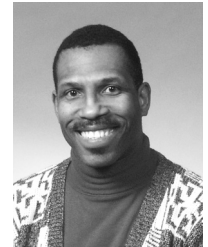# Convergent and Discriminant Validity of Time Attitude Scores on the Adolescent Time Perspective Inventory

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Abstract

In this study, we report on the validity of time attitude scores on the Adolescent Time Perspective Inventory-Time Attitudes (ATPI-TA; *Mello/Worrell* 2007) Scales. The ATPI-TA has six subscales: Past Positive, Past Negative, Present Positive, Present Negative, Future Positive, and Future Negative. Participants consisted of 300 adolescents from rural, urban, and suburban schools and a range of socioeconomic backgrounds. All time attitude subscales were interrelated, with correlations in the appropriate directions and the largest correlations occurring within the same time period. Convergent validity analyses indicated that time attitude scores had statistically significant correlations (medium to large effect sizes) with measures of hope, perceived life chances, optimism, perceived stress, and self-esteem. Moreover, the pattern of correlations was in keeping with theory (e.g., perceived life chances had stronger correlations with future attitude scales whereas perceived stress had stronger correlations with present attitude scales). Discriminant validity analyses indicated that time attitudes were not strongly related to age, GPA, school belonging, and academic self-concept.

Key words: Adolescents, Convergent Validity, Discriminant Validity, Time Attitudes

Attitudes towards time have been identified as a potentially important construct to study for several decades (e.g. *Lewin* 1942). However, most contemporary researchers of time-related constructs focus on the future (e.g., *Husman/Shell* 2008; *Nurmi* 1991; *Nurmi/Seginer/Poole* 1990; *Seginer* 1988), as future orientation has been found be related to motivation (*Husman/Lens* 1999; *Nuttin* 1985) and to predict resiliency in children and youth who are at risk for negative outcomes in academic domains (e.g., *Worrell/Hale* 2001; *Worrell/Latto/Perlinksi* 1999; *Wyman* u.a. 1993). Indeed, there is a growing literature on the relationship of future-oriented constructs such as hope (*Snyder* u.a. 1996; *Snyder* u.a. 2003), optimism (*Ek/Remes/Sovio* 2004; *Kao/Tienda* 1995), and perceived life chances (*Jessor/Donovan/Costa* 1990; *Worrell/Latto/Perlinski* 1999) to positive developmental outcomes in adolescents.

The focus on future constructs in the literature parallels a lack of attention to the present and the past, and leads to several gaps in our knowledge. For example, we do not know if attitudes toward the past and present affect attitudes

toward the future. For example, are at-risk individuals with positive attitudes toward both the present and the future more resilient than those with positive attitudes toward the future only? Is it possible to have negative attitudes toward the past and present but positive attitudes toward the future? How do positive attitudes toward one time period interact with negative attitudes toward another time period? One cannot answer any of these questions without a scale that produces valid scores for all three time periods. In the current study, we examined the convergent and discriminant validity of time attitude scores on the Adolescent Time Perspective Inventory (*Mello/Worrell* 2007), an instrument designed to examine present and negative attitudes toward the past, present, and future.

Assessing Attitudes Toward the Past, Present, and Future

Although there are several scales that examine multiple aspects of the future, to date, there are only two scales that assess attitudes towards the past, present, and future: the Zimbardo Time Perspective Inventory (ZPTI; *Zimbardo/Boyd* 1999) and the APTI-TA (*Mello/Worrell* 2007), the instrument being examined in this study.

The Zimbardo Time Perspective Inventory

The ZPTI. The ZPTI (*Zimbardo/Boyd* 1999) is a 56-item measure consisting of five subscales: Past Positive (9 items), Past Negative (10 items), Present Fatalistic (9 items), Present Hedonistic (15 items), and Future (13 items). The scale was developed using several samples ranging in size from 28 to 361 with ages ranging from 16 to 62. *Zimbardo/Boyd* reported structural validity support for ZPTI scores based on exploratory and confirmatory factor analyses, as well as reliability estimates ranging from .74 to .82.

The two past scales assess positive and negative attitudes toward the past. However, the other three scales assess attitudes towards time in conjunction with other constructs. For example, the Future scale ("I am able to resist temptations when I know there is work to be done;" "It upsets me to be late for appointments") seems to assess delay of gratification and task commitment rather than just a positive attitude toward the future. Similarly, the Present Hedonistic scale assesses "risk-taking" and "an orientation toward present pleasure with little concern for future consequences" (*Zimbardo/Boyd* 1999, S. 1275). Thus, this scale is focused on constructs other than an attitude towards the present time. Finally, the Present Fatalistic scale also reflects multiple constructs. Indeed, *Zimbardo/Boyd* (1999, S. 1275) indicated that this scale's scores reflect "a fatalistic, helpless, and hopeless attitude toward the future and life," rather than assessing attitudes toward the present as the title suggests.

This construct contamination is reflected in the validity coefficients reported by *Zimbardo/Boyd* (cf. 1999). They examined the relationship between ZPTI subscale scores and scores on 26 measures across a wide spectrum. Using a moderate effect size as a floor for interpreting the correlation coefficients (i.e., $r = .30$; *Newton/Rudestam* 1999) in keeping with the concern that statistical significance is determined in large part by sample size, Past Negative scores had sub-

stantial relationships with aggression (.49), depression (.59), emotional stability (-.45), self-esteem (-.48), trait anxiety (.68), impulse control (-.34) and level of happiness (-.41); however, Past Positive had only one meaningful correlation (i.e., $r > .32$) with level of happiness (.36). Present Hedonistic's strongest relationships were with ego control (.60), novelty seeking (.57), and sensation seeking (.57), in keeping with its focus on risky behaviors. Present Fatalistic had its largest relationship with consideration of future consequences (-.55), in keeping with the authors' description of this construct as future- rather than present-oriented, and moderate relationships with depression (.37), aggression (.39), and trait anxiety (.38). Other studies have indicated that the present-oriented scales on the ZPTI predict risky driving and substance use (vgl. *Keough/Zimbardo/Boyd* 1999; *Zimbardo/Keough/Boyd* 1997), variables that are related to risk taking rather than to temporal factors.

Scores on the Future subscale were most strongly related to conscientiousness (.57), consideration of future consequences (.52), preference for consistency (.47), and novelty seeking (-.41), reflecting the items' focus on self-control and delay of gratification. None of the scores had meaningful relationships to age, GPA, hours of study, shyness, or temper.

In another examination of ZPTI scores in a sample of 815 adolescents, *Worrell/Mello* (cf. 2007) found that ZPTI scores were generally reliable (.61 < α < .81), and were supported by exploratory factor analyses (five and six-factor structures), but not by confirmatory factor analyses (the comparative fit-index was .636 for the five-factor structure). Recommendations for an acceptable fit suggest fit indices in the .90 to .95 range (*Byrne* 2001, 2006; *Hu/Bentler* 1998). Further, none of the ZPTI scores was related to perceived life chances, and Future was the only score that had a modest relationship to a measure of hope ($r = .32$). These findings suggest that, in spite of their labels, some ZPTI subscales may not be assessing attitudes toward time as suggested by the scales' titles. Thus, although ZPTI scores have provided some evidence of validity, some subscales may be measuring more than attitudes toward time. Moreover, the ZPTI does not have a negative future subscale.

The ATPI-TA. The APTI-TA (*Mello/Worrell* 2007) was developed to provide researchers with a measure of attitudes toward the past, the present, and the future. The authors wanted to provide an alternative to the ZPTI that focused more clearly on the time dimensions, was age-appropriate for adolescents, and was substantially shorter in length. Thus, items were specifically designed to focus on positive and negative attitudes toward time with as minimal a focus on other constructs as possible. Sample items are presented in Table 1. The current version of the ATPI-TA consists of 30 items across six subscales—Past Positive, Past Negative, Present Positive, Present Negative, Future Positive, and Future Negative. The factor structures of individual subscale scores were established using exploratory factor analytic procedures. The six-factor structure was supported by confirmatory factor analyses (*Mello/Worrell/Buhl* 2008). Reliability estimates for APTI-TA scores are in the moderate range (see Table 2).

ZPTI subscales may be measuring more than attitudes toward time

The *ATPI-TA* as an alternative to the ZPTI

The Present Study

Given the evidence in support of the internal consistency and structural validity of ATPI-TA scores, the goal of the present study was to examine convergent and discriminant validity of these scores with academic, demographic, time-related, and well-being constructs. Based on previous research with the ZPTI, it was hypothesized that APTI-TA scores would have modest relationships (i.e., $r \approx .1$) with age or academic constructs (correlations indicating a small effect size), providing evidence of discriminant validity. It was also hypothesized that APTI-TA scores would have moderate to substantial correlations with other time-related variables such as perceived life chances, optimism, and hope, providing evidence of convergent validity, as these scales should be tapping similar time-related constructs.

Third, it was hypothesized that the time attitudes would be related to measures of psychological well being (self-esteem and stress) as these are global dispositional measures that should be related to positive and negative views of the world. Finally, it was hypothesized that scores on positive subscales would have positive relationships with other constructs (reversed for perceived stress), and scores on negative subscales would have negative relationships with other constructs. Given a sample size of 300, a moderate effect size (i.e., $r \geq .3$) in addition to statistical significance was used as basis for interpreting correlations as meaningful. Moderate and large effect sizes are more likely to replicate in future studies.

Method

Participants

Participants consisted of 300 adolescents (39.7 percent female, 59.7 percent male) ranging in age from 12 to 19 years old ($M = 16.1$; $SD = 1.25$) and attending schools in a Western and a Mountain state in the United States. Thirty eight percent ($n = 114$) of participants were youth attending a summer program for academically talented students, 41.7 percent ($n = 125$) were attending school in a rural district, and 19.3 percent ($n = 58$) were drawn from two urban schools. Three youth did not indicate which program they were in. The majority of participants indicated that they came from middle class (34.7 percent) or upper middle class (32 percent) families, with 22.6 percent coming from families of less economic means and 9.7 percent coming from wealthier families. Participants were from a variety of racial/ethnic groups: African American ($n = 33$), American Indian ($n = 3$), Asian American ($n = 76$), Chicano/Latino ($n = 31$), European American ($n = 123$), Multi-ethnic ($n = 28$), and Other/Unreported ($n = 6$).

Comparisons across the schools indicated no differences in socioeconomic status, but students attending the summer program (M age = 15.4, $SD = 0.91$) and one of the urban schools (M age = 15.8, $SD = 0.87$) were significantly

younger than students attending the rural school (*M* age = 16.1, *SD* = 1.2; *F*[3, 292] = 37.5, *p* < .001). Summer program students also had a significantly higher GPA (*M* = 3.86, *SD* = 0.28) than students in the other groups, *F*[3, 264] = 76.9, *p* < .001, with the students in the urban schools having the lowest GPAs (Urban 1 *M* = 2.68, *SD* = 0.54; Urban 2 *M* = 2.80, *SD* = 0.61), and the rural school falling in the middle (*M* = 3.12, *SD* = 0.59).

Measures

The APTI-TA. The primary measure was the ATPI-TA (*Mello/Worrell* 2007). The ATPI-TA consists of six subscales—Past Positive, Past Negative, Present Positive, Present Negative, Future Positive, and Future Negative—with five items each. The subscales were designed to assess individuals' positive or negative attitudes toward a particular time dimension, and are scored on a 5-point Likert scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*). Sample items can be found in Table 1. Internal consistency estimates (Cronbach's alpha) for scores in this study range from .73 to .83 (*Mdn* = .78; see Table 2), and structural validity was established using exploratory and confirmatory factor analyses (Mello et al. 2008).

The ATPI-TA consists of six subscales

Although the correlations between latent constructs representing subscales from the same time period but with a different valence were high (i.e., Past Positive/Past Negative *r* = -.84.; Present Positive/Present Negative *r* = -.84; Future Positive/Future Negative *r* = -.62), the six-factors structure was supported in confirmatory factor analyses (vgl. *Mello/Worrell/Buhl* 2008) with strong fit indices (comparative fit index of .944; root mean square error of approximation of .037). Fit indices for alternative models, including a model with both present and past items for the same time period loading on the same factor, yielded poor fits, suggesting that the six-factor structure best explain APTI-TA scores, despite the substantial intercorrelations.

Validity measures. Validity measures were divided into four subgroups: demographic, academic, time-related, and well being. The demographic variable in this study was age. Academic measures included GPA, a single-item measure assessing school belonging scored on a 7-point Likert scale (1 = *Strong Sense of Exclusion*, 7 = *Strong Sense of Belonging*), and a six-item academic self-concept measure scored on a 6-point Likert scale. A sample item is "Compared to others my age, I am good at most school subjects." Reliability estimates for scores on all composites were in the moderate to high range and are presented in Table 2.

Validity measures were divided into four subgroups: demographic, academic, time-related, and well being

Four time-related variables were used: a single-item variable and three composites (hope, perceived life chances, and optimism). The single-item variable, scored on a 5-point Likert scale, assessed participants' belief that the future will work out, and has been shown to distinguish between equally at-risk youth who dropped out and did not drop out of school (*Worrell/Hale* 2001). The six-item Children's Hope Scale (Hope; *Snyder* u.a. 1997, S. 401) is a dispositional measure that assesses individuals' beliefs in their "capabilities to produce workable routes to goals." Participants indicate their agreement to questions (e.g., "When I have a problem, I can think of lots of ways to solve it;" "I think the

things I have done in the past will help me in the future") using a 6-point Likert scale (1 = *None of the Time*, 6 = *All of the Time*). Hope scores have been shown to have internal consistency, stability over a one-month period, structural validity, convergent validity with measures of self-concept and attributional style, and discriminant validity with measures of intelligence and hopelessness (*Snyder* u.a. 1997).

The Measure of Perceived Life Chances (*Jessor/Donovan/Costa* 1990) is a 10-item global measure which assesses individuals' beliefs that certain events will occur. The 10 items are drawn from several domains (e.g., going to college, staying in good health, owning one's own home), and respondents indicate the probability of these events occurring on a 5-point Likert scale (1 = *Very Low*, 5 = *Very Low*), with items recoded for interpretation. The scores have been shown to be reliable (*Worrell/Latto/Perlinski* 1999; *Worrell/Mello* 2007) and to distinguish between resilient and non-resilient youth. The fourth temporal measure was the Life Orientation Test (LOT; *Scheier/Carver* 1984), a dispositional measure of optimism. This measure consists of eight items embedded within a set of 12 items (four are fillers). Four of the eight items are negatively worded and must be recoded for scoring. Participants respond on a 5-point Likert scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*), with items designed to assess general outcome expectancies (e.g., "In uncertain times, I usually expect the best;" "If something can go wrong for me, it will"). LOT scores have been found to be reliable and structurally valid, and college students with higher levels of optimism reported less physical symptoms a month later than those with lower levels of optimism.

The two measures of well being were the Rosenberg Self-Esteem Scale (RSES; *Rosenberg* 1965) and the Perceived Stress Scale (PSS; *Cohen/Kamarck/Mermelstein* 1983). The 10-item RSES is one of the most frequently used measures of global self-esteem in the literature. Items are scored on a 4-point Likert scale (1 = *Strongly Disagree*, 4 = *Strongly Agree*), with five of the items requiring reverse-coding. RSES scores have been found to be internally consistent across a variety of studies and risk groups (*Worrell/Latto/Perlinski* 1999) with strong evidence of convergent and discriminant validity (e.g., *Rosenberg* u.a. 1995). The PSS is a 14-item measure that assesses the degree to which individuals perceive their lives to be stressful within the previous four-week period (e.g., "In the last month, how often have you felt nervous and stressed?"). Items are rated on a 5-point Likert scale (1 = *Often*, 5 = *Never*) with some items being recoded for interpretation such that high scores indicate greater perceived stress. *Cohen/Kamarck/Mermelstein* (1983) reported evidence of internal consistency and convergent and discriminant validity for PSS scores.

Procedure

The variables were all on the same questionnaire which was administered in two different ways. Summer program participants collected the questionnaires in class, completed them at home, and returned them to class. Participants at the urban and rural schools were administered the questionnaires in class at their

schools. All participants were paid $10 for their time, and the Institutional Review Board at the authors' institution approved the study.

Results

Descriptive Statistics

APTI-TA subscales. Means, standard deviations, and internal consistency estimates for and intercorrelations among APTI-TA subscale scores are presented in Table 2. As can be seen, the means for the positive subscales are generally higher than the means for the negative subscales. The variables were neither skewed nor kurtotic, with all skew and kurtosis values falling below |1.0|. As expected, the relationships among positive subscales are positive and the relationships among negative subscales are positive, but relationships between negative and positive subscales are negative. Additionally, the highest correlations are between items in the same time period (e.g., Past Positive with Past Negative), with these constructs showing substantial overlap (60 to 70 percent shared variance) when the correlations are corrected for attenuation.

Other variables. The descriptive statistics for the validity constructs are presented in Table 3. As can be seen, some of the variables were not completed by all participants resulting in differing numbers of participants for these analyses. GPA and school belonging both had the largest amount of missing data, 29 and 22 participants, respectively. With the exception of perceived stress, means were generally above the mid-points on the scales, and no variable had a skew or kurtosis value greater than |1.0|, indicating generally normal distributions. Reliability estimates for scores were all greater than .70.

Validity Analyses

Bivariate correlations between the ATPI-TA subscale scores and the other variables are presented in Table 4, with the correlations for subscales corrected for attenuation. Generally, positive APTI-TA subscales have positive relationships with the validity variables, and negative APTI-TA subscales have negative relationships with the validity variables, with the exception of perceived stress, for which these values are reversed. Although many of the correlations are statistically significant, only those in the .30 range, indicating a medium effect size (*Rudestam/Newton* 1999), are interpreted. Most of the correlations between APTI-TA subscales and age, and APTI-TA subscales and GPA are in the .10 range as predicted. However, Future Negative scores had a negative correlation with GPA approaching a medium effect size. The correlations of the time attitude subscales with School Belonging (*Mdn r* = |.27|) and Academic Self-Concept (*Mdn r* = |.22|) were also generally modest, with the exception of a correlation of -.39 with Future Negative scores. Thus, students with higher academic self-concepts were less likely to endorse negative attitudes toward the future.

The means for the positive subscales are generally higher than the means for the negative subscales

All of the other variables had, on average, higher correlations with time attitudes than age and the academic past time attitudes. For example, the correlation between the Future Will Work Out and Future Positive scores was significantly higher than its correlation with the two past subscales, $t(297) = 2.25$, $p < .02$, and its correlation with Future Negative, $t(297) = 2.25$, $p < .001$. Correlations of time attitude subscales with Perceived Life Chances ranged from medium to large effect sizes, with the large effect sizes for relationships with Future Attitudes. The correlations of Perceived Life Chances with the Future Positive and Negative scores were significantly larger than the correlations of this variable with the Past and Present subscale scores ($p < .01$).

Similarly, Hope, Optimism, and Self-Esteem scores are related to all six time attitude subscales, with correlations in the medium to large effect size range. Hope's correlation with Present Positive scores was significantly higher than its correlation with Past Positive ($p < .01$), Past Negative ($p < .01$), and Present Negative ($p < .001$) scores. Perceived Stress, which assesses perceptions of stress in the past month (i.e., it is present-oriented) was significantly correlated with all six time attitude scores. However, the correlations with Present Positive and Present Negative had large effect sizes and were significantly greater ($p < .001$) than correlations with the Past and Future subscales. In keeping with theory, positive time attitudes were positively related to perceived life changes, hope, optimism, and self-esteem, and negatively related to perceived stress, whereas negative time attitudes had inverse relationships with these constructs.

Discussion

In the current study, we examined the relationship between APTI-TA scores and several variables. As hypothesized, most time attitude scores were generally not strongly related to age, GPA or academic self-concept, although Future Negative had moderate relationships with GPA and Academic Self-Concept. Four of the time attitude subscales had relationships approaching a moderate effect size with school belonging. Relationships with other time constructs and with well being were more substantial and consistent with the valence of the scales, as discussed below.

Academic and Demographic Variables

Age was not related to any of the six time attitudes. This finding is in keeping with previous literature. For example, *Mello/Worrell* (cf. 2006) found that age was related to only Present Hedonistic scores on the ZPTI in an adolescent sample, in keeping with a growing willingness to take risks over the teenage years. Time attitudes also did not have substantial relationships with GPA, sense of school belonging, or academic self-concept. However, it is worth noting that school belonging had generally higher relationships with the time attitude scales than the other two constructs. As a sense of belonging is an important aspect of

identity, which itself is an important variable in adolescence, it is perhaps not surprising that this variable was related to attitudes toward time. This finding warrants further study.

Additionally, Future Negative had the most consistent relationship with the three variables, indicating a modest inverse relationship between negative attitudes toward the future and variables indicative of academic engagement. These findings are similar to those reported for ZPTI scores by *Zimbardo/Boyd* (1999). However, the low correlations of the time attitude variables with age, GPA, and self-concept provide discriminant validity evidence in support of APTI-TA subscale scores.

Time-Related Variables

The time-related variables provided both convergent and discriminant validity evidence for ATPI-TA scores. For example, Perceived Life Chances scores, which are clearly about the future, had significantly stronger relationships to future time attitudes than to past and present attitudes. Interestingly, this finding was similar for the more limited single-item variable with regard to Future Positive scores, with which it had a significantly stronger relationship than it had with Past and Present scores. Both of these variables had their weakest relationships with past time attitudes. The Hope score, which is described as a dispositional or state orientation, had stronger relationships with present positive scores than it did with present negative and past time attitudes. These relationships are noteworthy, as ZPTI scores were generally not related to either hope or perceived life chances. Relationships of time attitudes with optimism were strong across the three time periods.

The time-related variables provided convergent and discriminant validity evidence

Well Being

Global self-esteem is generally considered to be a dispositional variable, and this is reflected in meaningful relationships with the six time attitude scores. On the other hand, perceived stress, which is operationalized with regard to the *last month*, had its most substantial relationships with present time attitudes, and significantly weaker relationships with past and future attitudes. This finding provides strong validity support for the Present subscales.

Conclusion

In the current study, we examined convergent and discriminant validity evidence for APTI-TA scores. As reviewed above, lack of relationships with age and variables related to academic achievement provided evidence of discriminant validity and relationships with time-related constructs and well being provided evidence of convergent validity. The patterns of relationships were theoretically consistent, with positive time attitude scores having positive relationships with most variables and negative relationships with perceived stress, and

ATPI-TA scores as a multidimensional measure of time perspective

negative time attitude scores showing a reverse pattern. In sum, the evidence in support of the APTI-TA scores is robust and supportive. These findings, in conjunction with the structural validity evidence (*Mello/Worrell/Buhl* 2008), provide compelling evidence for ATPI-TA scores as a multidimensional measure of time perspective in adolescent populations.

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Table 1.   Sample Items from Scales

Past Positive
I have very happy memories of my childhood.
Past Negative
My past is a time in my life that I would like to forget.
Present Positive
Right now, my life couldn't be better.
Present Negative
I wish that my present life were different.
Future Positive
I am excited about my future.
Future Negative
Thinking about my future makes me sad.

Table 2. Descriptive Statistics for ATPI Time Attitude Subscales (N = 300)

	1	2	3	4	5	6	*M*	*SD*
1. PaPos	(.80)	-.84	.51	-.34	.27	-.34	3.40	0.76
2. PaNeg	-.67	(.79)	-.51	.54	-.28	.63	2.49	0.82
3. PrPos	.40	-.40	(.77)	-.83	.49	-.45	3.42	0.68
4. PrNeg	-.27	.42	-.64	(.77)	-.38	.47	2.72	0.77
5. FuPos	.22	-.23	.39	-.30	(.83)	-.77	3.82	0.77
6. FuNeg	-.26	.48	-.34	.35	-.60	(.73)	2.08	0.71

Note. Alphas are in the diagonal, and correlations corrected for attenuation are above the diagonal. ATPI = Adolescent Time Perspective Inventory; PaPos = Past Positive; PaNeg = Past Negative; PrPos = Present Positive; PrNeg = Present Negative; FuPos = Future Positive; FuNeg = Future Negative. All correlations are significant at the .001 level.

Table 3. Descriptive Statistics for Validity Constructs

	N	*M*	*SD*	α
GPA (1.0 – 4.5)	271	3.36	0.65	—
School Belonging (1-7)	278	5.32	1.65	—
Academic Self-Concept (1-6)	294	4.52	0.98	.87
Future Will Work Out (1-5)	300	3.81	0.90	—
Hope (1-6)	300	4.18	0.87	.82
Perceived Life Chances (1-5)	300	4.03	0.64	.87
Optimism (1-5)	298	3.28	0.58	.74
Self-Esteem (1-4)	300	3.07	0.53	.83
Perceived Stress (1-5)	298	2.95	0.47	.71

Note. Range of responses in parentheses.

Table 4. Correlations between APTI Time Attitudes Subscale Scores and Other Variables

	PaPos	PaNeg	PrPos	PrNeg	FuPos	FuNeg
Age	-.01	-.04	.11	-.07	.22	-.09
GPA	.20	-.18	.09	-.04	.05	-.27
School Belonging	.26	-.27	.28	-.24	.14	-.27
Academic Self-Concept[a]	.23	-.21	.22	-.10	.21	*-.39*
Future Will Work Out	.17	-.18	*.30*	-.29	.37	-.25
Hope[a]	*.38*	*-.39*	*.59*	*-.38*	*.55*	*-.52*
Perceived Life Chances[a]	.29	-.29	*.34*	-.27	*.46*	*-.51*
Optimism[a]	*.44*	*-.51*	*.58*	*-.62*	*.51*	*-.59*
Self-Esteem[a]	*.44*	*-.51*	*.58*	*-.56*	*.49*	*-.63*
Perceived Stress[a]	*-.32*	*.45*	*-.66*	*.80*	*-.39*	*.43*

Note. ATPI = Adolescent Time Perspective Inventory; PaPos = Past Positive; PaNeg = Past Negative; PrPos = Present Positive; PrNeg = Present Negative; FuPos = Future Positive; FuNeg = Future Negative. All correlations of .17 and larger are significant at the .001 level. Correlations greater than or equal to .30 are italicized.

[a]Correlations with these constructs are corrected for attenuation.