# The Relationship of Time Perspective to Age, Gender, and Academic Achievement Among Academically Talented Adolescents

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*Time perspective is a useful psychological construct associated with educational outcomes (Phalet, Andriessen, & Lens, 2004) and may prove fruitful for research focusing on academically talented adolescents. Thus, the relationship of time perspective to age, gender, and academic achievement was examined among 722 academically talented middle and high school students. Time perspective was measured using the Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999). Regression analyses yielded several significant results: An increase in age was associated with present hedonism, females had fewer negative thoughts about the future than males, and academic achievement was negatively associated with present fatalistic attitudes and positively associated with future positive attitudes. Findings support the examination of time perspective as a multidimensional construct including past, present, and future orientations in academically talented populations. Implications of these results for educational and developmental theory and practice are discussed.*

## Background

Time perspective refers to individuals' orientation and attitude toward the past, the present, and the future, and is a particularly relevant topic to examine among academically talented adolescents. Dimensions of time perspective such as future time perspective have been related to variables pertinent to academically talented adolescents including academic achievement (Bowles, 1999; Honora,

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2002), motivation (Husman & Lens, 1999), and academic adjustment (Tehan, 1957; Trommsdorff, Burger, & Fuchsle, 1982; Wyman, Cowen, Work, & Kerley, 1993). Among college populations, positive and negative orientations to the past have predicted self-esteem and present orientation has been associated with problem behavior such as risky driving (Zimbardo & Boyd, 1999). Although there is an increasing amount of research on future time perspective and academic outcomes (e.g., Phalet et al., 2004), limited attention has been given to examining past and present time dimensions among adolescents, nor has research focused explicitly on academically talented populations. Thus, in this study, we examined time perspective, focusing on positive and negative attitudes toward the past, the present, and the future, and the relationship of these attitudes to age, gender, and academic achievement in a sample of academically talented adolescents.

*Theoretical Approaches to Time Perspective*

Educational and developmental researchers have highlighted the importance of time perspective as a factor related to educational attainment and as a topic for the period of adolescence (Husman & Lens, 1999; Lewin, 1939, 1942; Phalet et al., 2004). Educational researchers have focused on time perspective as an important construct for the promotion of learning, academic achievement, and educational attainment (Husman & Lens; Phalet et al.). For example, future time perspective, or thinking into the future, has been found to be related to delay of gratification (Bembenutty & Karabenick, 2004) and motivation (Shell & Husman, 2001). Other forward-looking constructs, such as hope and perceived life chances, have also predicted educational risk status (e.g., Snyder, et al., 2002; Worrell & Hale, 2001; Worrell, Latto, & Perlinski, 1999).

Developmental researchers, on the other hand, have focused on age-related variations in time perspective. Lewin (1939, 1942) proposed that as individuals mature from childhood to adulthood, their time perspective shifts from an emphasis on the present to the future. In describing the psychological changes in the developmental period of adolescence, Erikson (1968) wrote about time perspective and the

importance of considering the past, the present, and the future in forming a personal identity. Finally, Piaget (1955, 1975) described the cognitive changes occurring between childhood and adolescence that enable individuals to think about the future, and he suggested that understanding time was indicative of intellectual advancement.

Early researchers (Frank, 1939; Lewin, 1939, 1942) focusing on time perspective discussed the importance of considering the multiple dimensions of time including the past, the present, and the future. For example, Frank stated that "time is not merely a variable in scientific study but is also a process, a multi-dimensional and highly variable continuum" (p. 293). Empirical research also suggests that it is important to assess all three time periods (e.g., Lomranz, Friedman, Gitter, Shmotkin, & Medini, 1985; Shmotkin, 1991). Zimbardo and colleagues (Zimbardo & Boyd, 1999; Zimbardo, Keough, & Boyd, 1997) examined the multiple dimensions of time among college students and reported that past, present, and future orientations were predicted by self-esteem, grade point average (GPA), and hours of studying per week. In this study, we extend this literature on the multiple dimensions of time perspective by examining orientations and attitudes toward the past, the present, and the future in relation to age, gender, and academic achievement among academically talented adolescents.

## Research on Time Perspective

*Age.* Prior research has shown an inconsistent relationship between time perspective dimensions and age (Cottle, 1967; Lessing, 1972; Verstraeten, 1980). Some research has reported an increase in future orientation during adolescence (e.g., Wessman & Gorman, 1977). For example, among adolescents aged 12–18, Cottle showed that older adolescents focused more on the future compared to younger adolescents, who focused more on the past. Similarly, 17-year-olds reported a more extended perspective into the future than their 15-year-old counterparts (Verstraeten), and 15-year-olds projected farther into the future than 13-year-olds (Cartron-Guerin & Levy, 1980). Klineberg (1967) found that adolescents were more future-oriented than children in a study of 10- to 16-year-olds, and

Greene (1986) indicated that college students expected major life events to occur at an older age compared to their ninth-grade counterparts. Anderssen, Myburgh, van Zyl, and Wiid (1992) showed that among 8th–12th-grade students, the extent to which they focused on the present decreased with grade level, whereas the degree to which they planned for the future increased. Finally, Kalakoski and Nurmi (1998) reported that older adolescents thought more about their future education and occupation than their younger counterparts.

In contrast, other research has shown that adolescence is characterized by an increase in present orientation compared to other periods of the life span. For example, an emphasis on the future decreased, whereas an emphasis on the present increased, among children and adolescents aged 7–11 (Lessing, 1972). Similarly, an increase in present time perspective and a decrease in future time perspective was associated with increased age in a study of 14- and 18-year-olds (Tismar, 1987), and Bowles (1999) showed that adolescents were more oriented towards the present compared to the past and the future. Finally, Webb and Mayers (1974) found that adolescents aged 9–13 projected thoughts farther into the future and were more concerned with the present than older adolescents aged 15–19, although no age-related differences were observed in orientation towards the past.

In summary, research has not yielded consistent findings on the relationship between time perspectives and age. Some research supports the developmental perspective suggesting that adolescents focus more on the future and less on the past and the present (Cottle, 1967; Klineberg, 1967; Greene, 1986), while other research suggests that adolescents focus more on the present than the past and the future (Bowles, 1999; Lessing, 1972; Tismar, 1987).

*Gender.* Research examining gender differences and time perspective dimensions has also resulted in mixed findings. Some research has indicated that males are more future-oriented than females (Trommsdorff, 1983; Trommsdorff, Lamm, & Schmidt, 1979). For example, Greene and Wheatley (1992) examined how far into the future college-aged males and females anticipated major life events, such as marriage and entry into the work force, to occur. Results showed that across domains, males reported later ages than

females. In an earlier study of adolescents ages 13–15, Cartron-Guerin and Levy (1980) also found that males thought farther into the future than females. In contrast, Zimbardo et al. (1997) showed that males were more present-oriented than females in a college-aged sample, and Wyman et al. (1993) reported that males had more positive future expectations than females among early adolescents exposed to stress. Finally, some research has reported no gender differences in time perspective dimensions (Bowles, 1999; McCabe & Barnett, 2000).

The inconsistency in research on time perspective and gender differences has been examined through research investigating interactions between gender, academic achievement, and socioeconomic status (SES) in predicting time perspective. For example, Lamm, Schmidt, and Trommsdorff (1976) found that lower SES adolescent males thought farther into the future than their female counterparts among adolescents aged 14–16. In a more recent study, Honora (2002) reported that high-achieving adolescent females reported more future goals and expectations than their male and female counterparts.

*Academic Achievement.* Researchers who have examined time perspective in the general population have reported a positive association between time perspective dimensions and academic achievement (De Volder & Lens, 1982). For example, Lennings, Burns, and Cooney (1998) found that a positive attitude towards the future predicted high academic achievement in both high school and university students. Zimbardo and Boyd (1999) reported that an emphasis on the future was positively related to grade point average and hours studying per week in a college student sample. Future time perspective was positively associated with grade point average and time doing homework in another study of college students (Shell & Husman, 2001). Finally, academic achievement was positively associated with thinking farther into the future in a sample of 12- and 14-year-old adolescents (Cartron-Guerin & Levy, 1980).

Other variables related to time perspective have been associated with academic achievement. For example, adolescents who were more likely to envision a future were also rated as more cognitively advanced on a Piagetian test than their counterparts (Greene, 1986). Worrell and Hale (2001) found that students who were at

risk but expected the future to work out were less likely to drop out of high school than students equally at risk with little hope that the future would work out. Similarly, future time perspective was associated with academic values, which in turn, was associated with grade point average (Brown & Jones, 2004). Finally, in a study including multiple dimensions of time, Bowles (1999) found that academic achievement was positively associated with present orientation in 12- and 14-year-olds, negatively associated with past orientation in 14-year-olds, and unrelated to any time perspective dimension in 16-year-olds. In sum, research has focused on the future dimension of time perspective and has consistently shown a positive association between future time perspective and academic achievement variables.

*Academically Talented Adolescents.* There has been very little research on time perspective in gifted and talented populations. Only one study in the extant literature has examined time perspective in high-achieving adolescents. Groth (1972) examined 87 high school students from middle-SES backgrounds. Students were organized into academically talented and academically average groups, with academically talented students achieving grades of A's and B's. Groth reported that academic achievement was positively associated with a measure of time perspective, although details of the instrument were not included.

## The Present Study

The purpose of the present study was to contribute to our understanding of time perspective by examining its association with age, gender, and academic achievement among academically talented adolescents. As the review of the literature on time perspective has indicated, most studies of time perspective focus on future time perspective, and this variable has been consistently related to academic achievement. However, studies of the relationship between future time perspective and age or gender have not yielded consistent findings. And, importantly, a scant amount of research has been conducted with academically talented populations. In this study, we asked several research questions. First, we examined the pattern of

time perspective scores in academically talented adolescents. Given that these students are doing well academically, it was hypothesized that positive time perspective orientations would be significantly higher than negative orientations in this population of adolescents. Second, we examined the relationship of time perspective scores to age and gender. The extant literature provides no clear guidance with regard to these two variables, and we did not make any specific hypotheses. For the final question, we asked if time perspective scores are related to academic achievement in academically talented students. We expected a positive relationship between future time perspective and academic achievement.

## Method

### *Participants*

Participants included academically talented adolescents attending a 6-week summer program at a research university in a Western state. Adolescents are admitted into the summer program on the basis of multiple criteria including grade point average and standardized test scores, teacher recommendations, and a written product such as an essay. Potential participants included 900 adolescents. However, 93 students (10%) were eliminated due to missing academic achievement data and 23 students (2.5%) were eliminated due to missing demographic information with regard to gender, age, or grade level. An additional 62 participants (6.9%) were excluded because they failed to answer three or more questions on the Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999), which was the primary measure of interest to the present study. Thus, the final sample included 722 participants.

Participants ranged in age from 11 to 18 years ($M = 14.5$, $SD = 1.4$). The majority of the students had completed 7th ($n = 144$, 20%), 8th ($n = 185$, 26%), 9th ($n = 151$, 21%), or 10th ($n = 158$, 22%) grade, with 81 (11%) students rising 12th graders and 3 students in lower grades. Participants included 337 males and 385 females in the following ethnic groups: African American ($n = 26$, 4%), Asian

American/Pacific Islander ($n$ = 342, 47%), Chicanos/Latinos ($n$ = 50, 7%), East Indian ($n$ = 25, 3%), European American ($n$ = 130, 18%). The remaining participants declined to report ethnic group membership ($n$ = 27, 4%) or reported ethnic group membership as other ($n$ = 122, 17%).

*Measures*

Measures included demographic information (i.e., age measured in years and gender), academic achievement, and the ZTPI (Zimbardo & Boyd, 1999). Academic achievement consisted of students' self-reported grade point average ($M$ = 3.8, $SD$ = .34, skew = -1.8). The ZTPI is a 56-item instrument that measures individuals' positive and negative attitudes toward the past, the present, and the future. Respondents rate the items on a 5-point Likert scale from 1 (*very uncharacteristic*) to 5 (*very characteristic*). A factor analysis of the original instrument in a college student sample yielded the following five subscales: Past-Positive ($\alpha$ = .80), Past-Negative ($\alpha$ = .82), Present-Hedonistic ($\alpha$ = .79), Present-Fatalistic ($\alpha$ = .74), and Future ($\alpha$ = .77). Zimbardo and Boyd reported correlations with aggression, depression, self-esteem, and trait anxiety in directions supported by theory as criterion-related validity evidence for the subscales' scores.

However, exploratory factor analyses of the structure of ZTPI scores with academically talented adolescents (see Worrell & Mello, 2005) yielded a six-factor version. The six-factor structure was in keeping with earlier work on time perspective (Gonzalez & Zimbardo, 1985) and was employed in the present study. The six subscales and illustrative items included Past-Positive ($\alpha$ = .63, "It gives me pleasure to think about my past."), Past-Negative ($\alpha$ = .84, "I think about the bad things that have happened to me in the past."), Present-Hedonistic ($\alpha$ = .75, "Taking risks keeps my life from becoming boring."), Present-Fatalistic ($\alpha$ = .68, "My life path is controlled by forces I cannot influence."), and Future Positive ($\alpha$ = .69, "Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play."), and Future Negative ($\alpha$ = .63, "You can't really plan for the future because things change so much.").

## Procedure

The data were collected in the 5th week of a 6-week summer program for academically talented students. Students completed measures on their own time and returned the materials to a designated student in the summer program. Measures were included within an anonymous program evaluation questionnaire.

## Results

### Preliminary Analyses

Preliminary analyses indicated that neither age nor gender was associated with academic achievement. Specifically, males ($M = 3.79$, $SD = 0.33$) and females ($M = 3.82$, $SD = 0.35$) did not report different average GPAs, $t(720) = -1.13$, $p > .05$; and academic achievement was not significantly associated with age ($r = -0.001$, $p > .05$).

Table 1 shows descriptive statistics for the raw scores of the six subscales of the ZTPI. None of the subscales' distributions was skewed, but kurtosis values were high, ranging from 2.82 to 4.07. Correlations among the ZTPI subscales were generally low, ranging from |.01| to |.42| ($Mdn = .20$). Descriptive analyses indicated that participants' mean ratings on the past positive, future positive, and future negative subscales were near the midpoint of the 1 to 5 rating scale (i.e., around 3), while past negative, present hedonistic, and present fatalistic had mean values below the midpoint.

### Major Analyses

A one-way analysis of variance (ANOVA) was conducted to examine the pattern of mean time perspective scores. Results indicate that participants did not report significantly different average levels on the ZTPI subscales, $F(6, 721) = 0.28$, $p = .095$, adjusted $R^2 = -0.006$.

Multiple regression was used to examine the relationship of age, gender, and academic achievement to time perspective. Six separate

**Table 1**
**Time Perspective Dimension Descriptive Statistics**

| Time Perspective Dimension | *n* | *M* | *SD* | Skewness | Kurtosis |
|---|---|---|---|---|---|
| Past Positive | 686 | 3.41 | 0.53 | -0.23 | 3.01 |
| Past Negative | 709 | 2.39 | 0.57 | -0.06 | 2.82 |
| Present Hedonistic | 704 | 2.65 | 0.43 | 0.07 | 2.87 |
| Present Fatalistic | 714 | 2.31 | 0.74 | 0.55 | 3.40 |
| Future Positive | 712 | 3.26 | 0.46 | 0.25 | 3.56 |
| Future Negative | 720 | 3.14 | 0.46 | 0.34 | 4.07 |

regression equations were calculated—one with each of the ZTPI subscales as the dependent variable, and age, gender, and academic achievement as predictor variables. The critical alpha level for the regression equations and individual predictors were set at .008 and .002, respectively. Results from regression analyses are presented in Table 2.

Regression analyses yielded significant findings with age, gender, and academic achievement. Age had a positive effect on Present Hedonism ($\beta = 0.15$, $p < 0.001$) and females reported lower Future Negative scores than their male counterparts ($\beta = -0.13$, $p < 0.001$). Figure 1 shows ZTPI factor scores by gender, in which males and females had similar ZTPI scores for all dimensions but Future Negative. Academic achievement had a negative relationship with Present Fatalistic scores ($\beta = -0.13$, $p < 0.001$) and a positive relationship with Future Positive scores ($\beta = 0.16$, $p < 0.001$). It is also important to note that, although statistically significant associations were observed, the amount of explained variance was very small, ranging from 0.01 to 0.05, across all models.

## Discussion

In this study, we examined the relationship of time perspective to age, gender, and academic achievement among academically talented middle and high school students. Results indicated that academi-

**Table 2**
**Regression Analyses of Age, Gender, and Academic Achievement on Time Perspective Dimensions (N = 722).**

| | Past Positive | | | Past Negative | | | Present Hedonistic | | |
|---|---|---|---|---|---|---|---|---|---|
| | B | SE B | β | B | SE B | β | B | SE B | β |
| Age | 0.00 | 0.02 | 0.00 | 0.001 | 0.02 | 0.00 | 0.09 | 0.02 | 0.15*** |
| Gender | -0.15 | 0.06 | -0.09 | -0.15 | 0.07 | -0.08 | 0.07 | 0.07 | 0.04 |
| Academic Achievement | -0.18 | 0.09 | -0.07 | -0.20 | 0.10 | -0.08 | -0.01 | 0.10 | -0.01 |
| Intercept | 0.74 | 0.48 | | 0.82 | 0.52 | | -1.34 | 0.51 | |
| $R^2$ | 0.01 | | | 0.01 | | | 0.02 | | |
| F | 3.32 | | | 3.14 | | | 5.71*** | | |

| | Present Fatalistic | | | Future Positive | | | Future Negative | | |
|---|---|---|---|---|---|---|---|---|---|
| | B | SE B | β | B | SE B | β | B | SE B | β |
| Age | 0.00 | 0.02 | 0.00 | -0.06 | 0.02 | -0.09 | -0.09 | 0.02 | -0.15 |
| Gender | -0.20 | 0.06 | -0.11 | 0.14 | 0.06 | 0.08 | -0.22 | 0.06 | -0.13*** |
| Academic Achievement | -0.41 | 0.09 | -0.16*** | 0.34 | 0.09 | 0.13*** | -0.26 | 0.09 | -0.11 |
| Intercept | 1.60 | 0.48*** | | -0.51 | 0.49*** | | 2.38 | 0.46*** | |
| $R^2$ | 0.04 | | | 0.03 | | | 0.05 | | |
| F | 10.04*** | | | 7.99*** | | | 14.11*** | | |

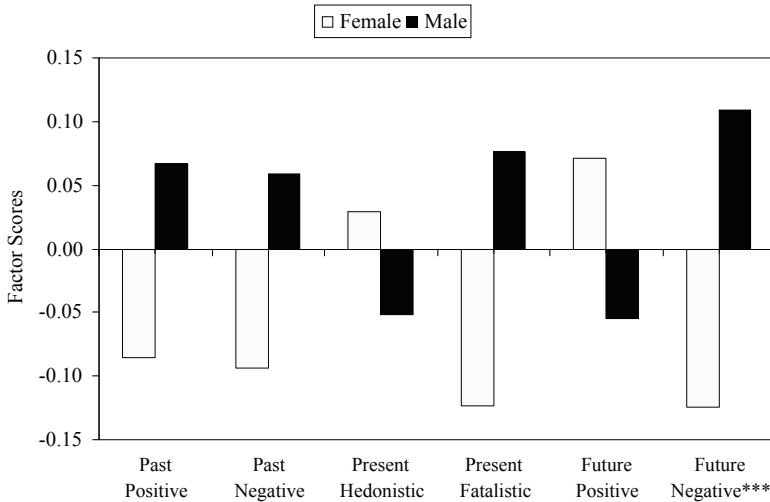*Note.* ***$p$ < .001. Gender coded 0 = male and 1 = female.

*Figure 1. Gender differences in time perspective dimensions (N = 722)*

*Note.*** $p < 0.001$.

cally talented students did not endorse particularly positive or negative attitudes toward the past, the present, and the future. However, age was associated with time perspective, with older adolescents reporting more present hedonistic attitudes than their younger counterparts. Females had fewer negative thoughts about the future than males and academic achievement was negatively associated with present fatalistic and positively associated with future positive orientations. Findings provide support for the continued examination of time perspective among academically talented adolescents as a meaningful psychological construct associated with demographic group membership such as age and gender and with educational outcomes.

## Age

Age predicted time perspective, with older adolescents reporting more present hedonistic attitudes than their younger counterparts. In other words, as middle and high school students matured, their thoughts increasingly turned to pleasure seeking and living in the

moment. This result is consistent with prior research showing that adolescents emphasize the present time dimension more so than the past and the future time dimensions (Bowles, 1999; Lessing, 1972; Tismar, 1987). Establishing a connection between age and present time orientation has implications for research on adolescent risk-taking, given that adolescents' attitudes about time that emphasize the present have been associated with early sexual intercourse, selling drugs, and weapon use (Harris, Duncan, & Boisjoly, 2002).

However, past- and future-orientation time dimensions were not associated with age, contrary to developmental perspectives (Erikson, 1968; Lewin, 1939, 1942) and to some prior research (Anderssen et al., 1992). One explanation regarding this nonsignificant association involves the restricted age range of the participants in this study. Although participants were individuals ages 11–18, the majority were 13–15. It is possible that research including individuals from a broader age range such as children or emerging adults would show age-related variation in time perspective dimensions.

## Gender

Gender was significantly associated with one time perspective dimension. Females reported less negative attitudes about the future than males. Gender was not associated with any other time perspective dimension; females and males reported equally positive attitudes about the past, hedonistic and fatalistic attitudes about the present, and positive attitudes about the future. Results are inconsistent with research showing that females are more present-oriented (Zimbardo et al., 1997) and have fewer thoughts about the future than males (Cartron-Guerin & Levy, 1980; Greene & Wheatley, 1992; Trommsdorff, 1983; Trommsdorff et al., 1979).

One interpretation of the inconsistency in results from the present study and prior research centers on the high academic achievement of the participants. In particular, gender differences in time perspective may be less pronounced among academically talented youth than the general academic population. Prior research (Honora, 2002) has shown that gender interacts with academic achievement in predicting time perspective variables. For example, high-achieving

females reported more future goals and expectations than their low-achieving female counterparts and low- and high-achieving males (Honora).

A second interpretation of the results on gender and time perspective focuses on historical changes in completed schooling among females and its potential impact on the time perspective of females in this study. In particular, in the past decade, females have surpassed their male counterparts in educational attainment including high school and college completion (National Center for Educational Statistics, 2000). The increased prevalence of females completing school may be manifested in the less negative future attitudes of the females in this current study.

*Academic Achievement*

Academic achievement was related to time perspective dimensions, as predicted by prior research (De Volder & Lens, 1982; Lennings et al., 1998; Shell & Husman, 2001). In particular, academic achievement was positively associated with positive attitudes toward the future and negatively associated with present fatalistic attitudes. In other words, individuals who achieved academically were more optimistic about their future and less pessimistic about their present than their less academically achieving counterparts. This study contributes to research examining the relationship between time perspective and academic achievement by providing results on multiple dimensions of time perspective.

*Academically Talented Adolescents*

Importantly, the significant association between time perspective dimensions and academic achievement was observed among an academically talented group of adolescents. Thus, even among youth who achieve academically, the degree to which they have achieved is associated with time perspective dimensions. This study extends our knowledge of this area by showing the association between time perspective and academic achievement among a population of adolescents who are high academic achievers.

## Limitations and Conclusions

This study had limitations pertaining to its measure and effect sizes. In particular, the measure administered (i.e., ZTPI) was developed for use with a college-age sample, individuals older than those who participated in this study. While the participants of this study were high academic achievers and may be more capable of completing the time perspective instrument compared to youth in the general academic population, additional research including an age-appropriate measure of time perspective is needed. Second, the effect sizes in this study were small. Previous research has found that time perspective has meaningful relationships with educational and psychological variables (e.g., Zimbardo & Boyd, 1999). Thus, the small effect sizes in this study may be due, in part, to the degree to which the ZTPI provides valid and reliable scores for an adolescent population. Future research should address this issue by including (a) a measure of time perspective with scores validated in an adolescent population and (b) multiple measures of time perspective.

Overall, this study contributes to a growing body of research focusing on time perspective as an important psychological construct associated with educational outcomes (e.g., Phalet et al., 2004). Although time perspective is a potentially fruitful area of investigation for educators and researchers who focus on facilitating educational attainment and warrants additional examination, it will be important to determine how time perspective facilitates the actual educational attainment of academically talented populations.

## References

Anderssen, E. C., Myburgh, C. P. H., van Zyl, M. A., & Wiid, A. J. B. (1992). A differential analysis of time-use attitudes of high school students. *Adolescence, 27*, 64–72.

Bembenutty, H., & Karabenick, S. A. (2004). Inherent association between academic delay of gratification, future time perspective, and self-regulated learning. *Educational Psychology Review, 16*, 35–57.

Bowles, T. (1999). Focusing on time orientation to explain adolescent self-concept and academic achievement: Part II. Testing a model. *Journal of Applied Health Behavior, 1*, 1–8.

Brown, W. T., & Jones, J. M. (2004). The substance of things hoped for: A study of the future orientation, minority status perceptions, academic engagement, and academic performance of Black high school students. *Journal of Black Psychology, 30*, 248–273.

Cartron-Guerin, A., & Levy, P. (1980). Achievement and future time perspective among preadolescents: Range, nature, and optimism of future plans. *Bulletin de Psychologie, 33*, 747–753.

Cottle, J. T. (1967). Adolescent perceptions of time: The effect of age, sex, and social class. *Journal of Personality, 37*, 636–650.

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

Erikson, E. (1968). *Identity: Youth and crisis*. New York: Norton.

Frank, L. K. (1939). Time perspectives. *Journal of Social Philosophy, 4*, 293–312.

Gonzalez, A., & Zimbardo, P. (1985). Time in perspective: A *Psychology Today* survey report. *Psychology Today, 19,* 21–26.

Greene, A. L. (1986). Future-time perspective in adolescence: The present of things future revisited. *Journal of Youth and Adolescence, 15*, 99–113.

Greene, A. L., & Wheatley, S. M. (1992). "I've got a lot to do and I don't think I'll have the time": Gender differences in late adolescents' narratives of the future. *Journal of Youth and Adolescence, 21*, 667–686.

Groth, N. J. (1972). Achievement of autonomy and other developmental tasks in bright and average adolescents. *Gifted Child Quarterly, 64*, 290–293.

Harris, K. M., Duncan, G. J., & Boisjoly, J. (2002). Evaluating the role of "nothing to lose" attitudes on risk behavior in adolescence. *Social Forces, 80*, 1005–1039.

Honora, D. (2002). The relationship of gender and achievement to future outlook among African American adolescents. *Adolescence, 37*, 301–316.

Husman, J., & Lens, W. (1999). The role of the future in student motivation. *Educational Psychologist, 34*, 113–125.

Kalakoski, V., & Nurmi, J. (1998). Identity and educational transitions: Age differences in adolescent exploration and commitment related to education, occupation, and family. *Journal of Research on Adolescence, 8*, 29–47.

Klineberg, S. L. (1967). Changes in outlook on the future between childhood and adolescence. *Journal of Personality and Social Psychology, 7*, 185–193.

Lamm, H., Schmidt, R. W., & Trommsdorff, G. (1976). Sex and social class as determinants of future orientation (time perspective) in adolescents. *Journal of Personality and Social Psychology, 34*, 317–326.

Lennings, C. L., Burns, A. M., & Cooney, G. (1998). The profiles of time perspective and personality: Developmental considerations. *Journal of Psychology, 132*, 629–641.

Lessing, E. E. (1972). Extensions of personal future time perspective, age, and life satisfaction of children and adolescents. *Developmental Psychology, 6*, 457–468.

Lewin, K. (1939). Field theory and experiment in social psychology: Concepts and methods. *The American Journal of Sociology, 44*, 868–897.

Lewin, K. (1942). Time perspective and morale. In K. Lewin (Ed.), *Resolving social conflicts and field theory in social science* (pp. 80–93). Washington, DC: American Psychological Association.

Lomranz, J., Friedman, A., Gitter, G., Shmotkin, D., & Medini, G. (1985). The meaning of time-related concepts across the life-span: An Israeli sample. *International Journal of Aging and Human Development, 21*, 87–107.

McCabe, K., & Barnett, D. (2000). First comes work, then comes marriage: Future orientation among African American young adolescents. *Family Relations*, 49, 63–70.

National Center for Educational Statistics. (2000). *Educational equity for girls and women* (NCES 2000–030). Washington, DC: U.S. Government Printing Office.

Phalet, K., Andriessen, I., & Lens, W. (2004). How future goals enhance motivation and learning in multicultural classrooms. *Educational Psychology Review, 16*, 59–89.

Piaget, J. (1955). The development of time concepts in the child. In P. H. Hoch & J. Zubin (Eds.), *Psychopathology of childhood* (pp. 34–44). London: Grube and Stratton.

Piaget, J. (1975). The intellectual development of the adolescent. In A. H. Esman (Ed.), *The psychology of the adolescence: Essential readings* (pp. 104–108). New York: International Universities Press.

Shmotkin, D. (1991). The role of time orientation in life satisfaction across the life span. *Journal of Gerontology, 46*, 243–250.

Shell, D. F., & Husman, J. (2001). The multivariate dimensionality of personal control and future time perspective beliefs in achievement and self-regulation. *Contemporary Educational Psychology, 26*, 481–506.

Snyder, C. R., Shorey, H. S., Cheaverns, J., Pulvers, K. M., Adams, V. H., & Wiklund, C. (2002). Hope and academic success in college. *Journal of Educational Psychology, 94,* 820–826.

Tehan, J. E. (1957). Future time perspective, optimism, and academic achievement. *Journal of Abnormal and Social Psychology, 57*, 379–380.

Tismar, K. G. (1987). Psychological aspects of temporal dominance during adolescence. *Psychological Reports, 61*, 647–654.

Trommsdorff, G. (1983). Future orientation and socialization. *International Journal of Psychology, 18,* 381–406.

Trommsdorff, G., Burger, C., & Fuchsle, T. (1982). Social and psychological aspects of future orientation. In M. Irle (Ed.), *Studies in decision making* (pp. 167–194). Berlin, Germany: de Gruyter.

Trommsdorff, G., Lamm, H., & Schmidt, R. W. (1979). A longitudinal study of adolescents' future orientation (time perspective). *Journal of Youth and Adolescence, 8,* 131–147.

Verstraeten, D. (1980). Level of realism in adolescent future time perspective. *Human Development, 23*, 177–191.

Webb, J. T., & Mayers, B. S. (1974). Developmental aspects of temporal orientation in adolescents. *Journal of Clinical Psychology, 30*, 504–507.

Wessman, A. E., & Gorman, B. S. (1977). *The personal experience of time*. New York: Plenum Press.

Worrell, F. C., & Hale, R. L. (2001). The relationship of hope in the future and perceived school climate to school completion. *School Psychology Quarterly*, *16*, 370–388.

Worrell, F. C., Latto, I. K., & Perlinski, M. A. (1999). The relationship of risk status to self-esteem and perceived life chances. *Journal of At-Risk Issues, 5*(2), 33–38.

Worrell, F. C., & Mello, Z. R. (2005). *Reliability and validity of Zimbardo Time Perspective Inventory Scores in academically talented adolescents*. Manuscript submitted for publication.

Wyman, P. A., Cowen, E. L., Work, W. C., & Kerley, J. H. (1993). The role of children's future expectations in self-system functioning and adjustment to life stress: A perspective study of urban at-risk children. *Development and Psychopathology, 5*, 649–661.

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

Zimbardo, P. G., Keough, K. A., & Boyd, J. N. (1997). Present time perspective as a predictor of risk driving. *Personality and Individual Difference, 23*, 1007–1023.

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