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RESEARCH PAPER

Affective Reactions to One's Whole Life: Preliminary Development and Validation of the Ontological Well-Being Scale

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Abstract In line with the perspective provided by the intentional paradigm which claims that the measures of subjective well-being (SWB), whether cognitive or affective, should refer to life itself, the Ontological Well-Being Scale (OWBS) has been operationalized. The research reported herein was aimed at developing and validating this psychometric tool in the assessment of individuals' affective evaluations of their life within a three-time perspective. Five studies were conducted to confirm the factor structure of the OWBS and to assess its construct validity. Four factors were derived and validated, which were shown to relate to mental health indicators and personality in expected ways. It was found that this new construct, in contrast with the current measures, did not tap into the personality factors of extraversion and neuroticism. Incremental validity results showed that the OWBS explained additional variance in mental health indicators already captured by the current measures of SWB.

Keywords Subjective well-being · Emotion · Life satisfaction · Personality · Narrative · Intentional paradigm · Intentionality

"The state of being is our ontology, our total experience of the present, past, and future" (Ivey 1986, p. 2).

1 INTRODUCTION

Kant (1965) was probably the first to show effectively, though indirectly, how human experience is constructed by the mind, transforming the appearances of the 'subjective'

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world into 'objective' truth. This was a Copernican revolution in epistemology, which changed the causal direction between the inside and the outside; knowledge should be searched for inside, not outside, the human mind. In the same vein, recent theoretical developments in the science of psychology acknowledge the self in light of constructive elements inherent in human mentality. In such a framework, individuals are seen as active agents who construct and react to their own realities (Neimeyer 1993).

Narrative thought is considered as one of the most powerful constructive features of the mind (McAdams 1999; Sarbin 1986). The narrative approach declares that human beings generate their own stories, through which the cognitive, affective, and motivational systems of personality are integrated into the self system (Singer 1995). McAdams (1999, 2001), in this respect, argues that the narrative components of experience are indispensable in personality research.

Such a view on personality and self has been a source of inspiration for researchers into well-being (McAdams 1999; Neimeyer 1993; Shmotkin 2005). In a recent review, Shmotkin (2005) argues that the narrative approach has become especially important in the assessment of subjective well-being (SWB), citing research based on the assessments taking into account the different periods of individuals' lifetimes; retrieving past SWB or/and anticipating future SWB, as well as assessing SWB into longitudinal orientation. It seems clear, however, that merely using the current well-being measures in different time frames does not make these evaluations narrative by nature (Shmotkin 2005). Moreover, such evaluations require excessive effort and time (McAdams 2001).

Using a narrative perspective as a starting point, Şimşek (2009) presented a new construct, ontological well-being (OWB), in order to tap affective and cognitive evaluations of life. This research, in this regard, was aimed at developing a new instrument, the Ontological Well-Being Scale (OWBS), as an operational definition of this new construct. In five separate studies, this scale was shown to have good psychometric qualities regarding factor structure, reliability, and incremental validity.

1.1 The Intentional Paradigm and Narrative Components in SWB

Although many different conceptualizations of SWB have been introduced into the research arena since Bradburn (1969), the formulation made by Diener (1984) is the one most accepted among scholars (Lent 2004; Ryan and Deci 2001; Ryff 1989). Diener defined SWB as the unity of cognitive and affective evaluations of life. The former is known as life satisfaction, while the latter subjective emotional well-being (SEWB), which is operationalized as the presence of positive affect (PA) and the absence of negative affect (NA). This formulation has been considered a hedonic conceptualization of well-being since it is based on the pleasure-pain dichotomy and is differentiated from eudaimonic conceptualizations which underlie an individual's capacity to grow and self-actualize (Deci and Ryan 2008; Ryan and Deci 2001).

Şimşek (2009, 2011) proposed a new framework in the SWB literature, which may be called the intentional paradigm (IP), indicating that the unity of life satisfaction, PA and NA fall short in creating or constructing a suitable referent for an operational definition of SWB. Intentionality is one of the basic concepts of the philosophy of mind, and indicates that all mental states, including emotion experiences, are directed toward or about something. The main problem in the current SWB formulation, accordingly, is the lack of a suitable referent, which is assumed to be life itself. As Diener and Lucas (2000) indicate: "Subjective well-being researchers …assess individuals' thoughts and feelings *about* their

lives" (p. 325, italics added). Affective measures of well-being, e.g. the Positive and Negative Affect Schedule (PANAS—Watson et al. 1988), however, assess only the frequency or intensity of affective states, having no reference to any 'thing' or context. The same problem is evident, to some extent, for the measurement of life satisfaction, which represents a rather vague referent (e.g., 'life as a whole'), making it very difficult to measure an individual's SWB (Lent 2004; Schwarz and Strack 1991).

In accordance with the recent conceptualizations in narrative personality/identity theory, IP (Şimşek 2009) indicates that "the whole life" may be transformed into a much clearer referent: "life as a personal project". There is, indeed, a body of literature with empirical support indicating that individuals construe their own lives as stories or projects (see McAdams 1999, 2001), and that such projects organize and guide all forms of personal goals and actions (McAdams 2001; Singer 1995; Singer and Bluck 2001). Individuals, thus, seem to construct personal stories as building blocks of lower level units of personal goals or projects, using cognitive capacities which start developing in the period of adolescence (Staudinger 2001). The life project, accordingly, is acknowledged as the personal criterion by which individuals evaluate their unique existence, and the life they lead. As Shmotkin (2005) states, narrative SWB evolves around a core personal scheme and results in a self-perceived trajectory, which connects individuals' SWB markers throughout life.

Based on autobiographical reasoning, consequently, personal narratives or life stories serve as frameworks for the evaluation of life from a temporal perspective (Bluck and Habermas 2001, p. 141). An important underlying assumption, accordingly, is that life projects, like life stories, are created and maintained in a temporal framework. Time, indeed, is an indispensable element of any narrative because narrating requires individuals to perceive themselves in, and evolve their stories into, time itself (McAdams 2001; Shmotkin 2005; Staudinger 2001).

As a result of such an application of the IP, coupled with the presumptions of narrative psychology, the term "whole life" refers to one's life project created and maintained in a temporal perspective, which consists of past, present, and future components. Although there is a life satisfaction measure based on a time perspective (Pavot et al. 1998), it focuses only on the cognitive dimension of SWB, and thus, the emotional dimension was ignored.

1.2 Owb as a Narrative Construct of Swb

In line with the philosophical and psychological literature, this new construct was labeled "ontological well-being" since it measures SWB within a temporal framework (Şimşek 2009). In the history of philosophy, the concept of time has been regarded as the most important ontological dimension that constitutes self-consciousness and self-identity (Aristotle 1991b; Heidegger 1996; Husserl 1970; Kant 1965). In Kant's (1965) philosophy, for example, time was conceptualized as an a priori (i.e., not dependent on experience) condition under which all inner sensations make sense for individuals. Time, in this respect, makes every instant of experience concerning the self possible.

Moreover, these theoretical insights are consistent with the contemporary conceptualizations and research on time, which indicate an inclination among individuals to assess their life in terms of three time dimensions, past, present, and future (Johnson and Sherman 1990; Lewin 1948, 1951), which are important for happiness (Robinson and Ryff 1999), psychological well-being (Ryff and Heidrich 1997), development (Bortner and Hultsch

1974), the evaluation of possible selves (Wilson and Ross 2001), as well as for ego identity (Erikson 1959; Rappaport et al. 1985).

Consequently, OWB can be defined as individuals' evaluations of their life projects taking into account its past, present, and future components. In contrast to the current approaches to narrative well-being (Shmotkin 2005), evaluation here refers to individuals' *affective reactions to their life projects* within a time perspective, rather than merely assessing the frequency or intensity of emotional experiences within different time frames. In other words, the construct consists of affective judgments on the life project in its continuity: individuals' feelings when considering the completed (past), the ongoing (present), and the prospective (future) parts of their projects.

An affective evaluation is preferred here because such an evaluation makes these evaluations more subjective, which is a prerequisite for any definition of SWB (Diener 1984). OWB takes into account only the affective reactions to life project, whatever these may be for the person in question, and ignores the specific ingredients of life projects because of their highly subjective quality. As Diener (1984) stated, the main characteristic of SWB constructs is their ignorance of standards or lenses imposed by all-embracing grand theories (Diener et al. 1998). Additionally, as indicated by Diener and Lucas (2000), emotions are central to SWB.

Moreover, assessing the affective reactions towards life does not mean the exclusion of the cognitive component or content in these projects. Current conceptualizations consider affective experiences as non-intentional states with no content, a concept known as core affect (Russell 2003). Core affect is thought to be independent of any connection with the outer world, and thus is considered simply a genetic inclination to feel in a certain way (Solomon 2006). IP insists, however, that affective experiences are basically intentional, which attributes to them a cognitive component. Consequently, in the present measurement of affect, intentionality (being about or related to something specific, such as feeling regret about the past of one's life project) refers to a cognitive component, because feelings towards an object inevitably include an individual perspective toward it. Intentionality, thus, should be acknowledged as personal engagement with the world (Nussbaum 2001; Solomon 2006), which Lewis and Todd (2005) call 'emotional interpretation', and Goldie (2004) refers to as 'extraspective knowledge' (e.g. feeling towards). The basic idea behind these considerations is that because of intentionality, emotions become individual lenses through which we are tuned into life itself. According to Nussbaum (2001), "Emotions are not about their objects in the sense of being pointed at them…Their aboutness is more internal, and embodies a way of seeing (p. 27)". Thus, we assume that when emotional experiences are conceptualized in reference to a specific thing, an individual's cognitive stance toward it is already incorporated into these emotional experiences.

1.3 Operational Definition of OWB

Abovementioned literature indicates that the assessment of OWB requires one to evaluate life in its continuity. Without having directly focused on the evaluation of life as a project, past research has provided valuable information about the affective evaluations of these time dimensions. Taking this literature, as well as the theoretical presuppositions related to OWB (e.g., Şimşek 2009) as a base, we defined specific themes for the three time dimensions in order to reach an operational definition, as indicated below.

The past has been considered the most important dimension of narrative research and has been shown to be closely associated with SWB (Bauer et al. 2005; Jokisaaki 2003;

Wrosch et al. 2005). The findings of this research as well as theoretical literature indicate that an affective evaluation of the past is mainly related to 'regret'. Lucas (2004), for example, defines regret as an existential emotion, emerging from past choices which were out of line with one's values or growth needs. According to Lucas, such choices could result in other existential emotions such as guilt. Similarly, Santor and Zuroff (1994) argue that an evaluation of the past results in feelings of regret, guilt or satisfaction and is therefore very critical in psychological well-being. Accordingly, when a life is evaluated as a project, a personal examination of the past could trigger positive emotions such as satisfaction, pride, and the feeling of achievement, or negative ones, such as disappointment, guilt, and incompetence (Karniol and Ross 1996; Lucas 2004; McAdams 2001; Santor and Zuroff 1994; Şimşek 2009: Wrosch et al. 2005).

Although most research is focused on the present SWB (Shmotkin 2005), it has not been considered part of a narrative approach. In the current literature, the issue of valence has been a major concern for the affective experiences and these experiences are taken into consideration along the PA and NA axis (Watson et al. 1992). The OWB perspective, however, acknowledges the life project in its movement, and the present refers to the current situation of the project which is in the process of execution by the individual. From this perspective, thus, the present refers to the point at which the motivation to "pursue the project" could be evaluated. A high level of motivation would result in a high level of active commitment to the project. Thus, we expected, within an OWB perspective, that emotions such as excitement, enthusiasm, or motivation would be important in the evaluation, since the person in question is actively engaged in pursuit of the life project. Lower levels of motivation, or amotivation, on the other hand, would be expected to result in seeing oneself in a blind alley, bringing about negative emotions such as feelings of being lost, aimlessness, helplessness or emptiness (Şimşek 2009).

Finally, the research clearly showed that most people have an inclination to perceive a positive view of the future (Newby-Clark and Ross 2003; Robinson and Ryff 1999; Staudinger et al. 2003). Staudinger et al. (2003) explain such an inclination with the motives of growth and self-improvement. Within the specific context of the life project, the future would refer to an optimistic perception of the possibilities, which might be called 'hopefulness'. Similarly, theories of both philosophy (Aristotle 1991a, b; Heidegger 1996), and psychology (Karniol and Ross 1996; Seligman and Csikszentmihalyi 2000; Stock et al. 1986) clearly indicate that future time is mainly characterized by hopefulness. Bauer et al. (2005) called this optimistic bias as the crystallization of desire, and showed that it is especially associated with positive outcomes and well-being. Being hopeful about the future, indeed, has been strongly associated with SWB (Wrosch et al. 2005; Bauer et al. 2005) and has been specified as an important indicator of well-being, in contrast to psychopathology-oriented constructs (MacLeod and Conway 2005). This dimension, consequently, is expected to be related with emotions such as being forward-looking and hopefulness (Karniol and Ross 1996; McAdams 2001).

1.4 The Research Plan for the Current Study

This research presents five studies conducted in order to assess validity and reliability of the OWBS as an operational definition of this new construct. The first and second sought to validate the factor structure of the OWBS, using different samples. Having achieved the final factor structure for the items of the OWBS in the first study, the factor structure was tested using confirmatory factor analysis in the second. The first also included an

experiential study to confirm the existence of the concept of the life project in the mind of individuals, and to obtain preliminary evidence that the adjectives used in the final version of this scale could be considered sufficient to evaluate these life projects. The third study tested the consistency between the scores on the OWBS over time for re-test reliability.

The fourth study aimed at showing the validity of this new construct and providing evidence that it did not overlap with personality. It was expected that, since it incorporates a set of elements such as goal, time perspective, and affect into a higher-order construct, the OWBS would be correlated with a broad range of psychological phenomena. Because narrative components are considered important elements of personality (McAdams 2001), affective evaluations of life projects would give important information about both eudaimonic (Psychological well-being) and hedonic conceptualizations of well-being (Emotional well-being and life satisfaction). As suggested by Deci and Ryan (2008), hedonic happiness is the natural result of a eudaimonic well-being and they therefore share a considerable amount of variance.

Additionally, the OWBS, as a eudaimonic conception of well-being, was expected to be related with intrinsic motivation (Deci and Ryan 2008; Ryan and Deci 2001). It is well-known that emotions as well as goals are related to motivation (Lazarus 1994). Temporal focus also provides a meaningful framework for defining motivation (Karniol and Ross 1996). In this respect, like all other projects, life projects reflect individuals' preferences or aspirations. Thus, OWB was anticipated to be more associated with intrinsic than extrinsic motivation.

Given that conscientiousness is associated with motivation (Colquitt and Simmering 1998), the close relation between OWB and motivation is also the reason for an expected association between life projects and the personality dimension of conscientiousness. Extraversion and neuroticism, on the other hand, have been found to be the most important determinants of happiness (Clark et al. 1994) and thus were foreseen to be also related with OWB. The association of openness to experience with OWB is very clear, since it refers to an individual propensity to undergo a variety of different experiences in one's life. It was expected, thus, to contribute to OWB because of its close relation to personal growth stories (McCrae and Costa 2003). Finally, we expect only a weak relationship, or the complete absence of relationship between agreeableness and the scores of OWB, since there is no theoretical basis for it making any contribution to the life project.

In the fourth study, we also aimed to expand the findings of Şimşek (2011) by showing that a measure of affective experience could be differentiated from the personality when it incorporates intentionality. There are considerable instances of findings indicating that the personality factors of extraversion (E) and neuroticism (N) overlap with PA and NA, respectively (McCrae and Costa 1991; Meyer and Shack 1989; Scmutte and Ryff 1997; Watson et al. 1992). Such an overlap resulted in extreme correlations between the constructs, sometimes exceeding .90 (Finch 1998). As a result of this confusion, researchers (Clark et al. 1994) have used the concepts of PA and E, and NA and N interchangeably, as if they were identical. Şimşek (2011) developed a measure of SWB which focuses only emotional well-being without a reference to time perspective or OWB and showed that when intentionality was incorporated into the measurement of affect, the problem of overlap between SWB and personality could be eliminated. The conceptual formulation represented here is expected additionally to alleviate the problem of overlap with personality, since this makes the referent or content in these evaluations clear and differentiable from that of personality.

Finally, in the fifth study, we expected this new construct to reveal additional knowledge about eudaimonic well-being above and beyond current measures of SWB, since it

captures narrative aspects not considered in the current measures. We also intended to show in this study that the current measures of SWB would fall short to account for the additional variance in eudaimonic well-being indicators, such as personal growth and life purpose, when the narrative aspects of well-being, measured by the OWBS, were being controlled statistically. We should also note that all analyses were conducted using LISREL 8.80 (Jöreskog and Sörbom 2001).

2 Study 1 Factor Structure, Initial Reliability and Validity

2.1 Study 1A: Development of Item Pool and Instruction

Since the present research aimed to define a suitable factor structure within a time perspective, rather than providing a complex list of emotions as a general way of measuring happiness we endeavored to determine the most relevant affect adjectives for three time dimensions. We also chose not to create sentences or narratives, because the best way of capturing one's OWB within the IP is thought to be through the assessment of 'affective reactions' to one's life project. We avoided imposing a purely theoretical framework on one's evaluation in view of our purpose of achieving more subjective operational definition of the OWB. Thus we did not focus on the ingredients of the life projects. When measured this way, affective reactions are 'about one's life project', and in themselves provide much information about the good life, as perceived by the individual. Moreover, such a conceptualization would be a more parsimonious approach to measuring OWB since it includes both cognitive and affective evaluations, as explained before.

We carefully examined the list of emotions used in the Levels of Emotional Awareness Scale (LEAS—Lane et al. 1990), which includes a list of emotion words and is, to the best of our knowledge, the most comprehensive list of emotions. Inclusion of the affect adjectives was accomplished according to the operational definition of OWB and the themes for the time dimensions defined above. Following this examination, we chose affect adjectives for the three dimensions. We chose ten adjectives for the past dimension related to the of theme 'regret' (proud, disappointed, satisfied, regretful, upset, guilty, incompetent, lucky, successful, gladness), twelve for the present time perspective (tired, under pressure, enthusiastic, aimless, lost, motivated, energetic, excited, irresponsible, empty, anxious, helpless) on the theme 'pursuing a project', and finally, twelve for the future dimension on the theme of 'hopefulness' (pessimistic, hopeful, strong, doubtful, scared, tense, confident, courageous, looking forward, determined, uneasy, ambitious).

It is worth noting here that we were very cautious about the orthogonality of PA and NA, since research has always shown that these factors are bidimensional (Watson et al. 1988). We were careful to select both positive and negative affect adjectives which referred specifically to the themes for each time dimension. We expected that such an approach would promote the achievement of the most parsimonious factor structure, and that both negative and positive items would constitute only one factor for each time dimension. Accordingly, a three-factor measurement model, rather than a six-dimensional one was expected.

The initial item pool was administered to small groups of university students. We held discussions on the instruction and the suitableness of the items used in the scale with these groups. As a result we made a number of changes concerning instruction, and eliminated some adjectives with strong emotional content such as 'mournful' and 'disgusted'.

The instruction of the scale was developed to promote individual reflection on life as a personal project, and then rated the intensity of the emotions provided. It should be noted that although frequency has been accepted most effective in the assessment of SWB (Diener et al. 1991), intensity has been found to be closely related to autobiographical memory (Talarico et al. 2004). In this regard, the following statement was included into the instruction section: "Please consider your own life as a personal project with its past, present, and future parts. Like all projects, your life includes completed (the past), ongoing (the present), and prospected (the future) parts. It is important that you rate the intensity of the emotions you feel when you look at these parts of your project". The three time dimensions and corresponding adjectives were distinguished by the introductory phrase "When I look at the completed (ongoing, future) part of my life project, I feel…".

2.1.1 Method

2.1.1.1 Participants and Procedure Participants were 232 individuals (120 male, 112 female), ranging in age from 17 to 41 years, with a mean age of 24. There were two groups of participants, university students, and primary/secondary school teachers. An identical procedure was carried out with both groups. After an initial meeting to obtain consent, each participant was given an answer sheet. The instructions, emphasizing the importance of completing the forms, were read aloud. The approximate administration time for both groups was ten minutes.

2.1.2 Results

2.1.2.1 Exploratory Factor Analysis The data and sample size were adequate for factor analysis according to Bartlett's test of sphericity, χ^2 (561, $N = 232$) = 5,504.635, $p < .001$, and the Kaiser–Meyer–Olkin measure of sampling adequacy (.848). An initial principal-axis factor analysis with Oblique rotation method (Direct Oblimin; Delta = 0) was performed on the data. This analysis revealed 7 factors having eigenvalues from 11.27 to 1.04. The scree-plot, however, indicated that a four-factor solution with interpretable item content was the most suitable. Moreover, parallel analysis (Horn 1965) supported a four-factor solution. A parallel analysis generates random datasets on the basis of the same sample size and number of scale items used in the actual study. Factors with smaller eigenvalues in the actual data than those evident in the simulated data should not be extracted (Reise et al. 2000). Only the first four factors' eigenvalues exceeded those produced by the parallel analysis. Items with single-factor loadings less than .50 and variables with cross-loadings greater than .10 were eliminated. Ten of the original 34 items were eliminated on the basis of the above criteria. The factor loadings of the items are represented in Table 1.

An examination of the results indicated that the first and last factors represent the present evaluation of life project, while the other two are indicators of the future and the past. The first factor, 'Nothingness', comprised of 6 affect adjectives and explained 33.54 % of the variance. This factor was composed of only negative items, such as *aimless*, *lost*, *empty*, and *anxious*. The second factor, 'hope', consisted of six adjectives and explained 13.39 % of the variance. This factor consisted of only positive adjectives, such as *forward-looking*, *confident*, *ambitious*, and *hopeful*. The third factor, 'regret', was composed of 7 emotion adjectives concerning the past and explained an additional 7.95 % of the variance. This dimension consisted of both negative adjectives, such as *regretful*, *guilty*, and *disappointed*, and positive, such as *proud* and *satisfied*. The last factor,

Table 1 Means, standard deviations and factor loadings of the items of OWBS

Items	*X*	SD	Nothingness	Hope	Regret	Activation
Aimless	2.62	1.25	**.73**			
Lost	3.18	1.21	**.72**			
Irresponsible	2.85	1.38	**.71**			
Empty	2.72	1.08	**.68**			
Helpless	2.98	1.09	**.68**		.22	
Anxious	3.32	1.15	**.55**	.20		
Courageous	3.08	1.24		**.75**		
Strong	3.44	1.21		**.73**		
Forward-looking	3.15	1.32	.31	**.69**		
Hopeful	3.52	1.20		**.69**	.21	
Confident	2.97	1.16		**.69**		
Ambitious			.20	**.58**		
Regretful	2.80	1.63			**.86**	
Satisfied®	2.84	1.04	.34		**.77**	
Guilty	3.18	1.60	.21		**.75**	
Proud®	3.07	1.18			**.67**	
Upset	2.97	1.23			**.63**	
Incompetent	2.70	1.83	.23		**.61**	
Disappointed	2.93	1.34	.20		**.58**	
Energetic	3.08	1.25				**.85**
Excited	2.95	1.12				**.79**
Enthusiastic	3.41	1.19		.23		**.77**
Tired®	2.95	1.35	.21			**.60**
Motivated	2.72	1.09				**.56**

$N = 232$; principal axis factor analysis with Direct Oblimin method was used in the analyses; the OWBS item ratings range from 1 to 5. Likert scale anchors ranged from 1 = *very slightly or not at all* to 5 = *extremely*. Factor loadings less than .20 are not represented; ® = reverse scored items

'activation', consisted of 5 adjectives and explained 7.31 % additional variance. All adjectives were positive in this factor except for *tired*. These four factors explained 62 % of the total variance. Internal consistencies of these factors were quite strong, ranging from $\alpha = .82$ to $\alpha = .87$. Internal consistency for the total scale was found to be satisfactory ($\alpha = .74$).

Moreover, we reviewed the intercorrelations of the items in the final form of the OWBS to identify any pairs of highly correlated items. The results suggested that there is no redundancy between the pairs of items in any sub-dimension. The correlations among the items ranged from $r = .30$ to $r = .55$ for 'regret', from $r = .31$ to $r = .57$ for 'activation', from $r = .33$ to $r = .62$ for *nothingness* and from $r = .45$ to $r = .60$ for 'hope'.

The intercorrelations among the factors suggested that the relationships between 'hope' and 'activation' ($r = .57$) and 'regret' and *nothingness* ($r = .55$) are moderate whereas those of *nothingness* with 'hope' ($r = .38$) and 'activation' ($r = .31$) are weak. Finally, 'regret' is uncorrelated with both 'hope' ($r = -.02$) and 'activation' ($r = .01$).

Corrected item-total correlations ranged from .49 to .70 for *nothingness*, from .32 to .78 for 'activation', from .56 to .79 for 'regret', and from .55 to .73 for 'hope'.

2.2 Study 1B: The Suitableness of the OWBS in the Evaluation of Life Projects

2.2.1 Method

This part of study aimed to determine the existence of life projects as concepts in the mind and the suitability of adjectives in the OWBS for the evaluation of life.

2.2.1.1 Participants and Procedure One hundred and two university students were included in this study. The instrumentation was completed in group meetings of 35 individuals. The first stage consisted of a single statement which asked the participants to rate on a scale of 1 (disagree strongly) to 10 (agree strongly) their inclinations to consider their life as a project with past, present, and future parts. The statement is given in full below.

"Some researchers argue that most individuals have some sort of personal projects or life goals which could be subsumed under a term 'life project'. These personal life projects are assumed to consist of the past, present, and future parts. Accordingly, they state that everyone has a personal life project and evaluate it in these time dimensions. As far as you are concerned, please indicate your agreement with this argument using the scale below".

In the second stage, all participants were asked to write about their thoughts, especially about their feelings, when reflecting on the past, present, and future parts of their life projects. One hour was allowed to complete the writing. Assurances of confidentiality were given to encourage a more open and deeper level of self-reflection.

After the writing, in the third stage, participants completed the OWBS. Finally, the participants were asked to assess the suitableness of the affect adjectives in the OWBS for evaluating the past, present, and future parts of their projects which were the subject of reflection in the previous stage. Ratings were again indicated on a scale from 1 (sufficient at all) to 10 (not sufficient at all).

2.2.2 Results

In the first stage, most participants rated the question above 7 ($M = 7.34$; SD = 1.07), providing support, though not strong, for the idea that individuals have an inclination to acknowledge life as a personal project in general. The scores concerning the suitableness of the adjectives for evaluating the past ($M = 7.16$; SD = 1.83), present ($M = 7.52$; SD = 1.28), and future parts (7.96; 1.81) showed a high-level of approval for the adjectives used in each dimension of the OWBS.

Following this, we factor analyzed the scores on the items of the OWBS, using principal-axis method with oblique rotation method (Direct Oblimin; Delta = 0). The Bartlett's test of sphericity, χ^2 (276, $N = 102$) = 1,799.31, $p < .001$, and the Kaiser–Meyer–Olkin measure of sampling adequacy (.821) values indicated that the data could be factor analyzed. The analysis resulted in 6 factors, explaining 76 % of the variance. The results of the parallel test, consistent with the scree-test, suggested a four-factor solution, which accounted for 66.97 % of the total variance. An examination of the items in these factors showed that all items except two loaded on their respective factors, items.

3 Study 2 Cross-Validation of Factor Structure

3.1 Method

Exploratory and confirmatory factor analyses were repeated on the data from a larger, more representative sample to investigate the stability of the four-factor solution obtained in Study 1. Confirmatory factor analyses were implemented using LISREL 8.80 (Jöreskog and Sörbom 2001). In these analyses, the four-factor model obtained in Study 1 was tested against, first, a three-factor model in which the two factors of the present time were collapsed into a single factor, second, a one-factor model in which all of the items were collapsed into a single factor, and third, a higher-order model in which these four factors were considered as first-order factors of a second-order construct (Fig. 1). It was hypothesized that this new data would fit the four-factor model better than the other models.

3.1.1 Participants and Procedure

The sample consisted of 549 individuals (286 female and 245 male), consisting of elementary and secondary school teachers, university staff, residents of three nursing homes, and university students. An interview was held with both the teacher and university staff groups to explain the research planned and to obtain their consent. The university students in nominated classes were provided with an explanatory research statement and their consent was sought. The scale was collectively administrated during the interviews. The voluntary nature of the participation was clearly stated prior to distributing the scale. Eighteen participants did not indicate their gender. Ages of the participants ranged from 15 to 86 years, with a mean of age 33.23.

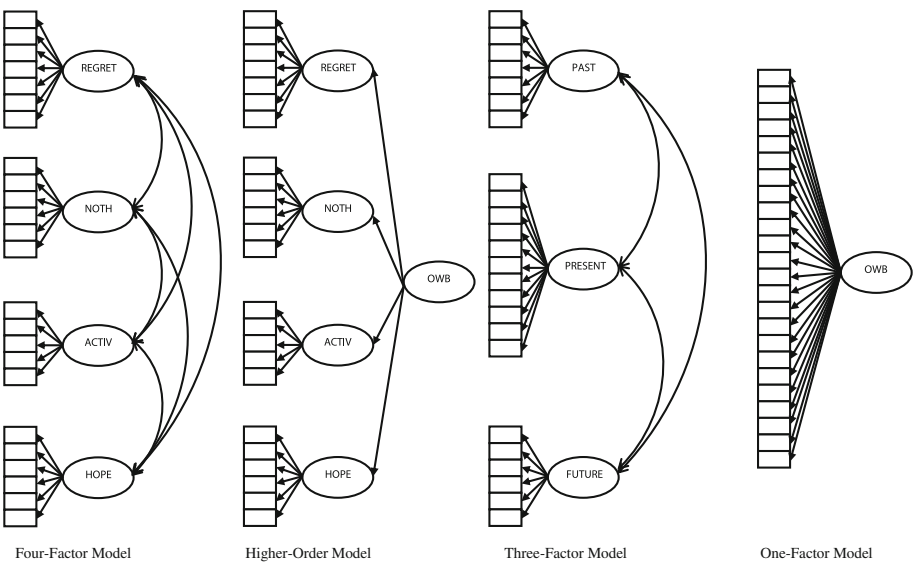

Fig. 1 Measurement models tested in Study 2. *Notes*: *NOTH* nothingness, *ACTIV* activation; item content is not represented

3.2 Results

3.2.1 Exploratory Factor Analysis

The results of the exploratory factor analysis strongly supported the four-factor model revealed in Study 1. A principal-axis factor analysis with oblique rotation method (Direct Oblimin; Delta = 0) yielded four factors with the items under consideration. These four factors explained 52 % of the total variance. Internal consistency coefficients for these factors were again strong, ranging from $\alpha = .78$ to $\alpha = .90$. Cronbach's alpha coefficient was found to be high ($\alpha = .91$) for the whole scale.

These high reliability estimates were reflected in corrected item-total correlations, ranging from .42 to .62 for 'regret', from .64 to .78 for 'hope', from .49 to .75 for *nothingness*, and from .46 to .70 for 'activation'. Corrected item-total correlations were found to be within a range of .34 and .63 for the whole scale.

3.2.2 Confirmatory Factor Analyses

The Maximum Likelihood estimation method assumes, according to Flora and Curran (2004), that a continuous, normal latent process determines each observed variable. The use of Weighted Least Squares (Jöreskog and Sörbom 2001) or Robust Weighted Least Squares (Flora and Curran 2004; Jöreskog and Sörbom 2001) produces more reliable estimates for model evaluation when ordinal variables are used in confirmatory factor analysis. Consequently, confirmatory factor analyses were performed on the asymptotic covariance matrix produced from the polychoric correlations of the items with the Robust Weighted Least Squares estimation method because this produces better results when compared to other estimation methods (Flora and Curran 2004).

In evaluating the models, several goodness of fit statistics were taken into consideration. As noted extensively in the literature, Chi-square statistics tend to be affected by large sample sizes and are almost always significant despite reasonable fit to the data (Bentler and Bonett 1980; Byrne 1998). Therefore, as suggested by Byrne (1998), several alternative indexes of fit as adjuncts to the Chi-square statistic were used, including the Chi-square to degrees of freedom ratio (χ^2/df), the comparative fit index (CFI), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), and root-mean-square error of approximation (RMSEA).

Since a competing models strategy was used, some other indices of fit were also taken into account, such as Akaike's information criterion (AIC; Akaike 1987), and expected cross-validation index (ECVI; Browne and Cudeck 1993). Lower values for these statistics indicate a better model fit (Maruyama 1998).

The results obtained by the use of CFA procedures are represented in Table 2. As can be seen from Table 2, the best goodness of fit statistics were produced for the four-factor model with no error covariance between any pair of items. Since these models are nested, Chi-square difference tests were computed to confirm the eligibility of this model in preference to the others. Indeed, the results of the Chi-square difference test indicated that this model is better than the three-factor model (68.59, 3: $p < .001$), the one-factor model (247.60, 6: $p < .001$), and the higher-order model (26.07, 2: $p < .001$). Smaller values of AIC, and ECVI for the four-factor model also confirmed that this model was better than the other models.

Correlations of the four factors and of the total score with age were computed. The results showed that scores on factors of the OWBS were weakly correlated with age, except

Table 2 The results of confirmatory factor analyses on the OWBS

Indices	Four-factor model	Three-factor model	One-factor model	Higher-order model
χ^2	941.05	1,009.64	1,188.65	967.12
df	246	249	252	248
CFI	.99	.99	.98	.99
GFI	.99	.98	.98	.99
AGFI	.98	.98	.98	.98
RMSEA	.069 (90 % CI = .064–.074)	.072 (90 % CI = .067–.076)	.079 (90 % CI = .075–.084)	.070 (90 % CI = .065–.075)
AIC	1,049.05	1,111.64	1,284.66	1,071.12
ECVI	1.77	1.87	2.17	1.81

$N = 549$; *GFI* goodness-of-fit index, *AGFI* adjusted goodness-of-fit index, *RMSEA* root-mean-square error of approximation, *CFI* comparative fit index, *CI* confidence interval

for 'activation'; $r = .10$ for 'regret' ($p < .05$), $r = .22$ for nothingness ($p < .01$), $r = -.12$ for 'hope' ($p < .01$), $r = .018$ for 'activation' ($p > .05$), and $r = .063$ for the total OWBS scores ($p > .05$).

Finally, a *t* test was conducted on the scores of the OWBS to determine whether there was a mean difference between male and female participants. The results showed that 'activation' ($M = 15.03$; SD = 4.32) scores of males are higher than those of females ($M = 14.14$; SD = 4.31) as indicated by the *t* value of 2.36 ($p < .05$). On the other hand, 'hope' scores ($M = 12.12$; SD = 5.66) of males was found to be lower than those of females ($M = 20.09$; SD = 5.84) with the *t* value of 2.04 ($p < .05$).

4 Study 3 Re-test Reliability

4.1 Participants and Procedure

The sample was composed of 57 university students (mean age = 22.56; 31 female, 26 male) randomly selected from the sample of Study 2. All took part on a voluntary basis. Test–retest reliability was conducted over a 2-week interval. A meeting was held with the students for the retest procedure in which the scale was administrated collectively.

4.2 Results

Test–retest reliability was conducted using the Pearson product–moment correlation coefficient to examine the relations among the subscales. The results revealed that test–retest reliability was .75 for the scale, .92 for 'regret', .72 for 'activation', .70 for *nothingness*, and .89 for 'hope'.

5 Study 4 Convergent, Discriminant and Initial Incremental Validity

The aim of this study was to obtain evidence regarding the construct validity of the OWBS by investigating its association with a number of scale scores related to trait personality, well-being, and motivation. It was expected that the OWBS scores would correlate

positively with positive dimensions of current SWB such as PA, and life satisfaction, in addition to psychological well-being, intrinsic motivation, and such positive dimensions of trait personality as extraversion, and conscientiousness. Additionally, the OWBS scores were expected to be negatively correlated with NA, extrinsic motivation, and N.

Two additional principal components analyses with Varimax rotation, as suggested by Meyer and Shack (1989), were conducted on the item scores of personality dimensions of N and E with those of the PANAS, and those of the OWBS, in two separate analyses. The main concern on these analyses was to show that the items of the OWBS would not overlap with E and N items, unlike those of PA and NA, as found in the earlier research (Meyer and Shack 1989). Thus we expected that the items of OWBS would not overlap with personality items since they are intentional.

5.1 Participants and Procedure

Two different samples composed of university students were used in this study. The students in one group (mean age = 19.41, SD = .76; 45 male, 54 female) completed the Positive and Negative Affect Scale, Life Satisfaction Scale, and the Big Five Inventory in addition to the OWBS. The students in second group (mean age = 20.40, SD = 1.66; 47 male, 54 female) answered the Psychological Well-Being Scale and the Aspirations Index. The students in each group were provided with an explanation of the research planned, and their consent was obtained. All students took part on a voluntary basis. The instruments were completed in a quiet room during a class hour. The order of presentation of the instruments was established at random for each group of students. Each administration lasted between 35 and 45 min.

5.2 Instruments

5.2.1 The Positive and Negative Affect Schedule: PANAS

Positive and Negative Affect Schedule was developed by Watson et al. (1988) as a short measure of the affective evaluation of life. A general time frame was used in the present research. Internal consistency was .88 and .87 for PA and NA, respectively. The adaptation of the scale to Turkish was carried out by Gençöz (2000). Consistent with the original study, the result of the factor analysis revealed two factors accounting for 44 % of the total variance. Internal consistency for PANAS was .83 in the original study, whereas it was .77 for NA and for .81 PA in the present study.

5.2.2 The Satisfaction with Life Scale: SWLS

Life satisfaction was measured using Diener et al.'s (1985) SWLS to identify the individual differences concerning the cognitive evaluation of one's life. The scale is designed to enable individuals to evaluate their lives according to their own subjective criteria. The internal consistency of the scale was .87. Durak et al. (2008) translated the scale into Turkish and reported satisfactory internal consistencies (α = .86, .82). Cronbach's Alpha was. 80 in this study.

5.2.3 The Big-Five Inventory (BFI)

The 44-item BFI (Benet-Martinez and John 1998) was administered to assess five personality dimensions—Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. Ratings are indicated on a scale from 1 (disagree strongly) to 5 (agree strongly) for each item. The scale was adapted by Sumer et al. (2005) who reported only Cronbach's alpha reliabilities ranging from .64 to .77. The coefficients of alpha were .75, .82, .67, .51, and .80 respectively in the data set used in this study.

5.2.4 The Psychological Well-Being Scale

The Psychological Well-Being Scale was developed by Ryff (1989). The scale consists of six dimensions: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. The scale was adapted to Turkish by Cenkseven (2004), with good internal consistencies ranging from .74 to .83. All coefficients in this study were over .60 (ranging from .62 to .77) with the exception of the personal growth dimension, which was .46.

5.2.5 The Aspirations Index

The Aspirations Index was developed to assess the 7 categories of aspirations, with five specific items within each category. The seven categories are: the extrinsic aspirations of wealth, fame, and image; the intrinsic aspirations of meaningful relationships, personal growth, and community contributions, and the aspiration of good health; the latter turned out to be neither clearly extrinsic nor intrinsic. In this study, wealth, image, meaningful relationships and personal growth dimensions were used. Participants rated: (1) the importance of each aspiration to themselves, (2) their beliefs about the likelihood of attaining each, and (3) the degree to which they had already attained each (Kasser and Ryan 1996). The internal consistency coefficients of alpha, .84 for wealth, .82 for image, .79 for personal growth, and .86 for relationships, were found in the present study.

5.3 Results

Intercorrelations of the OWBS scores with scores on the measures of well-being, trait personality, and motivation are presented in Tables 3 and 4. It is clear from Table 3 that the total OWBS scores and the four dimensions have relatively strong correlations with the current dimensions of SWB, namely PA, NA, and life satisfaction. Two factors, 'regret' and *nothingness*, were more strongly correlated with NA, while 'activation' was correlated with PA, and 'hope' was correlated with life satisfaction.

As can be seen from Table 4, all associations of the OWBS with psychological well-being are statistically significant except for the relation of 'hope' to positive relations with others. Autonomy has the strongest correlations with 'activation' and 'hope'. An expected result was the strongest correlations of personal growth and purpose in life to *nothingness*. Environmental mastery and self-acceptance have strong correlations with most of the dimensions of the OWBS. Finally, the positive relations with others factor has relatively weak correlations with all dimensions of the OWBS.

The OWBS has relatively strong correlations with all trait personality scores except for agreeableness (Table 3). Neuroticism has the strongest correlation with *nothingness*, whereas extraversion, as expected, correlated with 'activation'. The openness to experience

Table 3 Intercorrelations among OWB, SWB, and the Big-Five personality dimensions

	1	2	3	4	5	6	7	8	9	10	11	12
1. The OWBS	–											
2. Regret	−.80**	–										
3. Nothingness	−.73**	.60**	–									
4. Activation	.73**	−.38**	−.39**	–								
5. Hope	.77**	−.45**	−.29**	.51**	–							
6. Positive affect	.57**	−.30**	−.26**	.59**	.55**	–						
7. Negative affect	−.55**	.45**	.58**	−.47**	−.21*	−.31**	–					
8. Life satisfaction	.55**	−.39**	−.29**	.39**	.56**	.33**	−.26**	–				
9. Neuroticism	−.36**	.31**	.42**	−.28**	−.13	−.24*	.63**	−.15	–			
10. Extraversion	.43**	−.19	−.24*	.50**	.37**	.57**	−.28**	.18	−.08	–		
11. Openness	.45**	−.22*	−.14	.45**	.52**	.54**	−.33**	.30**	−.23*	.42**	–	
12. Agreeableness	.01	−.07	−.07	.15	.02	.18	−.22*	.08	−.22*	.14	.21*	–
13. Conscientiousness	.41**	−.29**	−.32**	.22*	.40**	.41**	−.27**	.15	−.27**	.11	.23*	.20*

$N = 99$, * $p < .05$; ** $p < .01$

Table 4 Intercorrelations among OWB, psychological well-being, and aspirations

	1	2	3	4	5	6	7	8	9	10
1. Owb	–									
2. Regret	−.74**	–								
3. Nothingness	−.77**	.44**	–							
4. Activation	.80**	−.50**	−.51**	–						
5. Hope	.83**	−.43**	−.51**	.58**	–					
6. Autonomy	.40**	−.28**	−.23*	.37**	.38**	–				
7. Env. Mas.	.61**	−.49**	−.43**	.52**	.49**	.49**	–			
8. Personal Growth	.42**	−.27**	−.43**	.35**	.28**	.25*	.47**	–		
9. Pos. Rel.	.32**	−.25*	−.32**	.26**	.19	.38**	.49**	.35**	–	
10. Purpose in life	.59**	−.37**	−.59**	.58**	.52**	.36**	.59**	.57**	.47**	–
11. Self-acceptance	.67**	−.66**	−.40**	.50**	.55**	.54	.69**	.36**	.52**	.54**
12. Wealth (imp.)	−.13	−.03	.19	−.13	−.07	−.28**	−.18	−.25**	−.30**	−.33**
13. Wealth (lik.)	.27**	−.18	−.16	.13	.33**	.06	.17	.01	−.02	.12
14. Wealth (att.)	.07	.12	.01	−.18	.05	.02	−.03	−.13	−.03	−.02
15. Image (imp.)	.19	.13	.28**	−.04	−.11	−.36**	−.20*	−.29**	−.26**	−.34**
16. Image (lik.)	.09	−.06	.07	.07	.19	.01	.12	.04	−.07	−.04
17. Image (att.)	.10	−.08	−.01	.03	.18	.16	.08	.01	.02	.04
18. Growth (imp.)	.19	−.09	−.11	.19	.19	.16	.39**	.32**	.36**	.42**
19. Growth (lik.)	.44**	−.32**	−.37**	.28**	.40**	.32**	.53**	.43**	.36**	.54**
20. Growth (att.)	.23*	−.14	−.25*	.04	.25*	.23*	.30**	.14	.17	.32**
21. Relationships (imp.)	.01	−.05	−.01	.04	−.03	−.04	.15	.13	.30**	.12
22. Relationships (lik.)	.36**	−.31**	−.29**	.30**	.25*	.24*	.51**	.30**	.43**	.36**
23. Relationships (att.)	.19	−.22*	−.15	.09	.13	.19	.32**	.08	.43**	.25**

Table 4 continued

	11	12	13	14	15	16	17	18	19	20	21	22
1. Owb												
2. Regret												
3. Nothingness												
4. Activation												
5. Hope												
6. Autonomy												
7. Env. Mas.												
8. Personal Growth												
9. Pos. Rel.												
10. Purpose in life												
11. Self-acceptance	–											
12. Wealth (imp.)	.21*	–										
13. Wealth (lik.)	.18	.36**	–									
14. Wealth (att.)	.01	.13	.46**	–								
15. Image (imp.)	−.23*	.68**	.22*	.20*	–							
16. Image (lik.)	.13	.41**	.68**	.46**	.54**	–						
17. Image (att.)	.22*	.18	.35**	.62**	.29**	−.59**	–					
18. Growth (imp.)	.34**	−.03	.21*	−.12	−.04	.12	−.05	–				
19. Growth (lik.)	.52**	−.14	.27**	.00	−.16	.18	.13	.54**	–			
20. Growth (att.)	.35**	−.13	.13	.44**	−.13	.06	.48**	.12	.42**	–		
21. Relationships (imp.)	.18	.11	.16	.03	.17	.19	.06	.62**	.37**	.18	–	
22. Relationships (lik.)	.50**	−.01	.29**	.05	.00	.28**	.14	.45**	.63**	.34**	.57**	–
23. Relationships (att.)	.39**	−.11	.08	.35**	.03	.12	.39**	.18	.35**	.59**	.43**	.62**

$N = 101$; *Env. Mas.* environmental mastery, *pos. rel.* positive relations with others, *imp.* importance, *lik.* likelihood, *att.* attainment; * $p < .05$; ** $p < .01$

dimension of personality has moderate correlations with 'activation' and 'hope'. Finally, conscientiousness has moderate relationships with all dimensions, the strongest of which is with 'hope'.

Although the correlations of the OWBS with aspirations are somewhat weak (Table 4), they occur in expected ways. The two sources of extrinsic motivation are found to be uncorrelated with most of the OWBS dimensions. Only two out of 24 correlations are significant: the importance of image has a negative correlation with *nothingness* and the likelihood of wealth a positive correlation with 'hope'. When it comes to intrinsic sources of motivation, the likelihood of the attainment of these goals has weak or moderate correlations with all dimensions of the OWBS.

Since one of the basic problems with the current SWB measures is their overlap with personality dimensions of E and N, as indicated above, two additional factor analyses were conducted on the item scores of the PANAS, the BFI, and the OWBS. In the first analysis, the items of E, N, and PANAS were extracted by a principal components analysis. Firstly, the plotted eigenvalues were assessed (Table 5). When plotted, an elbow formed at the fourth factor, which shows that a three-factor solution was the most appropriate, which was also supported by a parallel analysis. These three factors accounted for 41.70 % of the variance in the data. The result in this solution was that none of the factors consisted of only affect or personality items.

The items of the OWBS were then extracted along with those of E and N in a principal components analysis. Both parallel analysis results and the scree-plot clearly indicated that a six-factor solution is the most plausible, accounting for 57.84 % of the total variance. These factors consisted of the respective items of the four dimensions of OWBS, and N and E. The only exception was one item of N loaded on the 'regret' factor.

Finally, a hierarchical regression analysis was conducted on the data to see whether the factors of the OWBS accounted for additional variance in life satisfaction above and beyond the scores on the BFI and the PANAS. Thus, the OWBS factor scores were entered into the third block of a hierarchical regression model in which the scores on the factors of BFI composed the second block, and PA and NA scores the first block. No multicollinearity problem was detected because all tolerance values were greater than .10 (ranging from .39 to .91) and all VIF values were less than 10 (ranging from 1.10 to 2.50).

Table 5 Factors and their corresponding eigenvalues from the unrotated principal components analyses of the PANAS, the OWBS and the BFI items

Factor	Solution	
	PANAS & E & N	OWBS & E & N
1	7.708	9.013
2	4.742	5.044
3	2.561	2.788
4	1.865	2.405
5	1.634	2.093
6	1.509	1.790
7	1.318	1.462
8	1.241	1.262
9	1.168	1.169
10	1.008	1.075
11		1.047

$N = 99$; principal components analysis method was used

Table 6 Hierarchical multiple regressions: the OWBS, the PANAS, and the BFI as predictors of life satisfaction

Criteria/predictors Entered by step	$\beta 1$	$\beta 2$	$\beta 3$	R	R^2	Adj. R^2	ΔR^2
Life satisfaction							
Step 1				.320	.103	.057	
Extraversion	.067	.071	−.142				
Agreeableness	.004	−.009	.115				
Conscientiousness	.070	.012	−.174				
Neuroticism	−.071	.053	.043				
Openness	.223*	.144	−.029				
Step 2				.388	.151	.089	.048
PA		.247	.065				
NA		−.195	−.083				
Step 3				.617	.380	.306	.230**
Regret			−.119				
Nothingness			−.085				
Activation			.087				
Hope			.521**				

Notes: $N = 99$; * $p < .05$; ** $p < .01$

The results of this analysis given in Table 6 show that the scores on the factors of OWBS accounted for considerable unique variance in life satisfaction scores beyond and above personality and general mood. Among the four factors, only 'hope' added to the variance explained in the criteria.

6 Study 5 Further Validation of the OWBS

The aim of this study was to determine the amount of variance explained in some mental health indicators by the OWBS scale scores when the scores from current SWB measures were controlled for. Both positive and negative mental health indicators were used as criteria to show that the OWBS scores contributed to the explained variance in a broad range of mental health indicators beyond that already captured by the current measures of SWB. Additional regression analyses were conducted to examine the reverse situation, whether the current measures of SWB, i.e., the PANAS and the SWLS, predict mental health indicators beyond what is explained by the scores on the OWBS.

6.1 Method

6.1.1 Participants and Procedure

This study consisted of 195 participants(59 employees from the operations center of a major banking corporation, 42 lawyers in a major law department, and 94 university students) ranging in age from 17 to 37 years (mean age = 21.28, SD = 2.49; 100 male, 95 female). The bank employees and lawyers completed a packet of five instruments in a web environment where anonymity was guaranteed. An interview was held with university

students to describe the aims of the planned research and the proposed assessment instruments, and to obtain their collaboration and consent, which they were free to refuse. Subsequently, a meeting was held to explain the instruments and administrations. Research assistants were present throughout to offer help when necessary, and to verify that respondents completed the instruments independently. The administration took between 30 and 35 min.

6.1.2 Instruments

6.1.2.1 The Rosenberg Self-Esteem Scale: RSS Rosenberg Self-Esteem Scale is a ten item self-report scale developed by Rosenberg (1965) for the purpose of measuring global self-esteem. The Turkish adaptation of RSS by Cuhadaroglu (1986) revealed strong reliability and validity properties.

6.1.2.2 The Brief Symptom Inventory: BSI Brief Symptom Inventory is used in order to measure participants' mental health in negative terms. The scale was developed by Derogatis (1992) as a shortened version of the SCL-90-R and was adapted to Turkish by Şahin and Durak (1994). The adapted version of BSI revealed 5 sub-scales as a result of an exploratory factor analysis: Anxiety, Depression, Negative Self, Somatization, and Hostility. Only anxiety, depression, and negative self dimensions were used in the present study.

Study 4 gives descriptions of the other instruments used in this study, The Psychological Well-Being Scale, The Satisfaction with Life Scale, and The Positive and Negative Affect Schedule.

6.2 Results

The aim was to assess whether the OWBS accounted for unique variance in the positive and negative mental health indicators, measured by the Psychological Well-Being Scale, Brief Symptom Inventory, and self-esteem beyond that already captured by the current measures of SWB. Therefore, the OWBS factor scores were entered into the third block of a hierarchical regression model in which PA and NA scores composed the first block and life satisfaction scores the second.

This regression model was tested, with results depicted in Table 7. The unique variance contributed by the OWBS was significant in these analyses for all criterion variables. It is clear from Table 6 that, after controlling for PA, NA, and life satisfaction, the factors of OWBS contributed to the variance of all the dependent variables over 10 %, except for depression ($\Delta R^2 = 0.80$ %). The greatest increment in the additional variance explained by the OWBS was in purpose in life ($\Delta R^2 = 24$ %).

It can be seen from the results that only the factor *nothingness* added to the variance already captured by the current measures of SWB in the negative mental health indicators, while all other factors of the OWBS added to the variance in positive mental health indicators differentially.

Additional regression analyses were conducted to see whether the scores on the PANAS and the SWLS would predict mental health indicators beyond what is explained by the scores on the OWBS. We conducted a series of regression analyses in which the scores on the SWLS were entered into the third block of a hierarchical regression model, PA and NA scores composed the second block, and the OWBS scores, the first. The unique variance

Table 7 Hierarchical multiple regressions: SWB and OWB as predictors of positive and negative mental health indicators

Criterion/predictors Entered by step	$\beta 1$	$\beta 2$	$\beta 3$	R	R^2	Adj. R^2	ΔR^2
Autonomy							
Step 1				.436	.190	.182	.190***
PA	.389***	.405***	.244**				
NA	−.132	−.156*	−.066				
Step 2				.439	.193	.180	.003
LS		−.063	−.216**				
Step 3				.546	.299	.272	**.105****
Nothingness			−.111				
Hope			.191*				
Activation			.217*				
Regret			−.034				
Environmental mastery							
Step 1				.565	.320	.313	.320***
PA	.434***	.388***	.326***				
NA	−.284***	−.214**	−.073				
Step 2				.588	.345	.335	.026**
LS		.185**	.047				
Step 3				.696	.485	.465	**.139****
Nothingness			−.263***				
Hope			−.063				
Activation			.022				
Regret			−.265***				
Personal growth							
Step 1				.276	.076	.067	.076**
PA	.214**	.212**	.191**				
NA	−.136	−.133	−.022				
Step 2				.276	.076	.062	.000
LS		.007	−.080				
Step 3				.434	.188	.158	**.112****
Nothingness		−.365***					
Hope		.031					
Activation		−.038					
Regret		−.026					
Positive relations with others							
Step 1				.373	.139	.130	.139***
PA	.146*	.166	.100				
NA	−.314***	.−267***	−.144				
Step 2				.388	.157	.137	.011
LS		.123	.028				
Step 3				.531	.282	.255	**.131****
Nothingness			−.366***				
Hope			.007				

Table 7 continued

Criterion/ predictorsEntered by step	β1	β2	β3	R	R^2	Adj. R^2	ΔR^2
Activation			−.077				
Regret			−.113				
Purpose in life							
Step 1				.431	.186	.178	.186***
PA	.262***	.219**	.140*				
NA	−.292***	−.227**	−.100				
Step 2				.457	.209	.196	.023*
LS		.174*	.036				
Step 3				.671	.450	.429	**.241****
Nothingness			−.426***				
Hope			.299***				
Activation			−.185*				
Regret			.046				
Self efficacy							
Step 1				.567	.321	.314	.321***
PA	.395***	.307***	.156				
NA	−.332***	−.197***	−.059				
Step 2				.646	.417	.408	.096***
LS		.356***	.172***				
Step 3				.752	.565	.549	**.148****
Nothingness			−.215**				
Hope			.137*				
Activation			.130*				
Regret			−.180*				
Depression							
Step 1				.560	.313	.306	.313***
PA	.008	.051	.096				
NA	.561***	.496***	.404				
Step 2				.579	.336	.325	.023*
LS		−.183	−.087				
Step 3				.645	.416	.394	**.080****
Nothingness			.296***				
Hope			−.068				
Activation			−.040				
Regret			.031				
Anxiety							
Step 1				.553	.306	.299	.306***
PA	−.042	−.009	.037				
NA	.543***	.493***	.387***				
Step 2				.565	.320	.309	.013
LS		−.133	−.035				
Step 3				.648	.420	.398	**.100****

Table 7 continued

Criterion/ predictorsEntered by step	$\beta 1$	$\beta 2$	$\beta 3$	R	R^2	Adj. R^2	ΔR^2
Nothingness			.324***				
Hope			−.068				
Activation			−.005				
Regret			.018				
Negative self							
Step 1				.525	.276	.268	.276***
PA	−.084	.066	−.060				
NA	.501***	.474***	.368***				
Step 2				.529	.280	.268	.004
LS		−.073	.007				
Step 3				.625	.391	.367	**.111****
Nothingness			.344***				
Hope			−.001				
Activation			.098				
Regret			.001				
Self esteem							
Step 1				.567	.321	.314	.321***
PA	.395***	.307***	.156**				
NA	− .332***	−.197**	−.059				
Step 2				.646	.417	.408	.096***
LS		.356***	.172**				
Step 3				.752	.565	.549	**.148****
Nothingness			−.215**				
Hope			.137*				
Activation			.130*				
Regret			−.180*				

$N = 195$; *** $p < .001$; ** $p < .01$; * $p < .05$

accounted by the PANAS in the positive mental health indicators was lower than .025 except for self-esteem ($\Delta R^2 = .032$) and environmental mastery ($\Delta R^2 = .076$). The SWLS added almost nothing to the variance in all positive mental health variables (ranging from $\Delta R^2 = .000$ to $\Delta R^2 = .018$). On the other hand, the PANAS accounted for much more variance in negative mental health indicators ($\Delta R^2 = .10$ for negative self, $\Delta R^2 = .12$ for anxiety, and $\Delta R^2 = .14$ for depression). The variance accounted for by the SWLS in these negative mental health indicators ranged from $\Delta R^2 = .000$ to $\Delta R^2 = .005$.

7 General Discussion

Using the OWB construct and its presuppositions as the theoretical basis for scale development, the OWBS was constructed and hypotheses concerning the reliability and validity of this scale were supported by the data retrieved from different studies. The

studies conducted in this research provided initial evidence that the scale warrants further study and has the potential to provide a greater understanding of the narrative elements inherent in SWB. The findings showed that the affective evaluation of one's life as a project can be represented in different dimensions. These dimensions reflect one's affective evaluations regarding life already experienced, in the process of being experienced, and yet to be experienced.

7.1 Factor Analyses and Internal Consistency

The exploratory factor analyses revealed that it is accurate to operationalize the OWB construct as four distinct components, namely "'regret'", 'nothingness', 'activation', and 'hope'. The results of Study 1B gave preliminary evidence that individuals have an inclination to acknowledge their lives as personal projects. Moreover, after reflecting on their own personal life projects, they considered the affect adjectives used in the final version of the OWBS suitable for evaluating the past, present, and future stages. The reliability coefficients demonstrated strong internal consistencies for these dimensions and sufficient internal consistency for the whole scale. The confirmatory factor analyses conducted also showed that this four-factor structure fitted the data well. It is worth mentioning here, however, that since the higher-order measurement model also fitted well to the data, a composite score of the OWBS may also be used as an indicator of well-being.

As a result of the factor analyses conducted in Study 1A, an existential dimension called 'nothingness' emerged, which refers to finding oneself in a situation where no progress is possible. This dimension reflects the acknowledgment of the present conditions of the life project on a personal scale. The other dimension regarding the evaluation of the present conditions of the project was 'activation', which consists of affect terms such as *energetic*, *excited*, and *tired*. This dimension is similar to the PA dimension of PANAS, although it contains one NA term. It refers to one's activated energy or motivation in fulfilling the life project. The other factors emerged in the factor analyses were 'regret' and 'hope', which reflect the past and future parts respectively. 'regret' refers to one's evaluation of the past life project and consists of NA terms such as *regretful* and *guilty*, and positive terms, such as *satisfied* and *proud*. The last dimension, 'hope', refers to individuals' potential to pursue their life projects and consists of only PA terms, such as *courageous*, *hopeful*, and *ambitious*.

The research concerning the structure of affect has concentrated on the two-dimensions of valence and activation, and has provided findings indicating that PA and NA accounted for a good portion of variance on the affect circumplex (Russell 2003). This research showed that the structure of affect could change according to context, when the intentional nature of emotions was taken into account, and dimensions other than PA and NA could be defined accordingly. As clearly stated by Barrett et al. (2007, p. 387), "a scientific understanding of emotion experience requires rich, context-sensitive descriptions of what is experienced". Furthermore, Frijda (2005) suggests that it is impossible to differentiate different emotions if intentionality is not inherent. An original finding in the current research, in this respect, is that the affect terms are loaded on the factors according to the context, the time dimensions of a life project, rather than the valence or 'activation'.

The present time dimension, consistent with the current paradigm, appeared as two different factors consisting of dominantly negative and positive adjectives. In contrast, the past remained unidimensional, consisting of both negative and positive emotion adjectives, and the future consists of only positive adjectives. These results are consistent with recent research (Newby-Clark and Ross 2003), showing that individuals tend to remember the

past as containing both positive and negative memories, while conceiving the future with a purely positive outlook. The results of Newby-Clark and Ross's (2003) research showed that individuals are optimistic about their future even immediately after recalling negative experiences. Robinson and Ryff (1999) explain this in terms of the tendency to be more optimistic where there is less evidence available.

The correlations of the OWBS scores with age indicated that well-being is correlated with age, except for the 'activation' sub-scale. The 'nothingness' and 'regret' scores were shown to be weakly correlated with age, indicating that individuals' evaluations of the past and present become more positive with age, which is consistent with the literature (Diener 1984; Diener et al. 1999). The future dimension, 'hope', however, was shown to be inversely correlated with age; that is, individuals tend to have a more negative outlook on the future stage of their life project with increasing age. This is an expected result, given that, for the majority of middle aged people, aging is associated with dying.

7.2 Convergent, Discriminant, and Incremental Validity Outcomes

The correlations of the OWBS scores with mental health indicators and personality produced strong convergent validity estimates. It is well-known that PA and NA have strong correlations with E and N, respectively. Consistent with this knowledge, 'activation' and 'nothingness', the two indicators concerning the evaluation of the present in the life project, had relatively strong correlations with E and N, respectively. Moreover, these constructs were shown to be independent in Study 4, indicating no overlap between the factors of the OWBS and personality. In contrast, the exploratory factor analyses conducted in the same study showed that the PA and NA dimensions overlapped with E and N of BFI, which is consistent with the results of Meyer and Shack (1989). As Diener et al. (1999) report, the relations among these constructs are so strong and consistent that Watson and Clark (1984) relabeled the trait of neuroticism as negative affectivity, and suggested that positive affectivity forms the core of the broad trait of extraversion (Watson and Clark 1997). It seems plausible to argue that once the context of affective evaluations has been clarified, the conceptual and empirical overlap between affect and personality can be eliminated. Moreover, even though there is no overlap between these constructs, all OWBS factors have relatively strong correlations with all personality dimensions, with the exception of agreeableness.

Although the factors of 'nothingness' and 'activation' seem to be similar conceptualizations to NA and PA, respectively, they are in fact very different in their meanings because of the context in which these affective evaluations are made. The factor of 'nothingness', for example, consists of feelings such as being lost, aimlessness, anxiety, and emptiness, and therefore resembles the emotions presented in philosophical sources of existentialism (e.g., Heidegger 1996). Consequently, this dimension had the strongest correlation with purpose in life ($r = .59$). Moreover, the correlations of this dimension with NA (−.58), personal growth (.43), and environmental mastery (.43) are noteworthy. That is, those who do not acknowledge themselves as being in a blind alley in life are less likely to feel NA, and more likely to see themselves as growing individuals, and to have control over their environment, in addition to their higher levels of purpose in life. 'Activation', on the other hand, had the strongest correlation with PA (.59) as expected. Both 'activation' and PA have affect adjectives that are activated, making them closer to each other on the affect circumplex. The correlations of this dimension with environmental mastery (.52), extraversion (.50), and self-acceptance (.50) are also noteworthy. Thus, it seems that individuals who feel activated by the present conditions of their life project are

those who have control over their environment, enjoy being social, and are more prone to experience PA.

'Regret' has been defined as the factor regarding the past in the life project, and was found to have the strongest correlations with self-acceptance, environmental mastery, and NA. That is, individuals with a positive outlook on the past of their life project are more likely to accept themselves, have lower levels of NA, and are able to manage their environment more easily than those who have a negative outlook on the past. These results are consistent with earlier findings, showing that a negative outlook on the past has a negative impact on self-worth (Santor and Zuroff 1994), and is related to negative mood (Kennedy et al. 2004), in addition to its negative effect on mental health (Jokisaaki 2003; King and Hicks 2007).

The factor 'hope' as an evaluation of the future had the strongest correlation with openness to experience (.52) among the personality factors. That is, a positive attitude to the future of life brings a greater openness to new experiences, a finding supported by earlier research (Prenda and Lachman 2001). The correlations of this factor with dimensions of subjective and psychological well-being confirm the earlier findings, indicating that the evaluation of the future is important in positive mental health and adjustment (Zelenski and Larsen 2002).

It should be noted that all OWBS factors were found to correlate with participants' beliefs about the likelihood of attaining intrinsic aspirations of personal growth and meaningful relationships. These results indicate that a positive evaluation of one's life project has an association with two intrinsic motivation factors, namely personal growth and meaningful relationships. This is consistent with the literature, given that those who emphasized intrinsic goals were found to be more likely to have higher levels of well-being (Bauer and McAdams 2004).

Hierarchical regressions, conducted in order to prove incremental validity, produced encouraging results, showing that the OWBS scores accounted for considerable additional variance in criteria. In Study 4, additional variance accounted by the OWBS factor scores in life satisfaction above and beyond both general affectivity and personality, is impressive ($\Delta R^2 = .230$). These results show that affective evaluations of life project are, indeed, important in well-being and independent of the dispositional characteristics of individuals. Moreover, in these regression analyses, 'hope' was the only dimension which added to the variance accounted for in life satisfaction. This is an interesting result given that life satisfaction is mainly considered as related to the past or present, both theoretically and empirically. This research thus shows that, rather than present or past evaluations, it is the future that is potentially important for life satisfaction.

In Study 5, the OWBS scores accounted for considerable additional variance in both positive and negative mental health indicators above and beyond the current SWB measures, namely PANAS and the Satisfaction with Life Scale. In general, the additional variance accounted for in psychological well-being and self-esteem, as positive mental health indicators, is higher than those in such negative mental health indicators as depression, anxiety, and negative self. This is an expected result given that the OWBS is constructed by taking into account affect, goal, and time perspective, all of which are considered as important in positive mental health (Shmotkin 2005; Şimşek 2009). When negative indicators of mental health are taken into consideration, only 'nothingness' contributed to the variance already captured by the scores on the current SWB measures. These results show that existential emotions, such as aimlessness, emptiness, or feeling lost, have meaningful contributions in understanding mood disorders. This finding could be considered meaningful given that, although anxiety and depression are seen as moods that

are objectless, the content of these mental states is the world as a whole (Solomon 2006). Finally, the additional variance explained in purpose in life and personal growth is encouraging, indicating that the OWBS is indeed a eudaimonic measure.

On the other hand, the PANAS, one of the most cited measures used in SWB literature, accounted for a very limited additional variance in positive mental health variables above and beyond OWB scores. The PANAS, however, accounted a considerable unique variance in negative mental health indicators. The situation of the SWLS was much worse; the scores on this scale added nothing the variance in both positive and negative mental health indicators. These results support the idea that the narrative components are irrevocable in positive mental health research (McAdams 2001).

7.3 Implications for Future Research

The OWBS validated in this research is an easy way to assess individuals' affective evaluations of their life in a temporal perspective. As a combination of affect, time, and goal concepts, this construct could contribute much in the research on narrative-oriented research on well-being.

Taking a life span perspective (consideration of one's own life), according to Bluck and Habermas (2001), requires various cognitive abilities which begin developing in adolescence, and which may show a different age trajectory. Indeed, research shows that some personality variables, such as ego development and maturity, or age, moderate the relationship between narratives of life goals and well-being (Bauer and McAdams 2004). It appears that the same variables can also affect the evaluation of life projects, thus it is a requisite to identify the potential effects of age and maturity on evaluation of the various chronological components of life projects. Research on SWB and age, for example, has consistently shown a positive correlation (King and Hicks 2007). The results from the present research, however, show that this is not always the case, and that, rather, evaluation of the future part of life project tends to decrease with age. Thus, future research could contribute to aging research by showing which psychological variables explain such a decrease for people from different age groups.

The construct presented here acknowledges well-being from a narrative perspective. This perspective could contribute to the research on different areas of life, such as close relationships, marriage, or work. Romantic relationships, for example, could well be regarded projects, with the parties as time travelers. Lakoff and Johnson (1980), indeed, states that the "Love is a journey" metaphor manages the evaluations of romantic relationships and, thus, affects the perceptions and behaviors of the partners. The affective reactions to relationships as a joint-project, in this respect, could also contribute to the research on such important variables as marriage satisfaction and commitment.

It is clear that the evaluations of the life project are clearly related to growth, motivation, and mental health. Future research should evaluate the role of the variables which moderate this relationship; one of the most important, in this respect, is culture because of its effect on the construction of life stories or narrative elements in these stories (Hooker 2002). Culture vary as to whether they emphasize the fulfillment of either independent or interdependent goal constructs (Oishi and Diener 2001) and consequently, certain needs and values have different impacts on individuals' well-being in different cultures (Oishi et al. 1999). It is important, then, to identify potential cultural differences in the importance of different needs and values for attainment of a positive evaluation of life projects.

The construct of OWB acknowledges mental health in a time perspective and considers life as a project originating in the past and extending into the future. The construct, in this

respect, reflects an existential point of view and assesses mental health from a narrative/existential perspective. Specifically, 'nothingness', as an original, existential factor emerging in this research, has been found to be strongly correlated with NA and N factors of personality, as well as other clinical variables such as depression and anxiety. These findings suggest that it could be useful in clinical settings, and therefore future research should thoroughly evaluate its relationship to such variables as depression, anxiety, and suicidal inclinations.

Earlier research shows that life events affect well-being, and this association is moderated by age and personality (Headey and Wearing 1989). It is highly plausible that life events are also important in the evaluation of life projects. Future research should also focus on this association, testing the moderator effects of personality and age. Moreover, it is possible to argue, for example, that the effect of life events on well-being is mediated by the evaluation of life projects, and this mediation may be moderated by age. Since life narratives become more coherent and more based on intrinsic goals with age (Bauer and McAdams 2004), the evaluation of life projects will become a more important mediator variable in determining the effects of life events on well-being as the aging process progresses. In other words, with increasing age, life events are more likely to be acknowledged as consistent with the evaluation of life project, and thus, in turn be more likely to contribute to well-being.

7.4 Limitations

Although the OWBS has good psychometric qualities, there are some limitations of the research conducted. The most important of these is the lack of qualitative procedures before the validation study. In spite of our efforts to provide preliminary evidence of the existence of a life project in the minds of participants, the implementation of a more thorough approach would have given a clearer idea of participants' understanding of the way they 'consider their lives as personal projects'.

Some research shows that SWB scores show intra-individual variability over time (Diener and Lucas 2000). Although the re-test reliabilities found in this research were quite acceptable, the time interval was very limited and future research should evaluate the variability in the scores of the OWBS over a longer period of time. Moreover, the effects of daily events on the OWBS should be explored, given that these could have important effects on SWB (Clark and Watson 1988).

Although the participants of the second study were from different age groups, the participants in validation studies were convenience samples, composed of relatively young individuals. Moreover, almost all of the participants in the present studies were well-educated. Therefore, the parameters obtained in these studies limit the inferences that we can make regarding the validity of the OWBS across populations.

7.5 Conclusion

According to narrative psychology, people make sense of living by actively constructing stories containing characters moving toward goals through time (Richert 2006). In line with this perspective, the OWBS, as a new measure of SWB, has been operationalized as the affective evaluation of life stories, containing the past, present, and future dimensions. This model of SWB accounted for considerable additional variance in both positive (ΔR^2 ranges from .105 to .241) and negative mental health indicators (ΔR^2 ranges from .080 to .276), above and beyond the current measures of SWB. Most of the variance accounted for

by the OWBS scores in purpose in life indicates that this new construct is, indeed, closely related to eudaimonic factors. In support for such a conclusion, the OWBS scores have been found to be related to intrinsic motivation and psychological well-being.

The possibility of considering SWB from a eudaimonic perspective was indicated by Deci and Ryan (2008). Although the OWBS consisted of affect adjectives, it is still considered to be a eudaimonic measure since it regards happiness as an individual's potential to flourish in life. As Thomas (1968) proposed more than 40 years ago, "the person who thinks that this is the good life would say such things as that he is useful, that he spent his time in a worthwhile way, and that he has been a success" (p. 111).

It is therefore concluded that researchers in the counseling or psychotherapy field should evaluate SWB from a eudaimonic perspective in addition to hedonic ones. It is hoped that the measurement tool validated here will have an influence in activating such a motivation in the field of helping, since it captures those elements that are most closely related to inherent self-actualization motives.

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Appendix: The Ontological Well-Being Questionnaire

Please consider your own life as a personal project with its past, present, and future parts. Like all projects, your life includes completed (the past), ongoing (the present), and prospected (the future) parts. What is expected from you is to rate the intensity of the emotions you experience when looking at these parts of your project. Please answer according to the scale below.

Very slightly or not at all				Extremely
1	2	3	4	5

When I look at the completed part of my life project, I feel:

1. _____ Proud
2. _____ Disappointed
3. _____ Satisfied
4. _____ Regretful
5. _____ Upset
6. _____ Guilty
7. _____ Incompetent

When I look at the ongoing part of my life project, I feel:

8. _____ Tired
9. _____ Enthusiastic
10. _____ Aimless
11. _____ Lost
12. _____ Motivated
13. _____ Energetic
14. _____ Excited
15. _____ Irresponsible
16. _____ Empty
17. _____ Anxious
18. _____ Helpless

When I look at the future of my life project, I feel

19. _____ Hopeful
20. _____ Strong
21. _____ Confident
22. _____ Courageous
23. _____ Looking forward
24. _____ Ambitious

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