

Introducing English and German Versions of the Adolescent Time Attitude Scale

Assessment
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Abstract

In this study, the authors report on the development of English and German versions of the Adolescent Time Attitude Scale (ATAS). The ATAS consists of six subscales assessing Past Positive, Past Negative, Present Positive, Present Negative, Future Positive, and Future Negative time attitudes. The authors describe the development of the scales and present data on the reliability and structural validity of ATAS scores in samples of American ($N = 300$) and German ($N = 316$) adolescents. Internal consistency estimates for scores on the English and German versions of the ATAS were in the .70 to .80 range. Confirmatory factor analyses indicated that a six-factor structure yielded the best fit for scores and that the scores were invariant across samples.

Keywords

adolescents, cross-cultural, invariance, reliability, time attitudes, time perspective, validity

Time perspective is a cognitive–psychological construct that includes several dimensions, including attitudes toward time. Time attitudes—that is, how individuals feel about the past, the present, and the future (Lewin, 1939; Zimbardo & Boyd, 1999)—are of substantial interest to researchers who focus on the developmental period of adolescence, given that formal operational thought increases adolescents' ability to reason abstractly and to consider hypothetical scenarios (Piaget, 1955). Additionally, Erikson (1968) argued identity formation, which is the primary task of adolescence, involves the integration of one's past, present, and future selves.

However, scores on the most frequently used measure of time attitudes in the literature (i.e., the Zimbardo Time Perspective Inventory [ZTPI]; Zimbardo & Boyd, 1999) were validated in college-aged samples. Worrell and Mello (2007) found that the structure of ZTPI scores was only partially supported in an adolescent sample. These researchers also reported that ZPTI scores had low correlations with scores on other time-related constructs. Given the growing interest in time attitudes in adolescence (Mello & Worrell, 2006; Nurmi, 1991; Seginer, 2008; Worrell & Mello, 2007; Wyman, Cowen, Work, & Kerley, 1993), we developed English and German versions of the Adolescent Time Attitude Scale (ATAS; Mello & Worrell, 2007; Mello, Worrell, & Buhl, 2008) as part of a project to develop a multidimensional measure of time perspective for adolescents. In this article, we review some of the literature on

time-related constructs; provide an overview of the extant measures of time attitudes, with specific emphasis on the ZPTI; and provide data on the internal consistency and structural validity of ATAS scores in samples of American and German adolescents.

Variables Related to Time

Researchers have examined the relationship between several variables with important developmental consequences and attitudes toward time, with an emphasis on attitudes toward the future. For example, Lamm, Schmidt, and Trommsdorff (1976) found that higher socioeconomic status (SES) participants reported more positive attitudes toward the future than their lower SES counterparts. In a longitudinal study, Wyman et al. (1993) found that participants aged 9 to 11 years residing in high-risk neighborhoods who reported positive attitudes toward the future had higher academic achievement and better socioemotional

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adjustment than their counterparts 2 years later. Mello and Worrell (2006) reported that older adolescents had significantly higher scores on the ZPTI's Present Hedonistic subscale than their younger counterparts. However, the effect size for Mello and Worrell's finding was small.

In the academic arena, Lennings, Burns, and Cooney (1998) found that positive attitudes toward the future were positively correlated with high academic achievement in both high school and university students. Similarly, Worrell and Hale (2001) reported that high school students who were at risk of dropping out but felt hopeful about the future were more likely to complete high school than their counterparts who were equally at risk but reported less positive attitudes toward the future. In a group of academically talented adolescents, future positive attitudes and present fatalistic attitudes had significant positive and negative relationships with academic achievement, respectively (Mello & Worrell, 2006).

German Research on Time

In Germany, as in other countries, research on time has also focused primarily on the future. Trommsdorff, Lamm, and Schmidt (1979) examined hopes and fears for the future and reported that youth aged 14 to 16 years thought more about their future self than their future occupation. In the Shell Youth Study (Deutsche Shell, 2002), which began in the 1980s, individuals aged 15 to 24 years were studied with regard to their hopes for and fears about the future for both themselves and for society. Results indicated that youth thought the society would have problems in the future, although personally, they would not experience such problems. In another article based on the Shell study, Maschke and Stecher (2009) showed that youth with low economic and educational capital reported less optimistic attitudes toward the future for both themselves and society than their counterparts. All the studies reviewed above highlight the relationship that time attitudes have with important developmental outcomes.

Measuring Time Attitudes

There are several measures of attitudes toward time in the extant literature. However, the majority assess only the future time period. These include the Future Orientation Questionnaire (Nurmi, Seginer, & Poole, 1990), the Measure of Perceived Life Chances (Jessor, Donovan, & Costa, 1990), the State Hope Scale (Snyder et al., 1996; Snyder, Lopez, Shorey, Rand, & Feldman, 2003), and the Life Orientation Test (Scheier & Carver, 1985), a measure of optimism. Two time attitude measures assess multiple time periods. One is the Temporal Satisfaction with Life Scale (Pavot, Diener, & Suh, 1998), which has subscales assessing positive attitudes toward the past, the present, and

the future, but does not assess negative attitudes. The other is the ZPTI (Zimbardo & Boyd, 1999), which examines both positive and negative attitudes toward the past, hedonistic and fatalistic attitudes toward the present, and positive attitudes toward the future. As the ZPTI is closest in structure to the scale described in this article, and there is more psychometric evidence on ZPTI scores than on the other measures, we discuss this instrument in more detail. We suspect that the growing popularity of the ZPTI in the United States and international research is in part due to its focus on all three time periods.

The ZPTI. The ZPTI is a 56-item five-factor instrument scored on a 5-point Likert-type scale. The subscales are Past Positive ("a warm, sentimental attitude toward the past"), Past Negative ("a negative, aversive view of the past"), Present Hedonistic ("a hedonistic, risk-taking, 'devil may care' attitude toward time and life"), Present Fatalistic ("a fatalistic, helpless, hopeless attitude toward the future and life"), and Future ("a general future orientation"; Zimbardo & Boyd, 1999, pp. 1274-1275). In addition to the scale development study (Zimbardo & Boyd, 1999), there have been examinations of the reliability and validity of ZPTI scores in several different countries and languages (Milfont, Andrade, Belo, & Pessoa, 2008; Sircova et al., 2007). Results of these studies have provided support for and raised measurement and construct concerns about ZPTI scores.

Measurement concerns about ZPTI scores. In general, internal consistency estimates for ZPTI scores are moderate—in the .60 to .80 range—with the exception of the Brazilian sample (Milfont et al., 2008), where reliability estimates ranged from .46 to .67, and the Italian sample (D'Alessio, Guarino, De Pascalis, & Zimbardo, 2003; .49 to .67, $Mdn = .54$). Structural validity evidence from four exploratory factor analyses (EFAs; Apostolidis & Fieulaine, 2004; Diaz-Morales, 2006; Worrell & Mello, 2007; Zimbardo & Boyd, 1999) and four confirmatory factor analyses (CFAs; Apostolidis & Fieulaine, 2004; Milfont et al., 2008; Worrell & Mello, 2007; Zimbardo & Boyd, 1999) of ZPTI scores have been more variable.

A thorough review of these studies is beyond the scope of this article, but several general points can be made. First, the variance accounted for by the five factors in the EFAs has always been lower than 40%. Second, many items have been salient only because the floor for salience has been set at .30. In the single study to set the floor for item salience at .40 (Worrell & Mello, 2007), only 31 of the 56 items were salient. Third, Worrell and Mello (2007) found a viable six-factor structure for ZPTI scores using EFA, with the Future factor splitting into two. Fourth, only one of the five indices of fit/misfit reported across the four CFA studies of ZPTI scores indicated *acceptable* fit, with the other four indicating marginal to poor fit. Finally, different factor solutions

have also been reported for scores on the short form of the ZPTI (e.g., Crockett, Weinman, Hankins, & Marteau, 2009; D'Alessio et al., 2003).

Construct concerns about ZPTI scores. Worrell and Mello (2007) argued that there may be concerns with the time constructs being assessed by ZPTI subscales. As the names of the Present Hedonistic and Present Fatalistic subscales suggest, these subscales tap constructs such as risk taking and pessimism, respectively, in addition to attitudes toward the present. This mixture of constructs is reflected in convergent and structural validity analyses of ZPTI scores. For example, Present Hedonistic has its strongest relationships with lack of ego control ($r = .60$), novelty seeking ($r = .57$), and sensation seeking ($r = .57$), and Present Fatalistic has its strong relationships with anxiety ($r = .38$) and depression ($r = .37$; Keough, Zimbardo, & Boyd, 1999; Zimbardo & Boyd, 1999). Similarly, many of the items on the Future subscale are about planning and goal-setting rather than positive or negative feelings about the future. Zimbardo and Boyd (1999) found that ZPTI Future scores had their strongest relationships with measures of conscientiousness ($r = .56$), preference for consistency ($r = .47$), and consideration of future consequences ($r = .52$). Conversely, Worrell and Mello found that ZPTI Future scores had modest relationships with perceived life chances ($r = .25$) and hope ($r = .32$).

The results of factor analyses have also highlighted the mixture of constructs on ZPTI scores. In the EFA conducted by Worrell and Mello (2007), ZPTI Future items split into factors labeled Future and Future Planning. In a more recent study, Crockett et al. (2009) found that the Present Hedonistic and Future subscales yielded four rather than two factors, which they labeled Present, Hedonism, Future Orientation, and Conscientiousness. In sum, despite the growing popularity of the ZPTI as a measure of time attitudes, there are concerns about the construct validity of the scores.

The Present Study

As the literature reviewed indicates, attitudes toward time are a relevant topic of investigation for researchers interested in adolescence, and there is currently no age-appropriate measure that assesses both positive and negative attitudes toward the three time periods. Thus, we sought to develop an instrument that addresses all three time periods, yields valid and reliable scores in adolescent populations, and is appropriate for cross-cultural research, an interest evidenced by the multiple translations of the ZPTI (e.g., Apostolidis & Fieulaine, 2004; D'Alessio et al., 2003; Diaz-Morales, 2006; Milfont et al., 2008; Sircova et al., 2007).

We wanted to develop a measure that assesses feelings toward the time periods relatively *independently* of other domains to avoid the construct admixture that occurs with the ZPTI. In this two-study article, we report on the

development of a new instrument—the ATAS (Mello & Worrell, 2007; Mello et al., 2008)—with six subscales: Past Negative (PaNeg), Past Positive (PaPos), Present Negative (PrNeg), Present Positive (PrPos), Future Negative (FuNeg), and Future Positive (FuPos). We also report on the development of a German version of the instrument and the congruence between scores in the American and German samples.

Study 1

The primary goal of Study 1 was to develop a measure of time attitudes that assessed positive and negative attitudes toward the past, the present, and the future. In Study 1, we describe the development of the English version of the ATAS and provide evidence of the internal consistency and structural validity of ATAS scores. Scale development goals included internal consistency estimates of at least .70 for subscale scores and support for a six-factor structure using factor analysis.

Method

Participants. Participants were recruited from two public schools in urban school districts in a Western state, a public school in a rural district in a Mountain state, and a summer program for high-achieving students from urban and suburban backgrounds in a Western state. The final sample consisted of 300 American adolescents aged 12 to 19 years ($M = 16.06$, $SD = 1.25$) and 39.7% of them were female ($n = 119$). Based on self-report, participants belonged to the following racial/ethnic groups: African American ($n = 33$; 11%), American Indian ($n = 3$; 1%), Asian American ($n = 76$; 25.3%), European American ($n = 123$; 41.1%), Chicano/Latino ($n = 31$; 10.3%), Multi-ethnic ($n = 28$; 9.3%), and other ($n = 5$; 1.7%). One participant did not respond to this question. The average self-reported grade point average was 3.36 ($SD = 0.65$), with a range from 1.00 to 4.50. Average family income on a 7-point scale with verbal and numerical anchors (1 = *poor*, 4 = *middle class*, 7 = *wealthy*) was 4.2 ($SD = 1.29$).

Measures. The ATAS-English (Mello & Worrell, 2007) is the only instrument included in the current study. A research team comprising undergraduate, graduate, postdoctoral, and senior scholars generated items assessing attitudes toward time that were age-appropriate for adolescents and were positive and negative in valence. A total of 222 items were initially generated. Items were evaluated and 105 items were removed from the pool because they (a) were awkward in wording; (b) assessed constructs other than time, such as risk-taking or self-esteem; or (c) referenced more than one time period. Members of the research team were given the remaining 117 items in random order and asked to assign each item to one or more of the six subscales

Table 1. Descriptive Statistics for the 53-Item Adolescent Time Attitude Scale–English in U.S. Sample.

	<i>M</i>	<i>SD</i>	Skew	Kurtosis	α	95% CI (α)
Past Positive (12)	3.49	0.64	0.02	0.08	.87	.84, .89
Past Negative (6)	2.48	0.79	0.20	-0.31	.81	.77, .84
Present Positive (10)	3.53	0.61	-0.50	0.89	.86	.84, .89
Present Negative (8)	2.59	0.71	0.45	0.00	.83	.80, .86
Future Positive (11)	3.81	0.68	-0.20	-0.35	.89	.87, .91
Future Negative (6)	2.07	0.74	0.48	-0.68	.80	.76, .83

Note. *N* = 300. CI = confidence interval. Number of items in parentheses. Confidence intervals for the reliability estimates were calculated with SPSS language from Fan and Thompson (2003).

as appropriate. Sixty-four items were assigned to at least two subscales and were also eliminated from the pool.

The remaining 53 items were then included in focus groups with adolescents from diverse racial/ethnic and socioeconomic backgrounds. A trained researcher moderated the focus groups and asked participants to review the items and to indicate if the items were “good for people your age.” Participants agreed that the items were appropriate for people their age and were consistent with their ideas of positive and negative attitudes toward the past, the present, and the future. Participants also indicated that some items could be more specific or less redundant. Given the general endorsement of the items as age-appropriate, all 53 items were administered to the participants in this study.

The ATAS-English used in Study 1 consisted of 53 items representing six subscales: 12 PaPos, 6 PaNeg, 10 PrPos, 8 PrNeg, 11 FuPos, and 6 FuNeg items. Items were rated on a 5-point Likert-type scale ranging from 1 (*totally disagree*) to 5 (*totally agree*) and averaged to generate total subscale scores, with higher values indicating greater endorsement of the attitudes.

Procedure. Students and parents were provided with a letter describing the study and necessary consent and assent materials. Students who provided assent and had obtained consent from their parents were allowed to participate and were compensated with \$10. The institutional review board at the authors’ institution approved the study. Students in public school settings were administered the survey in class, and summer program participants completed the survey on their own time and returned the form to a researcher on campus. Three hundred and one participants completed the survey. However, one respondent was eliminated from analyses due to missing data on 26 of the 53 items. Several other participants had one (19), two (6), or three (2) items missing on subscales for a missing value percentage of .002. In these cases, missing values were replaced with the median value for the respondents on that subscale. The replacements

resulted in changes in some means and standard deviations in the 0.01 to 0.02 range.

Results

Preliminary Analyses. Means and standard deviations of ATAS scores based on 53 items are presented in Table 1. As can be seen, subscale means fell between 2.0 and 4.0, with standard deviations in the 0.6 to 0.7 range. Subscale distributions were neither skewed nor kurtotic, and correlations among the subscales were in keeping with theory. For example, correlations between positive and negative subscales were negative, and correlations within valence grouping (i.e., negative/negative, positive/positive) were positive. Correlations were in the medium to high range, with the highest correlations occurring between items in the same time period (e.g., PaPos and PaNeg). Additionally, correlations between proximal time periods, that is, Past and Present scores ($Mdn = |.45|$) and Present and Future scores ($Mdn = |.44|$) were generally higher than correlations between more distal periods, that is, Past and Future scores ($Mdn = |.34|$).

Cronbach’s alpha was used to examine the internal consistency estimates of scores on the six subscales. As can be seen in Table 1, estimates were in the .80 to .90 range ($Mdn = .85$). Examinations of the item/total correlations across the scales revealed that the majority of the items were contributing substantially to the reliability of the scores, with only 5 of the 53 items having a correlation of less than .40 with the appropriate total score.

Exploratory Factor Analyses. As this was a scale development project, EFAs (principal axis extractions) were used to examine structural validity initially. The number of factors to extract was determined by theory and parallel analysis as recommended (see Tabachnick & Fidell, 2007; Thompson, 2004). Item salience was set at .40, and factors were expected to have a minimum of three salient items. Theory and parallel analysis (Watkins, 2000) were in agreement on all but two analyses, Kaiser–Meyer–Olkin values (Kaiser, 1974) were high (.85-.92), and factor solutions accounted for at least 40% of the variance in item scores in all but two analyses (PaPos = 37%, PrNeg = 39.5%).

Structures of individual factors. For five subscales, the decision rules supported a one-factor solution, and the single factors that were extracted were robust, with four of the scales having at least 5 items with coefficients greater than .50. Parallel analysis indicated a two-factor solution for PaPos scores. However, in the two-factor solution, two of the four items had salient coefficients of similar strength on Factors I and II. Thus, the one-factor structure, which had 10 of 12 coefficients greater than .50, was accepted.

Factor analyses based on time periods. In the set of EFAs run for the pairs of scales assessing past attitudes, present

attitudes, and future attitudes, both orthogonal (varimax) and oblique (oblimin = 0) rotations were examined. Both one- and two-factor structures were examined for the three time periods. In the single-factor extraction of the past subscales, all items had coefficients greater than .48, with positive items having positive coefficients and negative items having negative coefficients, suggesting that the positive and negative subscales could be interpreted as a bipolar unidimensional construct. Nonetheless, excluding three cross-loadings and complex items, there were two discernable factors. As the two-factor structure was in keeping with theory and five PaPos and four PaNeg items were unique to different factors, the two-factor structure was accepted.

The Present subscales yielded clearer results. In the two-factor orthogonal solution, Factor I consisted of eight PrPos items with coefficients of at least .50, and Factor II consisted of six PrNeg items with coefficients of similar strength. Five items were complex with higher coefficients on the home factor, and one item cross-loaded. The oblique rotation yielded similar results, with an interfactor correlation of $-.60$. As two factors were clearly evident, this structure was accepted. The EFA of Future subscale scores also yielded interpretable results. Eight of the 11 FuPos items made up Factor I in the orthogonal extraction, seven of them with coefficients greater than .50. Four FuNeg and three FuPos items (with inverse coefficients) made up Factor II. No items were complex, and one FuNeg item did not achieve salience. These findings were replicated in the pattern matrix for the oblique rotation ($r = .60$) and the two-factor structure was accepted. The single-factor extractions for the Present and Future subscales showed the same bipolar pattern evident in the Past subscales.

Factor analyses based on valence. A third set of EFAs was run on subscales by valence (i.e., the three positive subscales and three negative subscales). Parallel analysis suggested a four-factor solution for the positive subscales and a three-factor solution for the negative subscales. Three-factor solutions were clearly interpretable for both positive and negative scales. For the positive scales, Factor I consisted of 11 FuPos items and 1 PrPos item with a minimally salient coefficient (.40) in the orthogonal rotation, Factor II consisted of the 10 PaPos items, and Factor III was made up of the remaining 9 PrPos items. No items were complex, and the pattern and structure matrices for the oblique rotations mirrored these findings. Intercorrelations were moderate, ranging from .25 to .48. Results were equally clean for the negative subscales. Factor I consisted of the seven PrNeg items, Factor II was made up of four FuNeg items and one PrNeg item, and Factor III consisted of the six PaNeg items.

Confirmatory Factor Analyses. CFAs were used to examine the six-factor structure for several reasons. First, the high intercorrelations between negative and positive subscales in the

same time period as well as the evidence of bipolarity from the unidimensional EFAs of the time periods suggested that EFAs would not yield clean results. Second, the results of the individual EFAs and EFAs of the three positive subscales by themselves and the three negative subscales by themselves provided strong evidence supporting the integrity of the factors. Third, CFAs allowed us to assess the goodness of fit of alternative models (MacCallum, Wegener, Uchino, & Fabrigar, 1993), including a three-factor bipolar model based on one factor for each time period. In the CFA analyses, we examined the 49 items that were initially retained as well as a 30-item version with five items per subscale. Descriptive statistics and intercorrelations for scores on the 30-item ATAS are presented in Tables 2 and 3, respectively.

The five items for each subscale were chosen using empirical criteria: (a) contribution to reliability estimates, (b) size of coefficients in EFAs, (c) breadth of construct coverage in terms of item content, and (d) practical limitations (e.g., there were only six PaNeg and six FuNeg items). We examined four models: (a) a two-factor model (15 Positive and 15 Negative items), (b) a three-factor bipolar model (10 Past, 10 Present, and 10 Future items), (c) a six-factor structure based on the 49 items retained after the EFAs on the individual subscales, and (d) a six-factor model with five items per subscale.

Based on the recommendations of Byrne (2001, 2006) and Thompson (2004), several criteria were used to assess goodness of fit. These included (a) the Satorra–Bentler scaled chi-square (Satorra & Bentler, 1994), which corrects for nonnormality in the data; (b) the chi-square to degrees of freedom ratio; (c) the nonnormed index (NNFI), which takes model complexity into account; (d) the comparative fit index (CFI; Bentler, 1990), which takes sample size into account; (e) the standardized root mean square residual (SRMR), or average value across the standardized residuals; and (f) the root mean square error of approximation (RMSEA) as well as a 90% confidence interval around RMSEA values. The SRMR and RMSEA are indices of misfit, with smaller values indicating better fit. Hair, Anderson, Tatham, and Black (1995) have suggested that a chi-square to degrees of freedom ratio between 1 and 2 indicates acceptable fit.

Hu and Bentler (1999) have suggested NNFI and CFI values greater than .95 as indicative of acceptable fit. However, other researchers (e.g., Byrne, 2006, 2008; Marsh, Hau, & Wen, 2004) have suggested that NNFI and CFI values in the .92 to .95 range and SRMR and RMSEA values in the .05 to .08 range are indicators of acceptable fit for item-level scales. T. Little (personal communication, May 8, 2010) made similar recommendations, arguing that CFI and NNFI values of .95 to .99 and SRMR and RMSEA values of .01 to .05 indicate close fit, whereas values of .90

Table 2. Descriptive Statistics for 30-Item Adolescent Time Attitude Scale–English in U.S. Sample.

	<i>M</i>	<i>SD</i>	Skew	Kurtosis	α	95% CI (α)
Past Positive (5)	3.36	0.75	-0.04	0.16	.80	.76, .83
Past Negative (5)	2.48	0.82	0.25	-0.27	.79	.75, .83
Present Positive (5)	3.63	0.68	-0.68	1.12	.77	.73, .81
Present Negative (5)	2.49	0.79	0.40	-0.07	.77	.72, .81
Future Positive (5)	3.83	0.79	-0.48	0.02	.83	.79, .86
Future Negative (5)	2.07	0.79	0.67	-0.37	.81	.77, .84

Note. $N = 300$. CI = confidence interval. Number of items in parentheses. Confidence intervals for the reliability estimates were calculated with SPSS language from Fan and Thompson (2003).

to .95 (for the CFI and NNFI) and .05 to .08 (for the SRMR and RMSEA) indicate acceptable fit. Maximum-likelihood extraction procedures were used to analyze the covariance matrices based on raw scores using EQS, Version 6.1 (Bentler, 2005). To scale the latent variables, a single indicator for each of the factors was set at unity. Use of robust statistics resulted in corrected test statistics and standard errors.

CFA results are presented in Table 4. The null model (Model 1) was rejected, with the highest chi-square to degrees of freedom ratio. The two-factor model with negative items making up one factor and the positive items making up the other factor did not fit the data well, with all but one of the fit indices falling well short of even an acceptable fit. Three of the fit indices (χ^2/df ratio, SRMR, and RMSEA) indicated acceptable fit for three-factor model, but the NNFI and CFI indicated poor fit. The fit for the 49-item six-factor model (Model 4) was a little better than the fit for Model 3, but the NNFI and CFI still fell short of acceptable fit.

The 30-item six-factor structure (Model 5) had the best fit, with all the indices within the acceptable fit range (Byrne, 2002, 2008). A three-factor model with only 30 items was run to see if this more parsimonious structure yielded a better fit. However, this model also had NNFI and CFI values indicating poor fit. The six-factor model, which is presented in Figure 1, was accepted. Only two standardized coefficients are less than below .50, and reliability estimates were .77 and higher for subscale scores. Intercorrelations among the factors ranged from $-.84$ to $.28$ and are included above the diagonal in Table 3. The 30-item ATAS-English is presented in Appendix A.

Study 2

The results of Study 1 provided good support for the internal consistency and structural validity of ATAS-English scores in American adolescents. In another article (Worrell & Mello, 2009), ATAS-English scores demonstrated evidence

Table 3. Correlation Matrix for the 30-Item Adolescent Time Attitude Scale–English in U.S. Sample.

	1	2	3	4	5	6
1. Past Positive	1.00	-.84	.50	-.36	.28	-.32
2. Past Negative	-.67	1.00	-.50	.55	-.29	.58
3. Present Positive	.40	-.40	1.00	-.84	.48	-.42
4. Present Negative	-.27	.42	-.64	1.00	-.36	.39
5. Future Positive	.22	-.23	.39	-.30	1.00	-.62
6. Future Negative	-.27	.47	-.33	.31	-.57	1.00

Note. $N = 300$. Correlations below the diagonal are for the manifest variables. Boldface correlations above the diagonal are for latent variables and were obtained from Model 5 of the confirmatory factor analysis reported in Table 4.

of convergent validity for the 30-item version (five-item subscales) with measures of hope, perceived life chances, optimism, global self-esteem, and perceived stress, and discriminant validity with age, grade point average, school belonging, and academic self-concept. In this study, perceived life chances had “significantly stronger relationships to [ATAS] future time attitudes [$r = .46, -.51$] than to past [$r = .29, -.29$] and present attitudes” ($r = .34, -.27$; Worrell & Mello, 2009, p. 193). Similarly meaningful patterns of relationships were also found between ATAS scores and scores on measures of hope (.38 to .59 with positive attitudes; $-.38$ to $-.53$ with negative subscales) and optimism (.44 to .58 with positive attitudes; $-.51$ to $-.68$ with negative subscales). These findings indicate that ATAS scores assessing future attitudes have the expected relationships with other time variables. Perceived stress is an indicator of how pressured an individual feels in the present, and this variable had significantly stronger negative relationships with PrPos ($r = -.66$) and PrNeg ($r = .80$) attitudes than with positive and negative attitudes toward the past ($r = -.32, .45$) and future ($r = -.39, .43$; Worrell & Mello, 2009).

Thus, ATAS-English scores showed evidence of internal consistency and concurrent validity (Worrell & Mello, 2009). The goals of Study 2 were to examine ATAS scores in another cultural context. Specifically, we hoped to develop a German version of the ATAS that yielded reliable and valid scores that were congruent with the scores from the English version of the instrument. The study goals were similar to those in Study 1: (a) develop scales with reliability estimates of at least .70 for individual subscale scores and (b) provide evidence of structural validity in the sample of German adolescents. In this study, we also examined the invariance of scores in the U.S. and German samples.

Method

Participants. Participants included 342 German adolescents aged 12 to 20 years ($M = 15.97$, $SD = 1.78$) living in the

Table 4. Fit Indices for the ATAS-English Scores Derived From Confirmatory Factor Analyses (Maximum Likelihood Robust).

Model	χ^2_{s-b}	df	χ^2/df	NNFI	CFI	SRMR	RMSEA	90% CI
1. Null	8298.26*	1176	7.06					
2. 2-Factor (Valence)	3441.61*	1126	3.06	.564	.583	.114	.083	.080, .086
3. 3-Factor (Time Periods)	2086.92*	1124	1.86	.818	.826	.075	.054	.050, .057
4. 6-Factor (49 items)	1792.71*	1112	1.61	.870	.877	.068	.045	.041, .049
5. 6-Factor (30 items)	545.99*	390	1.40	.937	.944	.059	.037	.029, .044
6. 3-Factor (30 items)	781.95*	402	1.95	.852	.863	.073	.056	.050, .062

Note. $N = 300$. ATAS = Adolescent Time Attitude Scale; s-b = Satorra-Bentler; NNFI = robust nonnormed fit index; CFI = robust comparative fit index; SRMR = standardized root mean square residual; RMSEA = robust root mean square error of approximation; CI = confidence interval.

* $p < .001$.

German state of Hessen. Almost half the sample was female (49.1%; $n = 148$). Participants came from families with varied levels of educational attainment: 33% ($n = 113$) included parents who had both obtained at least a bachelor's degree, whereas 15.2% ($n = 52$) included only a father and 9.9% ($n = 34$) only a mother who had obtained at least a bachelor's degree. The majority of the sample were German nationals and from middle-class backgrounds. Twenty-six participants were excluded due to incomplete data, resulting in a final sample of 316 adolescents.

Measure. The 53-item ATAS-English (Mello & Worrell, 2007) was translated into German through a multistage process in a graduate research class. The translation involved several steps. First, the 53 items were translated separately by different student groups, who translated the items for both meaning and idiom. Then, the translation results were compared. When there was disagreement about the translation among the groups, consensus was reached through discussion. Next, the translated items were shared with adolescents to ensure that the language was age-appropriate, and the adolescents' comments resulted in minor changes in a few items. As with the ATAS-English, the ATAS-German version used a 5-point Likert-type scale with verbal anchors (1 = *gar nicht* [strongly disagree], 2 = *eher nicht* [disagree], 3 = *teils teils* [neither agree nor disagree], 4 = *eher* [agree], 5 = *völlig* [strongly agree]). The German version of the 30-item ATAS is provided in Appendix B.

Procedure. Data were collected within the scope of a graduate course. Students in the graduate course recruited participants from a variety of settings, including schools, extracurricular and leisure activities, and youth organizations. School principals, teachers, and adult leaders were contacted with an informational letter asking if the school would participate in the project. In institutions that agreed to participate, parents were given passive

consent forms (i.e., they had the opportunity to refuse to let their adolescent participate). Adolescents also had to assent to participate in the study. In the letters of invitation to students and parents, information was provided on the type of questions that would be asked on the survey as well as information indicating that participation was voluntary and that data would be collected anonymously. Questionnaires were administered to students who assented and whose parents did not indicate that they could not participate. The study conformed to policies required for good scientific practice at research universities in Germany.

Results

Preliminary Analyses. As in the United States, German subscale means generally fell within 2.0 and 4.0, with standard deviations in the 0.80 to 0.90 range (see Table 5). The distributions were generally symmetrical with low skew and kurtosis scores. Alpha estimates for the scores based on 30 items were moderate to strong, ranging from .77 to .88 for the 30-item version with five items per subscale. Subscale intercorrelations were in the moderate range ($|.27| \leq r \leq |.63|$; see Table 6), and in keeping with the theoretical model.

Confirmatory Factor Analyses. The CFAs for the German sample were run using the same criteria as in Study 1. Four of the 53 items had been eliminated in the American sample using reliability estimates and EFAs. However, as this was a new sample in a different cultural context, we used all 53 items in the first set of models. The null model (Model 1) and the next three models included 53 items: Model 2 (two-factor positive, negative), Model 3 (three-factor Past, Present, Future), and Model 4 (six-factor individual subscales). Model 5—also a six-factor Past, Present, Future model—included the 49 items that were kept in Study 1 and represented a direct comparison to Model 4 in Study 1. Model 6 was the 30-item six-factor model, and

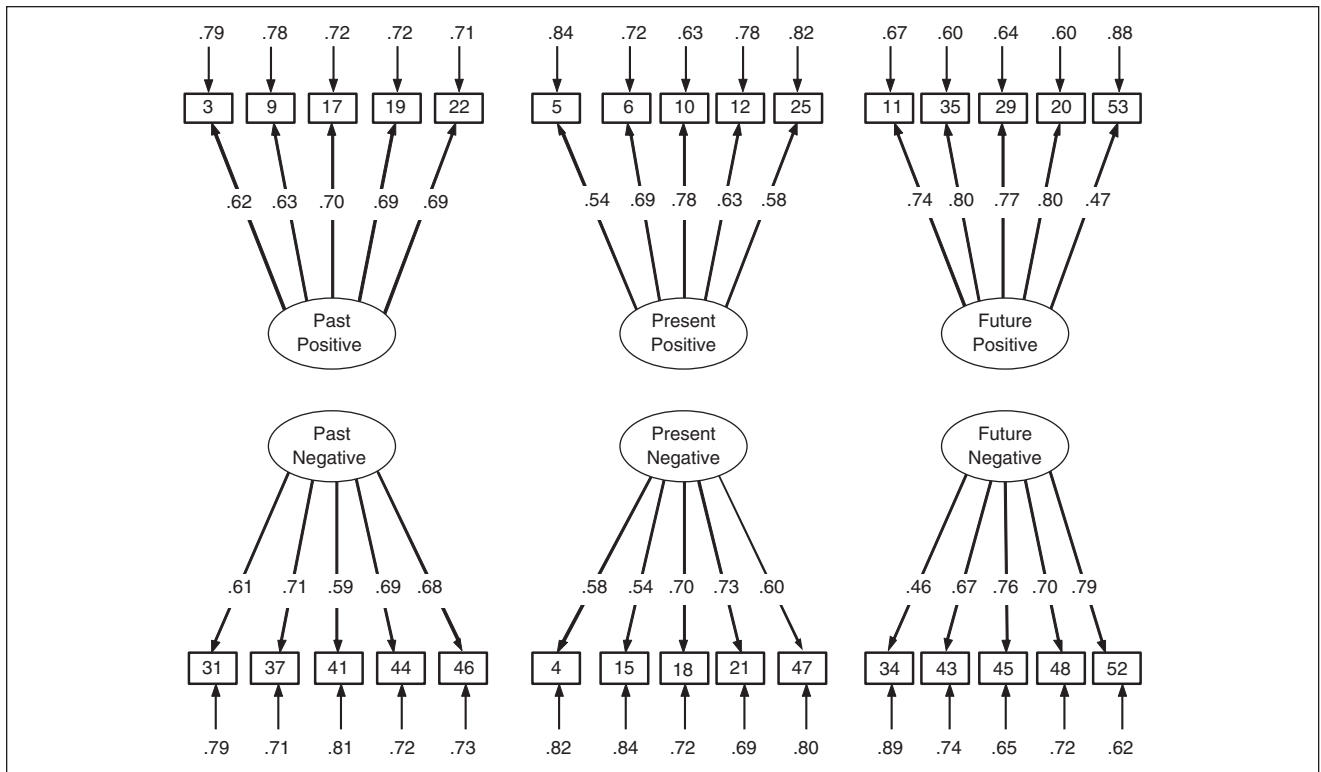


Figure 1. Six-factor model for ATAS-English scores in the U.S. sample.

Note. All coefficients are standardized robust maximum likelihood parameter estimates. Correlations among the latent variables were calculated and are reported above the diagonal in Table 3.

Model 7 was the 30-item three-factor model. These results, which are quite similar to Study 1, are presented in Table 7. The two-factor model resulted in very poor fit, and both three-factor models yielded a better fit, but also fell well short of an acceptable fit. Both the 53-item six-factor model and the 49-item six-factor model had acceptable fit, with the chi-square to degrees of freedom ratio below 1.5, an RMSEA value below .04, and NNFI and CFI values in the .91 to .92 range. However, the 30-item six-factor model had close fit, with all values in the recommended ranges. Standardized coefficients and error terms are presented in Figure 2, and factor intercorrelations are reported above the diagonal in Table 6.

In the next set of CFAs (see Table 7), we assessed the configural invariance (Model 8), metric invariance (Model 9), and invariance of intercepts (Model 10) of the 30-item six-factor model in the American and German samples. Configural invariance is the weakest form of invariance and tests whether the models have the same pattern of factors and factor loadings, but there are no constraints of equality on the parameters across groups. To assess metric invariance, also referred to as weak or measurement invariance (e.g., Byrne, 2006), in addition to testing the same pattern or

model, factor loadings are constrained to be equal across groups. Intercept invariance, sometimes referred to as strong invariance, requires constraining both the factor loadings and intercepts to be equal across groups (Byrne, 2006, 2008).

As can be seen in Table 7, Models 8 and 9 had close fit and Model 10 had acceptable fit. To examine the decrement in fit relative to the configural model, we compared the change in CFI value for the metric, structural, and mean invariance models with the CFI value for the configural model. Cheung and Rensvold (2002) suggested that “a value of CFI value smaller than or equal to -0.01 indicates that the null hypothesis of invariance should not be rejected” (p. 251). As can be seen in the last two columns in the second section of Table 7, each of the more restrictive models (i.e., Models 9 and 10) was compared with Model 8. All the differences in CFI value—reported in the CFI column—were less than .01, indicating that the more restrictive models are equivalent to the configural model. We also used another method of comparing decrement in fit recommended by N. A. Card (personal communication, June 9, 2010). Card suggested seeing if the RMSEA value for a more restrictive model falls within the confidence interval

Table 5. Descriptive Statistics for the 30-Item Adolescent Time Attitude Scale—German.

	<i>M</i>	<i>SD</i>	Skew	Kurtosis	α	95% CI
Past Positive (5)	3.60	0.90	-0.37	0.12	.88	.85, .90
Past Negative (5)	2.24	0.97	0.53	-0.19	.84	.81, .87
Present Positive (5)	3.79	0.81	-0.55	0.14	.87	.85, .90
Present Negative (5)	2.40	0.81	0.18	0.08	.77	.73, .81
Future Positive (5)	3.80	0.89	-0.38	-0.43	.87	.84, .89
Future Negative (5)	1.99	0.83	0.58	-0.13	.81	.77, .84

Note. *N* = 316. Number of items in parentheses. Confidence intervals for the reliability estimates were calculated with SPSS language from Fan and Thompson (2003).

of the previous model. As can be seen in Table 7, the RMSEA for Model 9 fell within the confidence interval for Model 8, and the RMSEA for Model 10 fell within the confidence interval for Model 9.

Discussion

The goal of these studies was to document the development of English and German versions of the ATAS and provide validity evidence in support of ATAS scores in the United States and Germany. Results from Study 1 indicated that scores for the six subscales had moderate to high reliability estimates and evidence of structural validity in the United States. In Study 2, we found evidence of (a) internal consistency for scores on the German subscales, (b) structural validity for the same 30-item scale that was used in the United States, and (c) strong invariance between scores in the U.S. and German samples. These results provide robust evidence in support of ATAS scores. In the following paragraphs, we discuss these findings and the implications of these results for researchers of time attitudes as well as the limitations of the current research.

Reliability

Results indicated internal consistency estimates of .77 and higher for both the American and German scores, providing solid evidence of reliability. Although these estimates are acceptable, future work will be needed to show that the internal consistency of ATAS scores is similar across subgroups that are often compared in the adolescent literature, such as gender, SES, race, ethnicity, and educational level in both cultural contexts. Future research will also need to establish the stability of ATAS scores and to examine the internal consistency of ATAS scores with more rigorous procedures than Cronbach's alpha (e.g., item response theory).

Table 6. Correlation Matrix for the 30-Item Adolescent Time Attitude Scale—German.

	1	2	3	4	5	6
1. Past Positive	1.00	-.68	.45	-.39	.44	-.43
2. Past Negative	-.58	1.00	-.41	.63	-.31	.73
3. Present Positive	.39	-.34	1.00	-.77	.56	-.49
4. Present Negative	-.31	.49	-.63	1.00	-.43	.74
5. Future Positive	.40	-.27	.48	-.35	1.00	-.58
6. Future Negative	-.37	.60	-.40	.56	-.51	1.00

Note. *N* = 316. Correlations below the diagonal are for the manifest variables. Boldface correlations above the diagonal are for the latent variables and were obtained from Model 5 of the confirmatory factor analysis reported in Table 7.

Structural Validity

In this study, we made extensive use of EFAs and CFAs. EFAs were used in the initial development of the ATAS-English to assist in item elimination, and CFAs were used to test the final models. The CFAs indicated that both the English and German versions of the scale had acceptable fits to the proposed theoretical model consisting of six factors. The results of the invariance analyses were also supportive of this model. The invariance results indicate that not only is the six-factor model viable in the United States and Germany (configural invariance) but also that the factor loadings and the intercepts of the indicators of ATAS scores are invariant in these two cultures.

These findings provide a strong statement about the similarity of time attitude constructs in American and German adolescents and indicate that it is possible to engage in cross-cultural comparisons of adolescents in both countries on the time attitudes assessed by the ATAS. These findings are particularly welcoming, given the measurement concerns that are evident in the studies of the ZPTI (Apostolidis & Fieulaine, 2004; Crockett et al., 2009; D'Alessio et al., 2003; Diaz-Morales, 2006; Milfont et al., 2008; Worrell & Mello, 2007; Zimbardo & Boyd, 1999).

Another advantage of the ATAS is the strength of the item coefficients. Across the EFAs of American scores and CFAs of American and German scores, only one of the EFA coefficients and two of the CFA coefficients were below .50. These findings bode well for future examinations of the scale. The factor analyses did reveal one area of concern, and that is the high intercorrelations among the ATAS subscale scores assessing the same time period (e.g., PaPos and PaNeg). It can be argued that these pairs of subscales are really opposite ends of the same dimension, rather than two separate dimensions, and the one-factor EFA solutions for the past, present, and future items provide some support for this interpretation. Thus, it is not surprising that PaPos and PaNeg scores have a high negative intercorrelation, as do PrPos/PrNeg and FuPos/FuNeg scores.

Table 7. Fit Indices for the ATAS-German Derived From Confirmatory Factor Analyses (Maximum Likelihood Robust).

Model	χ^2_{s-b}	df	χ^2/df	NNFI	CFI	SRMR	RMSEA	(90% CI)		
1. Null	8363.57*	1378	6.07							
2. 2-Factor (Valence)	3481.10*	1324	2.63	.679	.691	.094	.072	.069, .075		
3. 3-Factor (Time Periods)	2547.32*	1322	1.93	.817	.825	.082	.054	.051, .057		
4. 6-Factor (53 items)	1894.57*	1310	1.45	.912	.916	.058	.038	.034, .041		
5. 6-Factor (49 items)	1606.00*	1112	1.44	.920	.925	.057	.038	.033, .041		
6. 6-Factor (30 items)	520.73*	390	1.34	.960	.965	.050	.033	.025, .040		
7. 3-Factor (30 items)	968.23*	402	2.41	.834	.846	.088	.067	.061, .072		
Invariance Runs (30-Item U.S. and German TAS)									Model Comparison	Δ CFI
8. Configural Invariance	1065.94*	780	1.37	.951	.956	.050	.035	.029, .040		
9. Metric Invariance	1103.19*	804	1.37	.950	.954	.059	.035	.030, .040	7–6	.002
10. Intercept Invariance	1149.12*	810	1.42	.943	.949	.057	.037	.032, .042	8–6	.007

Note. *N* (for Models 1-5) = 316. ATAS = Adolescent Time Attitude Scale; s-b = Satorra-Bentler; NNFI = robust nonnormed fit index; CFI = robust comparative fit index; SRMR = standardized root mean square residual; RMSEA = robust root mean square error of approximation; CI = confidence interval (for RMSEA).

**p* < .001.

However, from a theoretical viewpoint, we would argue that individuals hold related but not identical positive and negative attitudes about the past, the present, and the future simultaneously, and an accurate assessment of their attitudes toward time requires having two scales assessing each time period (i.e., both positive and negative) rather than one. From an empirical viewpoint, the highest intercorrelations left 30% of the variance in the American sample and 40% of the variance in the German sample unaccounted for. Moreover, the three-factor bipolar models had poor fit in both samples, whereas the six-factor model based on 30 items had acceptable fit in the American sample, close fit in the German sample, and close to acceptable fit in the invariance analyses. Future research should establish whether having positive and negative scores for each time period increases the explanatory power of the constructs and poses problems of multicollinearity for statistical analyses.

Limitations and Future Directions

This study had several limitations. First, both samples came from limited geographical regions in their countries. Second, substantial percentages of both samples were from middle-class backgrounds. Thus, although the findings are promising, ATAS scores need to be examined in larger and more diverse samples across the United States and Germany. The samples in this scale study could not be divided into gender, racial, ethnic, or socioeconomic groups, as they

would have resulted in subgroups that were too small for analyses. Third, the participants were all attending high school. The reliability and validity of ATAS scores will need to be examined in other adolescent groups (e.g., middle school, early college entrants) to see if the scores are as useful in these populations. Fourth, ATAS scores need to be examined for stability and predictive validity with academic and other constructs of importance in adolescence. Fifth, we need to assess ATAS and ZPTI scores in the same study and examine the relationships between the constructs on the two scales.

Sixth, we need to ask several specific questions based on the extant literature. Given the findings with the ZPTI, it will be worth examining if positive attitudes toward the present are related to hedonism and risk taking, when these constructs are not included in how present attitudes are measured. We also need to ascertain if positive attitudes toward the present or the future can compensate for negative attitudes toward the past. These are important areas of research to pursue and may have implications for predicting resiliency in at-risk youth (Seginer, 2008). One final point that should be noted is related to the study of time perspective more generally. Although the ZPTI has time perspective in its title, it is only a measure of time attitudes, and although time attitudes are the most frequently studied, they make up only one of several domains of time perspective, which also includes meaning, frequency, relation, and orientation (e.g., Cottle, 1967; Lewin, 1948; Mello et al., 2009).

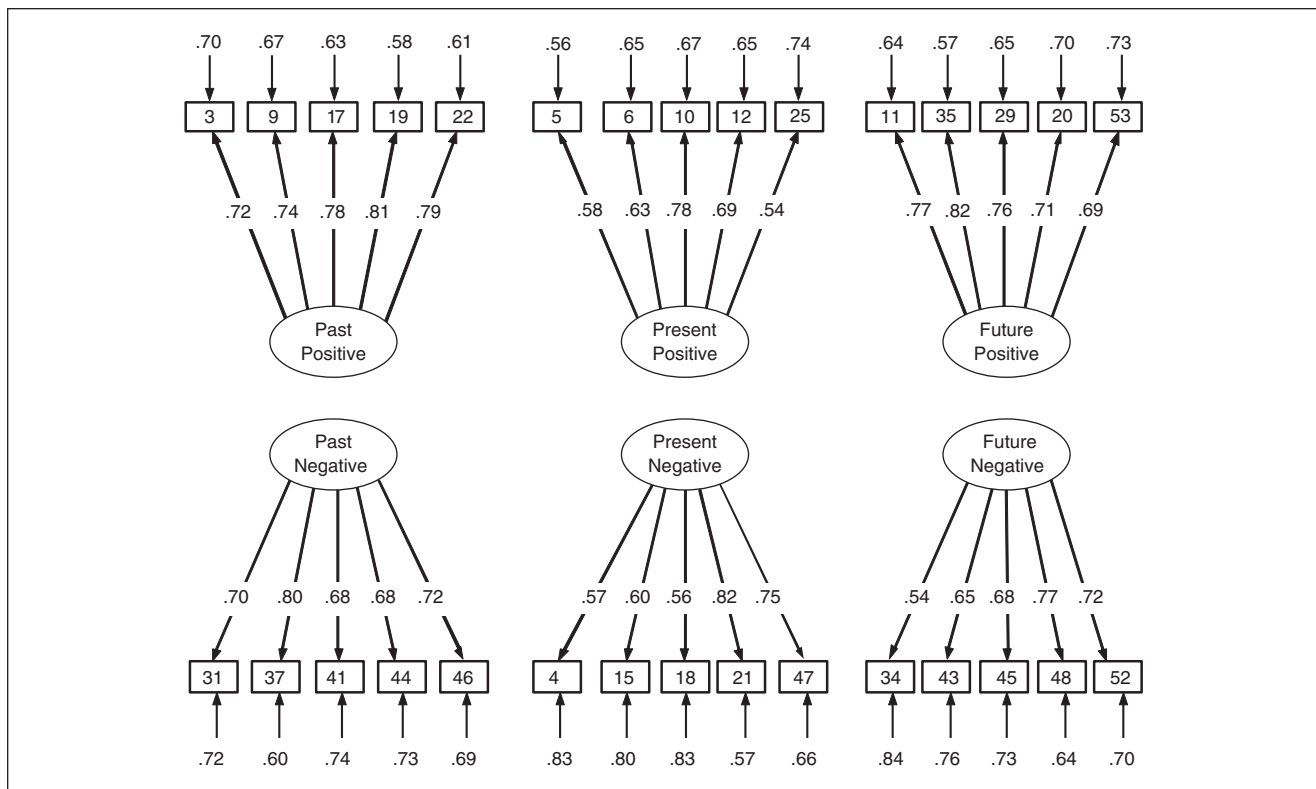


Figure 2. Six-factor model for ATAS-German scores in the German sample.

Note. All coefficients are standardized robust maximum likelihood parameter estimates. Correlations among the latent variables were calculated and are reported above the diagonal in Table 6.

Conclusion

The goal of this study was to develop a measure of time attitudes that yielded valid scores in both the United States and Germany. The results of this study indicate that ATAS scores have strong psychometric properties in these different national/cultural contexts and that these scores will be useful in examining time attitudes in adolescents (see Buhl & Lindner, 2009). These findings are promising for several reasons. The ATAS is currently the only measure that assesses *both* positive and negative attitudes toward the past, the present, and the future—the ZPTI has no assessment of negative attitudes toward the future, for example. Also, given the strength of the instrument in

Germany, it may prove useful in other cultural contexts as well. It will be also be useful to see if ATAS scores are reliable and valid in adult samples, although some items may have to be revised to make it more appropriate for older respondents. Sixty-five years ago, T. S. Eliot (1944) wrote that “time past and time present are both present in time future, and time future contained in time past” (p. 13). More recently, Zimbardo and Boyd (2008) claimed that “time is our most valuable possession” (p. 8). The ATAS will allow us to examine time attitudes’ relationship to educational and psychological constructs in adolescent populations, including reexamining questions that have only been studied with instruments focused on the future.

Appendix A

Adolescent Time Attitude Scale—English

Past Positive: 3, 9, 21, 24, 30

Past Negative: 6, 12, 15, 18, 27

Present Positive: 5, 11, 14, 17, 26

Present Negative: 2, 8, 20, 23, 29

Future Positive: 1, 7, 13, 19, 28

Future Negative: 4, 10, 16, 22, 25

Select one response for each question.	Totally Disagree	Disagree	Neutral	Agree	Totally Agree
1. I look forward to my future.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I am not satisfied with my life right now.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I have very happy memories of my childhood.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I doubt I will make something of myself.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I am happy with my current life.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. My past is a time in my life that I would like to forget.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. My future makes me happy.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I have negative feelings about my current situation.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I have good memories about growing up.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I don't think I'll amount to much when I grow up...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I am pleased with the present.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I am not satisfied with my past.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. My future makes me smile.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I am content with the present.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. My past makes me sad.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Thinking about my future makes me sad.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Overall, I feel happy about what I am doing right now.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I wish that I did not have the past that I had.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I am excited about my future.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. I am not satisfied with my present.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. I have happy thoughts about my past.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I don't like to think about my future.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I am not happy with my present life.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I like to think about my past because it was such a happy time for me.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Thinking ahead is pointless.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Overall, I feel happy with my life right now.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. I have unpleasant thoughts about my past.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Thinking about my future excites me.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. My current life worries me.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. My past is full of happy memories.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix B

Adolescent Time Attitude Scale-German

Past Positive: 3, 9, 21, 24, 30

Past Negative: 6, 12, 15, 18, 27

Present Positive: 5, 11, 14, 17, 26

Present Negative: 2, 8, 20, 23, 29

Future Positive: 1, 7, 13, 19, 28

Future Negative: 4, 10, 16, 22, 25

Jetzt interessiert uns, wie du über Vergangenes und Zukünftiges denkst.	gar nicht	eher nicht	teils teils	eher	völlig
1. Ich freue mich auf meine Zukunft.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Ich bin unzufrieden mit meinem derzeitigen Leben.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Ich habe sehr glückliche Erinnerungen an meine Kindheit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Ich denke nicht, dass aus mir einmal etwas wird.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Ich bin glückliche mit meinem derzeitigen Leben.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Meine Vergangenheit ist ein Abschnitt in meinem Leben, den ich gerne vergessen würde.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Meine Zukunft macht mich glücklich.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Ich habe ein schlechtes Gefühl bei meiner momentanen Situation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Ich habe gute Erinnerungen an mein Aufwachsen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Ich denke nicht, dass ich es einmal zu etwas bringen werde.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Ich bin über meine Gegenwart erfreut.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Ich bin unzufrieden mit meiner Vergangenheit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Ich freue mich wenn ich an meine Zukunft denke.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Ich bin zufrieden mit der Gegenwart.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Meine Vergangenheit macht mich unglücklich.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Wenn ich an meine Zukunft denke, werde ich traurig.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Im Großen and Ganzen bin ich glücklich mit dem, was ich momentan tue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Ich wünschte, ich hätte eine andere Vergangenheit gehabt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Ich bin gespannt auf meine Zukunft.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Mit meiner Gegenwart bin ich nicht zufrieden.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Ich habe glückliche Gedanken an meine Vergangenheit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Ich denke nur ungern an meine Zukunft.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Ich bin unglücklich mit meinem momentanen Leben.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Ich denke gern an meine Vergangenheit, weil es eine so schöne Zeit war.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Es ist nutzlos voraus zu denken.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Alles in allem bin ich derzeit glücklich.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Ich habe unangenehme Gedanken über meine Vergangenheit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Ich finde es spannend, an meine Zukunft zu denken.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. Mein derzeitiges Leben beunruhigt mich.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Meine Vergangenheit ist voller glücklicher Erinnerungen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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