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A French Version of the Balanced Time Perspective Scale: Factor Structure and Relation to Cognitive Reappraisal

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KEYWORDS*:* Balanced Time Perspective Scale, temporal orientation, future orientation, emotional regulation, French adaptation

ABSTRACT

A frequent and equal tendency to think positively about one's past and future has been conceptualised as a balanced time perspective (TP). Such a dispositional temporal orientation has been associated with higher life satisfaction and happiness. The aim of the present study was to develop and to validate a French version of the Balanced Time Perspective Scale (BTPS; Webster, 2011), which has been specifically designed to assess the combined use of positive future and past mental representations as resources for the self. Data were collected from an online survey in a sample of 622 French-speaking individuals from the general population. Results indicated that the French version of the BTPS replicated the 2-factor structure of the original questionnaire, and showed excellent internal consistency. External validity was supported by specific relationships with measures of TP and positive affect. In addition, a high propensity to project oneself positively both in the future and the past was associated with greater use of cognitive reappraisal.

Time perspective (TP)—the tendency to focus on the past, present, and/or future—has a pervasive influence on many aspects of human cognition and behaviour, such as decision making, planning, motivation, self-regulation, and sense of identity (e.g., Boniwell, 2005; Boniwell & Zimbardo, 2004; Zimbardo & Boyd, 1999). A seminal definition of TP was proposed by Lewin (1951, p. 75), as "the totality of the individual's view of his psychological future and psychological past existing at a given time." Later conceptualisations of TP emphasised its cognitive, emotional, and behavioural components: "a cognitive operation that implies both an emotional reaction to imagined time zones (such as future, present, or past) and a preference for locating action in some temporal zone" (Lennings, 1996, p. 72).

TP has been conceived as a relatively stable characteristic of personality (Zimbardo & Boyd, 1999). The Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999) is a widely used questionnaire that has been developed to assess five distinct TPs: Past-Negative (i.e., negative attitude toward the past), Past-Positive (i.e., positive view of the past), Present-Hedonistic (i.e., orientation toward immediate pleasures), Present-Fatalistic (i.e., belief in the inevitability of the future), and Future (i.e., planning for future goals). Although TP has been recognised as a dispositional characteristic, it has also been recognised that the ability to flexibly switch among TPs according to situational demands brings psychological, physical, and social benefits (Zimbardo & Boyd, 1999). Building on the ZTPI structure, such a functional profile has been

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conceptualised and characterised by moderate to high scores on the past-positive, present-hedonistic, and future subscales, as well as by low scores on the past-negative and present-fatalistic subscales (Boniwell & Zimbardo, 2004).

An alternative measure of TP has been specifically designed to assess a balanced TP, here conceived as "a frequent and equal tendency to think about one's past and future in positive ways" (Webster, 2011, p. 112). On this view, although benefits can either be drawn from positive reminiscence (i.e., O'Rourke, Cappeliez, & Claxton, 2011) or from positive prospection (i.e., Scheier & Carver, 1993), the frequent and extensive use of both these orientations might provide further advantages. Accordingly, the Balanced Time Perspective Scale (BTPS; Webster, 2011) comprises two subscales, respectively assessing the positive orientation toward the Past and the Future, that sum up into a global score reflecting the combined use of these mental representations as "sources of insight, strength and happiness" (Webster, 2011, p. 112). Although the BTPS does not comprise a subscale dedicated to the present per se, Past and Future representations are conceived as resources to deal with the present, an outlook that is entangled across items of both subscales. Indeed, the BTPS emphasizes the affective, motivational, and self-related aspects of positive memories and prospections, highlighting the ability to derive meaning and construct identity by building on these mental representations. For these reasons, the BTPS might constitute an interesting tool, notably in the context of clinical practice.

As compared with the ZTPI (Zimbardo & Boyd, 1999), the BTPS includes a strong affective component, is relatively short, is not influenced by social desirability, and demonstrates higher subscale reliability (Webster, 2016). An initial set of studies using the BTPS indicated that the two-factor scale exhibited good psychometric properties in two general population samples (Webster, 2011; Webster & Ma, 2013) and showed that a balanced TP was associated with life satisfaction, happiness, self-esteem, and wisdom (Webster, 2016, 2011; Webster & Ma, 2013; Webster, Bohlmeijer, & Westerhof, 2014). In a lifespan perspective, earlier studies using BTPS showed that younger adults tended to be more future-oriented than older adults, whereas older adults tended to be more past-oriented than younger adults (Webster & Ma, 2013; Webster et al., 2014).

The aim of the present study was to validate a French version of the BTPS, because such an adaptation might be useful for both research and clinical purposes in French-speaking communities. Following the translation of the original 28 items of the BTPS, an online survey was developed to acquire data in the general French-speaking population. A first goal was to assess the factor structure, internal consistency and external validity of the new scale. More particularly, the relations between the BTPS subscales and positive affect on the one hand, and between the BTPS subscales and the ZTPI Past-Positive and Future subscales (Zimbardo & Boyd, 1999) on the other hand, were evaluated. Given that so far, the construct validity of the BTPS has only been examined in English, a French validation would also contribute to evidence cross-cultural robustness of its two-factor structure.

A second goal was to investigate the relationship between a balanced TP and emotion regulation. Specifically, we hypothesised that the tendency to think positively about the past and future (as indexed by BTPS scores) might favour cognitive reappraisal strategies (i.e., the attempt to reinterpret an emotion-eliciting situation in a way that alters its meaning and changes its emotional impact; Gross & John, 2003). Indeed, recent findings (Barsics, Van der Linden, & D'Argembeau, 2016) indicate that a substantial proportion of future-oriented thoughts experienced in daily life are perceived as contributing to emotional regulation, with either a present-oriented focus (i.e., reassuring oneself or feeling better) or a future-oriented focus (i.e., preparing oneself to deal with an anticipated emotion). The frequent use of positive future simulations and of positive memories might allow easier access to these representations, especially when in need of regulating emotions. Therefore, we hypothesised that individuals who display a tendency to frequently and positively think about both their past and future (i.e., balanced TP) would be more likely to

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use cognitive reappraisal to regulate their emotions.

Method and Materials

PARTICIPANTS AND PROCEDURE

A total of 622 French-speaking individuals from the general population (434 women and 188 men) participated in an online survey after having been recruited through personal contacts (via email or social networks). Participants were between 17 and 87 years of age *(M* = 38.78, *SD* = 15.80), and had completed between 6 and 25 years of education (*M* = 15.35, *SD* = 3.91); 51% were Belgian, 32% French, 13% Swiss, and 4% were other nationalities.

The survey included sociodemographic data, the French version of the original English BTPS (Webster, 2011), a second measure of TP (short French version of the ZTPI; Fieulaine, Apostolidis, & Olivetto, 2006), measures of trait-positive affect (French version of the Positive Affect Negative Affect Scale; PANAS; Gaudreau, Sanchez, & Blondin, 2006), and emotion regulation (French version of the Emotion Regulation Questionnaire; ERQ; Christophe, Antoine, Leroy, & Delelis, 2009). The survey included three additional questionnaires that are not the object of the present article, thus will not be discussed further. All participants provided informed, voluntary consent and filled out the French version of the BTPS. A subgroup of 534 participants also filled out the ZTPI and the PANAS to determine the external validity of the scale, as well as the ERQ to explore its links with emotion-regulation strategies.

MEASURES

The French version of the BTPS was developed as follows: (a) The authors of this study translated the 28 items of the original English version of the BTPS (Webster, 2011) into French; (b) an English- French bilingual translated the French version back into English; and (c) discrepancies between the original BTPS and the back-translation were discussed between the authors and the translator until a satisfactory solution was found. The 28 items of the BTPS evaluate balanced TP, defined as "a frequent and equal tendency to think about one's past and future in positive ways" (Webster, 2011, p. 112). Half of the items refer to past orientation (e.g., "Reviewing events from my past helps give my life meaning"), whereas the others refer to future orientation (e.g., "Looking ahead really gets me energized"). Items are answered on 6-point Likert scales (1 = *Strongly disagree;* 2 = *Disagree;* 3 = *Slightly disagree;* 4 = *Slightly agree;* 5 = *Agree;* 6 = *Strongly agree*). Scores on each subscale were obtained by averaging items.

The ZTPI-Short French Version (Fieulaine et al., 2006) is a 25-item questionnaire that assesses five TPs: Past-Negative (five items), Past-Positive (seven items), Present-Hedonistic (three items), Present-Fatalistic (four items), and Future (six items). Answers are given on Likert scales ranging from 1 *(Very untrue)* to 5 *(Very true).* For this study, only the Past-Positive (e.g., "I get nostalgic about my childhood") and Future (e.g., "I make lists of things to do") subscales were considered; scores were calculated by averaging items. In the present sample, Cronbach's α were .75 (95% CI [.71, .78]) for the ZTPI Past-Positive, and .70 (95% CI [.65, .73]) for the ZTPI future. A factor analysis (FA) with maximum-likelihood extraction was conducted on each of the two scales to examine their dimensionality in the present sample. According to the Kaiser criterion (i.e., retention of all factors with eigenvalues >1; Kaiser, 1960), one single factor was extracted for the ZTPI Past-Positive (minimum loading = .35), as well as one for the ZTPI Future (minimum loading = .43).

The PANAS (Gaudreau et al., 2006) is a 20-item scale that measures the tendency to experience positive (10 items) or negative (10 items) affect, rated from 1 (*Very slightly or not at all*) to 7 *(Extremely).* In the present sample, the Cronbach's α was .78 (95% CI [.75, .81]) for the PANAS-Positive, and .85 (95% CI [.83, .87]) for the PANAS-Negative subscale. The unidimensionality of both subscales was ensured by FAs

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with maximum-likelihood extraction: One single factor was extracted for the PANAS- Positive (minimum loading = .32), as well as one for the PANAS- Negative (minimum loading = .43).

The ERQ (Christophe et al., 2009) assesses two emotion-regulation strategies, cognitive reappraisal and expressive suppression, and is composed of 10 items rated on a scale ranging from 1 *(Strongly disagree)* to 7 *(Strongly agree).* Only the Cognitive Reappraisal subscale (6 averaged items) was considered in this study (e.g., "When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.") In the present sample, the Cronbach's α was .85 (95% CI [.82, .87]) for the ERQ reappraisal. The unidimensionality of this subscale was ensured by an FA with maximum-likelihood extraction (minimum loading = .43).

ANALYTIC METHODS

To assess the factor structure of the BTPS-French Version, we used replication analysis (Osborne & Fitzpatrick, 2012), a method that relies on exploratory FAs and that addresses the replicability of factor loadings over different samples by comparing the squared differences between items in corresponding factor loadings. Polychoric correlations, which acknowledge the ordinal nature of the data (Muthén & Kaplan, 1985, 1992), were used in the FAs, performed with Factor.10 software (Lorenzo-Seva & Ferrando, 2013, 2006).

With regard to the investigation of the relationship between a balanced TP and Cognitive Reappraisal, we performed a hierarchical regression analysis. Cognitive Reappraisal (i.e., ERQ- reappraisal mean score; Christophe et al., 2009) was the criterion; all the independent variables were standardized to reduce potential multicollinearity between the main effects and interaction effects in the model (Cohen, Cohen, West, & Aiken, 2003). Age and gender were first included as predictors, as they influence reappraisal (McRae, Ochsner, Mauss, Gabrieli, & Gross, 2008; Shiota & Levenson, 2009). Second, the ZTPI-Future and ZTPI-Past- Positive (Fieulaine et al., 2006) were added as predictors. Third, testing for incremental validity, the BTPS-Past and BTPS-Future (Webster, 2011) were added to the model. Finally, the interaction between BTPS-Future and BTPS-Past was added as a predictor to assess the contribution of a balanced TP to the explained the variance in cognitive reappraisal.

Results

FACTOR STRUCTURE

The data set (η = 622; no missing values) was randomly divided in two for conducting two independent exploratory FAs (EFAs), as recommended by Osborne and Fitzpatrick (2012).

In the first data subset of 311 participants, the corrected item-total correlations for the 28 items of the French BTPS (Fieulaine et al., 2006) ranged from .34 to .65, with a mean of .53 (all corrected item-total correlations thus exceeded the accepted cutoff of .30, indicating that each item was related to the overall scale; Nunnally & Bernstein, 1994). Univariate normality was then explored for the 28 items by calculating the skewness and kurtosis of each item. The results showed that skewness ranged from —1.24 to —0.03 and kurtosis from -0.94 to 1.86, indicating no strong deviation from normality (absolute values are considered to be extreme for skewness > 3 and for kurtosis > 20; Weston & Gore, 2006).

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy indicated that the strength of the relationships between the 28 items was high (KMO = .92), and that the data were therefore adequate for FA (Kaiser & Rice, 1974). Bartlett's test of sphericity, which tests the overall significance of all the correlations within the correlation matrix, was significant, Bartlett's $\chi^2(378) = 5{,}170.6$, $p < .0001$, indicating that it was thus acceptable to proceed with the analysis (Bartlett, 1954). Indeed, a KMO value between .50 and 1 and a significant Bartlett's test of sphericity are considered appropriate (Kline, 1994). With respect to the number

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of factors that should be retained in the FA, the parallel analysis (PA; a test based on minimum-rank FA; Timmerman & Lorenzo-Seva, 2011) suggested a two-dimension solution.

As the data were ordinal (i.e., Likert scales), their polychoric correlation matrix, rather the Pearson's correlation matrix (Muthén & Kaplan, 1985, 1992), was analysed with an EFA computed with two factors, using the unweighted least-squares extraction method and an oblique rotation, because the factors were expected to be correlated. Based on a factor-loading cutoff of .30 (Kline, 2005), Factor 1 included even items, and Factor 2 odd items. Items loading on Factor 1 related to the future and items loading on Factor 2 related to the past; all items presented low cross loadings, and all rotated loadings were greater than .40 (see Table 1). The first factor was robust, with a high eigenvalue of 9.97, and accounted for 36% of the variance in the data. Factor 2 had an eigenvalue of 4.33 and accounted for a further 15% of the variance. The eigenvalues of Factors 3 to 5 were 1.42, 1.18, and 0.97, respectively. Despite their values exceeding 1, Factors 3 and 4 were not retained, because they only accounted respectively for further 5 % and 4 % of the total variance, and a solution including these factors would have been difficult to interpret. In line with the PA test, a two-dimension solution was hence adopted. Past and Future factors were moderately related, r = .39, p < .001.

In the second subsample of 311 participants, the corrected item-total correlations ranged from .40 to .68, with a mean of .56. Skewness ranged from —1.26 to —0.17 and kurtosis from -0.83 to 2.01, indicating no strong deviation from normality. To assess the replicability and stability of the EFA solution that was obtained from the first data set, and following the guidelines of Osborne and Fitzpatrick (2012), an EFA using the same extraction and rotation procedures (i.e., 2 factors, unweighted least squares extraction method and oblique rotation) was performed on the second set of data. The KMO measure of sampling adequacy (KMO = .94; Kaiser & Rice, 1974) as well as Bartlett's test of sphericity (Bartlett's $x^2(378)$ = 5318.0, p < .0001; Bartlett, 1954) ensured that the data were suitable for FA. As for the first subset of data, the PA indicated that the use of a two-factor structure was justified (Timmerman & Lorenzo-Seva, 2011).

As can be seen from Table 1, this EFA, which accounted for 52% of the total variance, yielded to a similar structure to the one obtained in the first data subsample: Factor 1 related to the future and included even items, and Factor 2 referred to the past and loaded on odd items (factor loading cutoff = .30; Kline, 2005).

Table 1 *- Loadings and Communalities of Exploratory Factor Analyses*

		Sample 1 (n =311)			Sample 2 (n = 311)			
		Loadings		Extracted	Loadings		Extracted	
#	Item	Factor 1	Factor 2	h^2	Factor 1	Factor 2	h^2	Squared diff
		Future						
2	J'attends mon futur avec impatience.	**.63**	.02	.40	**.61**	.02	.39	.0004
4	Penser à l'avenir me procure vraiment de l'énergie.	**.74**	-.01	.54	**.66**	.02	.45	.0064
6	J'aime envisager où j'en serai dans quelques années.	**.74**	.02	.56	**.78**	-.04	.58	.0016
8	J'aspire à beaucoup de choses dans le futur.	**.70**	.02	.49	**.78**	-.05	.58	.0064
10	Réaliser mes rêves d'avenir est quelque chose qui me motive dans le moment présent.	**.75**	.01	.57	**.78**	.01	.62	.0009
12	Je me réjouis lorsque je pense au futur.	**.83**	-.10	.64	**.76**	-.02	.56	.0049
14	Anticiper ma vie future me remplit d'espoir.	**.82**	-.06	.63	**.76**	.02	.59	.0036

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16	Imaginer mon futur me rend optimiste.	**.88**		-.15	.69	**.76**	.02	.58	.0144
18	J'aime imaginer ce que la vie va m'apporter dans le futur.	**.84**		-.05	.67	**.80**	.00	.64	.0016
20	Construire un avenir positif est une chose à laquelle je pense souvent.	**.70**		.07	.53	**.78**	-.02	.60	.0064
22	Je pense fréquemment à mon évolution future.	**.70**		.05	.51	**.73**	-.04	.51	.0009
24	J'aime penser aux objectifs qu'il me reste à accomplir.	**.64**		.08	.46	**.66**	.09	.49	.0004
26	J'ai des buts futurs très précis.	**.62**		-.04	.36	**.67**	-.11	.39	.0025
28	Quand je pense au futur, cela m'amène à mieux cerner le genre de personne que je veux être.	**.61**		.17	.48	**.61**	.12	.46	.0000
			Past						
1	Revenir sur des événements de mon passé m'aide à donner du sens à ma vie.	-.05		**.62**	.36	-.01	**.64**	.41	.0004
3	Je ressens un regain d'optimisme quand je me remémore des expériences de vie passées.	.02		**.58**	.34	.03	**.48**	.27	.0100
5	Le fait de me remémorer mon passé me donne le sentiment d'avoir un but dans la vie.	.01		**.63**	.40	.03	**.67**	.50	.0016
7	Voir comment les fragments de mon passé s'agencent me procure un sentiment d'identité.	.09		**.64**	.46	.12	**.61**	.43	.0009
9	Ma joie de vivre est renforcée lorsque je me souviens du passé.	.02		**.64**	.42	.01	**.64**	.45	.0000
11	Revivre des moments de ma vie passée m'aide à donner une direction à ma vie.	-.03		**.70**	.47	.02	**.68**	.49	.0004
13	Ma vie me semble avoir plus de sens lorsque je réfléchis à mon passé.	-.13		**.77**	.52	-.12	**.75**	.50	.0004
15	Accéder à mon passé constitue pour moi une source de réconfort.	-.12		**.72**	.46	-.07	**.67**	.45	.0025
17	Me souvenir de moments plus heureux de mon passé m'aide à me ressourcer dans le moment présent.	-.02		**.59**	.34	-.11	**.74**	.48	.0225
19	J'ai le sentiment que mon passé est une ressource à laquelle je peux avoir recours.	-.13		**.74**	.49	-.17	**.81**	.55	.0049
21	Le fait de penser à quand j'étais plus jeune m'aide à comprendre mon histoire de vie.	.10		**.53**	.33	.05	**.60**	.36	.0049
23	Penser à mes réussites passées m'aide à identifier mes points forts.	.27		**.52**	.45	.18	**.60**	.46	.0064
25	Me souvenir de mes succès passés m'aide à me motiver dans le moment présent.	.27		**.53**	.46	.18	**.61**	.47	.0064
27	Mon passé est rempli de souvenirs importants.	.05		**.47**	.24	.12	**.44**	.20	.0009

Note. Values greater than .40 are in bold. h^2 = communalities; Squared Diff = factor loadings squared differences.

The first factor was robust, with a high eigenvalue of 10.49, and accounted for 38 % of the variance; Factor 2 had an eigenvalue of 4.33 and accounted for a further 14 % of the variance in the data. The eigenvalues of Factors 3 to 5 were 1.70, 1.07, and 0.91, respectively. Despite their eigenvalues being greater than

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Kaiser's criterion, Factors 3 and 4 were not retained, as they only accounted respectively for further 6 % and 4 % of the total variance, and because a solution including these factors would have been difficult to interpret. Thus, in line with the PA test, a two-dimension solution was adopted. Past and future factors were moderately related, $r = .46$, $p < .001$. All items presented low cross loadings, and all loadings were greater than .40.

In sum, all items loaded on the same single factor across both analyses, duplicating the factor structure that emerged from the first data set. Moreover, the factor loadings of all items were of equivalent magnitude (all squared differences < .04; Osborne & Fitzpatrick, 2012). Overall, these results meet both requirements of strong EFA replication, as both the factor structure and the magnitude of the factor loadings were congruent in both subsamples (Osborne & Fitzpatrick, 2012).

RELIABILITY AND EXTERNAL VALIDITY

Among the 622 participants, 534 individuals filled out the three supplementary questionnaires in addition to the French version of the BTPS (no missing values). Means and standard deviations of the various questionnaires, as well as the correlations between the scales, are presented in Table 2. Internal consistency of the BTPS was excellent, with a Cronbach's α of .90 (95% CI [.89, .91]) for the BTPS past, and of .94 (95% CI [.93, .95]) for the BTPS future.

Table 2 *- Means, Standard Deviations and Correlations Between Questionnaires and Age*

Subscales	*M*	*SD*	1	2	3	4	5	6	7
1. BTPS past	4.1	.8	—						
2. BTPS future	4.3	.9	.41***	—					
3. ZTPI-Short Version Past-Positive	3.3	.7	.53***	.17***	—				
4. ZTPI-Short Version Future	3.5	.7	.18***	.19***	.11**	—			
5. ERQ Cognitive Reappraisal	4.6	1.2	.23***	.17***	.16***	.13**	—		
6. PANAS Positive Affect	3.5	.5	.24***	.34***	.09*	.20***	.25***	—	
7. PANAS Negative Affect	2.3	.7	.08	.06	.00	.05	-.12**	-.06	—
Age	39.37	16.00	.00	-.35***	-.08	.10*	-.04	.01	-.10*

Note. N = 534; BTPS = Balanced Time Perspective Scale. ZTPI = Zimbardo Time Perspective; ERQ = Emotion Regulation Questionnaire; PANAS = Positive Affect Negative Affect Scale.

* $p < .05$. ** $p < .01$. *** $p < .001$.

To evaluate the external validity of the French version of the BTPS, Pearson correlations were computed between the scores of the French BTPS (Past and Future) the ZTPI Past-Positive and Future; (Zimbardo & Boyd, 1999; French version: Fieulaine et al., 2006), and the PANAS-Positive (French version: Gaudreau et al., 2006; see Table 2). BTPS-Past was strongly related to the PastPositive subscale of ZTPI, and BTPS-Future was weakly, but significantly, related to ZTPI-Future. PANAS-positive affect was weakly correlated

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with BTPS-Past, and moderately correlated with BTPS-Future. Regarding the relationship between age and TP, age was negatively correlated with BTPS-Future and positively correlated with ZTPI-future.

RELATION TO COGNITIVE REAPPRAISAL

To investigate the influence of TP on cognitive reappraisal, a hierarchical regression analysis was performed (see Table 3). In Model 1, age and gender were entered as a block. This model was not significant. In Model 2, we added ZTPI-Future and ZTPI-Past- Positive. This model was significant, with 4.2 % of variance explained in cognitive reappraisal; both ZTPI-Future and ZTPI-Past-Positive were significant predictors. In Model 3, BTPS-Past and BTPS-Future were added. The model was significant, but only BTPS-Past was a significant predictor; this model explained 7 % of the variance in cognitive reappraisal. Finally, in Model 4, the interaction between BTPS-Future and BTPS-Past was added. The model was significant and explained 8.7 % of the variance in cognitive reappraisal; the only significant predictors were BTPS-Past, BTPS-Future and their interaction. As can be seen from Figure 1, a high propensity to project oneself positively in both the future and in the past was associated with greater use of cognitive reappraisal.

Discussion

The aim of the current study was to validate a French version of the BTPS (Webster, 2011) in a general population sample. First, factor structure, internal consistency, and external validity of the questionnaire were examined.

The factor structure of the original BTPS was replicated in the French version of the questionnaire across EFAs conducted in two independent samples. Specifically, a two-factor structure was evidenced twice, and item loadings of comparable magnitude emerged, providing evidence for strong replication (Osborne & Fitzpatrick, 2012). This two-factor structure, which initially emerged in two initial studies assessing the English version of the scale (Webster, 2011; Webster & Ma, 2013), reflects the assessment of a person's relative use of positive reminiscence and of positive anticipation.

Table 3 *- Hierarchic Regression on ERQ Cognitive Reappraisal*

Variable	Model 1			Model 2			Model 3			Model 4		
	β	*t*	sig	β	*t*	sig	β	*t*	sig	β	*t*	sig
Age	-.029	-.656	.512	-.034	-.784	.433	-.010	-.210	.834	-.003	-.061	.952
Gender	.065	1.481	.139	.032	.722	.470	.025	.581	.561	.031	.728	.467
ZTPI-Short Version Past-Positive				.140	3.217	.001	.055	1.085	.278	.052	1.045	.296
ZTPI-Short Version Future				.118	2.718	.007	.083	1.891	.059	.078	1.801	.072
BTPS Past							.149	2.730	.007	.154	2.831	.005
BTPS Future							.080	1.578	.115	.124	2.367	.018
BTPS Past X BTPS Future										.138	3.152	.002
R		.074			.204			.264			.295	
R^2		.006			.042			.070			.087	
ΔR^2		.002			.036			.028			.017	
F_{change}		1.473			9.939***			8.044***			9.937**	

Note. N = 534; BTPS = Balanced Time Perspective Scale; ZTPI = Zimbardo Time Perspective; ERQ = Emotion

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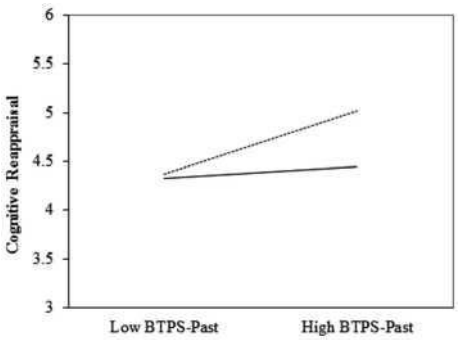
Regulation Questionnaire. **p < .01. ***p < .001.

Figure 1. Cognitive reappraisal as a function of BTPS-Past and BTPS- Future scores (high and low scores corresponding to 1 *SD* from the mean).



-- Low BIPS -Future

---High BTPS-Future

At the subscale level, the internal consistency was excellent. In terms of concurrent validity, both subscales correlated with the comparable subscales of the ZTPI-Short French Version (Fieulaine et al., 2006): BTPS-Past was strongly related to the PastPositive subscale of ZTPI and BTPS-Future was weakly related to the Future subscale of the ZTPI. The fact that BTPS-Future was only weakly related to the ZTPI-Future subscale might be explained by the fact that the latter mainly focused on planning, whereas the former focus more on the affective and identity components of future orientation. Such an explanation has already been advocated to explain a similar pattern of findings obtained in the original validation study of the scale (Webster, 2011). Indeed, the BTPS-Future subscale is positively valenced, whereas the ZTPI-Future subscale did not emphasise the affect associated with the aspects of goal pursuit that it measures. In line with their positive valence, BTPS-Past and BTPS- Future subscales were also correlated with positive affect, as assessed by the PANAS (Gaudreau et al., 2006).

In the present sample, age was negatively correlated to BTPS- Future (Webster, 2011), but positively correlated to ZTPI-Future (Zimbardo & Boyd, 1999). This pattern might reflect a perception of time as more limited as age increases. Similarly, ZTPI-Future items relate to a closer future than BTPS-Future items. In addition, the BTPS-Future subscale might be more easily associated with the nature of the goals that are pursued by young adults than by older adults, who might seek meaningfulness by selecting distinct goals compared with younger adults (Carstensen, Fung, & Charles, 2003).

A second goal of this study was to explore the relationship between TP and cognitive reappraisal (Gross & John, 2003). The present results indicate that people who think about both their past and future in positive ways more frequently use cognitive reappraisal to regulate their emotions. This might indicate that positive memories as well as imagined positive futures can constitute resources to reappraise situations and thereby to regulate emotions. Individuals who frequently evoke positive memories and future simulations might indeed benefit from an easier access to these representations when in need to regulate emotions. The ability of these "time-expansive" individuals to generate alternative plausible scenarios or to recast episodic memories in relationship with their current goals, might have translated into a more general capacity to modify their appraisal of a situation, helping them to monitor their emotional states. Another, not necessarily mutually exclusive, interpretation of the relationship between TP and cognitive reappraisal is that some people have more positive views of their personal past and future in part because they more frequently use cognitive reappraisal to modify the affective meaning of their personal experiences.

In conclusion, this study has shown that the French version of the BTPS replicates the two-factor structure

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of the original questionnaire in two independent samples of the general population sample. Internal consistency was excellent, and external validity was supported by specific relationships with measures of TP and positive affect. A frequent and equal tendency to think about one's past and future in positive ways has been shown to contribute to well-being (Webster, 2011; Webster et al., 2014; Webster & Ma, 2013). The present study also provided first evidence for a link between balanced TP and cognitive reappraisal. In future studies, it might be interesting to clarify the relationship between balanced TP, reappraisal abilities, and well-being. Limitations include the fact that the present study was exclusively Web-based and that self-report questionnaires were used to collect data at the same time from the same participants, which might have inflated the relationships between the variables, due to common-method variance (i.e., variance that is attributable to the measurement method rather than to the constructs the measures are assumed to represent; see Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

The French version of the BTPS (Webster, 2011) might constitute a promising tool for research and clinical purposes. Nevertheless, the assessment of the use of positive future and past mental representations as resources for the self should not prevent the consideration of their negative counterparts, as these can also bring some benefits. For instance, negative prospections are perceived as more helpful for decision making than positive ones (Barsics et al., 2016), and a bitter-sweet emotion such as nostalgia constitutes an important resource for psychological health and well-being (Routledge, Wildschut, Sedikides, & Juhl, 2013).

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