Research Notes / Notes de recherche

A Balanced Time Perspective in Adulthood: Well-being and Developmental Effects

Jeffrey Dean Webster
Langara College

Xiaodong Ma
University of Houston–Clear Lake

RÉSUMÉ

Cet article présente une étude qui reproduit directement l'Échelle de perspective temporelle éqilibrée (EPTE), récemment développée, et comprenait des adultes d'âge moyen et plus âgés. Parmi les participants figuraient 90 jeunes, 69 d'âge moyen, et 69 adulte âgés qui ont complété le BPTS comme une mesure de la vie sur la base de la Perspective de temps equilibrée. Une analyse factorielle a répliqué les résultats initiaux avec sous-échelles distinctes pour l'orientation au passé et à l'avenir, avec l'obtention d'une structure simple (alpha = .94 e .95, respectivenment). Une perspective de temps equilibrée prédit des scores plus élevés sur les deux mesures du bien-être, reproduisant les constations originales de J. D. Webster (2011). Comme prévu, une analyse du chi-carré a indiqué que le pourcentage de jeunes adultes avaient tendance à se trouver dans l'orientation axée sur l'avenir, et que les adultes plus âgés avaient tendance à se trouver dans l'orientation axée sur le passé. Les implications d'une perspective temporelle équilibrée sur la santé mentale au cours de la vie sont discutées.

ABSTRACT

This article presents a study that directly replicated the recently developed Balanced Time Perspective Scale (BTPS; J.D. Webster, 2011) and included middle-aged and older adults. Participants included 90 younger, 69 middle-aged, and 69 older adults who completed the BTPS and a measure of life satisfaction and happiness. A factor analysis replicated original findings with separate subscales for a past orientation and a future orientation obtaining simple structure (alphas = .94 and .95 respectively). A balanced time perspective predicted higher scores on both measures of well-being replicating the original J.D. Webster (2011) findings. A chi-square analysis indicated, as predicted, that the percentage of younger adults tended to be higher in the future-focused category, and the percentage of older adults tended to be higher in the past-focused category. Implications of a balanced time perspective on mental health over the life course are discussed.

Manuscript received: / manuscrit reçu : 02/07/2012

Manuscript accepted: / manuscrit accepté : 02/05/2013

Mots clés : vieillissment, perspective du temps future, santé mentale, personnes d'âge moyen, aînés, réminiscence

Keywords: aging, future time perspective, mental health, middle-aged adults, older adults, reminiscence

Correspondence and requests for offprints should be sent to / La correspondance et les demandes de tirés-à-part doivent être adressées à:

Jeffrey Dean Webster, M.Ed.
Psychology Department
Langara College
100 West 49th Avenue
Vancouver, BC V5Y 2Z6
(jwebster@langara.bc.ca)

Despite the centrality of time to the aging process (Hendricks, 2001; Schroots & Birren, 1990), little coordinated empirical research has been conducted in this area. Isolated archipelagos of conceptual knowledge from antiquity to the present exist, yet systematic methodological, theoretical, and empirical foundations are lacking in gerontology. This is an important and pressing omission given the integral nature of time in

doi:10.1017/S0714980813000500

developmental processes, as well as the increasing proportion of elderly adults worldwide. Indeed, as McFadden and Atchley (2001) observed, "[a]ll gerontologists must take time seriously, and yet this difficult construct is rarely addressed by those who would understand age and aging" (preface).

Various facets of time, from a non-developmental perspective (e.g., perceived duration, temporal orientation, subjective judgements of affective correlates, extension, and density) have been investigated, including the concept of time perspective (e.g., Boniwell & Zimbardo, 2004). *Time perspective* refers to a relatively stable individual difference variable in which individuals express a preferred mode of temporal focus (i.e., past, present, or future). An important trend in this area is the notion of a balanced time perspective, in which orientations to more than one temporal focus are flexibly employed to potentially enhance well-being and facilitate problem-solving. However, this is a nascent research area. For example, a Psychology Abstracts database search using the keywords *balanced time perspective* produced only nine results. When the keyword *aging* was introduced, the resultant search produced zero articles.

It has been suggested that time perspective in general (e.g., Carstensen, 2006) and a balanced time perspective in particular (e.g., Boniwell, Osin, Linley, & Ivanchencko, 2010) play a powerful role in many psychological outcomes, including those related to motivation, mental health, interpersonal relationships, sense of self, and addictive behaviors, among many others. However, according to literature reviews (e.g., Boniwell, 2009; Kazakina, 1999), early research was hampered by lack of psychometrically sound measures and by a focus on a single temporal orientation, typically the future. Moreover, investigation of age differences has not been the focus of most research in this area. Finally, as Boniwell et al. (2010) noted, "One of the unanswered questions with regard to time perspective concerns the relationship between different temporal orientation profiles with well-being" (p. 26).

Like Janus, the Roman god of portals, most of us at least occasionally reflect on our past and imagine our future. There is a large literature on reminiscence that suggests that focusing on the past can have negative implications, such as rumination (Nolen-Hoeksema, 1998), bitterness revival (Webster, 1993), intrusive thoughts as in trauma recollections (Tedeschi & Calhoun, 2004), and escapism (Watt & Wong, 1991). These types of processes have been associated with increased anxiety, depression, neuroticism, and hopelessness (Webster, Bohlmeijer, & Westerhof, 2010).

Similarly, anticipating the future can also involve maladaptive outcomes. For instance, imagining the type of person we most fear becoming, or feared selves (Markus & Nurius, 1986), can trigger an array of anxiety-provoking thoughts, as can anticipating performance inadequacies, existential concerns about life's meaning, death anxiety, and endings which Kennedy, Fung, and Carstensen (2001) stated can provoke "dread and sadness" (p. 51).

In contrast, there is also good evidence that focusing on the past and future can have very positive outcomes as well. We know from reminiscence and life review research that accessing positive memories of our past can enhance happiness, increase self-esteem, bolster our sense of purpose and meaning in life, and potentially contribute to longevity (see Webster et al., 2010, for review). For example, Stones, Rattenbury, and Kozma (1995) found decreased mortality rates at an 18-month follow-up for a community-based reminiscence group. Similarly, Zimbardo and Boyd (1999) have found that a future time perspective can be associated with many adaptive outcomes, including optimism, internal locus of control, achievement orientation, and delay of gratification, among others. As with the past, there is some evidence that a future time perspective also contributes to significantly increased longevity (e.g., Fry & Debats, 2011). Finally, Carstensen (2006) and colleagues' (e.g., Charles & Carstensen, 2009; Lang & Carstensen, 2002) well-known socio-emotional selectivity theory outlines the complex relationship among emotional, motivational, and future orientation variables. Findings derived from this theory generally indicate that an open-ended future has implications for both informational and emotional goal pursuits, and that, on average, younger adults score higher on future time perspective (FTP) relative to older adults. On the other hand, older adults, who are less future oriented, are motivated to pursue emotional satisfaction.

Given that such psychological benefits occur for a positive past and positive future orientation separately (at least when the focus is on affective quality), the question arises as to whether a joint, or balanced, time perspective would result in even stronger outcomes. As noted, less than a handful of studies have investigated this question and have used instruments not originally intended to measure a balanced time perspective. The most prominent of these measures is the Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999). Researchers have employed various exploratory coding schemes, including a 33rd and 66th percentile cut-off range (Zhang, Howell, & Stolarski 2013), a hierarchical clustering technique (Boniwell et al., 2010), and deviation from supposed optimal subscale scores (Stolarski, Bitner, & Zimbardo, 2011). The latter approach assumes there is an optimal score for each of the five subscales of the ZTPI. Obtained scores for each participant are subtracted from the optimal score for each subscale, squared to eliminate

negative values, and then the five subscale results are summed. Finally, the square root of this total score is calculated to return to the original metric.

Each of these approaches has advantages and disadvantages, and currently opinions concerning the best scoring approach remain open to further empirical evaluation. In our study discussed here, we have replicated the original cut-off approach reported by Webster (2011), but additionally, as suggested by a reviewer, for this article we also report results based upon the deviation from optimal subscale scores method as described by Stolarski et al. (2011).[1]

Recently, Webster (2011) developed the Balanced Time Perspective Scale (BTPS) which assesses a person's positive, subjective evaluation of both their past and future on a 28-item scale. Webster (2011) purposely omitted a present-orientation subscale, citing philosophical, conceptual, and pragmatic reasons for doing so. For instance, he noted that both remembering the past and imagining the future rely on similar brain regions (see Webster, 2011, for further explication of similar issues). Results from this initial scale construction indicated that the BTPS had very good to excellent psychometric properties, including internal consistency, convergent validity (with the Zimbardo Time Perspective Inventory), discriminant validity in regard to a measure of social desirability, and construct validity as regards measures of happiness and satisfaction with life. Webster (2011) suggested that important areas of future research include replication of factor structure and well-being results, as well as the inclusion of middle-aged and older adults.

The purpose of our present study was to address all three of these recommendations. In order to do so, we conducted a direct replication, an important and frequently neglected aspect of psychological science (Roediger, 2012). We extended the replication results by including younger, middle-aged, and older adults as participants, as well as evaluating a new scoring method as already described. We made seven predictions; prediction 1 was that the factor structure of the original BTPS would be replicated; prediction 2 was that the relationship between the BTPS and the two well-being measures would be replicated as well. Further, based on previous studies (e.g., Diener, Suh, Lucas, & Smith, 1999) in which mean levels of life satisfaction stayed the same or increased in old age, prediction 3 was that older adults would report the same or higher scores on the two well-being measures than younger adults and middle-aged adults.

In terms of the relationship between age and BTPS, we relied on recent conference findings (Webster, Bohlmeijer, & Westerhof, 2011), given the lack of published data, to make several additional predictions. In prediction 4, the percentage of younger adults would be highest in the BTPS futurists category (a description of the four possible BTPS categories follows in the Results section) and lowest in the reminiscers category; in prediction 5, older adults would be lowest in the futurists category and highest in the reminiscers category; in prediction 6, middle-aged adults would be highest in the time-expansive category. Finally, in prediction 7 a balanced time perspective (as the Results section explains, we measured this using the deviation from optimal subscale scores method) would predict both happiness and life satisfaction scores above and beyond demographic variables in a regression analysis.

Methods

Participants

Ninety younger adults (age range = 21–39, M = 26.8, SD = 4.70) from a Southeast University in the U.S., 69 middle-aged adults (age range = 40–59, M = 52.78, SD = 4.48) from the surrounding area, and 69 community-dwelling older adults (age range = 60–86, M = 66.41, SD = 5.46) from the surrounding area participated in our current study. Younger adults who participated received extra credits for psychology classes; middle-aged and older adults participated on a volunteer basis. A one-way analysis of variance (ANOVA) revealed a significant age effect on years of education ($F(2,225)$ = 9.62, $p < .001$). Post hoc comparisons using the Tukey honestly significant difference (HSD) test indicated that younger adults reported having significantly more years of education (M = 16.69, SD = 2.13) than middle-aged (M = 15.28, SD = 3.16) and older adults (M = 14.61, SD = 3.80). No significant age differences were found for the self-reported health measure (1 = poor, 2 = fair, 3 = good, 4 = excellent). (Younger: M = 3.11, SD = .74; Middle-aged: M = 2.89, SD = .70; Older: M = 2.99, SD = .99; $F(2,225)$ = 1.45, p = .24)

Measures

Balanced Time Perspective

Time perspective was measured with the recently developed Balanced Time Perspective Scale (Webster, 2011). The BTPS is a 28-item scale assessing positive thoughts and feelings towards one's personal past and future. Items are answered on a 6-point Likert-type scale where 1 = strongly disagree and 6 = strongly agree. The 14 items measuring a positive past orientation included these: "*I get a renewed sense of optimism when I remember earlier life experiences*", "*Reviewing events from my past helps give my life meaning*", and "*Thinking about when I was younger helps me understand my lifestory*". The 14 items measuring a positive future orientation included these: "*Looking ahead really gets me energized*", "*Anticipating my later life fills me with hope*", and "*My future*

https://doi.org/10.1017/S0714980813000500 Published online by Cambridge University Press

development is something I frequently think about". Validity and reliability information has been provided in earlier research (Webster, 2011). In the current project, Cronbach's alphas for the past and future subscales were .94 and .95 respectively.

Happiness

Happiness was assessed with the short version of the Oxford Happiness Questionnaire (Hills & Argyle, 2002). This is an eight-item questionnaire with a 6-point Likert-type response format where 1 = strongly disagree and 6 = strongly agree. Questions included these: "*I feel that life is very rewarding*" and "*I feel fully mentally alert*". Three of the items were reverse scored. Higher scores (scores could range from 8–48), indicated higher overall general happiness (see Hills and Argyle, 2002, for validity information). Cronbach's alpha for this measure in the current study was .67.

Well-being

Well-being was measured with the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) which is a brief, five-item scale in which respondents rated each statement (e.g., "*In most ways my life is close to my ideal*" and "*So far I have gotten the important things I want in life*") on a 7-point Likert-type scale, where 1 = strongly disagree and 7 = strongly agree. A higher total score, which could range from 5–35, indicates greater satisfaction with life (see Diener et al., 1985, for validity information). Cronbach's alpha obtained for this measure in the current study was .86.

Results

First, we report the replication of the factor structure and well-being results reported by Webster (2011) using the same criteria as the original study. Next, we report on the age differences and their potential implications for theory and empirical work. Finally, we report the regression analysis results using the deviation from optimal subscale score method.

The 28 items of the BTPS were submitted to principal components analysis (PCA). The number of factors was set a priori at two, and varimax rotation was employed to facilitate the interpretation of factors. Results, supporting prediction 1, strongly replicate our initial findings, and can be seen in Table 1. All *Past* items loaded on a single factor and had relatively low cross-loadings. Loadings ranged from .60 to .82 (M_{Loading} = .72). Similarly, all *Future* items loaded on a single factor with low cross-loadings. Loadings ranged from .55 to .82 (M_{Loading} = .75).

Following Webster (2011), we performed a median split on both the past and future orientation subscales and then used this cut-off to produce four categories: (a) persons scoring below the median on both the past and future were termed *time restrictive*; (b) persons scoring below the median on the future but above the median on the past were termed *reminiscers*; (c) persons scoring above the median on the future but below the median on the past were termed *futurists*; and (d) persons scoring above the median on both the future and the past were termed *time expansive*.

We performed multivariate tests using BTPS categories and age groups as independent variables and Satisfaction With Life Scale and Oxford Happiness Questionnaire as dependent variables. For the Satisfaction With Life Scale, results demonstrated a significant main effect for BTPS category (supporting prediction 2), $F(3, 217) = 8.75$, $p < .001$, *partial* $\eta^2 = .11$ and age group, $F(2, 217) = 3.52$, $p < .05$, *partial* $\eta^2 = .03$. The BTPS by age group interaction was not significant. Post hoc analysis for the BTPS category using Tukey HSD showed that the time-expansive category ($M = 27.91$, $SD = 4.50$) was significantly higher than both the time-restrictive ($M = 23.05$, $SD = 6.83$) and the futurists ($M = 23.80$, $SD = 6.73$) categories. No other categories were significantly different. For the age group, no subgroups were significantly different (supporting prediction 3).

For the Oxford Happiness Questionnaire, the study results demonstrated a main effect of the BTPS category, $F(3, 225) = 12.25$, $p < .001$, *partial* $\eta^2 = .15$ and age group, $F(2, 217) = 7.32$, $p < .01$, *partial* $\eta^2 = .06$. The BTPS by age group interaction was not significant. Post hoc analysis for the BTPS category using Tukey HSD showed that the time-expansive category ($M = 36.37$, $SD = 5.00$) was significantly higher than both the time-restrictive ($M = 30.48$, $SD = 6.26$) and the futurists ($M = 33.03$, $SD = 5.26$) categories. The reminiscers category ($M = 34.79$, $SD = 6.00$) was significantly higher than the time-restrictive category. No other categories were significantly different (supporting prediction 2). Post hoc analysis for the age group revealed that the older age group ($M = 35.86$, $SD = 5.75$) was significantly higher in happiness than both the younger ($M = 32.75$, $SD = 6.77$) and mid-life ($M = 31.81$, $SD = 5.01$) age groups (supporting prediction 3). No other subgroups were significantly different.

Next, we examined the relationship between age and BTPS category. Figure 1 shows the relative percentage of persons in each age group falling within the four BTPS categories. The chi-square test of independence was significant: χ^2 (6, $n = 228$) = 50.41, $p < .001$, Cramér's $V = .33$, $p < .001$. Standardized adjusted residuals indicated that the percentage of younger adults was less, and the percentage of middle-aged adults was greater, than expected in the time-restrictive category; the percentage of younger adults was less, and the percentage of older adults was greater, than expected in the reminiscers

https://doi.org/10.1017/S0714980813000500 Published online by Cambridge University Press

Table 1: Factor loadings, descriptive statistics, and communalities for the Balanced Time Perspective Scale[a]

BTPS #	Factor Loadings		Descriptive Statistics		h^2
	Future	Past	*M*	*SD*	Extracted
28	**.818**	.250	4.90	1.129	.732
10	**.816**	.218	4.96	1.158	.714
26	**.813**	.099	5.01	1.066	.671
24	**.810**	.173	4.86	1.121	.686
12	**.807**	.252	5.00	1.081	.715
16	**.777**	.256	4.88	1.178	.670
14	**.777**	.272	4.73	1.176	.677
22	**.768**	.220	4.82	1.172	.637
08	**.766**	.146	5.00	1.112	.608
18	**.748**	.149	4.86	1.217	.582
20	**.745**	.200	5.03	1.114	.595
06	**.703**	.285	4.89	1.185	.576
04	**.581**	.340	4.77	1.113	.453
02	**.551**	.276	5.28	.931	.380
09	.217	**.821**	4.33	1.228	.722
05	.151	**.808**	4.34	1.280	.675
11	.225	**.779**	4.38	1.263	.657
17	.244	**.770**	4.64	1.098	.652
03	.144	**.754**	4.46	1.208	.589
15	.129	**.752**	4.16	1.346	.582
21	.221	**.723**	4.69	1.117	.572
23	.271	**.710**	4.84	1.018	.577
01	.173	**.693**	4.69	1.128	.510
07	.336	**.689**	4.75	1.098	.588
13	.212	**.681**	4.54	1.197	.509
19	.179	**.666**	4.75	1.153	.476
25	.473	**.618**	4.74	1.108	.605
27	.183	**.595**	4.90	1.080	.388

[a] h^2 = extracted communalities; factor loadings are bolded.
***M* = mean**
***SD* = standard deviation**

category (supporting prediction 4 and 5); the percentage of younger adults was greater, and the percentage of older adults was less (in fact, no older adults fell in this category), than expected in the futurists category (supporting prediction 4 and 5); and the percentage of middle-aged adults was less than expected in the time-expansive category, therefore failing to support prediction 6.

Finally, we constructed a balanced time perspective score following suggestions by Stolarski et al. (2011). Specifically, the optimal score for each item of both the past and future orientation subscales of the BTPS is the maximum score available (i.e., 6) indicating strong agreement with each BTPS item. Recall that each item expresses a positive orientation to either the past or future, so the maximum score of six is theoretically optimal. Given this, the formula for calculating a deviation from the optimal score is $(6 - M_{\text{Past}}) + (6 - M_{\text{Future}})$. Note that the squaring/square root procedures used in calculating ZTPI scores are not required here as it is not possible to obtain a negative value because the optimal score is also the maximum possible score (i.e., 6).[2] We then used this balanced time perspective score in regression analyses, as reported in Tables 2 and 3.

As Table 2 shows, a balanced time perspective explains an additional 8.8 per cent of the variance in happiness scores after accounting for the demographic variables of gender, age, education, and health. Similarly, as can be seen in Table 3, a balanced time perspective explains an additional 7.4 per cent of the variance in satisfaction with life scores after accounting for the same set of demographic variables (supporting prediction 7).

Discussion

This report investigated the relationship of a balanced time perspective on happiness and satisfaction with life in younger, middle-aged, and older adults. We directly replicated (Roediger, 2012) the factor structure and the well-being findings reported by Webster (2011) using

https://doi.org/10.1017/S0714980813000500 Published online by Cambridge University Press

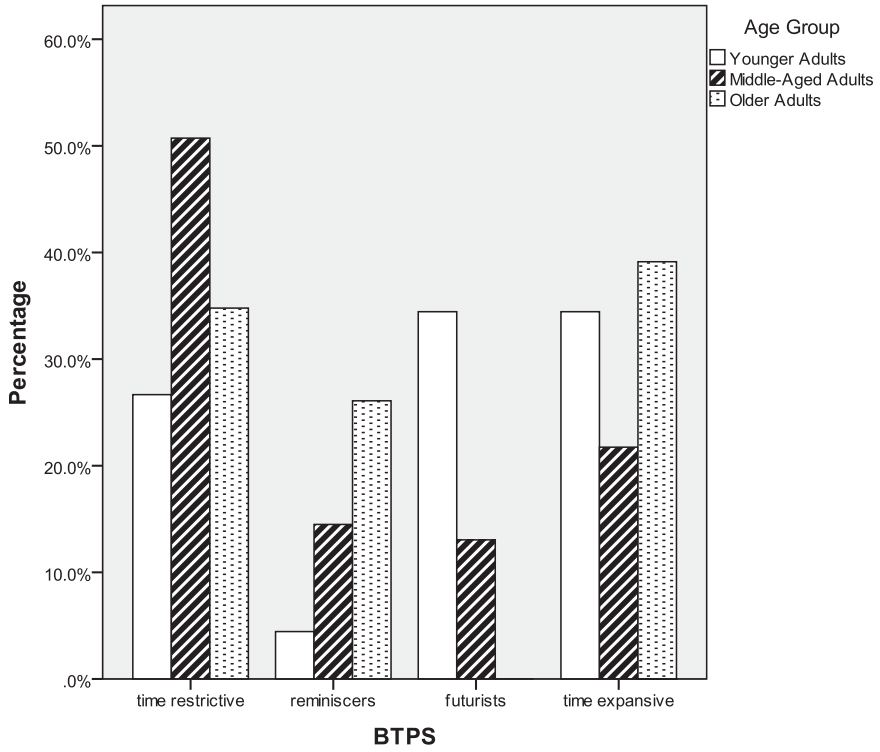

Figure 1: Percentage of young, middle-aged, and older adults within BTPS categories

the original cut-off score method, as well as with a new scoring procedure based on deviation from optimal scores. The two scoring procedures generally produced similar findings in that both methods indicated that a balanced time perspective is related to positive mental well-being. There are some differences, however, which may have important implications for future studies. We briefly explore these issues next.

We reported some of the first findings concerning age differences in a balanced time perspective. The factor replication results provide important validation for the newly created BTPS. The findings support the notion that a balanced time perspective is associated with higher scores on measures of happiness and well-being. Individuals who jointly explore their past and anticipate their future in positive ways seem to have mental health advantages over those who either focus on the

Table 2: Hierarchic regression on happiness

Variable	Model 1			Model 2		
	Beta	***t***	***sig***	***Beta***	***t***	***sig***
Sex	.058	.887	.376	–.007	–.114	.909
Age	.230	3.356	.001	.228	3.518	.001
Education (years)	.086	1.317	.189	.092	1.494	.137
Health	.325	5.174	.000	.264	4.337	.000
BTP				–.311	–5.049	.000
R		.377			.480	
R^2		.142			.230	
ΔR^2		.142			.088	
F		9.291**			25.491**	

**** = $p < .001$**
BTP = deviation from balanced time perspective score
***F* = Fisher's *F* ratio**
***R* = multiple correlation**
R^2 = multiple correlation squared

https://doi.org/10.1017/S0714980813000500 Published online by Cambridge University Press

Table 3: Hierarchic regression on Satisfaction With Life Scale

Variable	Model 1			Model 2		
	Beta	*t*	*sig*	*Beta*	*t*	*sig*
Sex	.140	2.176	.031	.080	1.272	.205
Age	.223	3.316	.001	.222	3.452	.001
Education (years)	.002	.026	.980	.008	.126	.900
Health	.365	5.934	.000	.309	5.150	.000
BTP				–.285	–4.688	.000
R		.417			.498	
R^2		.174			.248	
ΔR^2		.174			.074	
F		11.792**			21.974**	

**** = $p < .001$**
BTP = deviation from balanced time perspective score
***F* = Fisher's *F* ratio**
***R* = multiple correlation**
R^2 = multiple correlation squared

past or future exclusively, or tend not to think of either temporal orientation very frequently. Why positive mental health benefits accrue to a balanced time perspective is, at this early stage of investigation, still open to conjecture. Finding solace, strength, and personal meaning from examining one's personal past, as well as achieving a sense of optimism and future goal clarity, are most likely important contributors. It is possible, however, that the current results simply reflect a personality trait, a general tendency to be happy. This potential explanation is attenuated by recent findings in which time perspective predicted unique variance in mental health above and beyond the personality traits of neuroticism, extraversion, and openness to experience (Webster et al., 2011).

Age differences in a balanced time perspective generally supported predictions. Younger adults, on average, tended to be more future, rather than past, oriented; older adults, on average, tended to be more past, rather than future, oriented. These results are consistent with findings from studies conducted using the future time perspective scale (e.g., Lang & Carstensen, 2002) on which younger adults score higher than older adults. It is important to note here that while these results are consistent with such findings, the BTPS and the FTP measures are related, but different, constructs. Whereas the former measures positive affective, motivational, and cognitive elements of the past and future orientation, the latter measures one's sense of future time remaining.

The current results are also consistent with reminiscence research wherein older adults tend to score higher on social reminiscence functions associated with positive mental health such as happiness (Webster & McCall, 1999). However, a caveat is warranted here. When the total amount of reminiscence is measured, there are few, if any, age differences across the entire lifespan (e.g., Webster & Gould, 2007). When individual reminiscence functions are examined, however, older adults tend to score lower on negative functions (e.g., those measuring boredom and bitter memories); in contrast, for positive functions such as passing along life lessons, they tend to score higher. This selective use of personal memories is an aspect of the "positivity effect" (Mather & Carstensen, 2005).

The age differences reported here are also consistent with Webster et al. (2011) who found the same pattern with the one qualification that, in the current study, no older adults scored in the BTPS futurist category. The most likely explanation for this result illustrates a current limitation in the BTPS scoring. Median splits are used to create high and low scores on both the past and future dimensions, and this means that, currently, each study is likely to have different cut-off points. In our sample, the medians for both the past and future were higher than both the Webster (2011) and Webster et al. (2011) studies. This means that no older adults scored high enough on the future orientation subscale to achieve the cut-off score for the futurists category.[3] Similarly, fewer than expected middle-aged adults scored high enough to achieve the cut-off for the time-expansive category, accounting for the failure to support prediction 6.

A second possible explanation regarding the lack of older adults classified as futurists, and middle-aged adults classified as time expansive, concerns differences in sample characteristics between the current study and that used in earlier work by Webster et al. (2011). The latter study sample consisted of Dutch adults, using a translated version of the BTPS, who participated

https://doi.org/10.1017/S0714980813000500 Published online by Cambridge University Press

in an online survey. It is unknown how cultural, measurement, and sample recruitment methods may have affected the results. Notwithstanding these differences, the results of both studies, with the exception of the age finding just described, are remarkably similar.

Finally, it is important to emphasize that blanket statements about aging and time perspective are unwarranted. As the chi-square analysis makes clear, younger adults do think about their past, and older adults do think about their future. Therefore, while our results for the reminiscers and futurists categories do show the expected age trends, the time-expansive category clearly shows that all three age groups are represented to a significant degree. Regardless of age, all people appear capable of achieving a balanced time perspective. This conclusion is bolstered by the findings resulting from the deviation from optimal time-perspective scores, which indicated that the correlation between age and BTP was essentially zero; $r(229) = .079$, $p > .05$.

The current study makes important contributions to the aging and time-perspective literature. We further validated the BTPS (Webster et al., 2011) measure with the added middle-aged and older-adult sample. Further, our findings provide new insights into the relationship between aging and well-being from the perspective of BTPS. However, the results of the current study also must be interpreted with certain limitations in mind. One limitation is that the two measures of well-being (i.e., Satisfaction With Life Scale & Oxford Happiness Questionnaire) mainly targeted the cognitive components of subjective well-being. Future research can include well-being measures that focus on the emotional components of well-being, such as PANAS (Watson, Clark, & Tellegen, 1988), to examine thoroughly the relationship between BTPS, well-being, and aging. Moreover, future studies should include additional measures related to overall successful aging beyond well-being. For example, does a balanced time perspective act as a buffer in relation to anxiety and depression? Is the ability to flexibly time travel seamlessly between one's past and future indexed by particular cognitive abilities (e.g., cognitive complexity)? Are friendships and other important social relationships richer and more fulfilling in persons who share positive past, and anticipate rewarding future, experiences with intimate others? Finally, as noted, future studies need to investigate and establish more-formal scoring criteria for the BTPS. Without a standardized cut-off system, independent studies are likely to produce inconsistent results.[1] Establishing representative norms is an important next goal, as it would attenuate the concern that cut-off scores are specific to each population sampled.

Moreover, as our current study has demonstrated, a deviation from an optimal score approach may also hold promise. It too, has limitations, however. For instance, by collapsing the past and future scores into a single dimension, we lose information about scores in the middle of the distribution. For instance, a person who scores extremely high on the past and extremely low on the future would have the same score as a person with the opposite configuration (i.e., high on future and low on past). Given that futurists and reminiscers may have different psychological and mental health correlates, it is important, in this early phase of balanced time perspective research, not to prematurely discard any methods that show promise. For now, it seems prudent to include both measurement procedures until such time as we can say with confidence that one method is clearly superior to the other. Also, given that the BTPS does not include an explicit and separate present orientation subscale, we are currently unable to say whether, and how, a present orientation is related to the four BTPS categories. Is the time-restrictive category the same as a present orientation? Future research might include separate measures of present orientation as a means of assessing these types of questions. Or, if the deviation from the optimal scoring method proves valid, perhaps future versions of the BTPS could include a present subscale parallel to the past and future ones.

For now, researchers have a measure of a balanced time perspective with encouraging initial psychometric properties. Additional cross-sectional, and importantly longitudinal, studies will help not only in understanding the important consequences of a balanced time perspective, but also in how these potentially dynamic processes change over time.

Notes

1. We also conducted a hierarchical cluster analysis, but since this is an alternate way of producing discrete categories (as in the cut-off approach), we do not discuss this procedure here, noting only that the procedure did produce four meaningful categories virtually identical to the cut-off approach (i.e., time expansive, futurists, reminiscers, and time restrictive).
2. We also calculated scores using the Stolarski et al. (2011) squaring/square root method. The two sets of scores (i.e., those reported in this article and in the Stolarski et al. method) correlated .991, and the regression results were virtually identical, suggesting that the two methods produce highly similar results.
3. When we re-ran the analysis using the lower medians reported by Webster (2011), two older adults were classified as futurists. The BTPS results remained similar (e.g., the time-expansive category was higher than the time-restrictive one for both the Satisfaction With Life Scale and Oxford Happiness Questionnaire).

https://doi.org/10.1017/S0714980813000500 Published online by Cambridge University Press

References

Boniwell, I. (2009). Perspectives on time. In Lopez, S. (Ed.), *Handbook of positive psychology* (2nd ed.) (pp. 295–302). New York, NY: Oxford University Press.

Boniwell, I., Osin, E., Linley, P. A., & Ivanchencko, G. V. (2010). A question of balance: Time perspective and well-being in British and Russian samples. *The Journal of Positive Psychology*, *5*(1), 24–40.

Boniwell, I., & Zimbardo, P. G. (2004). Balancing time perspective in pursuit of optimal functioning. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 165–178). Hoboken, N.J.: Wiley.

Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science*, *312*, 1913–1915.

Charles, S. T., & Carstensen, L. L. (2009). Socioemotional selectivity theory. In H. Reis & S. Sprecher (Eds.), *Encyclopedia of Human Relationships* (pp. 1578–1581). Thousand Oaks, CA: Sage.

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.

Fry, P. S., & Debats, D. L. (2011). Cognitive beliefs and future time perspectives: Predictors of mortality and longevity. *Journal of Aging Research*, *2011*, 1–13.

Hendricks, J. (2001). It's about time. In S. McFadden & R. Atchley (Eds.), *Aging and the meaning of time: A multidisciplinary exploration* (pp. 33–92). New York, NY: Springer.

Hills, P., & Argyle, M. (2002). The Oxford Happiness Questionnaire: A compact scale for the measurement of psychological well-being. *Personality and Individual Differences*, *33*, 1073–1082.

Kazakina, E. (1999). *Time perspective of older adults: Relationships to attachment style, psychological well-being and psychological distress*. Unpublished doctoral dissertation. Columbia University.

Kennedy, Q., Fung, H. H., & Carstensen, L. L. (2001). Aging, time estimation, and emotion. In S. McFadden & R. Atchley (Eds.), *Aging and the meaning of time: A multidisciplinary exploration* (pp. 93–138). New York, NY: Springer.

Lang, F. R., & Carstensen, L. L. (2002). Time counts: Future time perspective, goals, and social relationships. *Psychology and Aging*, *17*, 125–139.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, *41*(9), 954–969.

Mather, M., & Carstensen, L. L. (2005). Aging and motivated cognition: The positivity effect in attention and memory. *Trends in Cognitive Sciences*, *9*(10), 496–502.

McFadden, S. H., & Atchley, R. C. (2001). Preface. In S. McFadden & R. Atchley (Eds.), *Aging and the meaning of time: A multidisciplinary exploration*. New York, NY: Springer.

Nolen-Hoeksema, S. (1998). The other end of the continuum: The costs of rumination. *Psychological Inquiry*, *9*, 216–219.

Roediger, H. L. (2012). Psychology's woes and a partial cure: The value of replication. *Observer*, *25*(2), 346–357.

Schroots, J. J. F., & Birren, J. E. (1990). Concepts of time and aging in science. In J. E. Birren & K. Warner Schaie (Eds.), *Handbook of the Psychology of Aging* (3rd ed.) (pp. 45–64). New York, NY: Academic Press.

Stolarski, M., Bitner, J., & Zimbardo, P. G. (2011). Time perspective, emotional intelligence and discounting of delayed rewards. *Time & Society*, *20*, 346–363.

Stones, M. J., Rattenbury, C., & Kozma, A. (1995). Group reminiscence: Evaluating short- and long-term effects. In B. K. Haight & J. D. Webster (Eds.), *The art and science of reminiscing: Theory, research, methods, and applications* (pp. 139–150). New York, NY: Taylor and Francis.

Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, *15*(4), 1–18.

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 and Social Psychology*, *54*, 1063–1070.

Watt, L., & Wong, P. T. P. (1991). A new taxonomy of reminiscence and its therapeutic implications. *Journal of Gerontological Social Work*, *16*, 37–57.

Webster, J. D. (1993). Construction and validation of the Reminiscence Functions Scale. *Journals of Gerontology: Psychological Sciences*, *48*, 256–262.

Webster, J. D. (2011). A new measure of time perspective: Initial psychometric findings for the Balanced Time Perspective Scale (BTPS). *Canadian Journal of Behavioural Science*, *43*(2), 111–118.

Webster, J. D., Bohlmeijer, E. T., & Westerhof, G. J. (2010). Mapping the future of reminiscence: A conceptual guide for research and practice. *Research on Aging*, *32*(4), 527–564.

Webster, J. D., Bohlmeijer, E. T., & Westerhof, G. J. (2011). *Time to flourish: Temporal perspective and well-being across the lifespan*. Poster presented at the 64th Annual Gerontological Society of America's Scientific Meeting, Boston, 18–22 November.

Webster, J. D., & Gould, O. (2007). Reminiscence and vivid personal memories across adulthood. *International Journal of Aging and Human Development*, *64*(2), 149–170.

Webster, J. D., & McCall, M. E. (1999). Reminiscence functions across adulthood: A replication and extension. *Journal of Adult Development*, *6*(1), 73–85.

Zhang, J. W., Howell, R. T., & Stolarski, M. (2013). Comparing three methods to measure a balanced time perspective: The relationship between a balanced time perspective and subjective well-being. *Journal of Happiness Studies*, *14*, 169–184.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual differences metric. *Journal of Personality and Social Psychology*, *77*(6), 1271–1288.

https://doi.org/10.1017/S0714980813000500 Published online by Cambridge University Press