

**VALIDATION OF A SCALE TO MEASURE TIME PERSPECTIVE IN AN
AFRICAN CONTEXT**

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B.Psych (Psychology)

**Mini-dissertation (article format) submitted in partial fulfillment of the
requirements for the degree Master of Science in Clinical Psychology at the North-
West University (Potchefstroom Campus)**

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2. SUMMARY

VALIDATION OF A SCALE TO MEASURE TIME PERSPECTIVE IN AN AFRICAN CONTEXT

Keywords: Time Perspective; African; Zimbardo Time Perspective Inventory; psychometric properties; reliability; validity; psychological well-being

The aim of this study was to determine the psychometric properties of a shortened version of the Zimbardo Time Perspective Inventory (ZTPI) in an African context. This self-report questionnaire, referred to as the Zimbardo Time Perspective Inventory – Revised Form (ZTPI-RF) consists of 20 items representing the five subscales of the original scale, namely: Past-Positive, Past-Negative, Present-Hedonistic, Present-Fatalistic and Future. The ZTPI-RF was completed by participants (N=1050) from urban (n=451) and rural (n=599) areas in the North-West Province of South Africa, together with a number of measures of psychological well-being. These scales, which were included for criterion-related validity purposes, were the Affectometer 2 (short version) (Kammann & Flett, 1983), the Satisfaction with Life Scale (Diener, Emmons, Larsen & Griffin, 1985), Sense of Coherence Scale (Antonovsky, 1987, 1993) and the General Health Questionnaire (Goldberg & Hillier, 1979). Results regarding the reliability and construct validity of the ZTPI-RF and its subscales were unsatisfactory. Qualitative data was also obtained, and analyzed by means of direct content analysis to help establish a picture of how time perspective prevails in an African context, and to determine whether time perspective is associated with psychological well-being. Qualitative results showed

that participants from an African context were strongly oriented toward the present and that social support played the most prominent role regarding participants' attitude toward the present. It was concluded that the ZTPI-RF is, in its current form, not reliable for the determination of time perspective of individuals from an African context, and that a longitudinal qualitative approach might be best suited to obtain information about the nature and dynamics of time perspective in an African context.

3. OPSOMMING

VALIDERING VAN 'N SKAAL VIR DIE BEPALING VAN TYDSPERSPEKTIEF IN 'N AFRIKA KONTEKS

Sleutelwoorde: Tydsperspektief; Afrika; Zimbardo Time Perspective Inventory; psigometriese eienskappe; betroubaarheid; geldigheid; psigologiese welstand

Die doel van hierdie studie was om die psigometriese eienskappe van 'n verkorte weergawe van die Zimbardo Time Perspective Inventory (ZTPI) in 'n Afrika-konteks te bepaal. Hierdie self rapporterings vraelys, naamlik die Zimbardo Time Perspective Inventory - Revised Form (ZTPI-RF) bestaan uit 20 items wat die vyf subskale van die oorspronklike skaal verteenwoordig, naamlik: Past-Positive, Past-Negative, Present-Hedonistic, Present-Fatalistic en Future. Die ZTPI-RF is voltooi deur deelnemers (N=1050) van stedelike (n=451) en landelike (n=599) gebiede in die Noordwes Provinsie van Suid Afrika, tesame met 'n aantal ander skale wat psigologiese welstand meet. Hierdie skale wat ingesluit is vir die bepaling van kriterium-verwante geldigheid, was die Affectometer 2 (short version) (Kammann & Flett, 1983), die Satisfaction with Life Scale (Diener, Emmons, Larsen & Griffin, 1985), Sense of Coherence Scale (Antonovsky, 1987, 1993) en die General Health Questionnaire (Goldberg & Hillier, 1979). Resultate aangaande die betroubaarheid en konstrukgeldigheid van die ZTPI-RF en sy subskale was onbevredigend. Kwalitatiewe data is verkry en ge-analiseer deur middel van direkte inhouds-analise om te bepaal hoe tydsperspektief in 'n Afrika konteks manifesteer en om aan te dui of tydsperspektief verband hou met psigologiese welstand.

Kwalitatiewe resultate het gewys dat deelnemers van 'n Afrika konteks meer georiënteerd is tot die hede en sosiale ondersteuning die mees prominente rol speel in die deelnemers se houding teenoor die hede. Die gevolgtrekking is gemaak dat die ZTPI-RF, in sy huidige vorm, nie betroubaar is vir die bepaling van tydsperspektief vir individue in 'n Afrika konteks nie, en dat 'n langtermyn kwalitatiewe benadering die mees gepaste benadering sal wees vir die verkryging van inligting oor die aard en dinamika van tydsperspektief in 'n Afrika konteks.

4. Preface

4.1 Article format

This mini-dissertation fulfils part of the requirements for a professional Master's degree in Clinical Psychology. The article format as described by General Regulation A13.7 of the North-West University was chosen for the purposes of this mini-dissertation.

4.2 Selected journal

The target journal for submission of the current manuscript is the *South African Journal of Psychology*. The manuscript as well as the reference list has been styled to the journal specification which includes the APA (American Psychological Association) reference style.

4.3 Page numbering

In the mini-dissertation page numbers run throughout the whole document. For submission to the above-mentioned journal, manuscript numbering will comply with journal requirements and thus start on the title page of the manuscript.

4.4 Letter of consent

The letter of consent from the co-authors, in which they grant permission that the manuscript *Validation of a scale to measure time perspective in an African context* may be submitted for purposes of a mini-dissertation by the first author, Jovika Dissel, appears on the next page.

Letter of consent

We, the undersigned, hereby give consent that Jovika Dissel may submit the manuscript *Validation of a scale to measure time perspective in an African context* for purposes of a mini-dissertation in partial fulfillment of a Master's Degree in Clinical Psychology.

Dr. J.C. Potgieter

Supervisor

Prof. M.P. Wissing

Co-Supervisor

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5. MANUSCRIPT

VALIDATION OF A SCALE TO MEASURE TIME PERSPECTIVE IN AN AFRICAN CONTEXT

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5.1 Instructions to authors: South African Journal of Psychology



Instructions to authors

Submitting a manuscript

SAJP is a peer-reviewed journal publishing empirical, theoretical and review articles on all aspects of psychology. Articles may focus on South African, African or international issues. Manuscripts to be considered for publication should be e-mailed to saip@unisa.ac.za. Include a covering letter with your postal address, email address, and phone number. The covering letter should indicate that the manuscript has not been published elsewhere and is not under consideration for publication in another journal. An acknowledgement of receipt will be e-mailed to the author within a few days and the manuscript will be sent for review by three independent reviewers. Incorrectly structured or formatted manuscripts will not be accepted into the review process.

Manuscript structure

- The manuscript should be no longer than 30 pages and no shorter than 10 pages.
- **First page:** The full title of the manuscript, the name(s) of the author(s) together with their affiliations, and the name, address, and e-mail address of the author to whom correspondence should be sent.
- **Second page:** The abstract, formatted as a single paragraph, and no longer than 300 words. A list of at least six key words should be provided below the abstract, with semi-colons between words.
- **Subsequent pages:** The text of the article. The introduction to the article does not require a heading.
- **Concluding pages:** A reference list, followed by tables and figures (if any). Each table or figure should be on a separate page. Tables and figures should be numbered consecutively and their appropriate positions in the text indicated. Each table or figure should be provided with a title (e.g., Figure 1. Frequency distribution of critical incidents). The title should be placed at the top for tables and at the bottom for figures.

Manuscript format

- The manuscript should be an MS Word document in 12-point Times Roman font with 1.5 line spacing. There should be no font changes, margin changes, hanging indents, or other unnecessarily complex formatting codes.
- American Psychological Association (APA) style guidelines and referencing format should be adhered to.
- Headings should start at the left margin, and should not be numbered. All headings should be in **bold**. Main headings should be in **CAPITAL LETTERS**.
- A line should be left open between paragraphs. The first line of a paragraph should not be indented.
- Use indents only for block quotes.
- In the reference list, a line should be left open above each reference. Do not use indents or hanging indents in the reference list.

Language and punctuation

Manuscripts should be written in English. As the SAJP does not employ a full-time or dedicated language editor, authors are requested to send their manuscripts to an external language specialist for language editing before submission.

5.2 Manuscript title, authors and addresses

Running head: Time Perspective in an African context

**VALIDATION OF A SCALE TO MEASURE TIME PERSPECTIVE IN AN
AFRICAN CONTEXT**

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Abstract

The aim of this study was to validate a revised and shortened version of the Zimbardo Time Perspective Inventory (ZTPI) in an African context. Participants (N=1050) from urban (n=451) and rural (n=599) areas in the North-West Province of South Africa completed the Zimbardo Time Perspective Inventory – Revised Form (ZTPI-RF), as well as a number of measures of psychological well-being in a one-shot cross-sectional survey design. Quantitative results showed unsatisfactory reliability and validity of the scale in its current form. Qualitative results were however useful in determining a picture of time perspective and its relation to psychological well-being in an African context. It was concluded that for any future attempts to develop or review a scale that measures time perspective, it should be more appropriate for the context, more culturally sensitive and conceptualized from an emic African perspective.

Keywords: Time Perspective; African; Zimbardo Time perspective Inventory; psychometric properties; reliability; validity; psychological well-being

Validation of a scale to measure time perspective in an African context

Lewin (1942) was one of the first researchers to stress the importance of time perspective (TP) in the study of human behavior. Lewin believed that the life space of an individual, far from being limited to what he considers the present situation, includes the future, the present, and also the past. TP has since been recognized as a non-conscious process whereby the continual flow of personal and social experiences are assigned to temporal categories, or cognitive time frames, that help to give order, coherence and meaning to those events (Zimbardo & Boyd, 1999). These cognitive frames, constructed by the non-conscious process of TP, may reflect repetitive temporal patterns or unique, non-recurring linear events in people's lives (Zimbardo & Boyd, 1999) and thus exert a strong influence on decision making, goal-setting and personality (Lennings, Burns & Cooney, 1998). Seijts (1998) indicated that TP is an outcome of the socialization process, where individuals learn that a society or group of people provide an organized array of events or goals that are integrated into a cognitive time structure influencing people's actions and thoughts.

In this study, the term 'time perspective' (TP) refers to an individual's preferred time orientation, but also includes the structure or range of an individual's TP (i.e. the distinction between near-by or distant future) and his or her time attitude (i.e. the person's attitude toward the past, present or future) as described by Zimbardo and Boyd (1999).

The preferential direction of an individual's thoughts and actions towards the past, present or future (Volder, 1979), in other words his/her TP, has been found to have a dynamic influence on that person's judgments, decisions and actions. The past, present, and future temporal frames are used in encoding, storing and recalling experienced events, as well as in forming expectations, goals, and possible scenarios. Given an awareness of these differences in TP, and the possible effects it may have on a person's life, Zimbardo, Boyd and Keogh (1999) suggested that the optimal TP is a balanced one that allows flexible transitions among temporal orientations that are most situationally appropriate. When a person uses a specific orientation too often and others too rarely, he may become "biased" in his perspective of time. For example, people who are predominantly present-orientated may be able to enjoy the moment, but they may have difficulty with delaying gratification and planning realistic goals (Zimbardo & Boyd 1999). People with a dominant future-orientation are good at meeting long term obligations, but they may be overly inclined to sacrifice present joys and gratification. Those with a strong past-orientation are often able to appreciate and honour obligations and responsibilities, but might be rigid when faced with change.

Brown and Segal (1997) have gone on to show that an individual's TP can influence both physical and psychological health, as well as health behavior. People who are future-orientated tend to think more about their future; have well developed visions of their future; are future goal-oriented; and are aware of the relationship between their present actions and future outcomes (DeVolder & Lens, 1982; Jones, 1988; Markus & Ruvolo, 1989). Future-orientation has thus been shown to be related to health-behavior

in a Western context. According to Wills, Sandy and Yeagars' (2001) study (as cited in Konefal, Duncan, Meub & Winfield, 2006) on the relation of TP to early onset of substance-abuse, future-orientations are inversely related to substance use, while present-orientation is positively related to substance use. Heterosexual college students rated high in future-orientation are also more likely to reduce exposure to HIV than their less future-orientated counterparts (Rothspan & Read, 1996). In a study by Holman and Silver (1998) it was shown that traumatized victims who indicate a past-orientation, had elevated distress long after the trauma had passed. It thus seems clear that TP is an important cognitive function that exerts a dynamic influence on important judgements, decisions and actions, which in turn influence an individual's physical and psychological well-being.

Despite its apparent importance in determining individual well-being, the concept of TP and its influence has not been explored in depth in an African context. In their development of the Zimbardo Time Perspective Inventory (ZTPI) Zimbardo and Boyd (1999) provided a means to obtain a quantitative description of individual time perspective. These authors however warned that TP variations are "learned and modified by a variety of personal, social and institutional influences" (p. 1271). Consequently, TP variances and associations found between TP and psychological well-being in Western contexts cannot be assumed to apply to non-Western societies. One of the important contributors toward the current lack of literature on cross-cultural differences in TP is that no measure of TP has been validated in an African context. "Existing scales such as the ZTPI were conceptualized in individualistic societies with reflection of those

ambitions, tasks, and demands, which may differ significantly from that in more collectivist, interdependent societies in which time may be differently valued and conceptualized” (Zimbardo & Boyd, 1999, p. 1284). Levine (1997) noted that the Western society is very much bound to the clock and calendar, and that individuals from this society often judge their fellows, and expect to be judged by them, to the extent that temporal norms are followed (Harber, Zimbardo & Boyd, 2003). While TP is considered an important predictor for social adjustment in a Western context, due to the importance placed on being punctual, it is important to consider that individual TP is shaped by current and enduring social constraints (Harber, Zimbardo & Boyd, 2003), which might lead to important intercultural differences.

In his attempt to clarify the cross-cultural variability in time perspective, Morello (2000) observed different perceptions about the future among Cuban, Spanish and Italian students. Cuban students declared that the future looked brighter more often, compared with Spanish and Italian students. Rousseau and Venter (2003) did a quantitative study in South African to investigate cultural differences in the perception of time among the youth and its implications for time management and productivity regarding future employment in the industry. They found that English speaking respondents were more concerned with completing a task at a certain point in time than Xhosa speaking participants, which may indicate cultural differences in people’s TP. According to Rousseau and Venter (2003) contemporary South Africa is presently in a state of flux between accepting Western cultural values and beliefs, and integrating it with traditional African systems of thoughts and assumptions. This may be either a global trend or the

result of cultural mixing and attempts by government to build a unified truly South African culture (Rousseau & Venter, 2003). It is still not clear to what extent TP differs among various cultural groups and whether it has unique relationships with other indices of bio-psycho-social health among the various groups that form part of the African, relatively collectivistic, cultural context. The validation of a TP scale in a South African context is a pre-requisite for further exploration of the possible intercultural differences in TP and its relevance to bio-psycho-social health in a South African context.

The main aim of this research was to validate a shortened version of the ZTPI (ZTPI-RF) in a Setswana-speaking African group.

METHOD

Design and Participants

A cross sectional survey design was used in this study. This study was a cross-cutter between two larger research projects: the PURE-SA (Prospective Urban and Rural Epidemiology – South Africa) and FORT2 (Fortology – Understanding and promoting psychological health, resilience and strengths in an African context). The study was conducted in two phases, allowing triangulation of quantitative and qualitative means of data gathering and analysis.

A total of 1050 Setswana speaking individuals from both rural and urban strata in the North-West Province of South Africa took part in the first, quantitative phase of this

study. Participants were all from a relatively collectivistic Batswana cultural context, and were recruited from the following four sites, which represented different levels of urbanization. Two hundred and eighty one participants were from Ganyesa (a semi-rural settlement situated on the road to Botswana); 318 from Tlakgameng (a deep rural settlement situated approximately 35 kilometres from Ganyesa); 229 from Ikageng (an established urban settlement outside Potchefstroom); and 215 from an informal urban settlement alongside Ikageng. Of the 1050 participants, 392 were male and 649 were female. The age distributions were as follows: 228 participants were aged between 30 and 40 years; 416 participants were aged between 41 and 50 years; 248 participants were aged between 51 and 60 years; 106 participants were aged between 61 and 70 years; and 29 participants were aged between 71 and 80 years; while two participants were aged over 80. Disagreement in numbers is due to incomplete data.

During the second phase, seven participants were randomly selected from the initial group for participation in qualitative interviews. In terms of the demographic information it is notable to state that the age distribution of these participants did differ from the larger group used for the quantitative phase. The participants were relatively older and grew up in a different era which might have had an impact on the data that was obtained. The demographic information and MHC-scores of these participants are summarized in Table 6.

Measuring Instruments

Zimbardo Time Perspective Inventory – Revised Form (ZTPI-RF)

The original ZTPI (Zimbardo & Boyd, 1999) was developed in order to assess an individual's beliefs, preferences, and values regarding experiences that are temporally based. The ZTPI consists of 56 statements regarding an individual's TP and asks the respondents to indicate how personally characteristic a statement is on a 5-point Likert scale [1 = Very uncharacteristic; 5 = Very characteristic]. The ZTPI was designed in the United States of America, and Zimbardo and Boyd (1999) have demonstrated the necessary psychometric requirements for reliability and validity. A shorter version of the ZTPI (ZTPI-RF) was created for validation in the current South African study. During the process of item selection, the psychometric properties of the original scale were taken into account. A review of item content was also conducted by a small research group, in order to consider the applicability of items in the South African context. The resultant scale consisted of 20 items, with four items representing each of the subscales of the original instrument (see Addenda:ZTPI-RF). These subscales, reflecting both the time orientation and time attitude of an individual, are:

(a) *Past-Negative*: This category reflects a generally negative and aversive view towards the past. An item representing this category is, for example: "I think about the bad things that have happened to me in the past."

(b) *Past-Positive*: The Past-Positive category reflects with feelings of sentimentality and warmth towards the past, for example: "I like family rituals and traditions that are regularly repeated."

(c) Present-Hedonistic: A person in the Present-Hedonistic category lives for the moment and often adopts a risk-taking attitude towards his/her life with little concern for future consequences, for example: "I do things impulsively".

(d) Present-Fatalistic: The Present-Fatalistic category refers to the future is predestined and uninfluenced by individual actions, for example: "My life path is controlled by forces I cannot influence".

(e) Future: The Future time category is concerned with future goals and rewards where the present situation is contemplated in terms of future consequences, for example: "I make lists of things to do".

Affecometer 2(short version) (AFM) (Kammann & Flett, 1983).

The AFM measures happiness or a general sense of well-being on an affective level by determining the balance between negative and positive affect (Kammann & Flett, 1983). The measure consists of two sub-scales measuring positive affect (PA), and negative affect (NA). A third score, representing the individual's positive/negative-affect-balance (PNB), is calculated by determining the ratio between positive and negative affect-scores. A higher level of well-being is obtained when PA is higher than NA, as reflected by the PNB score (Kammann & Flett, 1983). The scale has been deemed reliable by Kammann and Flett (1983), who reported Cronbach alphas ranging from 0.88 to 0.93. Wissing *et al.* (1999) found the scale applicable to, and reliable within the South African context. Cronbach alphas of 0.66 for PA and 0.69 for NA were found in the current study.

Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen & Griffin, 1985).

This 5-item scale was developed to give an indication of a person's general satisfaction with life, which is evaluated on a cognitive judgemental level based on his/her own subjective criteria. The Cronbach alpha-reliability index of the SWLS is 0.87 (Diener *et al.*, 1985). The scale showed acceptable psychometric properties for use in South Africa (Wissing *et al.* 1999). In the current study, the Cronbach alpha reliability index obtained for the SWLS was 0.69.

Sense of Coherence Scale (SOC) (Antonovsky, 1987, 1993).

This 29-item scale measures an individual's experiences of the world and his/her life. According to Antonovsky (1993), Sense of Coherence consists of three elements, namely the comprehensibility, manageability and meaningfulness that a person ascribes to his/her life. The SOC has been found to correlate positively with measures of psychological and physical well-being (Wissing & Van Eeden, 2002). Internal reliability indices of the SOC vary from 0.78 to 0.93 and test-retest reliability indices vary from 0.56 to 0.96 (Antonovsky, 1993). The scale has also been found reliable and valid for use in a South African context (Wissing *et al.* 1999). In the current study, a Cronbach alpha reliability index of 0.80 was found.

General Health Questionnaire (GHQ) (Goldberg & Hillier, 1979).

The aim of the 28-item GHQ is to detect symptoms of mental disorder. The scale consists of four subscales, namely Somatic Symptoms (SS), Anxiety and Insomnia (AI), Social Dysfunction (SD) and Severe Depression (DS). Goldberg and Hillier (1979)

reported various Cronbach alphas ranging from 0.82 to 0.86. Wissing *et al.* (1999) reported acceptable psychometric properties from a study with a Setswana speaking group. The Cronbach alpha reliability index in the current study for the full scale was 0.89 and for the sub-scales was 0.74 for SS, 0.74 for AI, 0.55 for SD, 0.75 for DS respectively.

Procedure

The study was conducted in two phases, which allowed triangulation of quantitative and qualitative methods of data gathering and assessment. During the first, quantitative phase of the project, the ZTPI-RF was administered a large group (N=1050) of Setswana-speaking participants, together with a selection of measures of psychological well-being. In preparation for this quantitative survey, all questionnaires were translated into Setswana and then back translated into English. English versions of the questionnaires were then compared in a research committee approach (Van de Vijver & Leung, 1997). A total of 16 Setswana-speaking fieldworkers were subsequently selected from the relevant sites, and trained in administering the questionnaires to selected participants in the Ikageng, Tlaskgameng and Ganyesa communities. The fieldworkers were all bilingual and capable of speaking and understanding both English and Setswana.

During the second phase, semi-structured qualitative interviews were conducted with a small group of participants (n=7) that were randomly drawn from the initial sample. After obtaining informed consent, interviews consisted of a short introduction by the participant in terms of his/her identity, family background and work situation. This was

followed by questions aimed at gaining information about different aspects of the TP of these participants. Examples illustrating the line of questioning are:

- “Tell us about a couple of events that stand out in your life”
- “When thinking about these things/events, what feelings or emotions do you experience?”
- “How far back in the past or into the future are these things/events that you are telling us about?”

Data Analysis

In order to be applicable across cultures, a scale should, according to Paunonen and Ashton (1998), show invariability in at least the following four psychometric properties: (i) scale means and variances, (ii) reliability coefficients, (iii) factor structure, and (iv) pattern of correlations with other variables (criterion-related validity; convergent and discriminant validity). The Statistica (2004) software system was used to determine the descriptive statistics and reliability indices of the different scales administered. The Cronbach alpha was determined as a measure of internal consistency. Due to the fact that the Cronbach alpha has limited use in the establishment of unidimensionality (Clark & Watson, 1995), inter-item correlations and item-total correlations as proposed by Smith and McCarthy (1995) were used in order to determine the extent to which scale items measure a single construct or factor.

To determine construct validity, confirmatory factor analyses were done using the maximum likelihood method of factor extraction (Floyd & Widaman, 1995) with oblique

rotation. Criterion-related validity was established through correlations with other scales measuring positive and negative facets of psychosocial functioning.

During the analysis of qualitative data, a process of directed content analysis, as described by Hsieh and Shannon (2005), was used. The goal of directed content analysis is to validate or extend a theoretical framework or theory conceptually. Because of its similarity to the inherent structure of the original ZTPI, the shortened coding scheme of Westerhof and Bode (1999) was used during the process of data analysis. By using existing theory, the process is according to Hsieh & Shannon (2005) more structured. Data was collected through interviews, where open-ended questions were followed by targeted questions about the determined categories. This coding scheme was used to determine the TP, time attitude and several themes of the participants' TP. Qualitative results were also sorted and presented by means of a frequency table.

RESULTS

Quantitative Data

Descriptive statistics and reliability of the ZTPI-RF

Descriptive statistics and reliability indices for the ZTPI-RF are reported in Table 1. The mean scores of individual items ranged between 2.35 and 3.82. The item with the highest mean ($M = 3.82$) was item 18 ("I like family rituals and traditions that are regularly repeated") and the item with the lowest mean ($M = 2.35$) was item 5 ("If things don't get done on time, I don't worry about it"). The Kolmogorov-Smirnoff test was used to give an indication of the normality of the data. Due to the consistently small p-values

across all items and the negative values of the items in terms of the skewness, the assumption of normality was rejected.

According to Clark and Watson (1995), recommended reliability values vary between 0.60 and 0.70 during the early stages of scale validation. The Cronbach alpha reliability coefficient for the total ZTPI-RF was 0.69, which could thus be regarded as sufficient during this initial stage of validation. This apparently favorable result regarding the internal consistency of the ZTPI-RF has to be interpreted with caution, though, as the relevance of this result for a scale in which only the use of sub-categories are meaningful for interpretation is questionable. Further, the number of items in the scale could possibly lead to an artificial increase in the Cronbach alpha. However, in subsequent analyses where some of the variables were deleted, the coefficient did not change significantly, which reflects favorably on the internal consistency results.

As a further means of establishing the internal consistency of the ZTPI-RF, the item-total correlations were also considered. These values showed a degree of variation, ranging between 0.05 to 0.43 and three of the items did not fall within the recommended range of 0.15 to 0.50, as stipulated by Clark and Watson (1995). More specifically, items 4 (“I do things impulsively”), 5 (“If I don’t get things done on time, I don’t worry about it”) and 14 (“It doesn’t make sense to worry about the future, since there is nothing I can do about it anyway”), produced low item-total correlations, which placed a question mark over the reliability of these items, and the adverse effect this could have on the internal consistency of the total scale. The fact that all three these items were from sub scales

focusing on the present (i.e. Present-Hedonistic and Present-Fatalistic) could be significant and will receive further attention during the discussion.

The results of subsequent analyses performed on the subscales of the ZTPI-RF as derived from the original version of the ZTPI are reported in Table 2. The inter-item correlations of the individual subscales were generally low and ranged between 0.05 to 0.22. These results were confirmed by Guttman's Lambda 2, which can be used as an indication of the reliability of subscale items that are not regarded as parallel. While values of 0.7 to 0.8 would be indicative of reliable subscale items, the values of items in this instance ranged between 0.22 to 0.53. The Cronbach alphas of the individual subscales were also low, and ranged between 0.17 and 0.53. It thus seems that the subscales of the ZTPI-RF did not fit the criteria of reliability.

[Tabel 2]

Validity of the ZTPI-RF

Construct validity

The validity of the ZTPI-RF and its subscales was investigated through a confirmatory factor analysis, using the maximum likelihood method of factor extraction with oblique rotation. These results are reported in Table 3. In three of the five subscales (Past-Positive, Past-Negative, and Future) the relevant subscale items loaded strongly on the individual factors. In the Present-Hedonistic (PH) and Present-Fatalistic (PF) subscales however, factor loadings were unexpectedly low. Communalities and variance

explained were also low, and showed that the subscales in general, but especially the PH and PF subscales, gave only poor representation to the relevant items.

[Tabel 3]

Since the selected items from the original ZTPI represented the original subscales only poorly, an exploratory factor analysis of all the scale items followed, using the maximum likelihood method of factor extraction with oblique rotation. The results of the exploratory factor analysis are reported in table 4. Ideally, the same number of factors as subscales (5) should be extracted, and the total variance explained as well as the communalities should be high. According to Clark and Watson (1995) an extracted factor should have at least three items loading significantly (i.e. factor loading higher than 0.3), and contain no double or cross-loadings to be deemed valid. Although, as expected, a total of five factors were extracted, the resultant factor structure was complex and showed little resemblance to the original subscales. The occurrence of a number of cross-loadings was further complicated by the fact that two of the factors were represented by less than three items. When the content of the items were considered, no clear picture of what the different factors represented could be established.

[Table 4]

Criterion-related validity

Because of the proven association between individual TP and psychological well-being (Zimbardo & Boyd 1999), correlations of the ZTPI-RF with other scales measuring positive and negative facets of psychosocial functioning were used to give an indication

of its concurrent/criterion-related validity. In the light of the poor reliability estimates, however, these results have to be interpreted with caution.

Positive correlations between the Past-Positive subscale and the other well-being indices (AFM; SOC; MHC) were found as expected, as were negative correlations between the Past-Negative subscale and the AFM and SOC. The positive correlation between the Past-Positive subscale and the GHQ, which measures symptoms of psychopathology, was surprising. Negative correlations between the Present-Fatalistic subscale and the AFM, and its positive correlation with the GHQ were also in line with what was expected. There were no statistically significant correlations between the Present-Hedonistic subscale or the Future subscale and any of the psychological well-being indices.

[Table 5]

Due to the fact that the ZTPI-RF was according to the quantitative results on reliability and validity not an appropriate measure of TP in an African context, a qualitative approach was taken in order to determine how TP presented in an African context. A round of qualitative interviews was done and by means of content analysis the following qualitative results were obtained.

Qualitative Data

Content Analysis

Because of its similarity to the inherent subscale structure of the ZTPI, qualitative data was analyzed according to the shortened coding scheme of Westerhof and Bode (1999). An overview of the results of this analysis is provided in Table 7. As can be deduced from the number of comments about the present, it was evident that the ‘here and now’ played the most important role for this group of participants. A prominent theme in the predominant **present time orientation** of the participants was the negative life circumstances that participants had to contend with on a daily basis. The social and political situations that these individuals are confronted with, as well as the influence of their current personal contexts, seemed to play an important part in their experience of the present. Interviews showed that participants seemed to harbor a generally negative attitude toward the present, on account of the predominantly negative circumstances they endured. These included various aspects of daily living (“*ek baklei saam met my man en dan kom hy nie weer huis toe nie nou bly ek alleen saam met my kinders by Ikageng en ek is bekommerd*”) as well as participants’ present financial situations. In this context, where poverty is widespread, this aspect included frustration due to unemployment, lack of income and worries about the lack of other financial resources. This appears to have impeded people’s attempts to provide for themselves and their families, and also had a negative impact on their self-esteem and general psychological functioning (“*en die werk is nie daar nie en jy moet dink..partykeer se jou kinders, mamma koop vir my ice-cream, koop vir my daai ding en dan word jy hartseer want dit is nie lekker as jy wil maar jy kan nie*”). From these quotes it seemed as if participants were trapped in a daily struggle for

survival. The fact that they seemed overwhelmed by their present circumstances made it difficult to maintain a view of a possible future.

When participants reflected positively on the present, social support was one of the themes that featured prominently. As expected in this relatively collectivistic culture, participant comments on social support included strong elements of familial and relational support. It seemed from the interviews that social support formed an important part of their resilience. Where the present was often characterized by difficult circumstances and financial problems, participants were able to find strength in social support. (*“saam met my ma hulle, dit is beter, hulle help altyd met goed vir die kinders se skool”*).

From the interviews it became evident that, although participants often felt overwhelmed by the demands of their present situations, they also had a strong **Future time orientation**. During the analysis of the interviews, participants' comments about the future were divided into two categories namely: the nearby future, which included all anticipated events in the following twelve months, and the distant future, which included events anticipated for the time following this twelve month period. Finances emerged as the primary theme when respondents reflected on their nearby future. What was of interest regarding this theme was that participants harbored both positive and negative attitudes regarding their future financial situations. On the positive side, participants expressed the intention to provide for their families financially by means of securing a job (*“ja, ek soek die werk, dan kan ek vir my en my familie mooi goeters doen”*). At the

same time, though, participants were discouraged by the scarcity of work, and the high levels of unemployment, that in turn strongly influenced their ability to execute their future plans successfully (*“ek is geworry, want die werk is min, en ek kort die werk om plan te maak”*). Participants thus seemed able to formulate future goals, but these often seemed unrealistic in the light of their difficult circumstances and limited means, which were often outside of their control (*“as ek die geleentheid kry ek dink ek kan besigheid begin...die grootste probleem is om nie die geld te he nie”*).

The participants' view of the distant future also seemed to be characterized by both positive and negative attitudes, and mainly involved the themes of finances and education. Once again, a number of participants expressed the need and intention to plan financially for the long term future. Some participants planned on starting a business (*“ek wil die besigheid begin , met miskien die groente of die hoenders”*), and others intended obtaining further education in order to get a job, or providing for the education of their children (*“as ons trou ons gaan die kinders education gee, ons wil seker maak ons het geld om vir dit vir die kinders te sorg”*). One individual was successful in this regard, and was actively planning for unforeseen circumstances by saving money at the bank, and obtaining a funeral benefit plan to help his family should he pass away. This was the exception however, because in spite of participants expressing their motivation to achieve these long term goals, it was repeatedly offset by the stark reality of their current situations, and lack of clarity regarding the means of obtaining these long terms goals. For example, obtaining an education necessitated financial resources that were usually

beyond participants' ability (*"education vir kinders is belangrik, maar geld is die probleem"*).

Interestingly, the least prominent in the comments of participants was their **past time orientation**. Contrary to what was expected within this collectivistic community, it seemed as if the participants from this group of Africans were not strongly inclined towards reminiscing about the past. When participants did reflect on the past, the theme of social support (which included familial and relational support) was prominent, and elicited a positive attitude among the participants (*"ek dink aan daardie tyd wat lekker was saam met my vrou en my familie"*). In other cases, the experience of a lack of social support evoked a strongly negative attitude toward the past, which gave an indication of the importance of this theme for people from an African culture (*"in my familie en my man se familie het hulle my nie gehelp met die kinders nie, en dit was moeilik vir my"*). This possibly reflected the strong interdependence necessitated by difficult life circumstances. Another theme evoking a positive attitude toward the past was that of strong morals that were highly valued by participants. It seemed important for the participants forming part of this group of generally middle aged individuals to honour the morals/values that they learned as children (*"as julle groot word, julle moet nie vergeet van julle ma en pa nie"*).

In order to shed light on the possible association between participants' TP and their current levels of psychological well-being, participants were grouped together in terms of their psychological well-being based on their results on the Mental Health Continuum

(Keyes, 2002), and their compared TP's as reported in Table 6. In the flourishing group, the present played the most prominent role in participants' reflections. High levels of social support elicited a lot of positive feelings and it also seemed as if this factor had a positive impact on participant's sense of financial security for the future (*"ek sal gelukkig wees want ek en my vrou en kinders lewe sonder probleme"*). The knowledge that they were part of a strong social support network, and more specifically their confidence that their children would provide for them in their old age led to a generally positive outlook on the future (*"as ek nie meer kan werk, die kinders sa help om agter my te kyk"*).

In the languishing group, participants showed a stronger propensity to focus on the past in comparison with the flourishing group. Negative attitudes toward this time period were mainly associated with difficult circumstances and a lack of social support that participants had to contend with in the past (*"niemand in my familie of die familie van my man het my gehelp, ek moes die kinders alleen groot kry"*), and seemed unable to escape from. Positive reflections about the past involved reminiscing about morals that were previously valued, but at the same time made it difficult to accept the perceived lack of morals in the current generation (*"toe ons nog jonk was ons het nie bymekaar geslaap voor die trou nie, jy weet soos van die ou mense se goed"*). When reflecting about the future, the unrealistic planning reported for the total group seemed to be more characteristic of this languishing group of individuals (*"ek wil adult school toe gaan want dan gaan ek makliker werk kry, maar ek kort die geld vir dit"*). There also seemed to be a strong sense of apprehension about the future among this group (*"as my kinders mans of vrouens kry, hulle gaan vir hulle sorg en van my vergeet"*).

Discussion

The ZTPI-RF and its subscales measuring TP did not show adequate reliability and validity for this Setswana African group. In terms of reliability, the assumption for normality was rejected and the item-total correlations did not fall within the expected range. Neither the subscales nor the total scale met the criteria for reliability. For validity purposes, both confirmatory and explorative factor analysis were done and the resultant factor structure was complex, with little resemblance to the original scale. It was concluded that the ZTPI-RF in its current form is not a valid indicator of TP in this Setswana population.

Several possible reasons exist for the results regarding the poor reliability and validity of the ZTPI-RF. Firstly, certain items in the scale are a strong reflection of the concepts and terms used in the Western context in which the scale was developed. For instance, items like “I do things *impulsively*” were difficult to translate into Setswana, since no direct equivalent terms exists in the Setswana language. Despite efforts to translate the scale as accurately as possible, the translator’s interpretation of certain words might have changed the precise meaning of certain items. Another factor that might have adversely affected the reliability of the scale might have been participants’ lack of familiarity with, and exposure to, the concept of TP. This is salient given Zimbardo’s own statements that TP is learned within, and also modified by, various influences (Zimbardo & Boyd, 1999). Consequently, the level of education of some of the participants might have had an influence on their understanding of some of the words and concepts, if one takes the above into account. A final possible reason for the poor

reliability of the ZTPI-RF is that participants might have found some of the items too personal to comment on, for instance “*I tend to do things impulsively*” and “*I have suffered abuse and rejection in the past*”. It might be that it is not culturally appropriate for participants to share personal information with a total stranger. This was evident in some of the qualitative interviews as well. Taking all of this into account, it is clear that the ZTPI-RF is not adequate for the determination of TP in an African context. The qualitative phase of the study was subsequently aimed at establish a picture of how TP presents in an African context. It was hoped that this would provide vital information that might help in developing a more culture-specific questionnaire regarding TP.

During the process of obtaining the qualitative data, it was clearly difficult for participants to express themselves. This might have had an influence on the qualitative results. A possible reason for this resistance might have been that the participants were uncomfortable sharing personal information with someone from a culture different to their own, and in a setting unknown to them. The interviews seemed to indicate that TP in the African context is strongly influenced by certain prominent factors that are characteristic of this context. These factors include the struggle of these participants to get through every day, especially due to their difficult circumstances and poor financial status. Their struggle for everyday survival seemed to place them in a situation where they have no choice but to lean towards a time orientation that is more focused on the present. This focus on the present seems to be associated with their ability to persevere in highly challenging circumstances with little resources, and thus represents a prominent source of resilience and survival thrust. In terms of the future, participants expressed a

general intention to plan and provide for the future, both financially and educationally, but the means and ability to execute these plans was often lacking due to circumstances over which they have no control.

Social support also seemed to have a prominent influence, whether it be positive or negative, on participants' TP. Social support was one of the themes that were prominent when participants reflected positively on the past, present and future. Characteristic of this collectivistic culture, familial and relational support seemed to be a source of resilience for these participants in difficult social and financial circumstances. Although the past was the orientation which was focused on the least, once again the importance of social support was evident. This correlates with the Xhosa proverb "umunthu ngumuntu ngabantu" (a person is a person through a person). This is a notion that is common to all African languages and traditional cultures. It is concerned both with the peculiar interdependence of a person's development and fulfillment of his/her powers, and the understanding of what it is to be a person in that particular culture (Lassiter, 1999).

Interestingly, there were some prominent differences in TP between participants when their levels of psychological functioning were taken into account. This confirms Zimbardo's experience of the association between TP and levels of psychological well-being that exist in a Western context. Some prominent differences were observed between Zimbardo's (1999) categories and the findings from the qualitative data in terms of psychological well-being. According to Zimbardo, a balanced TP is conducive to a person's psychological well-being; however, within this African context, it seemed that a

present time orientation held certain benefits in terms of survival. The flourishing group was predominantly focused on the present, whereas the languishing group fantasized about the future in an unrealistic manner, which was at the cost of a realistic view of their present circumstances. This seems to be an important qualification of Zimbardo's (1999) view of the link between a future time orientation and psychological well-being within the current African context.

In the flourishing group, social support is one of the most important resources for participants of this African culture. It is also social support that gives the participants from this context hope for the future. Unlike the Western context, where an individual has to make plans on his own to secure his future, it was evident that social support contributed to these participants' psychological well-being. This is an important factor to keep in mind when developing a scale to measure TP in an African context.

In the languishing group of people it was interesting to see that morals, such as not having pre-marital sex and children looking after their parents when they age, were perceived by individuals as not being respected any more, and that this was very difficult for some of the participants to understand. This has important implications in terms of grandparents having to look after their grandchildren due to parents who passed away from HIV/AIDS (AIDS Report, 2004), which clashes with the moral that children need to provide for their elderly parents. There are thus evident differences in terms of the TP of individuals in an African context with different levels of psychological well-being.

An important issue that needs consideration is the apparent discrepancy between some of the quantitative and qualitative results, specifically in terms of the participants' present time-orientation. According to the confirmatory factor analysis (Table 4), the Present-Hedonistic and Present-Fatalistic subscales, as derived from the original ZTPI, explained only a very small percentage of the variance in participants' TP results. The three items that showed unsatisfactory item-total correlations, were also from these subscales. From these results, it could be concluded that an orientation towards the present almost does not exist for these participants. However, results from the content analysis of qualitative data painted a totally different picture, as it indicated that the participants from this African context were actually very strongly inclined towards the present. This highlights the possible difference between participants' experience of the present, and the way in which the present orientation is conceptualized in the ZTPI-RF. It seemed from the qualitative interviews that an inclination toward the present is the norm in this group. Because this is especially true for the flourishing group of participants, a strong present orientation possibly also contributes to psychological well-being. It could thus be concluded that the way in which the present time-orientation is conceptualized in the ZTPI, and the way in which it finds expression in the language and meaning of the scale items, might not be an adequate representation of participants' experience of the present.

These possible differences in TP are highlighted by the existence of terms like "Africa Time" used in South Africa. This term gibingly refers to the assumed contention among Black Africans that nothing has to be done in a rush or by means of a deadline, for it can always be done later. Although used jokingly, this term often reflects high levels

of frustration because of presumed cross cultural variations in TP, and also contains a degree of generalization and cultural bias that is unsubstantiated by research on this topic. Both the quantitative and qualitative data seems to confirm this implied difference in TP of Western and African groups, at least for this group of Setswana individuals.

Conclusions

It is evident that the ZTPI-RF is not reliable or valid within the African context in its current form. It is recommended that for any future attempts of developing or reviewing a scale that measures TP, it should be more appropriate for the context, more culturally sensitive, and conceptualized from an emic perspective. More qualitative information on TP might shed more light on all the context and culture-specific factors that should be taken into account when investigating TP in the African context, and will provide a broad base for future scale development.

References

Antonovsky, A. (1987). *Unravelling the mystery of health: How people manage stress and stay well*. San Francisco: Jossey-Bass.

Antonovsky, A. (1993). The structure and properties of the Sense of Coherence Scale. *Social Science and Medicine*, 36, 725-733.

Brown, C. & Segal, R. (1997). The development of the Hypertension Temporal Orientation (HTO) Scale. *Ethnicity & Disease*, 7, 41-54.

Christopher, J.C. (1999). Situating psychological well-being: exploring the cultural roots of its theory and research. *Journal of Counseling & Development*, 77, 141-152.

Clark, L.A. & Watson, D. (1995). Constructing validity: Basic issues on objective scale development. *Psychological Assessment*, 7(3), 309-319

Deci, E.L. & Ryan, R.M. (2000). The “what” and “why” of goal pursuit: human needs and the self-determination of behavior. *Psychological Enquiry*, 11(4), 227-268.

Devolder, M. & Lens, W. (1982). Academic achievement and future time perspective as a cognitive-motivational concept. *Journal of Personality and Social Psychology*, 42, 566-571.

Diener, E., Emmons, R., Larsen, R.J. & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49(1), 71-75.

Floyd, F.J. & Widaman, K.F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment*, 7(3), 286-299.

Goldberg, D.P. & Hillier V.F. (1979). A scaled version of the General Health Questionnaire. *Psychological medicine* ,9, 139-145

Harber, K.D., Zimbardo, P.G. & Boyd, J.N. (2003). Participant self-selection biases as a function of individual differences in time perspective. *Basic and Applied Social Psychology*, 25(3), 255-264.

Hsieh, H.F. & Shannon, S.E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288.

Holman, E. & Silver, R. (1998). Getting stuck in the past: temporal orientation and coping with trauma. *Journal of personality and social psychology*, 74, 1146-1163.

Jones, J. (1988). Cultural differences in temporal perspective. In J. McGrath (Ed.), *The social psychology of time*. Newbury Park, CA: Sage, 21-38.

Kammann, R. & Flett, R. (1983). Affecometer 2: a scale to measure current levels of general happiness. *Australian Journal of Psychology*, 35, 259-265.

Keyes, C.L.M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Research*, 43, 207-222.

Keyes, C.L.M. (2005). Mental illness and/or mental health? Investigating the axioms of the complete state model of health. *Journal of Consulting and Clinical Psychology*, 73(3), 539-548.

Konefal, J., Duncan, R., Meub, W. & Winfield, D. (2006). Time perspective as a potential tool for psychotherapeutic interventions. *Psychological Reports*, 99, 111-120.

Lassiter, J.E. (1999). African culture and personality: Bad science, effective social activism or a call to reinvent ethnology? *African Studies Quarterly* 3(2), pp. 1+

Lennings, C.J., Burns, A.M., & Cooney, G. (1998). Profiles of time perspective and personality: developmental considerations. *The Journal of Psychology*, 132(6), 629.

Levine, R. (1997). *A geography of time: the temporal misadventures of a social psychologist, or how every culture keeps time just a little bit differently*. New York: Basic Books.

Lewin, K. (1942). *Time perspective and morale. Resolving social conflicts*. New York: Harper.

Markus, H. & Ruvolo, A. (1989). Possible selves: personalized representation of goals. In L. Previn (Ed.), *Goal concepts in personality and social psychology* (pp. 211-241). Hillsdale, NJ: Erlbaum.

Morello, G. (2000). Time orientation across cultures: a comparative study in Italy, Cuba and Spain. (Proceedings: Multicultural Marketing Conference, Grand Stanford Intercontinental Hotel: Hong Kong).

Paunonen, S.V. & Ashton, M.C. (1998). The structured assessment of personality across cultures. *Journal of Cross-cultural Psychology*, 29(1), 150-170.

2004 Report on global Aids Epidemic. Retrieved November 1, 2007.

<http://www.unaids.org>

Rousseau, G.G. & Venter, D.L.J. (2003). A multicultural investigation of consumer time perception. *Management dynamics*, 12(2), 24-33.

Rothspan, S. & Read, S. (1996). Present versus future time perspective and HIV risk among heterosexual college students. *Healing Psychology*, 15, 131-134.

Seijts, G.H. (1998). The importance of future time perspective in theories of work motivation. *The Journal of Psychology*, 132(2), pp. 154+.

Smith, G.T. & McCarthy, D.M. (1995). Methodological considerations in the refinement of clinical assessment instruments. *Psychological Assessments*, 7(3), 300-308.

Statsoft. Inc (2004). STATISTICA (data analysis software system), version 7.
www.statsoft.com

Van der Vijver, T. & Leung, K. (1997). *Methods and analysis of cross-cultural research*. Sage: London.

Volder, M. M. (1979). Time orientation: A review. *Psychological Belgica*, 19, 61-79.

Westerhof, G.J. & Bode, C. (1999). Handleiding van Beknopt Codeschema voor het SELE instrument (Versie 3.0). Nijmegen: Forschungsgruppe Psychogerontologie, Universiteit Nijmegen.

Wissing, M.P., Thekiso, S., Stapelberg, R., Van Quickelberge, L., Choabi, P., Moroeng, C. & Nienaber, A. (1999). The Psychometric properties of scales measuring psychological well-being in an African group. (Handout. International Africa

psychology congress of the psychological society of South Africa, Durban, July 18-23, 1999).

Wissing, M.P. & Van Eeden, C. (2002). Empirical clarification in the nature of psychological well-being. *South African Journal of Psychology*, 32 (1), 32-42.

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

Zimbardo, P., Boyd, J., & Keogh, K. (1999). Who's smoking, drinking, and using drugs? Time perspective as a predictor of substance use. *Basic & Applied Psychology*, 21, 149-165.

Addendum

Table 1: Descriptive statistics, effect size and reliability indices per item of the**ZTPI-RF**

Item	Mean	SD	Range	Skewness	Kongolmorov- Smirnov: p- value	Item-total correlations
			Min-Max			
ZTPI1	3.67	1.20	0 – 5	-0.80	<0.01	0.31
ZTPI2	3.77	1.04	0 – 5	-0.80	<0.01	0.43
ZTPI3	3.54	1.17	0 – 5	-0.70	<0.01	0.37
ZTPI4	2.87	1.23	0 – 5	0.15	<0.01	0.08
ZTPI5	2.35	1.17	0 – 5	0.75	<0.01	-0.14
ZTPI6	3.61	0.97	0 – 5	-0.95	<0.01	0.40
ZTPI7	3.72	1.12	0 – 5	-0.88	<0.01	0.43
ZTPI8	3.82	1.05	0 – 5	-1.05	<0.01	0.38
ZTPI9	3.23	1.29	0 – 5	-0.26	<0.01	0.29
ZTPI10	2.98	1.21	0 – 5	-0.01	<0.01	0.20
ZTPI11	3.50	1.12	0 – 5	-0.68	<0.01	0.34
ZTPI12	3.46	1.28	0 – 5	-0.49	<0.01	0.41
ZTPI13	3.23	1.18	0 – 5	-0.24	<0.01	0.35
ZTPI14	2.71	1.28	0 – 5	0.27	<0.01	0.05
ZTPI15	3.16	1.16	0 – 5	-0.32	<0.01	0.16
ZTPI16	3.71	1.23	0 – 5	-0.81	<0.01	0.34
ZTPI17	3.69	1.27	0 – 5	-0.62	<0.01	0.19
ZTPI18	3.61	1.10	0 – 5	-0.63	<0.01	0.28
ZTPI19	3.26	1.26	0 – 5	-0.31	<0.01	0.28
ZTPI20	3.53	1.21	0 – 5	-0.52	<0.01	0.35

Note:

Past-Positive: ZTPI1; ZTPI3; ZTPI7; ZTPI18

Past-Negative: ZTPI2; ZTPI9; ZTPI12; ZTPI19

Present-Hedonistic: ZTPI4; ZTPI8; ZTPI10; ZTPI16

Present-Fatalistic: ZTPI5; ZTPI13; ZTPI14; ZTPI17

Future: ZTPI6; ZTPI11; ZTPI15; ZTPI20

Table 2: Inter item correlations for the subscales of the ZTPI-RF

Subscales	Mean Inter-item correlation	Chronbach Alpha	Gutman Lambda2
Past Positive	0.21	0.52	0.53
Past Negative	0.22	0.53	0.53
Present Hedonistic	0.05	0.18	0.22
Present Fatalistic	0.05	0.17	0.25
Future	0.11	0.33	0.35

Tabel 3: Confirmatory factor analyses of the ZTPI-RF using the maximum likelihood method of factor extraction

Items	Factorloadings	Communalities	Eiegenvalue	% variance explained
ZTP7	0.64	0.40		
ZTP3	0.49	0.24		
ZTP1	0.44	0.19		
ZTP18	0.30	0.09		
			0.53	33.50%
ZTP12	0.53	0.27		
ZTP2	0.48	0.23		
ZTP9	0.47	0.21		
ZTP19	0.40	0.16		
			0.58	29.00%
ZTP8	1.00	1.00		
ZTP16	0.24	0.05		
ZTP4	0.05	0.02		
ZTP10	-0.05	0.00		
			0.14	1.50%
ZTP14	1.00	1.00		
ZTP5	0.25	0.06		
ZTP13	0.17	0.02		
ZTP17	-0.13	0.01		
			0.25	3.00%
ZTP6	0.65	0.41		
ZTP11	0.40	0.16		
ZTP20	0.30	0.08		
ZTP15	0.10	0.01		
			0.24	25.50%

Table 4: Explorative factor analysis of the ZTPI-RF using the maximum likelihood method of factor extraction

Variable	Factor Loadings				
	1	2	3	4	5
ZTPI 17	0.52				
ZTPI 16	0.43				
ZTPI 11	0.39				
ZTPI 18	0.38				
ZTPI 2	0.38				
ZTPI 1	0.32	0.46			
ZTPI 8		0.41			
ZTPI 20		0.37	0.31		
ZTPI 6		0.33			
ZTPI 7		0.32			
ZTPI 5*					
ZTPI 9			0.64		
ZTPI 19			0.47		
ZTPI 13			0.40		
ZTPI 10			0.37		
ZTPI 14				0.66	
ZTPI 4*					
ZTPI 15					0.53
ZTPI 3		0.32			0.46
ZTPI12*					

Note:

Values less than 0.3 are not displayed. Items indicated with * did not load significantly on any factors.

Table 5: Criterion-related validity: Correlations between ZTPI-RF subscales and other measures of psychological well-being

ZTPI Subscales	AFM	SWLS	SOC	GHQ	MHC
Past Positive	0.18*	0.06	0.23*	0.25*	0.30*
Past Negative	-0.17*	-0.13	-0.15*	0.13	0.10-
Present Hedonistic	-0.03	-0.08	0	-0.02	-0.02
Present Fatalistic	-0.23*	-0.11	-0.12	0.18*	-0.01
Future	0.13	0.05	0.04	0.01	0.01

Note:

AFM = Affectometer 2; SWLS = Satisfaction With Life Scale; SOC = Sense of Coherence Scale; GHQ = General Health Questionnaire; MHC = Mental Health Continuum.

*: statistical significant correlation: p-value<0.0001

Table 6: Qualitative Interviews: Participant Profile

Participant	Age	Sex	Urban/Rural	MCH-score
1	48	Male	Rural	52/70 (flourishing)
2	36	Male	Rural	11/70 (languishing)
3	46	Female	Rural	53/70 (flourishing)
4	47	Female	Urban	26/70 (languishing)
5	50	Female	Urban	8/70 (languishing)
6	42	Male	Urban	58/70 (flourishing)
7	59	Male	Urban	53/70 (flourishing)

Table 7: Qualitative Content Analysis

Time Orientation	Time Attitude	Theme					
		Circumstances	Social Support	Finances	Health	Education	Morals
Total group							
Past	(+)	1	4	3	-	-	2
	(-)	4	4	-	-	-	-
	(+/-)	1	-	-	-	-	-
Present	(+)	2	5	4	-	-	-
	(-)	8	-	6	1	-	-
	(+/-)	2	-	-	-	-	-
Future: Near-by	(+)	-	2	7	-	-	-
	(-)	-	-	5	1	-	-
	(+/-)	2	-	-	-	-	-
Future: Distant	(+)	2	-	2	-	2	-
	(-)	-	-	1	-	1	-
	(+/-)	-	-	-	-	-	-
Flourishing group							
Past	(+)	-	2	2	-	-	-
	(-)	2	1	1	-	-	-
	(+/-)	-	-	-	-	-	-
Present	(+)	2	4	2	-	-	-
	(-)	3	-	3	1	-	-
	(+/-)	1	-	-	-	-	-
Future: Near-by	(+)	-	-	4	-	-	-
	(-)	-	-	2	1	-	-
	(+/-)	1	-	-	-	-	-
Future: Distant	(+)	-	-	1	-	1	-
	(-)	-	-	-	-	-	-
	(+/-)	-	-	-	-	-	-
Languishing group							
Past	(+)	1	1	1	-	-	2
	(-)	3	2	1	-	-	-
	(+/-)	-	-	-	-	-	-
Present	(+)	1	1	2	-	-	-
	(-)	4	-	2	-	-	-
	(+/-)	-	-	-	-	-	-
Future: Near-by	(+)	-	-	2	-	-	-
	(-)	-	-	2	-	-	-
	(+/-)	1	-	-	-	-	-
Future: Distant	(+)	2	1	-	-	1	-
	(-)	-	1	1	-	-	-
	(+/-)	-	-	-	-	-	-

Note: (+) indicates a positive attitude towards the TP and discussed theme
 (-) indicates a negative attitude towards the TP and discussed theme
 (+/-) indicates a neutral attitude towards the TP and discussed theme

Zimbardo Time Perspective Inventory-Revised (ZTPI-RF)

Instructions:

Read each item, and as honestly as you can, answer the question: "How characteristic or true is this of you?" Check the appropriate box using the scale.

	Very untrue	Untrue	Neutral	True	Very true
1. Familiar childhood sights, sounds and smells often bring back a flood of wonderful memories					
2. I often think of what I should have done differently in my life					
3. It gives me pleasure to think about my life					
4. I do things impulsively					
5. If things don't get done on time, I don't worry about it					
6. When I want to achieve something, I set goals and consider specific means for reaching those goals					
7. There is much more good to recall than bad in my past					
8. I try to live my life as fully as possible, one day at a time					
9. I've taken my share of abuse and rejection in the past					
10. I make decisions on the spur of the moment					
11. I take each day as it is rather than to plan it out					
12. I've made mistakes in the past that I wish I could undo					
13. My life path is controlled by forces I cannot influence					
14. It doesn't make sense to worry about the future, since there is nothing that I can do about it anyway					
15. I make lists of things to do					
16. I often follow my heart more than my head					
17. Life today is too complicated; I would prefer the simpler life of the past					
18. I like family rituals and traditions that are regularly repeated					
19. I think about the bad things that have happened to me in the past					
20. There will always be time to catch up on my work					

Note:

Past-Positive: ZTPI1; ZTPI3; ZTPI7; ZTPI18

Past-Negative: ZTPI2; ZTPI9; ZTPI12; ZTPI19

Present-Hedonistic: ZTPI4; ZTPI8; ZTPI10; ZTPI16

Present-Fatalistic: ZTPI5; ZTPI13; ZTPI14; ZTPI17

Future: ZTPI6; ZTPI11; ZTPI15; ZTPI20