmatory approach was used in which a single-factor solution was specified.

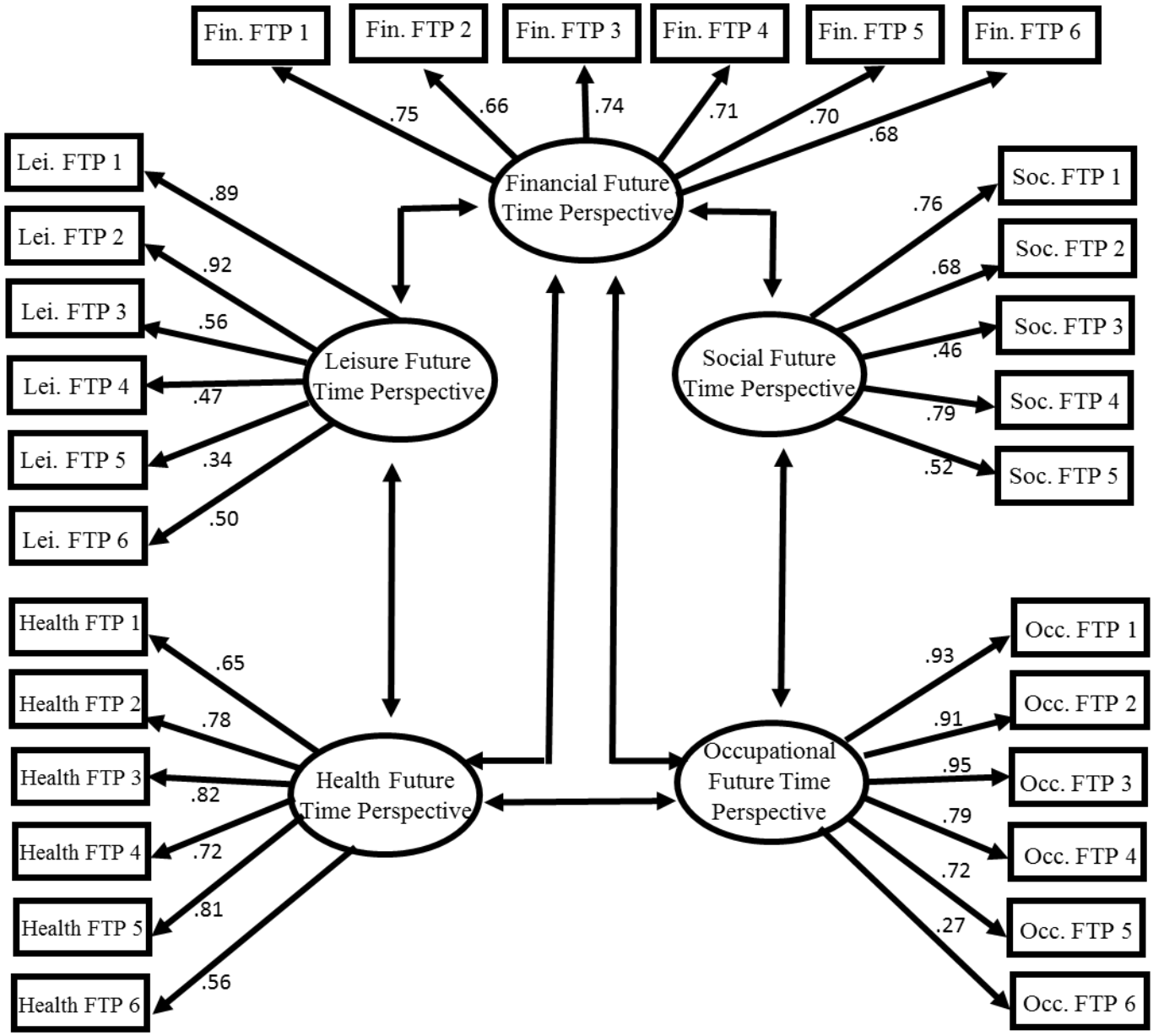


Figure 1. Measurement Model for the Five Domain-Specific Future Time Perspective Scales.

The construct "Planning Activity Level" was specified in AMOS as a latent variable and each of the nine items were entered as manifest indicators. All item loadings were adequate at .51 or greater, yet the fit indices for the model were abysmal. The model was statistically significant $\chi^2(27) = 471.41$, $p < .01$ and the chi-square to degrees of freedom ratio was 17.46. Fit indices were: *GFI* = .83, *AGFI* = .71, *NFI* = .82, *TLI* = .78, *CFI* = .83, and *RMSEA* = .17 (confidence interval .16 to .18).

The Work Behaviors Scale was newly developed for this investigation. Therefore, an exploratory factor analysis using SPSS was carried out and eigenvalues greater than one were extracted using principal components analysis. The scale fit a single factor solution, so no rotation to the component loadings was applied. Factors containing eigenvalues greater than one were retained. Two factors emerged. Upon examination of the face validity of the items, it was decided to split the items into two separate categories. The seven items in the first category represented one's work achievements and degree of self-promotion at work. For these items, all factor loadings were adequate, with each having a loading of .54 or greater. The factor accounted for 50.49% of the variance in the model. The six items in the second category represented hard work and commitment toward one's employment. As with the first set of items, all factor loadings were adequate, with each having a loading of .65 or greater. This factor accounted for 54.07% of the variation in item scores. It was decided that the work achievement and self-promotion items were likely to be influenced by future time perspective (and the hard work and commitment items not necessarily so), therefore, only the work achievement and self-promotion items were retained for this study and were collectively named the Work Behavior Scale.

The Personal Lifestyles Questionnaire was first published in a paper by Brown et al. (1983). No factor analysis procedures were carried out on the items in that original investigation. The authors' rationale for not conducting a factor analysis was that the measure was designed to assess the frequency of behaviors and not their structure as a related group of behaviors. The authors did report test results to suggest the measure had good reliability and validity. In an effort

to be thorough, in the present investigation a six-item confirmatory factor analysis was performed on the Personal Lifestyles Questionnaire. One item, "*I wear a seat belt when riding in an automobile*," had a factor loading of .29. Although this was slightly below the loading cut-off criteria of .30, the item was retained because it was so close to the acceptable threshold. Moreover, as pointed out above, Guadagnoli and Velicer (1988) advise that low loadings should be considered meaningful when the sample size is greater than 150, and the sample size for this investigation ($N = 570$) met that criteria. The remaining factor loadings were found to be weaker than those seen among loadings on the other measures, but they were still above threshold at .33 or greater. The model was statistically significant $\chi^2(9) = 60.63$, $p < .01$, and the chi-square to degrees of freedom ratio was 6.74. Fit indices were: *GFI* = .97, *AGFI* = .92, *NFI* = .80, *TLI* = .71, *CFI* = .82, and *RMSEA* = .10 (confidence interval .08 to .13).

The Social Behaviors Scale, which was modeled after the Long-Term Perspectives in Social Relations Scale developed by Peetsma and Van der Veen (2011), has been previously shown to have a single-factor solution. A confirmatory factor analysis was performed in which social behaviors was specified to be a latent construct and the set of five individual items were cast as manifest indicators. All item loadings were adequate at .54 or greater. The model was statistically significant $\chi^2(5) = 67.30$, $p < .01$, and the chi-square to degrees of freedom ratio was 13.46. Fit indices were less than optimal at: *GFI* = .95, *AGFI* = .86, *NFI* = .93, *TLI* = .87, *CFI* = .94, and *RMSEA* = .15 (confidence interval .12 to .18).

The six-item Leisure Behaviors Scale was newly developed for the purposes of this investigation. Therefore, an exploratory factor analysis using SPSS was carried out and eigenvalues greater than one were extracted using principal components analysis. The scale fit a single factor solution, so no rotation to the component loadings was applied. The factor loadings were adequate, with each item having a loading of .71 or greater. The single factor accounted for 61.52% of the variation in item scores.

Measurement Model for Behavioral Scales. After examining the factor structure for each behavioral scale, items from all five scales were used to develop a measurement model using AMOS v.19.0. In this analysis, the five latent factors were allowed to correlate with one another. As is often the case when computing a measurement model, the initial model fit was seriously suboptimal, $\chi^2(485) = 2088.87$, $p < .01$, chi-square to degrees of freedom ratio = 4.31, *GFI* = .79, *AGFI* = .76, *TLI* = .79, *CFI* = .81, *RMSEA* = .08 (confidence interval .07 to .08). Modification indices suggested the fit could be improved by allowing some of the error terms for items to correlate. As with the previous measurement model, it was decided that it was theoretically plausible to correlate error terms within the same scale, but not between different scales. Therefore, a total of 21 within-scale covariances were added to the model: three on the Social Behaviors Scale, two on the Leisure Behaviors Scale, three on the Work Behaviors Scale, eleven on the Retirement Planning Activities Scale and two on the Personal Lifestyles Questionnaire. This resulted in a substantially improved model fit, $\chi^2(464) = 1291.90$, $p < .01$, chi-square to degrees of freedom ratio = 2.78, *GFI* = .87, *AGFI* = .85, *TLI* = .89, *CFI* = .90, *RMSEA* = .06 (confidence interval .05 to .06). The final measurement model for the behavioral outcome scales is shown in Figure 2.

Summary of Psychometric Analyses

Five domain-general and five domain-specific future time perspective scales were analyzed with regard to internal consistency and factor structure. In terms of internal consistency, all ten scales were found to be reliable, and each factor loading was of an acceptable magnitude. The model fit for seven of the ten scales was good to excellent according to criteria established by Kline (2005), Miles and Shevlin (1998), Bentler and Bonnet (1980), Hu and Bentler (1999), and Steiger (2007). However, the model fit for the Consideration of Future Consequences Scale was suboptimal, as was the Long-term Perspective in Leisure Scale. The model fit for the Zimbardo Time Perspective Inventory had some indices that were below the established cut-off points, as

well, however again, these measures were retained in the study for theoretical reasons despite their measurement weaknesses.

The five behavioral outcome scales were also examined. The scale corresponding to the health domain—the Personal Lifestyles Questionnaire—was found to have a low coefficient alpha. The remaining four scales had acceptable coefficient alpha values (.80 and higher). The confirmatory models for two of the five scales were suboptimal when evaluated according to the established criteria, described above. These were the Personal Lifestyles Questionnaire (health domain) and the Retirement Planning Activities Scale (financial domain).

Again, the scales noted as having suboptimal psychometric properties were retained in the investigation on the basis of theoretical reasons and for comparative purposes. The scales in question have been frequency cited in the extant literature, so it is worthwhile to examine how well they perform in relation to other comparable measures. Furthermore, the psychometric properties of these scales have been deemed to be adequate when tested on other samples in prior investigations.

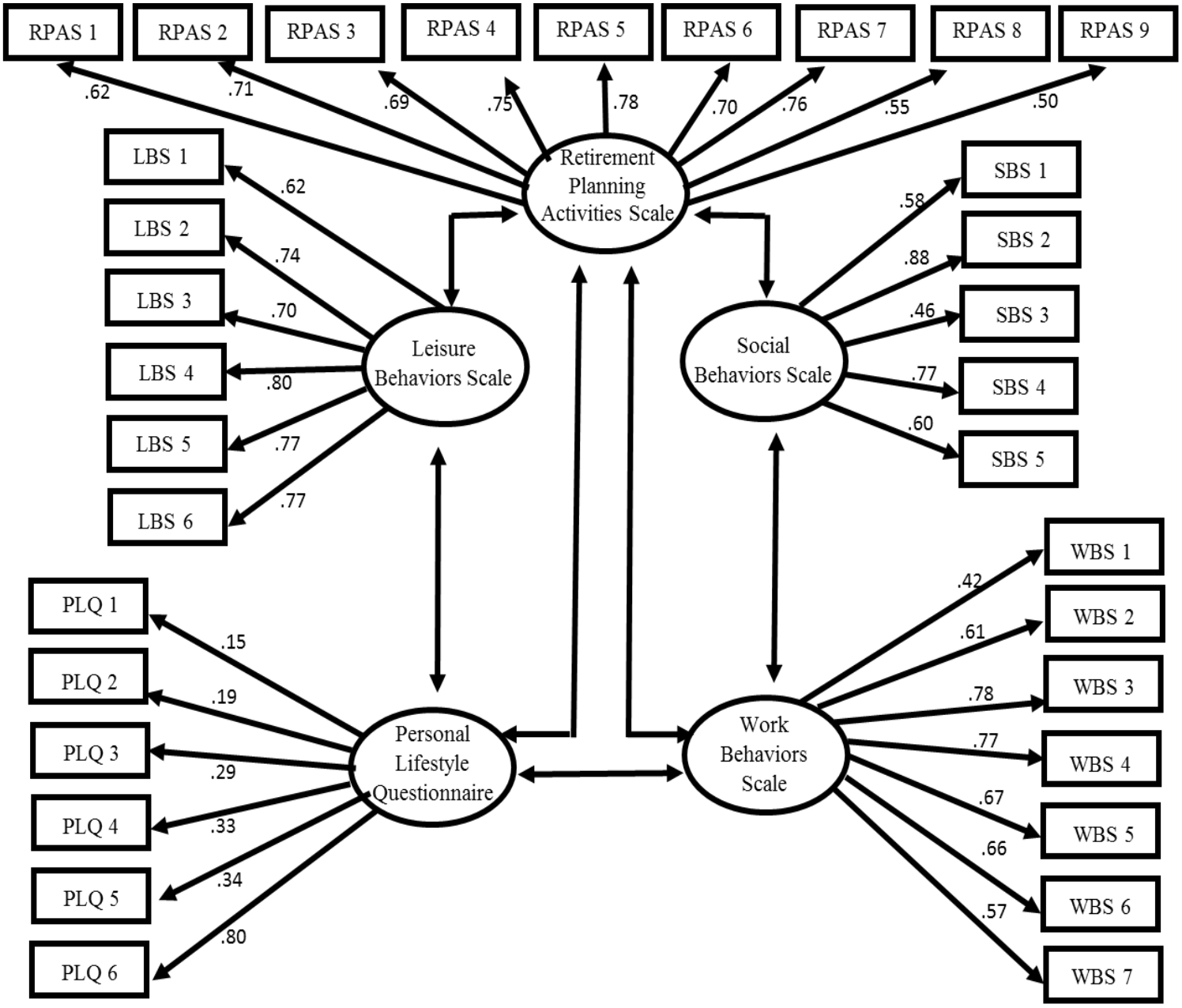


Figure 2. Measurement Model for the Five Behavioral Scales.

CHAPTER IV

CORRELATIONS AMONG FUTURE TIME PERSPECTIVE SCALES AND BEHAVIOR

The first goal of the present investigation was to examine the extent to which domain-general measures of future time perspective were related to one another, the extent to which domain-specific measures of future time perspective were related to one another, and the extent to which domain-general measures of time perspective were related to domain-specific measures.

To accomplish these goals, a Pearson correlation matrix was constructed that included all of the future time perspective scales. It was hypothesized that the highest intercorrelations would be among the domain-general future time perspective scales, given that they are all intended to measure the same identical construct. In terms of the domain-specific future time perspective scales, it was expected that there would be moderate correlations. The reason for this is that, despite each measure being designed to target future-oriented thinking in different domains, they all reflect future-oriented thinking, and thus, should covary with one another. Finally, it was hypothesized that there would be moderate correlations among the set of domain-general and domain-specific future time perspective scales. This is because domain-general future time perspective scales have been used as proxies for domain-specific scales in investigations prior to the time domain-specific scales were developed (i.e., prior to the 1990s). Moreover, from a theoretical standpoint, all domain-specific measures of future time perspective likely stem from a general, common construct of future-oriented thinking, despite their being specifically geared toward different contexts.

Correlations among Domain-General Future Time Perspective Measures

All five of the domain-general future time perspective scales were significantly and positively correlated with one another (i.e., all $p < .01$; see Table 4). The strongest relationship was observed between the Future Time Perspective Scale developed by Hershey and Mowen (2000) and the Time Styles Questionnaire ($r = .73$). The weakest relationships observed were between the Future Time Perspective Scale developed by Lang and Carstensen (2002) and the Zimbardo Time Perspective Inventory, and between the Lang and Carstensen (2002) scale and the Consideration of Future Consequences Scale. Correlations of $r = .24$ were observed for both pairs of measures.

As hypothesized, overall, the domain-general future time perspective scales had strong intercorrelations. It is worth noting, however, that the strength of the correlations among scales were quite varied—despite all five scales being designed to assess the same construct. This is interesting from both a theoretical and a measurement standpoint, because it implies that the measures cannot all be tapping the same basic psychological construct if some have strong correlations and others have weak correlations.

Table 4

Correlations among Future Time Perspective Scales. All Correlations are Significant at p < .01.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1. Zimbardo Future Time Perspective Inventory	1.00									
2. Consideration of Future Consequences Scale	.55	1.00								
3. Future Time Perspective Scale (Lang & Carstensen, 2002)	.24	.24	1.00							
4. Time Styles Questionnaire	.36	.37	.43	1.00						
5. Future Time Perspective Scale (Hershey & Mowen, 2000)	.44	.44	.64	.73	1.00					
6. Long-Term Perspective in Social Relations Scale	.29	.28	.47	.39	.53	1.00				
7. Long-Term Perspective in Leisure Scale	.20	.19	.22	.34	.37	.29	1.00			
8. Occupational Future Time Perspective Scale	.18	.18	.71	.38	.55	.43	.17	1.00		
9. Financial Future Time Perspective Scale	.43	.48	.34	.36	.57	.40	.29	.27	1.00	
10. Health Future Time Perspective Scale	.40	.26	.29	.37	.40	.42	.36	.24	.37	1.00

Correlations among Domain-Specific Future Time Perspective Measures

All five of the domain-specific future time scales were found to be significantly and positively correlated with one another (all $p < .01$; see Table 4). The strongest relationships were observed between the future time perspective scales for the social domain and career domain ($r = .43$) and between the social domain and the health domain ($r = .42$). The weakest relationship observed was between the future time perspective scales for the career domain and the leisure domain ($r = .17$), which seems interesting in that heavy involvement in one of the two domains would seem to preclude high levels of engagement in the other.

Although correlations for the domain-specific future time perspective measures were statistically significant, the correlations between scales were weaker than those observed for the domain-general measures. This outcome was predicted, however, as the domain-general measures were all designed to assess the same construct, whereas the domain-specific measures were designed to assess future time perspective in only one particular life context. Theoretically, the weaker correlations among the domain-specific future time perspective scales (in comparison to the domain-general intercorrelations) implies that they are indeed targeting different domains, because if they were all measuring the exact same thing the correlations would be near perfect (which they were not).

The findings regarding domain-specific future time perspective scales are also interesting from an applied perspective. Consider a scenario in which a travel agent wishes to assess clients' levels of future time perspective in the leisure domain. The ideal choice would be a domain-specific scale such as the Long-Term Perspectives in Leisure Scale. However, given that the future time perspective scales were all correlated with one another, the travel agent could alternatively use a domain-general scale if a scale in the leisure context was not available. A caveat to this notion is that the particular domain-general measure chosen would likely yield different results. The domain-specific leisure future time perspective measure was correlated with the Time Styles Questionnaire and the Future Time Perspective Scale developed by Hershey and

Mowen (2000) at $r = .34$ and $r = .37$, respectively, so either of these two domain-general scales would potentially serve as a good proxy measure. However, the best case scenario in this hypothetical situation would be for the travel agent to administer a scale that best matches the measurement context, which would be the domain-specific leisure scale.

Correlations among General and Specific Future Time Perspective Measures

Correlations were also examined among the set of five domain-general future time perspective scales and the set of five domain-specific future time perspective scales. The strongest correlation was found to be between the Future Time Perspective Scale developed by Lang and Carstensen (2002) (domain-general) and the Occupational Future Time Perspective Scale (domain-specific). The correlation for this relationship was $r = .71$. The weakest correlation was between the Zimbardo Time Perspective Inventory, Future Dimension (domain-general) and the Occupational Future Time Perspective Scale (domain-specific), $r = .18$. The Consideration of Future Consequences Scale (domain-general) and the Occupational Future Time Perspective Scale (domain-specific) were found to have a similarly weak correlation ($r = .18$).

The correlations from this set of analyses (domain-general with domain-specific) represented the widest range of values when compared to the other two sets of correlations (i.e., domain-general with domain-general, and domain-specific with domain-specific). The strong correlation between the Future Time Perspective Scale developed by Lang and Carstensen (2002) and the Occupational Future Time Perspective Scale is most likely due to the fact that the Occupational Future Time Perspective Scale (Zacher & Frese, 2009) was originally based on the Lang and Carstensen measure. The Occupational Future Time Perspective Scale was also involved in the weakest correlations. This is indirect evidence of the fact that, of the five domains assessed in this investigation, the occupational domain is the most unique with regard to time perspective measurement issues. An explanation for why this domain stands out is that individuals do not need to be future-oriented toward their careers after their careers are already established. In contrast, some of the other domains—like health, social, and leisure—are desirable

to actively manage throughout the entire lifespan, both before and after the establishment of one's career.

Comparison between Domain-General Intercorrelations and Domain-Specific Intercorrelations

In light of the correlations above, it was decided that it would be informative to compare the mean intercorrelation among the domain-general scales to the mean intercorrelation among the domain-specific scales. It was hypothesized that the mean intercorrelation among the domain-general scales would be larger than the mean intercorrelation among the domain-specific scales. This is because the domain-general scales are purported to measure the same construct and the domain-specific scales are assumed to measure different areas. Mean intercorrelations were computed for each correlation matrix. The mean intercorrelation among the domain-general scales, $r = .44$, was larger than the mean intercorrelation among the domain-specific scales, $r = .32$. A test of the difference between dependent correlations was performed using the dependent correlations online calculator (Lee & Preacher, 2013). The dependent test was selected because the two intercorrelations were from the same sample. Consistent with what was expected, it was found that the mean intercorrelation among the domain-general scales ($r = .44$) was significantly larger than the mean intercorrelation among the domain-specific scales ($r = .32$), $z = 2.83$, $p = 0.005$.

Correlations among Future Time Perspective Scales and Behavioral Outcome Scales

A final set of correlations was computed to examine the relationship among future time perspective scales and behavior. It was expected that all of correlations would be positive and significant, given that future time perspective has been shown to predict behavior.

First, the domain-general future time perspective scales were examined. Twenty-five separate Pearson correlations were computed in which each of the five domain-general scales was correlated with each of the five behavioral outcome scales. The strongest correlation was observed between the Future Time Perspective Scale developed by Lang and Carstensen (2002)

and the Work Behaviors Scale (r = .48). The weakest correlation was between the Consideration of Future Consequences Scale and the Social Behaviors Scale and between the Time Styles Questionnaire and the Social Behaviors Scale (both r = .11). All of the correlations were positive and significant, as expected.

Next, the domain-specific scales were examined. Five separate Pearson correlations were computed in which each of the five domain-specific scales was correlated with the behavioral outcome scale that corresponded to that life domain. The strongest correlation was observed between the Financial Future Time Perspective Scale and the Retirement Planning Activities Scale (financial planning domain; r = .61). The weakest correlation was between the Long-Term Perspectives in Leisure Scale and the Leisure Behaviors Scale (leisure domain; r = .38). Again, all of the correlations were positive and significant, as expected.

Finally, in light of the correlations above, it was hypothesized that the mean intercorrelations among the domain-general scales and behavioral outcome scales (r = .29) would be significantly smaller than the mean intercorrelations among the domain-specific scales and the behavioral outcome scales (r = .48). This is because the domain-specific scales and the behavioral outcome scales are both designed to correspond to particular life domains and the domain-general scales are not. A test of the difference between dependent correlations was performed using a dependent correlations online calculator (Lee & Preacher, 2013). The dependent test was selected because the two intercorrelations were from the same sample. Consistent with the hypothesis, the intercorrelations among the domain-general scales and the behavioral outcome scales (r = .29) was significantly smaller than the intercorrelations among the domain-specific scales and the behavioral outcome scales. Thus, it can be concluded that domain-specific scales are better predictors of behavior than domain-general scales.

Conclusion

The analyses in this chapter explored the relationships among domain-general and domain-specific future time perspective scales. It was hypothesized that all scales would be correlated, but that the strongest intercorrelations would be observed between domain-general measures. This was found to be the case, as the intercorrelations among the domain-general scales were significantly larger than the intercorrelations among the domain-specific scales. A second hypothesis was that there would be moderate correlations among the domain-specific future time perspective scales. This hypothesis was partially supported; the correlations among these measures were found to range from weak to moderate.

In another set of analyses, the correlations among future time perspective scales and behavioral outcome scales were examined. All five domain-general scales and all five domain-specific scales were positively and significantly correlated with each of the five behavioral outcome scales. However, it is important to note that the intercorrelations among the domain-general scales and the behavioral outcome scales were significantly smaller than the intercorrelations among the domain-specific scales and the behavioral outcome scales.

These findings shed light on interesting theoretical considerations. One of these is whether or not all domain-general future time perspective scales measure the same construct (as one would theoretically posit). The correlations among domain-general scales were quite varied, which implies that some—particularly those with low intercorrelations—are not the most valid choices when it comes to measuring future time perspective. Another interesting theoretical point to consider is what may be implied by the fact that magnitude of the intercorrelations among domain-general and domain-specific scales varied widely. Some domain-specific scales were closely related to domain-general scales, whereas others were found to be only weakly related. This implies that, for some domains (e.g., career/occupation), a domain-specific measure may not be necessary because a domain-general scale would appear to be an adequate proxy measure. But for other domains (e.g., health), a domain-specific measure of future time perspective would be

warranted in order to capture variability in behavior not picked up by domain-general scales. Another interesting finding was that the intercorrelations among the domain-general scales and the behavioral outcome scales were smaller than the intercorrelations among the domain-specific scales and behavioral outcome scales. This finding suggests that domain-specific scales are better predictors of behavior than domain-general scales. In sum, the findings largely supported the hypotheses outlined at the beginning of the chapter, and in doing so, shed light on implications for psychometric measurement.

CHAPTER V

MODELS OF FUTURE TIME PERSPECTIVE PREDICTING BEHAVIOR

In the previous chapter, the relationships among domain-general and domain-specific measures of future time perspective were explored. The set of analyses described in this chapter explores the ability of domain-general and domain-specific future time perspective scales to predict behavior in each of the five life domains. Toward that end, five path analysis models are described below that statistically examine these future time perspective/behavior relationships. All five models were analyzed using the AMOS structural equation modelling software.

For the first model, the financial domain will be examined. The five domain-general future time perspective scales will all be arranged as exogenous variables along the left side of the model—the Consideration of Future Consequences Scale, the Zimbardo Time Perspective Inventory, the Time Styles Questionnaire, the Future Time Perspective Scale developed by Hershey and Mowen (2000), and the Future Time Perspective Scale developed by Lang and Carstensen (2002). A regression path will extend from each of the five domain-general measures to predict scores on the domain-specific Financial Future Time Perspective Scale. A sixth regression pathway will extend from the domain-specific measure of Financial Future Time Perspective to the Retirement Planning Activities Scale, which is the behavioral outcome measure for retirement finances. All variables in this path model are represented as manifest indicators. It is anticipated that each of the five domain-general future time perspective scales will be significant predictors of financial future time perspective, and that financial future time perspective, in turn, will significantly predict retirement planning activities. In other words, a full

mediation model is posited. Consistent with best practices in path model analysis, exogenous variables will be allowed to correlate with one another. The second model tested will be structurally identical to the financial model described immediately above, but it will be designed to explore the career planning domain. The only difference between it and the previous model will be that the Occupational Future Time Perspective measure and the Work Behavior Scale will substitute for the Financial Future Time Perspective measure and the Retirement Planning Activities Scale, respectively. Models three, four, and five will involve similarly testing in the health, social, and leisure domains using the same structural format.

Again, each of the five path models are hypothesized to be full mediation models, in which the domain-specific future time perspective scale mediates the relationship between the domain-general future time perspective measures and the behavioral scale in each domain. However, given that in the previous chapter all of the domain-general future time perspective measures were shown to independently predict behavior in most life domains, direct paths may need to be added between the domain-general future time perspective measures and the behavioral scale(s). Such paths would be added in cases in which the domain-general measure captures variance in the outcome variable over and above that explained by the domain-specific measure. The AMOS goodness-of-fit and modification index values will be used as a guide for whether additional (i.e., non-hypothesized) direct paths will need to be added between the five exogenous measures and the behavioral outcome variable. The five observed models for each of the life planning domains are shown in Figures 4, 5, and 6.

The model for the financial domain (see Figure 4a) was found to be an excellent fit to the data as hypothesized. The chi-square value was non-significant $\chi^2(5) = 8.25$, $p = .14$, and the chi-square to degrees of freedom ratio was 1.65. Fit indices were: *GFI* = 0.99, *AGFI* = 0.98, *NFI* = 0.99, *TLI* = 0.99, *CFI* = 0.99, and *RMSEA* = 0.03 (confidence interval 0.00 to 0.07). One domain-general future time perspective scale, the measure developed by Lang and Carstensen (2002), was not a significant predictor of financial future time perspective. The other four domain-general

measures were significantly related to the mediating construct. Oddly, one of the significant domain-general pathways was found to carry a value with a negative valence, which runs counter to intuitions and counter to what was observed among the other domain-general measures and Financial Future Time Perspective. Although, it may be not worth reading too much into this anomalous finding, as the magnitude of the negative coefficient was quite small ($\beta = -.14$). The path from the Financial Future Time Perspective Scale to the Retirement Planning Activities Scale was found to have the strongest beta weight ($\beta = .61$) in the model, as one might expect to find. Prediction in the model was quite good, with 40 percent of the variability in Financial Future Time Perspective being captured and 37 percent of the variation accounted for in Retirement Planning Activity scores.

The model fit for the career domain (see Figure 4b) was found to be suboptimal, $\chi^2(5) = 99.74$, $p < .0001$, chi-square to degrees of freedom ratio = 19.95, *GFI* = 0.96, *AGFI* = 0.75, *NFI* = 0.95, *TLI* = 0.78, *CFI* = 0.95, and *RMSEA* = 0.18 (confidence interval 0.15 to 0.22). Modification indices suggested the fit could be improved by adding paths from all five domain-general scales to the Work Behavior Scale. Using a stepwise approach to model modification, based on the largest modification indices observed, paths from the Zimbardo Time Perspective Inventory and the Hershey and Mowen Future Time Perspective Scale were connected to the Work Behavior Scale. The addition of the two paths resulted in a good fit. The chi-square value for the modified model was significant $\chi^2(3) = 12.72$, $p = .005$; the chi-square to degrees of freedom ratio was 4.24. Fit indices were: *GFI* = 0.99, *AGFI* = 0.94, *NFI* = 0.99, *TLI* = 0.96, *CFI* = 0.99, and *RMSEA* = 0.08 (confidence interval 0.04 to 0.12), all of which are considered well above threshold. Paths from the Future Time Perspective scale developed by Lang and Carstensen (2002) and the Future Time Perspective Scale developed by Hershey and Mowen (2000) significantly predicted Occupational Future Time Perspective. The two paths that were added from the Zimbardo Time Perspective Inventory and the Future Time Perspective Scale developed by Hershey and Mowen

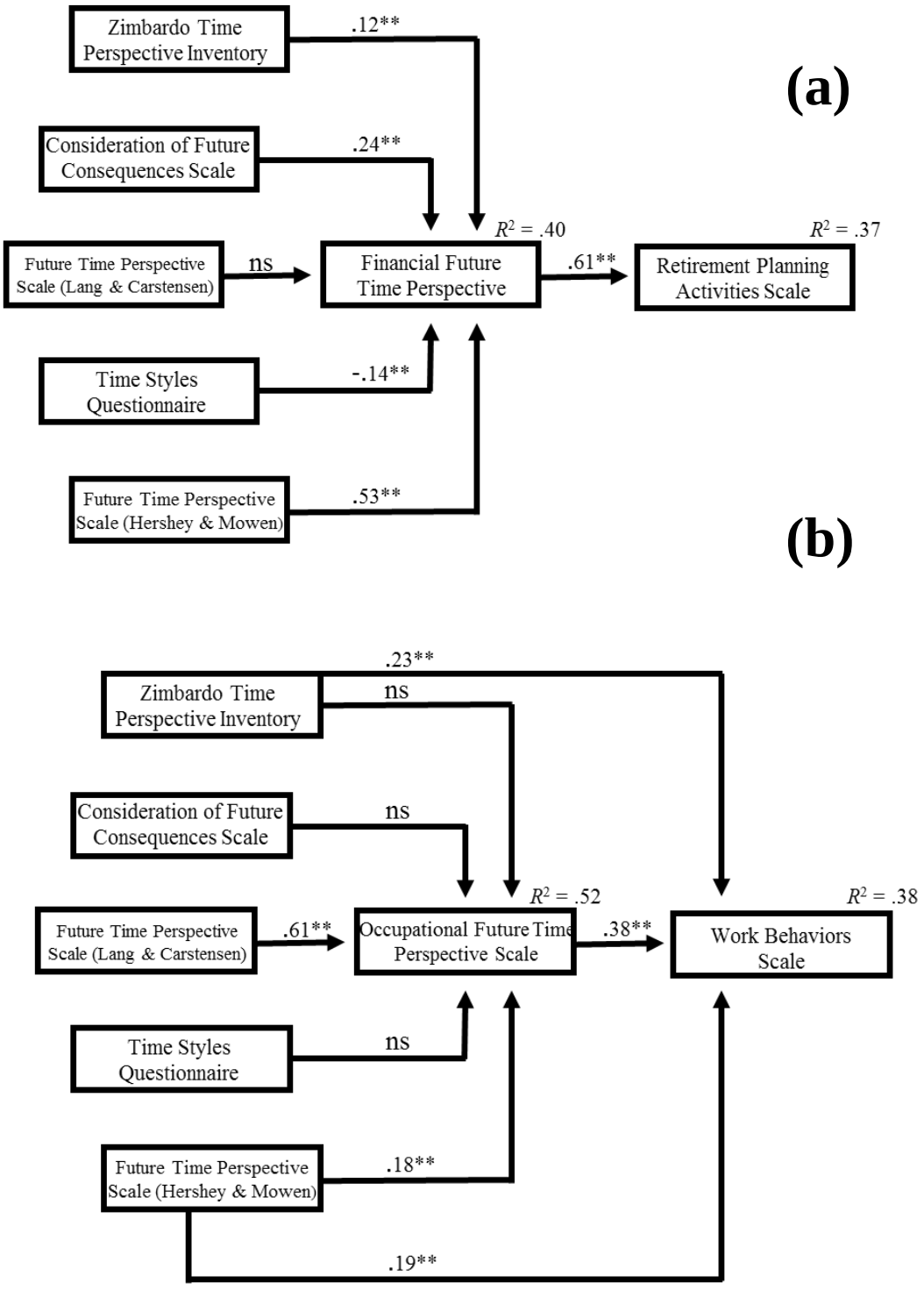
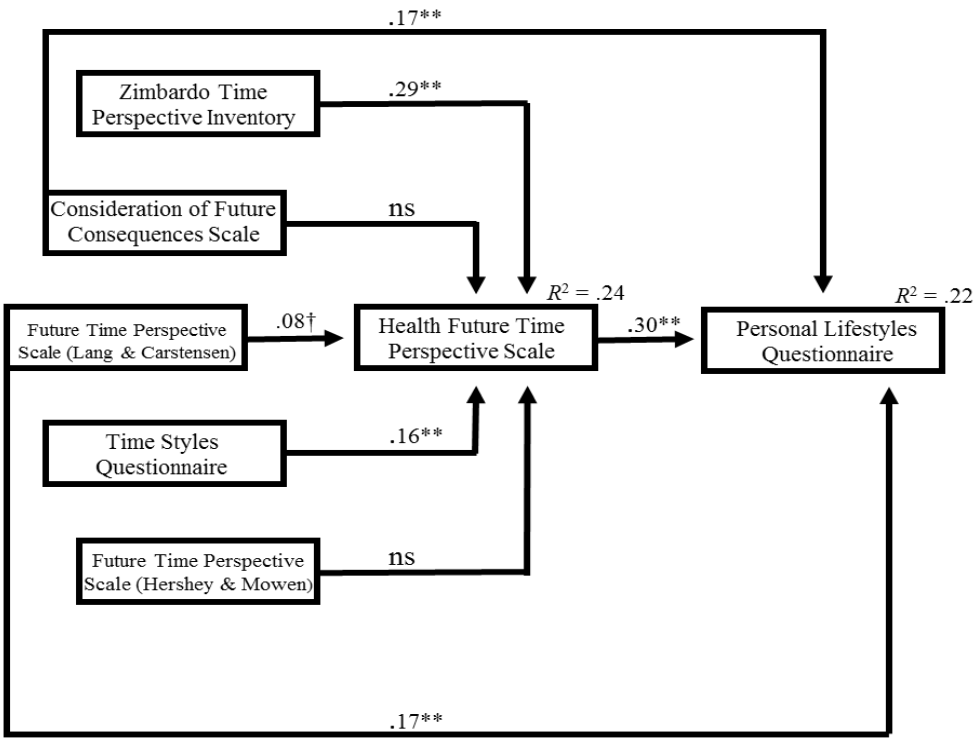
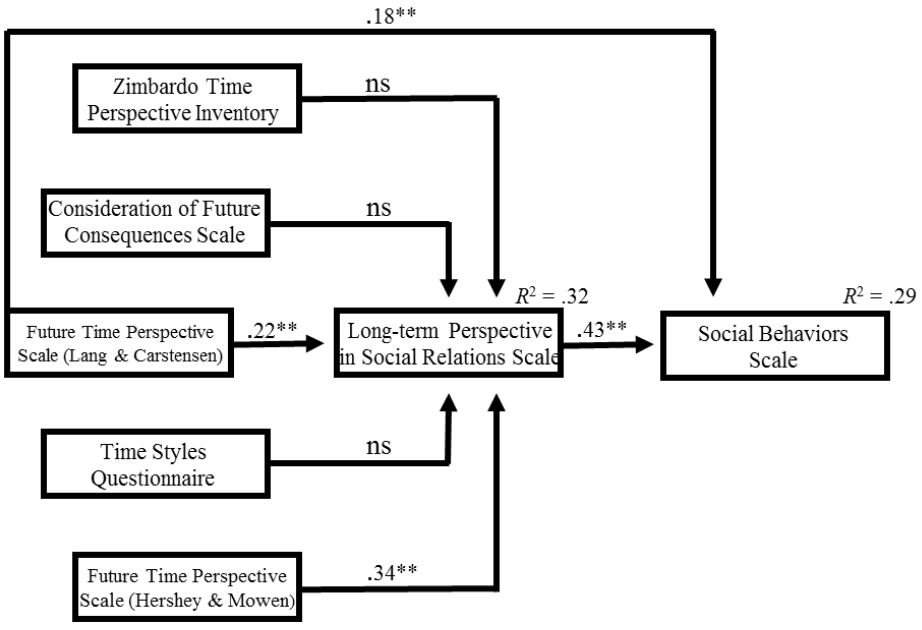


Figure 3. Models of Future Time Perspective in the (a) Financial and (b) Career Domains.

**$p < .01$



(a)



(b)

Figure 4. Models of Future Time Perspective in the (a) Health and (b) Social Domains. **$p < .01$; † $p < .10$

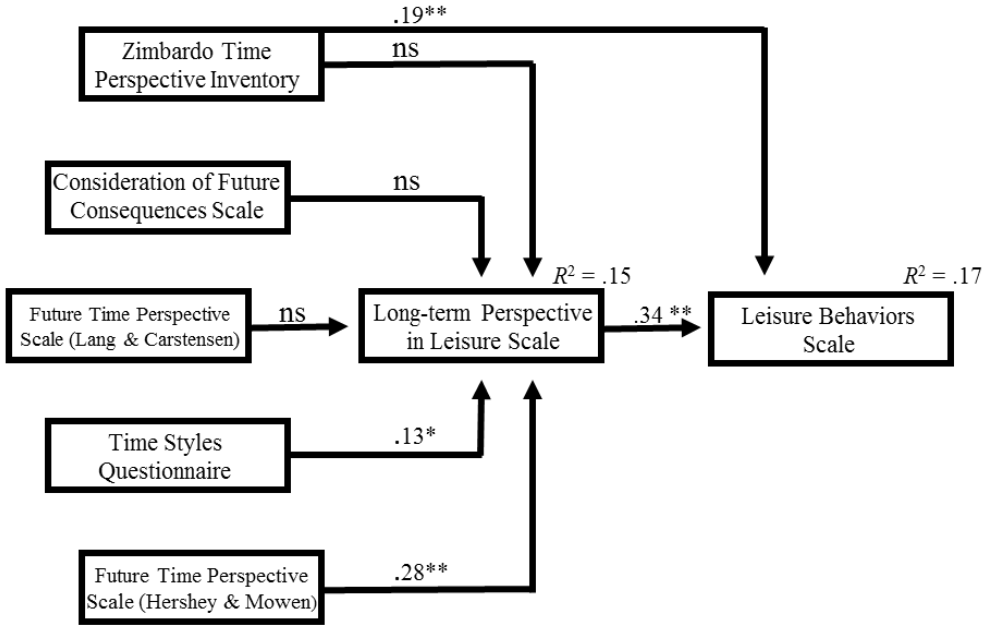


Figure 5. Model of Future Time Perspective in the Leisure Domain. **$p < .01$; *$p < .05$

(2000) predicting the Work Behaviors Scale were significant as well. The path from the Future Time Perspective Scale developed by Lang and Carstensen (2002) to the Occupational Future Time Perspective Scale was found to have the strongest beta weight ($\beta = .61$). Interestingly, three domain-general future time perspective scales, the Zimbardo Time Perspective Inventory, the Consideration of Future Consequences Scale, and the Time Styles Questionnaire, were not significant predictors of occupational future time perspective. The predictors accounted for over half of the variability in occupational future time perspective ($R^2 = .52$), as well as a substantial amount of variance in work behavior ($R^2 = .38$).

The model fit for the health domain (see Figure 5a) was less than optimal, $\chi^2(5) = 58.16$, $p < .0001$, chi-square to degrees of freedom ratio = 11.63, *GFI* = 0.97, *AGFI* = 0.85, *NFI* = 0.96, *TLI* = 0.84, *CFI* = 0.96, and *RMSEA* = 0.14 (confidence interval 0.11 to 0.17). Modification indices suggested the fit could be appreciably improved by adding four paths to the Personal Lifestyles Questionnaire (the behavioral outcome scale for the health domain). The suggested paths were from the Zimbardo Time Perspective Inventory, from the Consideration of Future Consequences Scale, from the Future Time Perspective Scale developed by Lang and Carstensen (2002) and from the Future Time Perspective Scale developed by Hershey and Mowen (2000). However, based on the magnitude of the modification indices, only two of the four recommended paths were added. These were paths from the Consideration of Future Consequences Scale and the Future Time Perspective Scale developed by Lang and Carstensen (2002) to the Personal Lifestyles Questionnaire. This resulted in a good fit. The chi-square value for the revised model was significant $\chi^2(3) = 14.19$, $p = .003$, and the chi-square to degrees of freedom ratio was 4.73. Fit indices were: *GFI* = 0.99, *AGFI* = 0.94, *NFI* = 0.99, *TLI* = 0.94, *CFI* = 0.99, and *RMSEA* = 0.08 (confidence interval 0.04 to 0.13). Only two of the five domain-general future time perspective scales—the Zimbardo Time Perspective Inventory and the Time Styles Questionnaire—were significant predictors of the domain-specific measure of health future time perspective. A third domain-general future time perspective scale—the Future Time Perspective

Scale developed by Lang and Carstensen (2002)—reached the level of a trend. Together, these three predictors accounted for 24 percent of the variance in health future time perspective. The paths that were added from the Consideration of Future Consequences Scale and the Future Time Perspective Scale developed by Lang and Carstensen (2002) were both found to be significant predictors of the Personal Lifestyles Questionnaire. The path from the Health Future Time Perspective Scale to the Personal Lifestyles Questionnaire had the strongest beta weight ($\beta = .30$). Two domain-general future time perspective scales, the Consideration of Future Consequences Scale and the Future Time Perspective Scale developed by Hershey and Mowen (2000), were not significant predictors of health future time perspective, whereas the path from the Lang and Carstensen (2002) measure to health future time perspective only reached the level of a trend ($p = .08$). Slightly more variance was accounted for in the Health Future Time Perspective scale ($R^2 = .24$) than in the Personal Lifestyles Questionnaire ($R^2 = .22$).

The model fit for the social domain (see Figure 5b) was somewhat suboptimal, $\chi^2(5) = 50.06$, $p < .01$, with a chi-square to degrees of freedom ratio of 10.01, *GFI* = 0.98, *AGFI* = 0.87, *NFI* = 0.97, *TLI* = 0.88, *CFI* = 0.97, and *RMSEA* = 0.13 (confidence interval 0.10 to 0.16). Modification indices suggested the fit could be improved by adding paths from the Future Time Perspective Scale developed by Lang and Carstensen (2002) and the Time Styles Questionnaire to the Social Behaviors Scale. Based on the size of the modification indices and consistent with a stepwise approach to model modification, only the latter of the two suggested paths was added. This resulted in an acceptable model fit. The chi-square value was significant $\chi^2(3) = 30.19$, $p = .0001$, and the chi-square to degrees of freedom ratio was 7.55. Fit indices were: *GFI* = 0.99, *AGFI* = 0.90, *NFI* = 0.98, *TLI* = 0.91, *CFI* = 0.98, and *RMSEA* = 0.11 (confidence interval 0.07 to 0.15). Only two of the five domain-general future time perspective scales—the future time perspective scale developed by Lang and Carstensen (2002) and the future time perspective scale developed by Hershey and Mowen (2000)—were significant predictors of social future time perspective. The path added from the Lang and Carstensen (2002) domain-general measure to the

Social Behaviors Scale was statistically significant at the .01 level. The path from the Long-term Perspectives in Social Relations Scale to the Social Behaviors Scale was found to carry the strongest beta weight (β = .43). Three domain-general measures, the Zimbardo Time Perspective Inventory, the Consideration of Future Consequences Scale, and the Time Styles Questionnaire, were not found to be significant predictors of the Long-term Perspectives in Social Relations Scale. The predictors accounted for more variance in the Long-term Perspective in Social Relations Scale (R^2 = .32) than in the Social Behaviors Scale (R^2 = .29).

The model fit for the leisure domain (see Figure 6) was somewhat suboptimal, $\chi^2(5)$ = 46.44, $p < .0001$, chi-square to degrees of freedom ratio = 9.29, *GFI* = 0.98, *AGFI* = 0.88, *NFI* = 0.97, *TLI* = 0.87, *CFI* = 0.97, and *RMSEA* = 0.12 (confidence interval 0.09 to 0.15). Modification indices suggested the fit could be improved by adding a path from four of the domain-general measures to the Leisure Behaviors Scale. Based on the size of the modification indices, only a path from the Zimbardo Time Perspective Inventory to the Leisure Behaviors Scale was added. Doing so resulted in a good model fit. The chi-square value for the revised model was significant $\chi^2(4)$ = 23.75, p = .0001, and the chi-square to degrees of freedom ratio was 5.94. Fit indices for the revised model were: *GFI* = 0.99, *AGFI* = 0.92, *NFI* = 0.98, *TLI* = 0.92, *CFI* = 0.99, and *RMSEA* = 0.09 (confidence interval 0.06 to 0.13). Only two of the five domain-general future time perspective scales were significant predictors of leisure future time perspective; specifically, the Time Styles Questionnaire and the Future Time Perspective Scale developed by Hershey and Mowen (2000). The path that was added from the Zimbardo Time Perspective Inventory to the Leisure Behaviors Scale was statistically significant at the .01 level. The path from the Long-term Perspective in Leisure Scale to the Leisure Behaviors Scale had the strongest beta weight (β = .34). Three domain-general measures, the Consideration of Future Consequences Scale, the Zimbardo Time Perspective Inventory and the Future Time Perspective Scale developed by Lang and Carstensen (2002), were not significant predictors of the Long-term Perspectives in Leisure Scale. The predictors accounted for slightly more variance in the Leisure Behaviors Scale (R^2 =

.17) than in the Long-Term Perspective in Leisure Scale (R^2 = .15). Relative to the other four models tested, this model was found to have the weakest relationships overall.

The goal of the five analyses reported above was to determine how successful domain-general and domain-specific future time perspective scales would be in predicting behavior in each of five life domains. On the whole, the domain-specific scales were indeed more successful in capturing variance in the outcome measures. In the domains of financial planning, health planning, social planning and leisure planning, the domain-specific future time perspective measures were stronger than any of the domain-general measures in capturing variance in the behavioral outcome measure for that particular life domain. The one exception to this was in the area of career planning, where the predictive power of the Occupational Future Time Perspective Scale was subordinate to the (general) Future Time Perspective Scale developed by Lang and Carstensen (2002).

In each of the five models, at least one domain-general future time perspective scale was non-significant in the prediction of a domain-specific future time perspective scale. The Consideration of Future Consequences Scale failed to reach significance in four out of the five models (leading one to question its predictive validity when it comes to explaining domain-specific future time perspective variation) and the Future Time Perspective Scale developed by Hershey and Mowen (2000) failed to reach the significance threshold in one model. This outcome is important because it suggests that domain-general measures are not *always* adequate indicators of domain-specific future time perspective measures. The prediction of behavioral outcomes was the most straightforward and efficient in the financial planning domain; in this model, the domain-specific future time perspective measure fully mediated the relationship between the domain-general future time perspective measures and the Retirement Planning Activities Scale. The least straightforward domain in this regard was in the career planning domain. In this model, three hypothesized paths were not significant, and unlike the other domains, a domain-general scale was found to be a better predictor than the domain-specific scale. The findings described in

this chapter have both applied and theoretical import. One applied implication is that future time perspective is better understood in some domains (e.g., financial planning) than in others (e.g., career planning). So, a practitioner or educator who wishes to increase a client's level of future time perspective in all domains may choose to start with the financial domain, because measurement and prediction in this context is more straightforward, and therefore, more likely to result in a successful outcome. In terms of theoretical implications, it is important to note that the five domain-general scales had a wide range of beta weights in relation to the outcome measures. This implies that each is capturing a slightly different construct or different aspect of future time perspective—if they were all measuring the same intrapsychic dimension, then the beta weights would have been similar across the five models. The different patterns of prediction for the different domains suggests that there is not one "story" that can account for an explanation of behavior—the best future time perspective measure to use is dependent upon the life domain being investigated.

CHAPTER VII

DISCUSSION

The purpose of this investigation was to assess the relationships among ten different measures of future time perspective and to assess how well various measures of future time perspective predicted behavior. Future time perspective—the extent to which one enjoys thinking about future—is an important construct. It is closely tied to how well individuals plan for their lives in old age and is related to many life-planning behaviors.

Future time perspective has been assessed and measured in a number of ways. These include tasks such as the sentence completion task (Meade, 1971; Nurmi, 1991), where participants are determined to be more or less future oriented depending on how far in the future they project when completing a sentence, to things such as the circles test (Cottle, 1967), where participants draw three interlaced circles to represent the past, present, and future. Perhaps the most widely used method of assessing future time perspective involves using self-report scales with a Likert-type response format. Some are domain-general future time perspective scales—scales that assess future time perspective as a general, unitary characteristic as it applies to all areas of life. Others are domain-specific future time perspective scales—those that aim to measure future time perspective in one particular context. For example, a domain-specific future time perspective scale could be geared to the health domain, in which participants would answer questions about how much they like to think about the future with regard to health planning throughout life. Or, a domain-specific future time perspective scale in the area of finance would assess how much an individual likes to think about future financial decisions and what the state of their finances will be like later in life.

In this study, five life domains were selected to be examined with regard to future time perspective. The five domains were financial planning, career planning, health planning, social planning, and leisure planning. These domains were selected because they are frequently cited in the literature as being important with regard to future time perspective (Antonides et al., 2011; Hall & Epp, 2013; Howlett et al., 2008; Kooij et al., 2013; Laran, 2010; Peetsma & Van der Veen, 2011; Phillip, 1992; Waite & Joyner, 2001; Zacher & Frese, 2009; Zalatan, 1996). However, it is important to note that there are many other life domains—for example, housing planning or end-of-life planning—that could also be heavily influenced by one's level of future time perspective. In previous studies on future time perspective, only one or two life domains have been examined. For example, Hall and Epp (2013) found that future time perspective predicts health behavior, and Peetsma and Van der Veen (2011) examined the role of future time perspective in social planning and leisure planning. In the present investigation, five domains were examined side-by-side and the domain-specific scales for each domain were examined simultaneously. This allowed for more direct comparisons.

Psychometric Evidence Regarding Scale Properties

A two-part analysis was carried out to examine the extent to which future time perspective measures were related to one another and were predictive of behavior in five life domains. Prior to analyses, an in-depth examination of the psychometric properties of scales used in the investigation was carried out. Five domain-general future time perspective scales, five domain-specific future time perspective scales, and five behavioral outcome scales were examined with regard to internal consistency and factor structure.

The five domain-general future time perspective scales that were used were all published in prior investigations. Therefore, it was not surprising to find that they had adequate psychometric properties because these psychometric properties had already been established. Levels of internal consistency were all good (Cronbach's alpha = .81 and higher). Confirmatory factor analysis using AMOS v. 19.0 (Arbuckle, 2010) was used to examine the factor structure of

each domain-general scale. The Consideration of Future Consequences Scale was found to have poorer fit indices than those reported in the investigation in which it was established (Stratham et al., 1994). Likewise, fit indices for the Zimbardo Time Perspective Inventory were found to be poorer than those found by Zimbardo and Boyd (1999). In contrast, analysis of the Time Styles Questionnaire revealed better fit indices than those reported by Usunier and Valette-Florence (2007), who developed the scale. The fit indices for two domain-general future time perspective scales—the Future Time Perspective Scale developed by Lang and Carstensen (2002) and the Future Time Perspective Scale developed by Hershey and Mowen (2000)—have not been published to date. However, the model fit for both of these scales was good.

Five domain-specific future time perspective scales were used in the investigation. Two scales were newly developed for this study (the Financial Future Time Perspective Scale and the Health Future Time Perspective Scale), one was previously published (the Occupational Future Time Perspective Scale; Zacher & Frese, 2009), and two were modified from published scales (the Long-Term Perspective in Social Relations Scale and the Long-Term Perspective in Leisure Scale; Peetsma & Van der Veen, 2011). Internal consistency for all five domain-specific scales was at an adequate level (Cronbach's alpha .77 or higher). One item was dropped from the Long-Term Perspective in Social Relations Scale to improve the coefficient alpha.

An exploratory factor analysis using principal components extraction was performed on the two newly developed scales, and both were found to have a single factor solution. A confirmatory factor analysis was performed for the remaining three scales. It was found that the Occupational Future Time Perspective Scale (Zacher & Frese, 2009) had the best confirmatory fit indices, and the Long-Term Perspective in Leisure Scale (Peetsma & Van der Veen, 2011) had the worst. A measurement model was computed using all five domain-specific future time perspective scales. The initial fit was suboptimal, but modification indices suggested that the fit could be improved by allowing error terms on some scale items to correlate. It was deemed theoretically plausible to allow error terms on items within the same scale to correlate, but not

items on different scales. The model fit was acceptable after adding these fourteen intra-scale, inter-item covariances.

Five behavioral outcome scales—one corresponding to each life domain—were used in this investigation. Two of the scales were newly developed (the behavioral outcome scales corresponding to the work and leisure domains), two were previously published (which corresponded to the finance and health domains), and one was based on a previously published scale (corresponding to the social domain). One item was dropped from the Social Behaviors Scale and three items were dropped from the Personal Lifestyles Questionnaire (health domain) to improve levels of internal consistency. The coefficient alpha for the Personal Lifestyles Questionnaire was low at .59. However, the scale was retained on the basis of the fact that it has been frequently used in previous investigations. The Cronbach's alpha value for the other four scales was acceptable at .80 and above.

An exploratory factor analysis using principal components extraction was performed on the two newly developed scales, and the remaining three were subject to a confirmatory factor analysis using AMOS 19.0. Interestingly, the model fit indices for the Personal Lifestyles Questionnaire (health domain) and the Social Behaviors Scale were superior to those found for the Retirement Planning Activities Scales (finance domain), despite the fact that the Retirement Planning Activities Scale was superior in terms of internal consistency and magnitude of component loadings. A measurement model was computed in which the items for all five behavioral outcome scales were entered. The initial fit was poor. Modification indices suggested that the fit could be improved by allowing error terms on some scale items to correlate. It was deemed theoretically plausible to allow error terms on items within the same scale to correlate, but not items on different scales. The model fit was acceptable after adding twenty-one intra-scale, inter-item covariances.

In sum, ten measures of future time perspective and five measures of behavior were employed in this investigation. Some scales were previously published, and others were newly

developed. All of the newly developed scales were found to have adequate psychometric properties. The majority of the previously published scales were found to have adequate psychometric properties as well. Two had less than desirable characteristics, but were retained for theoretical reasons.

Associations among Measures

Subsequent to psychometric evaluation of the measures, the relationship between domain-general future time perspective scales and domain-specific future time perspective scales was examined. Toward this end, the five domain-general scales and the five domain-specific scales were entered into a matrix of Pearson correlations. Pearson correlations less than .30 were considered small in magnitude, correlations between .30 and .50 were considered moderate, and correlations above .50 were considered large. First, the relationships among the domain-general scales were examined. The strength of these intercorrelations were found to substantially vary. Second, the relationships among the domain-specific scales were examined. Again, the strength of the correlations varied, but the correlations among domain-specific scales were weaker overall in comparison to the correlations among the domain-general scales.

Two important takeaway messages are worth noting here. The first is that all domain-general future time perspective scales are not, in fact, assessing the same construct; if that were the case, the correlations among them would be near unity. Rakowski (1982) also found that correlations among domain-general future time perspective measures were quite varied, giving further support for this idea. The second takeaway message is that different domain-specific measures do indeed tap different facets of future time perspective (as they are intended to). This is evidenced by the fact that the different domain-specific scales were not strongly correlated with one another. The correlations ranged from .17 to .43, with a mean intercorrelation of .32. This finding provides support for the future development of domain-specific future time perspective scales as a way of investigating particular life domains. Some researchers have already done this. For example, Hall and Epp (2013) developed a domain-specific future time perspective scale for

the health domain, and Peetsma and Van der Veen developed scales specific to the social and leisure domains. Finally, it was found that the intercorrelations among domain-specific scale and behavioral outcome scales was significantly larger than the intercorrelations among domain-general scales and behavioral outcome scales. This gives further support for the use of domain-specific measures when the goal is to predict behavior.

Predictive Validity of the Future Time Perspective Measures

In subsequent analyses, both domain-general and domain-specific future time perspective scales were used to predict behavior. Toward this end, five models—one for each life domain in the study—were constructed. In each model, a behavioral outcome scale was entered as the dependent variable. The appropriate domain-specific future time perspective scale was entered as a predictor, and all five domain-general future time perspective scales were entered as predictors of the domain-specific scale. In the model for the financial domain, the domain-specific future time perspective scale fully mediated the relationship between the domain-general future time perspective scales and financial behavior. In the remaining four models, partial mediation was observed. In all but one of the models (in the career domain), the domain-specific future time perspective scale was a better predictor than any of the domain-general future time perspective scales. In no model were all five domain-general scales significant predictors; different ones were found to be significant for different domains. In each of the five models, a substantial amount of variance was captured.

One interesting finding from this set of analyses is that the domain-specific future time perspective scales were better predictors of behavior than any of the five domain-general future time perspective scales. This is consistent with an investigation by Hall and Epp (2013), in which a domain-specific health future time perspective scale was a significant predictor of the outcome variable, but a domain-general future time perspective measure was not. Another interesting finding is that, among the domain-general future time perspective scales, there was no consistency as to which had the strongest standardized beta weight. Therefore, if a domain-

general measure is being utilized for a study, the best one to select is dependent on the domain being assessed. There is no single measure (among the five tested in this investigation) that serves as a gold standard for measuring future time perspective in all life domains.

Theoretical Implications

There are both theoretical and applied implications that arise from the findings in this investigation. One theoretical implication is that there exist valid, psychometrically sound domain-general scales to measure future time perspective. Five previously published scales were investigated in the present study. Some were more attractive than others in terms of their psychometric characteristics, but all were deemed acceptable for use in research settings. Likewise, some demonstrated better predictive validity than others, but all were significant predictors of behavior in at least one life domain. The finding that domain-general future time perspective scales exhibit predictive validity is consistent with previous studies in which future time perspective was found to be related to financial planning (Antonides et al., 2011; Hershey et al., 2010; Howlett et al., 2008), career planning (Kooij et al., 2013; Marko & Savickas, 1998; Zacher & Frese, 2009), health planning or taking care of one's health (Brown et al., 1983; Mahon & Yarcheski, 1994; Orbell et al., 2004), social planning (Oner, 2001; Peetsma & Van der Veen, 2011; Waite & Joyner, 2001), and leisure planning (Philipp, 1992; Zalatan, 1996).

A second theoretical implication stemming from this work has to do with whether or not the various published measures of future time perspective all tap the same general construct. The answer, it appears, is that no—they do not. The five domain-general future time perspective scales were significantly correlated with one another, but the correlations ranged from $r = .24$ to $r = .73$. Rakowski (1982) found an even broader range of associations between domain-specific scales, $r = -.01$ to $r = .96$. Moreover, Crockett et al. (2009) demonstrated that two domain-general future time perspective scales were correlated with a Pearson r value of .38. The wide range of correlations suggests that the measures are tapping different facets of future time perspective, or perhaps even constructs that fit a different operational definition.

A third theoretical implication is that the relationship between future time perspective and behavior is more straightforward in some life domains than in others. This conclusion is based on the path models that were constructed for the five life domains. The financial domain was found to have the most straightforward prediction; in this context domain-specific future time perspective fully mediated the relationship between domain-general future time perspective and behavior. The model for the career domain was the most difficult to interpret. Unlike the other four models, in this context the domain-specific future time perspective scale was not the strongest predictor of the dependent variable.

Applied Implications

There are also a number of applied implications that can be inferred from the findings of this investigation. One implication is that future time perspective does indeed predict proactive planning behaviors. This link between future-oriented thinking and behavior has been established in prior investigations (Braley & Freed, 1971; Epel et al., 1999; Gjesme, 1979; Klahr, 1994; Milfont & Gouveia, 2006) and is believed to ultimately result in individuals having a high quality of life in retirement. Because of this, it is important for professionals who work in the applied arena to advise the individuals they serve to be future-oriented in their thinking. For example, a financial advisor might do an exercise with clients in which they list specific activities they picture themselves doing during their retirement years, and then, have them set specific savings goals in order to make those activities possible. Similarly, a doctor might talk with patients about how their present-day health practices will influence their long-term health; for instance, patients might be encouraged start doing strength training every week in order to minimize muscle loss in old age.

A second applied implication has to do with domain-general versus domain-specific measures of future time perspective. In this investigation, it was demonstrated that domain-specific measures were superior to domain-general measures in predicting behavior. Therefore, professionals who wish to conduct quantitative assessments of future time perspective should use

domain-specific scales geared toward the life domain in which their work is situated. For example, the financial advisor who has clients imagine retirement activities would want to utilize a financial future time perspective scale, whereas the doctor who advises clients to think about preventing muscle loss in old age would want to utilize a health future time perspective scale. Doing so will help to ensure that the most appropriate construct and scale is being employed.

In real-world situations, it is not always possible to use a domain-specific measure of future time perspective. Such a measure might be omitted from a study in order to prevent fatigue on a questionnaire, or a domain-general scale may be preferred over a domain-specific measure so that effects can be analyzed in multiple life domains. That being the case, a third applied implication has to do with the selection of a domain-general future time perspective scale for use should a domain-specific measure either not be available or not be practical to administer. In this study, the best domain-general predictor of behavior was dependent upon the life domain being assessed; different scales emerged as the strongest predictor in different domains. For example, in the finance domain, the domain-general scale with the greatest beta weight was the Future Time Perspective Scale developed by Hershey and Mowen (2000). But in the health domain, the scale with the greatest predictive validity was the Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999). Because of these inconsistences, it is important for professionals to review information on which domain-general scale is most applicable to the domain they wish to assess before collecting data.

Limitations and Future Directions

The present study yielded a wealth of valuable information, but is not without its limitations. One possible limitation of the present investigation involves the possibility of inflated effects due to methods variance. All measures were administered using a common Likert-type response format. This could have led to inflated effects that might not be seen if varied response options had been available. Therefore, in future investigations it would be worthwhile to examine the associations among measures of future time perspective that do not employ a Likert-type

response format. Examples of such measures are the sentence completion task (Meade, 1971; Nurmi, 1991) and having participants imagine different versions of themselves in the future (Markus & Nurius, 1986). Behavioral outcomes could also be assessed using different formats other than the self-report Likert-type approach. Examples include looking at participants' records to assess actual past behavior, or having participants record their behavior(s) in real time using a diary data collection format.

A second limitation is that only five life domains were examined with regard to future time perspective. It is likely the case that future time perspective exerts an influence in many more domains. For example, planning for housing in old age and planning for post-mortem arrangements both require future-oriented thinking. It would be beneficial for future studies to address these topics.

Another limitation of this work is that only the Western, linear conceptualization of future time perspective was taken into account. Different cultures have different ideas about the passage of time. Poole (2000) notes that passage of time has been conceptualized as not only moving in a linear pattern, but also moving in a circular pattern, in an interwoven simultaneous way, or a pattern that combines a linear view with the cycles of the moon and seasons. Furthermore, attitudes toward the importance of time vary across cultures. Perhaps subsequent studies could examine future time perspective among different cultures to determine how the dominant view of time affects the relationship between time perspective and behavior. Toward this end, experts from different cultures could collaborate with one another to decide which measures would be appropriate, if and how questions and responses could be translated, and how cross-cultural responses would be compared. Doing so would yield powerful information about the function of future time perspective and its relationship to planning for later life among individuals from different cultures and nationalities. Within cultures, data from individuals with diverse demographic characteristics could be compared. This could yield useful information

because future time perspective has been shown to be related to age, gender, income, and level of education (Glass & Kilpatrick, 1998; Lens & Gailly, 1980; Padawer et al., 2007).

One other potentially profitable future research direction would involve probing for age differences in the relationships among domain-general future time perspective scales, domain-specific future time perspective scales, and behavioral outcome scales. Participants could be divided into young, middle aged, and old age groups, and the same analyses would be run separately for each group. Given that age covaries with future time perspective (Glass & Kilpatrick, 1998; Padawer et al., 2007), different results may emerge for the three different groups. Moreover, some investigators have conceptualized future time perspective as a developmentally-based construct that changes as individuals grow older (Carstensen, 1998; Lang & Carstensen, 2002, Zacher & Frese, 2009), so age differences in individuals' levels of future time perspective would be expected, as well. This would be particularly interesting to examine with regard to the five different life domains, as marked differences might be expected to emerge. For example, in the career planning domain, young adults who are establishing their careers would be expected to be more future-oriented than older adults who are ending their careers and looking toward retirement.

Future time perspective plays an important role in life planning, particularly in making plans for one's life in old age. Although it is generally agreed upon that the psychological construct is both theoretically informative and valuable from a predictive standpoint, definitions of time perspective differ markedly. Moreover, investigators have attempted to measure future time perspective in different ways—through open ended tasks, by counting future goals, and by using self-report scales. The present investigation provides evidence that several different measures of future time perspective are successful in predicting behavior, although scales specific to particular life domains are the most effective. Given that a high level of future time perspective can ultimately lead to a higher quality of life in old age, time is of the essence in extending the understanding of this construct.

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APPENDIX:
List of Scales used in the Study

Note: items followed by (R) were reverse coded.

Consideration of Future Consequences Scale (Strathman, Gleicher, Boninger, & Edwards, 1994). Response format: 1 = Extremely Uncharacteristic, 2 = Somewhat Uncharacteristic, 3 = Uncertain, 4 = Somewhat Characteristic, 5 = Extremely Characteristic.

1. I consider how things might be in the future and try to influence those things with my day to day behavior.
2. Often I engage in a particular behavior in order to achieve outcomes that may not result for many years.
3. I only act to satisfy immediate concerns, figuring the future will take care of itself. (R)
4. My behavior is only influenced by the immediate (i.e., a matter of days or weeks) outcomes of my actions. (R)
5. My convenience is a big factor in the decisions I make or the actions I take. (R)
6. I am willing to sacrifice my immediate happiness or well-being in order to achieve future outcomes.
7. I think it is important to take warnings about negative outcomes seriously even if the negative outcome will not occur for many years.
8. I think it is more important to perform a behavior with important distant consequences than a behavior with less-important immediate consequences.
9. I generally ignore warnings about possible future problems because I think the problems will be resolved before they reach crisis level. (R)
10. I think that sacrificing now is usually unnecessary since future outcomes can be dealt with at a later time. (R)
11. I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date. (R)
12. Since my day to day work has specific outcomes, it is more important to me than behavior that has distant outcomes. (R)

Zimbardo Time Perspective Inventory, Future Dimension (Zimbardo & Boyd, 1999). Response Format: 1 = Strongly Disagree; 5 = Strongly Agree.

1. I believe that a person's day should be planned ahead each morning.
2. If things don't get done on time, I don't worry about it. (R)
3. When I want to achieve something, I set goals and consider specific means for reaching those goals.
4. Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play.
5. It upsets me to be late to appointments.
6. I like meeting my obligations to friends and authorities on time.
7. I take each day as it is rather than try to plan it out. (R)
8. Before making a decision, I weight the costs against the benefits.
9. I complete projects on time by making steady progress.
10. I make lists of things to do.

Time Styles Questionnaire, Orientation towards the Future Subscale (Usunier & Valette-Florence, 2007). Response Format: 1 = Strongly Disagree; 5 = Strongly Agree.

1. I spend time thinking about what my future might be like.
2. I think a lot about what my life will be some day.
3. Many of us tend to daydream about the future. It also happens to me.
4. I often think about the things I am going to do in the future.

Future Time Perspective Scale (Hershey & Mowen, 2000). Response Format: 1 = Strongly Disagree; 5 = Strongly Agree.

1. I enjoy thinking about how I will live years from now in the future.
2. I like to reflect on what the future will hold.
3. I look forward to life in the distant future.
4. My close friends would describe me as future oriented.
5. It is important to take a long-term perspective on life.

Future Time Perspective Scale (Carstensen & Lang, 2002).
Response Format: 1 = Does Not Apply At All; 5 = Applies Completely.
Remaining Opportunities Subscale:

1. Many opportunities await me in my future.
2. I expect that I will set many new goals in my future.
3. My future is filled with possibilities.

Remaining Time Subscale:

4. Most of my future lies ahead of me.

5. My future seems infinite to me.

6. As I get older, I begin to experience time in my future as more limited. (R)

Financial Future Time Perspective Scale (Financial Domain) (Newly developed for this investigation). Response format: 1 = Strongly Disagree; 5 = Strongly Agree.

1. When planning for retirement, I take the perspective that it is important to save for a rainy day.

2. I often think about how I will budget my finances throughout my retirement.

3. I enjoy thinking about and planning for my financial future.

4. I will start (or have already started) saving money for my retirement long before I retire.

5. One goal I have in preparing for retirement is to acquire as much information as possible.

6. I think that having a well thought-out plan for retirement is a key to happiness in old age.

Occupational Future Time Perspective - Work Domain (Carstensen & Lang, 2002; Zacher & Frese, 2009). Response Format: 1 = Does Not Apply At All; 5 = Applies Completely.

Remaining Opportunities Subscale:

1. Many opportunities await me in my occupational future.

2. I expect that I will set many new goals in my occupational future.

3. My occupational future is filled with possibilities.

Remaining Time Subscale:

4. Most of my occupational future lies ahead of me.

5. My occupational future seems infinite to me.

6. As I get older, I begin to experience time in my occupational future as more limited. (R)

Health Future Time Perspective Scale – Health Domain (Koposko & Hershey, 2014). Response Format: 1 = Strongly Disagree; 5 = Strongly Agree.

1. In general, working out is a good way to avoid health problems.

2. It is important to engage in routine exercise because of the long-term benefits.

3. Healthy food options are a good way to ensure good health in late life.

4. It is important to have routine health screenings to detect problems before they become serious.

5. In order to ensure good health, it is important to eat right and get proper nutrition.

6. Routine medical check-ups are a good way to ensure one stays fit.

Time Perspective Questionnaire, Long-term Perspective in Social Relations Subscale - Social Domain (Modified from Peetsma & Van der Veen, 2011).
Response Format: 1 = Not at all agree; 5 = Completely Agree.

1. I like to think about getting along with people years from now in the future.
2. I hope to spend a lot of time with friends years from now in the future.
3. I hope I'll get along well with my family years from now in the future.
4. I like to think about how my friendships with good friends will be years from now in the future.
5. I don't spend a lot of time thinking about socializing with other people years from now in the future. (R)
6. When I think about life years from now in the future, I'm not really bothered about how well I'll get along with my family. (R) *

Time Perspective Questionnaire, Long-term Perspective in Leisure Subscale - Leisure Domain (Modified from Peetsma & Van der Veen, 2011).
Response Format: 1 = Not at all agree; 5 = Completely Agree.

1. My free time will be a very important part of my life when I'm older.
2. Free time will be very important to me years from now in the future.
3. I love dreaming about what I'll be able to do in my free time when I'm older.
4. When I think about my life in old age, free time won't play a very important part in my life. (R)
5. I don't think free time and holidays are very important when you're older. (R)
6. I don't expect free time to be very important when I'm older. (R)

Retirement Planning Activities Scale (Retirement Domain) (Stawski et al., 2007).
Response Format: 1 = Strongly Disagree; 5 = Strongly Agree.

1. I have tuned into television or radio shows on investing or financial planning.
2. I have read brochures/articles on investing or financial planning.
3. I have read one or more books on investing or financial planning.
4. I have visited investing or financial planning sites on the World Wide Web.
5. I have gathered or organized my financial records.
6. I have assessed my net worth.
7. I have identified specific spending plans for the future.
8. I have discussed financial planning goals with a professional(s) in the field.
9. I have discussed financial retirement plans with my employer's benefits specialist.

Work Behavior Outcomes Scale (Newly developed for this investigation).
Response Format: 1 = Strongly Disagree; 5 = Strongly Agree.

1. I have represented my company at events or professional training that was not required for my job.
2. I attend company functions and social events.
3. I like to think about ways to manage my career so that my job will continue to be fulfilling in the long run.
4. I seek out ways to position myself for promotions or new positions that will advance my career.
5. My employer would describe me as a model employee who is committed to the organization.
6. When it comes to work, I actively look for opportunities for advancement in the marketplace.
7. I am satisfied with how I have managed my career at this point and time.

Personal Lifestyles Questionnaire - Health Domain (Muhlenkamp & Brown, 1983).
Response Format: 1 = Never, 2 = Infrequently, 3 = Occasionally, 4 = Regularly.

1. Wear seat belts while riding in an automobile
2. Take time out to relax 5-10 minutes per day
3. Exercise regularly 3 times a week
4. Am careful to eat foods from each food group daily (protein, milk, breads, fruits and vegetables)
5. See a health care provider for a check-up yearly
6. Get together with friends
7. Smoke more than one pack of cigarettes daily (R) *
8. Add salt to my food after preparation (R) *
9. Drink more than two alcoholic beverages per day (R) *

Social Behaviors Scale (Modified from Peetsma & Van der Veen, 2011 Long-Term Perspectives in Social Relations Scale). Response Format: 1 = Not at all Agree; 5 = Completely Agree.

1. I get along well with other people.
2. I spend a lot of time with friends.
3. I get along well with my family.
4. I have good friendships.
5. I don’t spend a lot of time socializing with other people. (R)

6. I’m not really bothered about how well I get along with my family. (R) *

Leisure Behavior Outcomes Scale (Koposko & Hershey, 2014).
Response Format: 1 = Strongly Disagree; 5 = Strongly Agree.

1. I make adequate time for recreation, entertainment and hobbies.
2. I think it's important to make time for hobbies and leisure pursuits in my life.
3. I believe that it is critical to take regular time off from work to take vacations.
4. Finding a balance between work and play is one of the keys to happiness.
5. Developing ways to "play" in life is one way to stay young and vibrant.
6. It's important to take opportunities to relax from time to time.

* Item was deleted from scale in order to improve internal consistency

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