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## **The Relationship Between Time Perspective and Subjective Well-being of Older Adults**

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### **Abstract**

Time perspective is crucial for our present and future plans, and for the way we act in the present. The aim of this study was to investigate the relationship between time perspective and subjective well-being in older adults. The sample of our questionnaire study consisted of 149 older adults aged between 65 and 96 years. Time perspective was measured with the Zimbardo Time Perspective Inventory. The five time perspective dimensions were related to four specific aspects of subjective well-being (positive affect, negative affect, life satisfaction and depression). Future-oriented older persons had a more positive affect. Older adults who were positively oriented towards the past appeared to be more satisfied with life. A hedonistic view of the present was related to a high positive affect. Older persons with a Past-Negative perspective were more likely to experience negative affect and depressive feelings, along with a lower level of positive affect and satisfaction with life. The Present-Fatalistic time perspective correlated with more depressive symptoms. The findings emphasize the relevance of time perspective styles for the subjective well-being, which has specific implications for the way caregivers could interact with older adults to enhance quality of life.

*Key words:* Time perspective, subjective well-being, life satisfaction, emotion, ageing

### **The Relationship Between Time Perspective and Subjective Well-being of Older Adults**

#### **Theories of Time Perspective**

Time perspective is crucial for our present and future plans, for the way we see ourselves in relation to the past, the future and other people, and for the way we act in the present (Lennings, 2000). Lewin (1951) was among the first researchers who emphasized the importance of time perspective (TP) in social science and claimed that behaviour, emotion and motivation are influenced by TP. The socioemotional selectivity theory (Carstensen, 1995; Carstensen, Isaacowitz & Charles, 1999) postulates that the perception of time plays a fundamental role in social goals, with important implications for emotion, cognition and age related motivational changes. Zimbardo and Boyd (1999) assume in their theory of TP that our self-image, our world view and our interpersonal relations are influenced by cognitive processes related to TP. We learn to categorize personal and social experiences into the past, present and future, which helps us to lend order, coherence and meaning to these events. The three time frames (past, present, future) are used for the purpose of encoding, storing and recalling experiences as well as in forming expectations, goals, contingencies and imaginative scenarios. TP is conceived as a fundamental process which is influenced by factors such as culture, religion, social class, education, family modelling and age. “Because the operation of TP is so pervasive in people’s live and is multiply determined, people are rarely aware of its subtle operation, influence, or biasing powers” (Zimbardo & Boyd, 1999, p. 1272). Moreover, Zimbardo and Boyd (1999) state when one time frame dominates, a ‘biased TP’ occurs and becomes dysfunctional. In contrast, a ‘balanced TP’ gives the flexibility to switch between the different time frames, depending on the situation, our needs and our values. As TP can have an determination on several aspects of human behaviour, it was interesting to know if it may also affect psychological health, even in old age? The main

objective of the current study was to investigate TP in relation to subjective or personal experience of well-being in old age.

### **Measures of Time Perspective**

Several instruments have been developed to measure TP, including the Circles Test (Cottle, 1967), the Experiential Inventory (Cottle, 1968), the Time Structure Questionnaire (Bond & Feather, 1988) and the Rappaport Time Line (Rappaport, Enrich & Wilson, 1985), but none of these instruments were highly reliable or could be used to measure all three time dimensions, and most of them involve scoring difficulties (Boniwell & Zimbardo, 2004; Kazakina, 1999). For this reason, the Zimbardo Time Perspective Inventory (ZTPI) was developed. This questionnaire overcomes the shortcomings of the existing scales. It is a theory based instrument including the motivational, emotional, cognitive and social processes determining the TP (Zimbardo & Boyd, 1999). Exploratory principal component factor analysis revealed five main factors, each reflecting a profile. The first factor, the *Past-Negative* scale of the ZTPI, contains a negative, aversive view of the past. The second factor, the *Present-Hedonistic* scale, reflects a hedonistic, risk-taking attitude towards time and life, with little concern for future consequences. Persons scoring high on Present-Hedonistic are oriented towards present pleasure, love taking risks, enjoy intense activities, seek excitement and are open to friendships. The third factor, the *Future* factor, characterizes people who focus on future goals and rewards. Future-oriented persons give importance to consequences, contingencies and the outcomes of present decisions and actions. *Past-Positive*, the fourth time factor, reflects a warm, pleasurable, sentimental and nostalgic attitude towards the past, with the emphasis on maintaining relationships with family and friends. The fifth and last factor, *Present-Fatalistic*, reveals a fatalistic, helpless and hopeless attitude towards life and the future.

### **Subjective Well-Being in Later Life**

Subjective well-being (SWB) refers to one's perception of quality of life (McNeil, Stones & Kozma, 1986). It is a measure of how someone feels about his life at a given moment (Ehrlich & Isaacowitz, 2002). It includes emotional reactions to events, feelings, pleasures, satisfaction with life and satisfaction with specific areas such as marriage and work (Diener, Oishi & Lucas, 2003). Baltes and Baltes (1990) believe that SWB, in addition to positive emotions and the absence of feelings of loneliness, is one of the criteria for successful ageing and adaptation in later life. SWB has been conceptualized as one cognitive aspect, namely satisfaction with life, and two emotional aspects: positive and negative affect (Diener, 1984; Diener, Emmons, Larson & Griffin, 1985; Diener, Suh, Lucas & Smith, 1999; Ehrlich and Isaacowitz, 2002; Myers & Diener, 1995). Kashdan (2004) defines a high level of SWB as the combination of three factors: frequent and intense positive affects, relative absence of depression and overall satisfaction with life. In a recent review by George (2010) on subjective well-being in later life, the terms SWB, happiness, psychological well-being, positive affect, and morale – all referring to a positive orientation towards life – are evaluated. Life satisfaction is conceptualized as a stable orientation, whereas positive affect seems to be the least stable. To be in line with the pallet of definitions of SWB the indicator SWB within the framework of our study was conceived as a combination of presence of positive affect and satisfaction with life and absence of negative affect and depressive symptomatology.

Research on SWB has revealed that older adults experience the same level as or even a higher level of positive affect than younger adults and a lower level of negative affect (Carstensen, Pasupathi, Mayr & Nesselroade, 2000; Mroczek & Kolarz, 1998). In a study by Isaacowitz and Smith (2003), the 'oldest' old persons (70-100 years) experienced a lower level of both positive and negative affect. According to Ferring and Fillip (1995) the intensity and frequency of positive affect declines in a sample of old-old (75-92) people, but

not in a young-old (65-75) sample. Approximately 10% to 15% of the older population suffers from some form of depressive complaint (Kraaij, 2001). Based on a recent meta analysis (Mitchell, Rao, & Vaze, 2010), the point prevalence of depression in older adults was estimated at 13.2%. Because ageing is accompanied by an objective increase in negative life events, for example personal loss and physical deterioration (e.g. Wrosch, Schulz & Heckhausen, 2004), these percentages are lower than might be expected. Indeed, according to many studies, life satisfaction stabilizes or even increases during the ageing process (Diener et al., 1999; Ehrlich & Isaacowitz, 2002). A recent study (De Groof & Elchardus, 2005) investigating the SWB of older adults (75 and up) showed that the majority of older persons experience a high level of well-being. In general, we can state that the older adults in comparison with younger persons (<65-70 year) report a higher degree of positive affect and satisfaction with life and fewer negative emotions.

### **Time Perspective Linked to Subjective Well-Being in Later Life**

Concerning the past orientation, Kazakina (1999) found in her sample of older adults (65 years and older) a significant relationship between a Past-Positive orientation and satisfaction with life and a correlation between a positive orientation towards the present and positive affect. The former is an important finding, because it suggests that satisfaction with life depends mainly on having a positive view of the past. In a large sample, participants, ranging from 16 to 83 years of age, a Past-Positive TP was positively correlated to self-reported subjective happiness and a Past-Negative TP was negatively correlated to happiness (Drake, Sutherland, Abernethy & Henry, 2008). Research on the functions of reminiscence for adaptation in later life, as well as clinical research on reminiscence interventions (e.g. autobiographical retrieval practice) with (depressed) older adults, have shown unequivocally that having or developing a positive/meaningful view of the past is linked with well-being and mental health in terms of higher life satisfaction, decreased depressive and anxiety symptoms, less feelings of hopelessness, and positive or negative emotions (Cappeliez,

O'Rourke & Chaudhury, 2005; Cappeliez, Guindon & Robitaille, 2008; Fry, 1983; Pot, Bohlmeijer, Onrust, Melenhorst, Veerbeek & De Vries, 2010; Serrano, Latorre, Gatz & Montanes, 2004; Westerhof, Bohlmeijer & Webster, 2010). Obsessive and escapist reminiscences (akin to Past-Negative TP) are associated with psychological distress such as depression and anxiety (Cully, LaVoie & Gfeller, 2001) and lower satisfaction with life (Cappeliez & O'Rourke, 2006).

With regard to the present orientation, psychologists such as Maslow (1971) and Csikszentmihalyi (1992) hypothesized that a focus on the present with the emphasis on the 'here and now' is advantageous for well-being. Nurmi, Pulliainen, and Salmela-Aro (1992) reported that a present TP seems to be positively correlated with optimism. In a study of older adults (range of age 57-95), Lennings (2000) noticed that older people are present-oriented and appear to avoid the past. In his 'youngest' older population (under 75 years), optimism was positively correlated with satisfaction, and in the 'oldest' segment (75 years or more) optimism and satisfaction were negatively correlated with each other. Thus, as people get older they seem to be less satisfied with their lives, in contrast to their increasing optimism (Lennings, 2000). This indicates that in older adults we might expect present orientation to correlate with positive emotions but not necessarily with life satisfaction. Drake and co-workers (2008) found a significant relationship between the Present-Hedonistic TP and subjective happiness. The Present-Fatalistic factor of the ZTPI represents fatalistic, helpless and hopeless attitudes towards life and the future and has a significant and strong correlation with aggression, anxiety and depression (Boniwell, 2005; Boniwell & Zimbardo, 2004; Zimbardo, 2002; Zimbardo & Boyd, 1999, 2008).

With respect to future orientation, Zimbardo & Boyd (2008) assume that older people have a transcendental view, which means that they focus on a future that extends beyond death. There is evidence to suggest that compared with younger people older adults think more often about their own future death, but in contrast death inspires more fear in young

people than in older adults (De Raedt & Van der Speeten, 2008). Other researchers found that maintaining a future perspective is important for older people, if combined with other time orientations (Miller & Lieberman, 1965; Shifflett, 1987; Spence, 1968). Studies of the future TP showed that when the residents of a nursing home were given the opportunity to participate in planning future events, such as the film schedule or the visiting hours, they had a better sense of control over their lives and showed an improvement in their physical and mental health (Heckhausen & Schulz, 1995; Fry, 1990; Shmotkin & Eyal, 2003). As Marcoen, Grommen and Van Ranst (2006) pointed out, “a realistic future perspective would be an advantage for the adaptation and happiness of the elderly” (p. 139). Zaleski, Cycon and Kurc (2001, in Boniwell & Zimbardo, 2004) concluded that a future TP is positively correlated with nearly all aspects of well-being, such as a meaningful life, social self-efficacy and persistence. According to Peterson (2000), a future TP is related to two poles, namely optimism and pessimism. Kazakina (1999) sees a positive future orientation as the essence of personal optimism or as the anticipation of positive changes in the future. Moreover, a focus on the future has been found to be essential for well-being and positive functioning. Future oriented thinking has also an impact on the pro-activity or health behaviour in late life (Kahana, Kahana & Zhang, 2005). Positive attitudes towards the future in older persons have also been associated in several studies with indicators of SWB (Rakowski, 1986; Reker & Wong, 1985; Sameth, 1980; Steuer, 1976; Thomae, 1981, in Kazakina, 1999).

### **Aims and Hypotheses**

Up until now, empirical studies on the relationship between past, present or future TP and SWB in older adults are limited. Most studies are restricted to one of the three dominant TPs (mostly the future TP), so that most of them fail to provide an overall picture of TP (Boniwell & Zimbardo, 2004; Kazakina, 1999). Nonetheless, literature highlights TP as one of the fundamental dimensions of human existence which is significantly related to many fundamental psychological concepts, including SWB. This study aimed to investigate



within a cross-sectional design whether dimensions of SWB are related to the five dimensions of TP among older adults. Based on the above mentioned research, four hypotheses regarding the relationship between four specific measurements of SWB and five dimensions of TP were formulated. First, the more elderly people are Past-Positive, Present-Hedonistic and Future-oriented, the greater their positive affect. Second, increase in satisfaction with life would be related to the Present-Hedonistic and Future TP and to a positive view of the past (Past-Positive). Third, it has been hypothesized that a more Past-Negative and Present-Fatalistic focus may be related to higher levels of depressive symptomatology. Finally, as elders are more Past-Negative and more Present-Fatalistic oriented, they would experience more negative affect.

### **Methods**

#### **Sample**

A total of 149 older persons (63 men and 86 women) out of 180 contacted persons, participated in this study. Their ages ranged from 65 to 96 years; the mean age was 75.7 years ( $SD = 7$  years). They were drawn from the Flemish part of Belgium (Flanders). Participants were white and most came from the middle- and upper-class. Most of them were currently married or were having a partner (57.7%). Sixty-three percent of the participants reported living together with someone (63.1%), more than a third lived alone (36.9%). Seventy eight percent lived in their own house (78.2%), the rest lived in a home or service flat with care. Thirty-nine percent had completed elementary school (39.6%), 34.2% had completed middle school, 18.1% had completed high school, and a minority had attended college / university (8.1%). Respondents were asked to indicate who completed the questionnaires: 74.5% filled them out independently (participants have read and completed the questionnaire on their own) and 25.5% with someone's help (e.g. another person helped by reading the questions and filling in the answers given by the respondent). The sample was not checked for cognitive impairments (e.g. dementia) nor for impaired mobility.

## Materials

**Zimbardo Time Perspective Inventory.** The ZTPI (Zimbardo & Boyd, 1999) is a 56-item scale which was designed to measure TP using a 5-point Likert scale ranging from very uncharacteristic (1) to very characteristic (5). The survey is a standardized, reliable and valid instrument that measures the three TPs (past, present, future). Several relevant constructs such as achievement, goal setting, risk taking and sensation seeking are embedded in the ZTPI. Exploratory and confirmatory factor analysis of the items of several translations showed a five-factor structure consisting of the subscales ‘Past-Negative’, ‘Present-Hedonistic’, ‘Future’, ‘Past-Positive’ and ‘Present-Fatalistic’ Portuguese (Milfont, 2008; Diaz-Morales, 2006; Ferrari & Diaz-Morales, 2007). The internal and test-retest reliability of the five factors is good, and the convergent, divergent, discriminant and predictive validity are supported empirically. The Dutch translation was developed by the authors<sup>1</sup>.

**Satisfaction with Life Scale.** The SWLS (Diener et al., 1985) measures the cognitive aspect and excludes the affective components of SWB. The participant indicates the extent of his agreement with five statements based on a 7-point Likert scale ranging from 1 (totally agree) to 7 (totally disagree). High scores mean a high satisfaction with life.

The scale has good psychometric properties, including internal consistency, reliability, predictive and convergent validity (Diener et al., 1985; Ehrlich & Isaacowitz, 2002; Pavot, Diener, Colvin & Sandvik, 1991). The scale was translated into Dutch by the authors<sup>1</sup>.

**Positive and Negative Affect Schedule.** The PANAS (Watson, Clark & Tellegen, 1988) measures positive affect (PA) and negative affect (NA) on a 5-point Likert scale from 1 (very slightly or not at all) to 5 (extremely). Two scales of ten positive and ten negative items each describe different feelings and emotions. The reliability and validity of the PANAS was satisfactory (Crawford & Henry, 2004). The Dutch translation of the PANAS was developed by Peeters, Ponds, Boon-Vermeeren, Hoorweg, Kraan and Meertens (1999). Higher scores on the ten positive words mean higher positive affect, and higher scores on the

negative adjectives characterize a more negative affect. Psychometric properties and normative data on the Dutch version of the PANAS (Peeters, Ponds & Boon-Vermeeren, 1999) were obtained through two studies (Peeters, Ponds & Boon-Vermeeren, 1996; Boon & Peeters, 1999). In both studies the internal consistency of the two scales was found to be good.

**Geriatric Depression Scale.** The GDS (Yesavage, Brink, Rose, Lum, Huang, Adey & Leirer, 1983) is a short 30-item self-report measure that screens for depressive symptoms in older adults over 65 years of age. It is a useful evaluation tool for the assessment of the clinical severity of depression. In the questionnaire the respondent is asked to answer yes or no to 30 questions about how he felt the week before, including the day of the administration of the questionnaire. The GDS can be used with healthy or with medically or cognitively ill older persons. It is a valid, reliable and frequently used instrument. Research showed that the GDS is an improvement on other scales. For one thing, in an older population it has greater reliability and validity than the Beck Depression Inventory and the Zung scale (Kok, Heeren & Van Hemert, 1993). A score of 0-9 is considered normal, 10-19 indicates mild depression and 20-30 indicates severe depression. The 30 items were translated into Dutch by Bleeker, Frohn-de Winter and Cornelissen (1985).

### **Procedure**

Participants were recruited on voluntary basis by snowball procedure or by direct contacts. The questionnaire were given directly (face-to-face) to the participant or indirectly by co-students/colleagues, family, friends or acquaintances of the researcher (FD). Those contact persons were asked to encourage older adults in their social network to participate. These participating older adults could recruit potential subjects from among their acquaintances to participate as well. Questionnaires, with instructions, an informed consent form, and envelope were given directly to the participants or indirectly to a contact person familiar with the older person. A informed consent letter explained the purpose of the study,

the method and the procedure. In order to guarantee anonymity, the respondents were asked to return to the researcher (FD) the answers in the envelope separately from the informed consent. In each questionnaire the importance of answering all questions completely was stressed. The participants could fill in the surveys at their own pace. For example, they could take a break between each questionnaire.

### **Results**

#### **Preliminary Analyses**

Table 1 provides an overview of the internal consistency coefficients, maximum scores, means, standard deviations and ranges for the ZTPI scales, PANAS scales, GDS and SWLS.

The multi-colinearity in the regression analyses was checked by examining the correlations between the different dimensions of the ZTPI. Table 2 shows that the Pearson correlations range from .06 to .53, which can be considered as low (Tabachnick & Fidell, 2001).

The relationship between demographic variables and the five time dimensions was examined by using independent samples t-tests with  $p < .05$  (Table 3). Concerning age, the sample was divided into two age groups. The 'youngest old' ranged between 65-74 years, the 'oldest old' ranged between 75-96 years. Individuals ageing between 65 and 74 years did not differ from those between 75 and 96 years on their scores on any dimension of TP. There were also no gender differences on the scores of the five TPs. Moreover, none of the TP scores turned out to be different between the individuals who live alone and the ones who live together (Table 3). ANOVA's revealed no differences between the four education categories (independent variable: elementary school; middle school; high school; college / university) for the different TPs, all  $p$ 's  $> .05$ .

### Regression Analyses

Because we were interested in the strongest predictors for our four dependent variables, we used a stringent corrected significance criterion of  $p < 0.01$ . If questionnaire data from a participant contained missing values, this participant was removed from the analysis. Four linear regression analyses were performed with the four measures of SWB as the dependent variables: positive affect ( $N = 119$ ), negative affect ( $N=120$ ), satisfaction with life ( $N=121$ ) and depression ( $N=121$ ), and each with the five scores on the five time dimensions mentioned by Zimbardo and Boyd (1999) as the independent variables. The results of the regression analyses are shown in Table 4. The Present-Hedonistic and Future TPs were important predictors of more positive affect ( $\beta = .34, t = 3.61$  and  $\beta = .32, t = 3.17$ ). A positive attitude towards the past correlated with greater satisfaction with life ( $\beta = .25, t = 2.72$ ). Scores on the Past-Negative scale were associated with less positive affect ( $\beta = -.27, t = 5.28$ ), high negative affect ( $\beta = .31, t = 3.23$ ), less satisfaction with life ( $\beta = -.45, t = 5.39$ ) and more depression ( $\beta = .43, t = 5.28$ ). Evidence was found for a positive correlation between Present-Fatalistic and depression ( $\beta = .29, t = 3.41$ ).

### Discussion

This study examined the relationship between TP and the SWB of older persons. Four hypotheses based on the existing literature were formulated and tested in a sample of 149 women and men between 65 and 96 years of age. The results show that there is a relationship between the variables, in line with the expected direction of the correlations. The way older persons are oriented towards the past, the present and the future were related to their feelings in terms of positive and negative emotions, life satisfaction and depressive symptoms. The present findings did not reveal considerable within-group differences. There were no significant differences between ‘young’ and ‘older’ old persons, which means that the younger group did not have a preference for one time dimension over another in comparison with the older group.

The first hypothesis was mainly supported by the data. The Present-Hedonistic factor was related to more positive affect. Future-oriented older persons also showed high positive affect. However, the Past-Positive factor was found not to be related to positive affect. As regards our second hypothesis, we observed that a Past-Positive TP was related to a higher level of satisfaction with life. We did not find life satisfaction to be correlated with the Future or Present-Hedonistic TP. The results of the third hypothesis were as predicted. The Past-Negative and Present-Fatalistic orientations were associated with more depressive feelings. We also observed that a negative view of the past (Past-Negative) was correlated with less positive affect and less satisfaction with life. The findings regarding the fourth hypothesis showed that a Past-Negative orientation was linked with higher negative affect. The relationship between the Present-Fatalistic TP and negative affect was anticipated but not found in our study.

The reason why the Future TP was related to positive affect may indicate that a future-oriented perspective is characterized by a number of positive factors such as motivation, a sense of responsibility and the opportunity to plan and to organize. In comparison with younger persons, who generally view the future more positively than older persons, older adults may see their future as a way to maintaining the positive circumstances they enjoy in the present. Although former studies revealed that they no longer expect many pleasant events in life in the future, and they are aware that their joy cannot go on indefinitely (Dittmann-Kohli, 1991).

The Present-Hedonistic TP was positively correlated with positive affect. Kazakina (1999) also suggested that a positive view of the present goes hand in hand with a positive balance of affect. This result may be linked to the socioemotional selectivity theory (Carstensen, Isaacowitz & Charles, 1999) which holds that TP influences human motivation. Research based on this theory has shown that people who are more present-oriented, such as

older people who have limited future prospects, attach more importance and attention to positive information, resulting in more satisfactory relationships (Carstensen, 1995).

The significant correlation between Past-Positive and satisfaction with life observed by Kazakina (1999) was also found in our study. A positive view of the past may be related to general satisfaction with accomplishments during life. Also Marcoen, Grommen and Van Ranst (2006) described a generally positive view of the past among older persons, because childhood and young adulthood call up the most pleasant memories and older people experience positive feelings by recalling such pleasant memories. The expectation that satisfaction with life would also be correlated with the future or present-hedonistic perspective could not be confirmed.

Our findings regarding the Past-Positive and Past-Negative orientations could be linked to the reminiscence research literature as indicated earlier. Reminiscence, recalling memories from the past, is associated to positive emotions as well as negative ones. Particularly integrative reminiscence is correlated to higher life satisfaction and lower psychological distress, whereas Bitterness Revival (obsessive reminiscence) and Boredom Reduction (escapist reminiscence) and reminiscence for Intimacy Maintenance are associated with lower life satisfaction and higher psychiatric distress (Cappeliez, O'Rourke & Chaudhury, 2005; Cappeliez, Guidon & Robitaille, 2008).

The high correlation between a Past-Negative orientation and depressive symptoms was similar to the strong correlation found in the study by Zimbardo and Boyd (1999), showing that in young adults the Past-Negative and Present-Fatalistic TPs are strongly correlated with feelings of depression, anxiety, anger and aggression. Zimbardo and Boyd (2008) recently illustrated that the way we look at the past influences the way we live and feel in the present. Looking positive towards the past can be a source of happiness for today and tomorrow. On the contrary people with a Past-Negative perspective are at risk of psychological distress. Lyubomirsky and Nolen-Hoeksema (1995) and Nolen-Hoeksema and

Morrow (1993) demonstrated that negative rumination, which is connected to a dominant Past-Negative orientation, is associated with depression. These studies also emphasized that persons who score highly on the Past-Negative subscale report symptoms of depression and related aspects such as anxiety, misfortune and a low sense of self-esteem. The finding is in line with the results of other studies showing that depressive people have more stable and global attributions of prior negative events, but the origin of this relationship might be related to a negative memory bias which is consistently found in depressed people (Mathews & MacLeod, 2005). In a similar vein as the reminiscence results, research on regrets lend support to the results about the Past-Negative orientation. Looking back on life and experiencing regret, can have a negative impact on subjective well-being (depressive symptoms and satisfaction with life) and physical health of older adults (Wrosch, Bauer & Scheier, 2005). This study also showed that setting or having future goals predicts lower levels of regret intensity, higher levels of life satisfaction and lower depressive scores only among older adults. Among younger adults regret experiences were not associated to indicators of quality of life. The past temporal orientation was also an important factor in a study on coping with trauma. A past negative orientation or focussing on a trauma in the past was associated with more psychological distress long after the trauma had been experienced (Holman & Silver, 1998). As older adults frequently face loss experiences, a Past-Negative perspective can become more prominent. It is thus not surprising that Past-Negative correlates with negative affect, as 'negative affect' relates to a general negative emotional response (Erllich & Isaacowitz, 2002).

Zimbardo and Boyd (1999, 2008) discovered a correlation between their Present-Fatalistic concept and feelings of depression, anxiety, anger and aggression. In our study, a positive relationship was also found between a Present-Fatalistic orientation and depressive symptoms. This was expected, because this particular TP reflects a fatalistic, helpless and hopeless attitude towards life and the future.



A first limitation of our study is the cross-sectional nature of the design, which does not enable to infer causal relations. Although the theoretical model of Zimbardo and Boyd (1999) proposes a one-way causality of TP on mental health, TP can also be influenced by mental health. For example, depressive people generally view the past negatively (Wyrick & Wyrick, 1977). Only a prospective longitudinal design can shed light on the causal characteristics of the correlations found. Also prudence is needed in comparing current study results across studies that have used a wide or different age range.

Secondly, the majority of the sample lived independently (78.5%), the rest of the persons lived in an nursing home or flat with care. Although snowball sampling reduced the research cost enormously, it diminished also the representability of a good cross section of the population. For this reason, it would be advisable to recruit differently more men and women from different backgrounds and with different situations.

A third restriction is that we did not use the Transcendental-future Time Perspective Inventory (Boyd & Zimbardo, 1997), which is an often neglected TP (Zimbardo & Boyd, 2008). A transcendental life style can for example lighten psychical pain caused by loss of beloved ones (Zimbardo & Boyd, 2008).

Although a cultural comparison was not the focus of this study, cultural variations may exist with respect to TP. Therefore it is important to consider the degree of equivalence between the results from the studies quoted here and the current study. Different cultures may experience TP differently.

One particular strength of this study is that existing research on TP focused mainly on one time dimension of TP and generally on the future. Few studies have included the past, the present and the future and integrated the various aspects of SWB. To our knowledge, this is one of the first studies that adopts an integrative approach to TP and SWB in an attempt to cover the complexity and conceptual variety of the two concepts.

Against the background of the increasing ageing of the population, the results of this study may be important when it comes to understanding the factors affecting the quality of life of the older segment of the older population. When older persons remain excessively focused on a negatively-oriented TP, intervention programs could be directed towards exploring and re-assessing negative thoughts. It is clear from previous research (Zimbardo, 2002) and from the present study that certain TPs are positively correlated with various aspects of SWB. One important finding is that a positive view of the past is conducive to happiness in terms of satisfaction with life. Reminiscence interventions in (mental) health care have proven to be effective to prevent or treat depressive symptomatology of older adults (Bohlmeijer, 2007; Serrano, Latorre, Gatz & Montanes, 2004; Westerhof, Bohlmeijer & Webster, 2010). Life review could help elderly to integrate unresolved conflicts of the past into their present life or could help to approach their future death (Butler, 1963, in Westerhof, Bohlmeijer & Webster, 2010). Based on the findings, caregivers, family or friends could be encouraged to stimulate older persons to focus on the positive elements of past events. The reminiscence function Death Preparation, “the way we use our past in order to arrive at a calm and accepting attitude towards our own mortality”, was related to higher life satisfaction (Cappeliez, O’Rourke, & Chaudhury, 2005; Cappeliez & O’Rourke, 2006).

The reminiscence type Death Preparation, offered by counselors with advanced skills, would help elderly to develop a more realistic future time perspective, such as an increased awareness of life end. Therefore future research on the effectiveness of reminiscence interventions are required.

Our study shows that a future orientation is significantly correlated with a higher positive affect. Caregivers should therefore be aware that giving older persons the chance to anticipate the future by encouraging them to make future plans based on realistic and feasible goals would give them a higher positive affect and an enhanced feeling of control over their lives (Shmotkin & Eyal, 2003; Heckhausen & Schulz, 1995; Fry, 1990). Prenda

and Lachman (2001) also concluded that planning the future increases the level of satisfaction with life of older adults more than of younger persons. Moreover, focusing on the present, on the 'here and now', can also affect one's sense of well-being. If older persons can be encouraged to take each moment with mindfulness (an attribute of consciousness that has been much discussed in relation to well-being), they are more likely to maintain a positive emotional state (Brown & Ryan, 2003). Giving older persons psychological education to promote a balance between the different TPs would offer them the prospect of a happier and longer life. Indeed, research showed that people with a 'balanced time perspective' significantly score higher on mindfulness than people with other TP preferences (Drake et al., 2008). It is therefore important to gain insight into the TP factors that affect older persons and their feelings and their view of the past, the present and the future.

To summarize, the main objective of this study was to examine the relationship between TP and the SWB of older persons. The Future and Present-Hedonistic TPs were related to positive affect of older persons. Older adults who are positively oriented towards the past appear to be more satisfied with life. By the same token, an older person with a more negative view of the past is more likely to experience more negative affect and feelings of depression and a lower level of positive affect and satisfaction with life. The Present-Fatalistic perspective correlated with more depressive symptoms. This study may stress the importance of TP for well-being in old age and a question remains: can TP and more specifically a 'balanced TP' contribute to successful ageing? This is an issue for future investigation.

### References

- Baltes, P.B., & Baltes, M.M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P.B. Baltes & M.M. Baltes (Eds.), *Successful aging: Perspectives from the behavioral sciences* (pp. 1-34). New York: Cambridge University Press.
- Bleeker, J.A.C., Frohn-de Winter, M.L., & Cornelissen, E. (1985). *Geriatric Depression Scale*. May, 2005, from <http://www.stanford.edu/~yesavage/Dutch2.htm>
- Bohlmeijer, E. (2007). Reminiscence and depression in later life. *Dissertation of Free University Amsterdam: Faculty of Psychology and Education*.
- Bond, M., & Feather, N.T. (1988). Some correlates of structure and purpose in the use of time. *Personality and Social Psychology*, 55, 321-329.
- Boniwell, I., & Zimbardo, P.G. (2004). Balancing one's time perspective in pursuit of optimal functioning. In Linley, P.A., & Joseph, S. (Eds.). *Positive psychology in practice*. New Jersey: John Wiley & Sons.
- Boniwell, I. (2005). Beyond time management: How the latest research on time perspective and perceived time use can assist clients with time-related concerns. *International Journal of Evidence Based Coaching and Mentoring*, 3, p. 61-74.
- Boon, M.T.G., & Peeters, F.P.M.L. (1999). Affectieve dimensies bij depressie en angst. *Tijdschrift voor Psychiatrie*, 41, 109-113.
- Boyd, J.N., & Zimbardo, P.G. (1997). Constructing time after death: The transcendental-future time perspective. *Time and Society*, 6, 35-54.
- Brown, K.W., & Ryan, R.M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84, 822 - 848.
- Butler, R.N. (1963). The life-review: An interpretation of reminiscence in the aged. In Westerhof, G.J., Bohlmeijer, E., & Webster, J.D. (2010). Reminiscence and mental

- health: A review of recent progress in theory, research and interventions. *Ageing & Society*, 30, 697-721.
- Cappeliez, P., O'Rourke, N., & Chaudhury, H. (2005). Functions of reminiscence and mental health in later life. *Aging & Mental Health*, 9, 295-301.
- Cappeliez, P., & O'Rourke, N. (2006). Empirical validation of a model of reminiscence and health in later life. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 61, 237-244.
- Cappeliez, P., Guindon, M., & Robitaille, A. (2008). Functions of reminiscence and emotional regulation among older adults. *Journal of Aging Studies*, 22, 266-272.
- Carstensen, L.L. (1995). Evidence for a life-span theory of socioemotional selectivity. *Current directions in Psychological Science*, 4, 151-156.
- Carstensen, L.L., Isaacowitz, D.M., & Charles, S.T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, 54, 165-181.
- Carstensen, L.L., Pasupathi, M., Mayr, U., & Nesselroade, J.R. (2000). Emotional experience in everyday life across the adult life span. *Journal of Personality and Social Psychology*, 79, 644-655.
- Cottle, T.J. (1967). The Circles Test: An investigation of perceptions of temporal relatedness and dominance. *Journal of Projective Techniques and Personality Assessment*, 31, 58-71.
- Cottle, T.J. (1968). Location of Experience: A manifest time orientation. *Acta Psychologica*, 28, 129.
- Crawford, J.R., & Henry, J.D. (2004). The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, 43, 245-265.
- Csikszentmihalyi, M. (1992). *Flow: The psychology of happiness*. Sydney: Random House.

- Cully, J.A., LaVoie, D., & Gfeller, J.D. (2001). Reminiscence, personality, and psychological functioning in older adults. *Gerontologist*, 41, 89–95.
- De Groof, S., & Elchardus, M. (2005). “Zolang ge maar gezond zijt en uw man nog hebt.” Een empirische analyse van de welzijnservaring van 75-jarige Vlamingen. *Tijdschrift voor Gerontologie en Geriatrie*, 36, 47-59.
- De Raedt, R., & Van der Speeten, N. (2008). Discrepancies between direct and indirect measures of death anxiety disappear in old age. *Depression and Anxiety*, 25, E11-E17.
- Diaz-Morales, J.F. (2006). Factorial structure and reliability of Zimbardo Time Perspective Inventory. *Psicothema*, 18, 565-571.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95, 542-575.
- Diener, E., Emmons, R.A., Larsen, R.J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75.
- Diener, E., Suh, E.M., Lucas, R.E., & Smith, H.L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276-302.
- Diener, E., Oishi, S., & Lucas R.E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology*, 54, 403-425.
- Dittmann-Kohli, F. (1991). Meaning and personality change from early to late adulthood. *European Journal of Gerontology*, 1, 98-103.
- Drake, L., Duncan, E., Sutherland, F., Abernethy, C., & Henry, C. (2008). Time perspective and correlates of wellbeing. *Time & Society*, 17, 46-61.
- Ehrlich, B.S., & Isaacowitz, D.M. (2002). Does subjective well-being increase with age? *Perspectives in Psychology*, 5, 20-26.
- Ferrari, J.R., & Diaz-Morales, J.F. (2007). Procrastination: Different time orientations reflect different motives. *Journal of Research in Personality*, 41, 707-714.
- Ferring, D., & Fillip, S.H. (1995). The structure of subjective well-being in the elderly: A

- test of different models by structural equation modeling. *European Journal of Psychological Assessment*, 11, 32-39
- Fry, P.S. (1983). Structured and unstructured reminiscence training and depression among the elderly. *Clinical Gerontologist*, 1, 15–37.
- Fry, P.S. (1990). The person-environment congruence model: Implications and applications for adjustment counselling with older adults. *International Journal for the Advancement of Counselling*, 13, 87-106.
- George, L.K. (2010). Still happy after all these years: Research frontiers on subjective well-being in later life. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 65, 331-339.
- Heckhausen, J., & Schulz, R. (1995). A life span theory of control. *Psychological Review*, 102, 284-2003.
- Holman, E.A., & Silver, R.C. (1998). Getting “stuck” in the past: Temporal orientation and coping with trauma. *Journal of Personality and Social Psychology*, 74, 1146-1163.
- Isaacowitz, D.M., & Smith, J. (2003). Positive and negative affect in very old age. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58, 143-152.
- Kahana, E., Kahana, B., & Zhang, J. (2005). Motivational antecedents of preventive proactivity in late life: linking future orientation and exercise. *Motivation and Emotion*, 29, 443-464.
- Kashdan, T.B. (2004). The assessment of subjective well-being (issues raised by the Oxford Happiness Questionnaire). *Personality and Individual Differences*, 36, 1225–1232.
- Kazakina, E. (1999). Time perspective of older adults: Relationships to attachment style, psychological well-being and psychological distress. *Unpublished dissertation of Columbia University*.

- Kok, R.M., Heeren, T.J., & Van Hemert, A.M. (1993). De Geriatric Depression Scale. *Tijdschrift voor Psychiatrie*, 35, 416-421.
- Kraaij, V. (2001). Negative life events and depressive symptoms in the elderly: A life span perspective. *Aging & Mental Health*, 5, 84 -91,
- Lennings, C.J. (2000). Optimism, satisfaction and time perspective in the elderly. *International Journal of Aging and Human Development*, 51, 167-181.
- Lewin, K. (1951). *Field theory in social science*. New York: Harper & Row.
- Lyubomirsky, S., & Nolen-Hoeksma, S. (1995). Effects of self-focused rumination on negative thinking and interpersonal problem solving. *Journal of Personality and Social Psychology*, 69, 176-190.
- Marcoen, A., Grommen R., & Van Ranst N. (2006). *Als de schaduwen langer worden: Psychologische perspectieven op ouder worden en oud zijn*. Leuven: Uitgeverij LannooCampus.
- Maslow, A.H. (1971). *The farther reaches of human nature*. New York: McGraw-Hill.
- Mather, M., & Carstensen, L. L. (2005). Aging and motivated cognition: The positivity effect in attention and memory. *Trends in Cognitive Science*, 9, 496-502.
- Mathews, A., & MacLeod, C. (2005). Cognitive vulnerability to emotional disorders. *Annual review of Clinical Psychology*, 1, 167-195.
- McNeil, J.K., Stones, M.J., & Kozma, A. (1986). A subjective well-being in later life: Issues concerning measurement and prediction. *Social Indicators Research*, 18, 35-70.
- Mitchell, A.J., Rao, S., Vaze, A. (2010). Do Primary Care Physicians Have Particular Difficulty Identifying Late-Life Depression? A Meta-Analysis Stratified by Age. *Psychotherapy and Psychosomatics*, 79, 285-294.
- Milfont, T.L. (2008). Zimbardo time perspective inventory: Its Brazilian-Portuguese version and its use in environmental issues research. *International Journal of Psychology*, 43, 42.



- Miller, D., & Lieberman, M. (1965). The relationship of affect state and adaptive capacity to reactions to stress. *Journal of Gerontology*, 20, 492-497
- Mroczek, D.K., & Kolarz, C.M. (1998). The effect of age on positive and negative affect: A developmental perspective on happiness. *Journal of Personality and Social Psychology*, 75, 1333-1349.
- Myers, D.G., & Diener, E. (1995). Who is happy? *Psychological Science*, 6, 10-19.
- Nolen-Hoeksema, S., & Morrow, J. (1993). Effects of rumination and distraction on naturally occurring depressed mood. *Cognition & Emotion*, 7, 561-570.
- Nurmi, J-E., Pulliainen, H., & Salmela-Aro, K. (1992). Age differences in adult's control beliefs related to life goals and concerns. *Psychology and Ageing*, 7, 194-196.
- Pavot, W.G., Diener, E., Colvin, C.R., & Sandvik, E. (1991). Further validation of the Satisfaction with Life Scale: Evidence for the cross-method convergence of well-being measures. *Journal of Personality Assessment*, 57, 149-161.
- Peeters, F.P.M.L., Ponds, R.W.H.M., & Boon-Vermeeren, M.T.G. (1996). Affectiviteit en zelfbeoordeling van depressie en angst. *Tijdschrift voor Psychiatrie*, 38, 240-250.
- Peeters, F. P. M. L., Ponds, R. W. H. M., Boon-Vermeeren, M. T. G., Hoorweg, M., Kraan, H., & Meertens, L. (1999). *Handleiding bij de Nederlandse vertaling van de Positive and Negative Affect Schedule (PANAS) [Manual accompanying the Dutch translation of the Positive and Negative Affect Schedule (PANAS)]*. Universiteit Maastricht, Vakgroep Psychiatrie en Neuropsychologie.
- Peterson, C. (2000). The future of optimism. *American Psychologist*, 55, 44-55.
- Pot, A.M., Bohlmeijer, E.T., Onrust, S., Melenhorst, A.S., Veerbeek, M., & De Vries, W. (2010). The impact of life review on depression in older adults: A randomized controlled trial. *International Psychogeriatrics*, 22, 572-581.

- Prenda, K.M., & Lachman, M.E. (2001). Planning for the future: A life management strategy for increasing control and life satisfaction in adulthood. *Psychology and Aging, 16*, 206-216.
- Rappaport, H., Enrich, K., & Wilson, A. (1985). Relation between ego identity and temporal perspective. *Journal of personality and social psychology, 48*, 1609 -1620.
- Reker, T., & Wong, P.T.P. (1985). Personal optimism, physical and mental health: The triumph of successful aging. In Kazakina, E. (1999). Time perspective of older adults: Relationships to attachment style, psychological well-being and psychological distress. *Unpublished dissertation of Columbia University*.
- Sameth, L.F. (1980). Temporal orientation and well-being in the elderly. In Kazakina, E. (1999). Time perspective of older adults: Relationships to attachment style, psychological well-being and psychological distress. *Unpublished dissertation of Columbia University*.
- Serrano, J.P., Latorre, J.M., Gatz, M., & Montanes, J. (2004). Life review therapy using autobiographical retrieval practice for older adults with depressive symptomatology. *Psychology and Aging, 19*, 272-277.
- Shifflett, P.A. (1987). Future time perspective, past experiences, and negotiation of food use among the aged. *The Gerontologist, 27*, 611-615.
- Shmotkin, D., & Eyal N. (2003). Psychological time in later life: Implications for counseling. *Journal of Counseling and Development, 81*, 259-267.
- Shmotkin, D. (1991). The role of time orientation in life satisfaction across the life span. *Journal of Gerontology, 46*, 243-250.
- Spence, D. (1968). The role of futurity in aging adaptation. *Gerontologist, 9*, 180-183.
- Steuer, J. (1976). Future time perspective, commitments and life satisfaction of retired women educators. In Kazakina, E. (1999). Time perspective of older adults:

Relationships to attachment style, psychological well-being and psychological distress.

*Unpublished dissertation of Columbia University.*

Tabachnick, B.G., Fidell, L.S. (2001). *Using multivariate statistics* (4th ed.). Boston, Massachusetts: Allyn and Bacon.

Thomae, H. (1981). Future time perspective and the problem of cognition motivation interaction. In Kazakina, E. (1999). Time perspective of older adults: Relationships to attachment style, psychological well-being and psychological distress. *Unpublished dissertation of Columbia University.*

Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality & Social Psychology*, 54, 1063-1070.

Westerhof, G.J., Bohlmeijer, E., & Webster, J.D. (2010). Reminiscence and mental health: A review of recent progress in theory, research and interventions. *Ageing & Society*, 30, 697-721.

Wrosch, C., Bauer, I., & Scheier, M.F. (2005). Regret and quality of life across the adult life span: The influence of disengagement and available future goals. *Psychology and Aging*, 20, 657-670.

Wrosch, C., Schulz, R., & Heckhausen, J. (2004). Health stresses and depressive symptomatology in the elderly: A control-process approach. *Current Directions in Psychological Science*, 13, 17-20.

Wyrick, R.A., & Wyrick, L.C. (1977). Time experience during depression. *Archives of General Psychiatry*, 34, 1441-1443.

Yesavage, J.A., Brink, T.L., Rose, T.L., Lum, O., Huang, V., Adey, M., & Leirer, V.O. (1983). Development and validation of a geriatric depression screening scale: A preliminary report. *Journal of Psychiatric Research*, 17, 37-49.

- Zaleski, Z., Cycon, A., & Kurc, A. (2001). Future time perspective and subjective well-being in adolescent samples. In Kazakina, E. (1999). Time perspective of older adults: Relationships to attachment style, psychological well-being and psychological distress. *Unpublished dissertation of Columbia University*.
- Zimbardo, P.G., & Boyd, J.N. (2008). *The time paradox: The new psychology of time that will change your life*. New York: Free Press.
- Zimbardo, P.G., & Boyd, J.N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, 77, 1271-1288.
- Zimbardo, P.G. (2002). Just think about it: Time to take our time. *Psychology Today*, 35, 62.

**Footnote**

<sup>1</sup>The authors of the questionnaires were contacted and gave permission for the translation. Three independent persons translated the 56 items plus the instructions from the original language (English) to the target language (Dutch). The translations were compared and discussed. One version was selected by consensus. The selected version was carefully checked by a person who was not familiar with the questionnaire. Also, a member of the target population was asked to check the readability and comprehensibility of the Dutch items. The Dutch version was then translated once again into the original language by three different persons. After a consensus version was constructed, the author was invited to give his comments on the retranslation and to agree to implementation.

Table 1

*Internal consistency coefficients (Chronbach's  $\alpha$ ), maximum scores, means ( $M$ ), standard deviations ( $SD$ ) and ranges for the different dimensions of 'time perspective' and 'subjective well-being'*

Variable	$\alpha$	Maximum score	$M (SD)$	Range
<i>Time Perspective</i>				
Past-Negative (ZTPI)	.79	50	28.92 (6.85)	11-44
Present-Hedonistic (ZTPI)	.76	75	45.95 (7.74)	28-73
Future (ZTPI)	.53	65	43.82 (5.44)	33-60
Past-Positive (ZTPI)	.46	45	31.35 (3.99)	20-42
Present-Fatalistic (ZTPI)	.64	45	27.96 (4.88)	15-44
<i>Subjective Well-being</i>				
Positive Affect (PANAS)	.84	50	33.45 (7.25)	11-50
Negative Affect (PANAS)	.81	50	18.97 (6.56)	10-45
Satisfaction with Life (SWLS)	.83	35	25.60 (6.10)	8-35
Depression (GDS)	.37	30	7.48 (5.28)	0-24

Table 2

*Pearson Correlations between the different time perspectives*

Variable	1.	2.	3.	4.	5.
1. Past-Negative	-				
2. Present-Hedonistic	.17	-			
3. Future	.11	.49*	-		
4. Past-Positive	.24*	.40*	.53*	-	
5. Present-Fatalistic	.45*	.29*	.06	.23*	-

\*  $p < .01$

Table 3

Means (M), Standard Deviations (SD) and t values (t) of the scores on the different dimensions of 'time perspective' according to the demographic variables Age Group, Gender and Living Standard

Time Perspective	Age Group		t	Gender		t	Living Standard		t
	<i>M (SD)</i>			<i>M (SD)</i>			<i>M (SD)</i>		
	Young	Old		Men	Women		Alone	Together	
	(65-74)	(75-96)							
Past-Negative	28.06 (7.25)	29.69 (6.50)	1.35	29.78 (7.55)	28.24 (6.21)	1.30	29.31 (5.57)	28.67 (7.57)	.52
Present-Hedonistic	46.60 (7.12)	44.69 (7.82)	1.45	44.75 (7.59)	46.94 (7.77)	1.63	46.98 (8.62)	45.28 (7.07)	1.23
Future	43.99 (5.23)	43.38 (5.37)	.64	43.84 (5.71)	43.81 (5.28)	.02	44.61 (5.76)	43.26 (5.17)	1.40
Past-Positive	30.76 (3.67)	31.86 (4.11)	1.65	31.23 (4.10)	31.44 (3.92)	.30	31.95 (4.46)	30.95 (3.62)	1.44
Present-Fatalistic	27.23 (4.69)	28.77 (5.11)	1.81	27.44 (5.13)	28.35 (4.69)	1.08	28.81 (4.34)	27.42 (5.15)	1.64



Table 4

*Linear Regression Analyses with Positive Affect, Negative Affect, Satisfaction with Life and Depression as dependent variables and the different time perspectives as independent variables*

Dependent Variable	Independent variable	B	SEB	$\beta$	$r^2$
Positive Affect (PANAS)	Past-Negative	-.28*	.09	-.27*	.32
	Present-Hedonistic	.314*	.09	.34*	
	Future	.41*	.13	.32*	
	Past-Positive	-.19	.17	-.11	
	Present-Fatalistic	-.17	.13	-.12	
Negative Affect (PANAS)	Past-Negative	.31*	.10	.31*	.15
	Present-Hedonistic	.08	.09	.09	
	Future	-.06	.14	-.05	
	Past-Positive	-.13	.18	-.08	
	Present-Fatalistic	.18	.14	.13	
Satisfaction with Life (SWLS)	Past-Negative	-.39*	.07	-.45*	.37
	Present-Hedonistic	.12	.07	.15	
	Future	.23	.10	.21	
	Past-Positive	.38*	.14	.25*	
	Present-Fatalistic	-.10	.11	-.08	
Depression (GDS)	Past-Negative	.32*	.06	.43*	.38
	Present-Hedonistic	-.13	.06	-.20	
	Future	-.08	.09	-.09	
	Past-Positive	.04	.12	.03	
	Present-Fatalistic	.31*	.09	.29*	

\*  $p < .01$