

Using Three Levels of Personality to Predict Time Perspective

Curtis S. Dunkel · Jennifer L. Weber

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Abstract While there is accumulating evidence that individual differences in time perspective are important predictors of a diverse set of psychosocial outcomes, there is little understanding concerning the possible origins of these individual differences. To begin to examine the possible predictors of individual differences in time perspectives, three levels of personality (life history strategy, the Big Five personality traits, and identity) were used to predict the five time perspectives identified by Zimbardo and Boyd (*Journal of Personality and Social Psychology*, 77, 1271–1288, 1999). The results are discussed in terms of the ability of the three levels of personality, in combination and individually, to predict the time perspectives.

Keywords Time perspective · Life history · Big Five · Identity

In their seminal article Zimbardo and Boyd (1999) uncovered five orientations toward the past, present, and future. These orientations were termed time perspectives (TPs). The TPs are future, present-fatalistic, present-hedonistic, past-negative, and past-positive. While individuals adjust their TP based on the situation, there are also dispositional differences between individuals in their reliance on the different TPs.

Individuals with a future TP are likely to think about what is to come and have a sense that they can plan for and work to achieve future goals. A present-fatalistic TP is defined by a view of the present as being immutable; individuals are resigned to their fate. Individuals with a present-hedonistic TP live for the moment. They take advantage of the pleasures available as opportunities arise. Taking a past-positive TP means that the past is interpreted nostalgically and this orientation impacts present thoughts and behaviors. Finally, the past-negative TP is defined by a despondent view of the past which continues to color the interpretation of the present.

C. S. Dunkel (✉) · J. L. Weber
Psychology Department, Western Illinois University, Macomb, IL 61455, USA
e-mail: c-dunkel@wiu.edu

Subsequent to the factor analyses of the items reflecting the five TPs, Zimbardo and Boyd (1999) examined the reliability and validity of the new measure that was coined the Zimbardo Time Perspective Inventory (ZTPI). The subscales for all the TPs exhibited good psychometric qualities. In establishing the validity of the TPs, they were found to be associated with a wide array of demographic, behavioral, health, attitudinal, and (of greatest relevance to the current study) personality variables.

Research conducted since the development of the ZTPI has focused disproportionately on the outcomes predicted by the ZTPI, in contrast to examining predictors of the TPs themselves (Padawer et al. 2007). The findings have shown that the TPs are predictive of a diverse set of behavioral and psychological outcomes. TP has been shown to predict: academic success (Adelabu 2007; Horstmannshof and Zimitat 2007), procrastination (Díaz-Morales et al. 2008), the promptness and reliability of which obligations are met (Harber et al. 2003), emotional regulatory responses to the terrorist attacks of September 11th (Holman and Silver 2005), political orientation (Thornhill and Fincher 2007), and anti-social behavior (Kruger et al. 2008).

The current study was designed to fill the gaps left by the focus of previous research, instead of using the TPs to predict other variables we attempted to predict each of the TPs. Given the initial results of Zimbardo and Boyd (1999), linking all of the TPs with aspects of personality, it made sense to revisit personality in the prediction of the TPs. However, to avoid haphazardly throwing measures of personality at the TPs to see which stick, a systematic approach using levels or a hierarchy of personality model was utilized. To this end, three separate aspects of personality were used to predict the five TPs. The three aspects were life history strategy, the Big Five personality traits, and identity. These three aspects were used for two reasons. First, there is evidence that life history strategy, the Big Five personality traits, and identity are each associated with TP, and secondly, these three aspects of personality can be organized in a hierarchical structure which coheres to a model of personality consisting of levels (McAdams 2008; McAdams and Pals 2006).

Three Levels of Personality: Life History Strategy, the Big Five, and Identity

Life history theory Life history theory is a mid-level theory derived from the principles of evolution. Life history theory states that individual differences in life history strategies represent differences in the handling of the tasks of growth, maintenance, and reproduction. Some individual's development follows a trajectory of slow development and reproduction that is focused on the quality of offspring with relatively high degrees of parental investment. This pattern of development is referred to as a Type II trajectory (e.g., Belsky et al. 1991). Alternatively, others develop more rapidly and allocate more resources toward mating (as opposed to parenting) reflecting relatively low degrees of parental investment and a higher quantity of offspring. This pattern of development is referred to as a Type I trajectory (e.g., Belsky et al. 1991). Recent research suggests that individual differences in life history strategy may be a single super ordinate trait atop the hierarchy of personality traits, similar to the concept of general intelligence when referring to cognitive abilities (e.g., Rushton et al. 2008).

Because life history strategies are thought to be strongly associated with TP, TP has actually been used as a proxy for life history strategy. Thornhill and Fincher (2007) used differences in TP to measure differences in life history in their investigation of attachment, life history, and political orientation. They found that liberals view the past more negatively and less positively than conservatives. In terms of attachment they found that: the past negative TP was positively correlated to ambivalent-anxious attachment and negatively related to secure attachment, the past positive TP was negatively correlated to ambivalent-anxious and avoidant attachment while positively correlated to secure attachment, and future TP was negatively related to ambivalent-anxious attachment.

In a study utilizing a sample of urban middle school students Kruger et al. (2008) found that the present-hedonistic and future TPs mediated the relationship between environmental risk factors and antisocial behavior. As with Thornhill and Fincher (2007) the study was initiated and the results were interpreted with TP as a proxy for the life history strategies.

The Big Five personality traits The Big Five personality traits are openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability (John et al. 2008). In terms of a hierarchical structure or levels of personality the Big Five fall under individual differences in life history strategy (e.g., Rushton and Irwing 2008, 2009). The Type II life history strategy is positively correlated with all five traits (Dunkel and Decker 2010).

In the initial examination of the TPs and the convergent and discriminant validity of the ZTPI the TPs were correlated with the Big Five. Openness was positively correlated to future TP and negatively correlated to a present-fatalistic TP. Conscientiousness was positively correlated to future TP and negatively correlated the past-negative, present-hedonistic, and present-fatalistic TPs. Extraversion was positively correlated to the future, present-hedonistic, and past-positive TPs, while also being negatively correlated to the past negative and present-fatalistic TPs. Agreeableness was positively correlated to the past-positive TP and negatively correlated to the past-negative TP. Finally, emotional stability was negatively correlated to the past-negative, present-hedonistic, and present-fatalistic TPs.

Identity Using the concept of levels of personality, identity is on the lowest rung fitting under both life history strategy and the Big Five (McAdams and Pals 2006). Consistent with this model individual differences in identity have been found to be associated with both individual differences in life history strategies and the Big Five. Dunkel and Sefcek (2009) found that the life history strategies are strongly correlated to individual differences in identity formation; a more mature identity is associated with a Type II strategy. Although different conceptualizations and measures have been used to examine the relationship between the Big Five and identity, the pattern of findings suggests that identity formation is, like the Type I strategy, positively associated with each of the Big Five traits (e.g., Lounsbury et al. 2007).

There has been a great deal of research on the relationship between identity and views of the self in the future (e.g., Dunkel and Kerpelman 2006; Packard and Conway 2006) with less interest in how identity is related to the self across the past, present, and future (see Dunkel and Anthis 2003 for an exception). However, we

know of only one investigation that examined identity in relation to TP as measured by the ZTPI, and that was limited to the future TP. Dunkel and Sefcek (2009) found that individual differences in identity style were strongly associated with future TP, accounting for close to 50% of the variance in the future TP.

Summary

The current study was undertaken to begin to examine variables that predict individual differences in TP. To this end, three aspects of personality (life history strategy, the Big Five personality traits, identity) were used. These three aspects were chosen because: (a) conceptually they are organized in a hierarchy with life history strategies at the top (the Big Five in the middle, and identity at the bottom), (b) the research that has been conducted has supported this hierarchal structure, and (c) each aspect has been shown to be associated with TP. By incorporating all three levels of personality into the research and using linear regression to predict the TPs the total variance accounted for by the three levels of personality and the unique variance accounted for by the individual levels of personality can each be assessed.

Method

Participants and Procedure

One-hundred and ninety-six undergraduate students volunteered to partake in the study. One hundred and sixteen were female and 80 were male with an age range of 18–25 ($M=19.76$, $SD=1.49$). One hundred and fifty-two were white, 20 were black, 9 were Hispanic, 5 Asian, and 10 did not respond to the demographic question on ethnicity/race.

The participants were administered the questionnaires in small groups. The ethical guidelines of the American Psychological Association were adhered to in the collection of the data.

Questionnaires

Time perspective The ZTPI (Zimbardo and Boyd 1999) was used to measure TP. The ZTPI is a 56-item self-report measure that consists of five subscales which measure the five time perspectives using a 5-point Likert type scale ranging from 1 (very uncharacteristic) to 5 (very characteristic). The future orientation subscale includes items such as, “I believe that a person’s day should be planned ahead each morning”, and had an internal consistency of $\alpha=.77$. The present fatalistic orientation subscale includes items such as, “Fate determines much in my life”, and had an internal consistency of $\alpha=.76$. The present-hedonistic orientation subscale includes items such as, “I take risks to put excitement in my life”, and had an internal consistency of $\alpha=.78$. The past-positive orientation subscale includes items such as, “It gives me pleasure to think about the past”, and had an internal consistency of $\alpha=.71$. And finally, the past-negative orientation includes items such

as, “I’ve made mistakes in the past that I wish that I could undo”, and had an internal consistency of $\alpha=.81$.

Life history strategy Life history strategy was measured using the mini-K (Figueredo et al. 2006). The mini-K was designed so that higher scores represent a life history strategy as seen in the Type II trajectory. The mini-K consists of a 20 item Likert-type scale from -3 (Disagree strongly) to 3 (Agree strongly). A sample item from the mini-K is, “I am closely connected to and involved in my community.” The internal consistency for the mini-K was $\alpha=.72$.

Big Five personality traits The Big Five personality traits were measured using the Big Five Inventory (BFI; John et al. 2008). The BFI is a 44-item self-report measure that uses a 5-point Likert-type scale anchored at 1 (Disagree strongly) and 5 (Agree strongly). Participants are instructed rate the degree to which, “I see myself as someone who...” possesses various characteristics. The five subscales measure the Big Five personality traits of openness (sample item; “is ingenious, a deep thinker”), conscientiousness (sample item, “is a reliable worker”), extroversion (sample item, “is talkative), agreeableness (sample item, “likes to cooperate with others”, and neuroticism (sample item; “is depressed, blue”). The internal consistencies for the subscales were; openness ($\alpha=.71$), conscientiousness ($\alpha=.77$), extraversion ($\alpha=.84$), agreeableness ($\alpha=.75$), neuroticism ($\alpha=.83$).

Identity commitment The identity commitment subscale of the Identity Style Inventory-4 (ISI4; Berzonsky et al. 2007) was used to measure identity. A sample item of the commitment subscale of the ISI4 is, “I know basically what I believe and don’t believe.” The internal consistency for the identity commitment scale was $\alpha=.85$.

Results

Before conducting the regression analyses the variables were standardized and zero-order correlations between the levels of personality and the TPs were conducted. The results can be seen in Table 1. Type II life history strategy was positively correlated with future and past-positive TPs and negatively correlated to the past-negative TP. Openness was positively correlated to the hedonistic TP. Conscientiousness was positively correlated to future TP, but negatively correlated to fatalistic, hedonistic, and past-negative TPs. Extraversion was positively correlated to the hedonistic and past-positive TPs, while negatively correlated to past-negative TP. Agreeableness was positively correlated to the future, hedonistic, and past-positive TPs, but negatively correlated to the past-negative TP. Neuroticism was positively correlated with the future and past-negative TPs, but negatively correlated to the hedonistic and past-positive TPs. Finally, identity commitment was positively correlated with future TP and negatively correlated with the fatalistic and past-negative TPs.

To determine the total and unique variance accounted for by the three levels of personality five hierarchical regression analyses (one analysis per TP) were conducted in which the demographic variables of age and gender were entered on Step 1 followed by the personality variables which were entered together on Step 2.

Table 1 Correlations between the TPs and the personality variables

Variables	Time Perspectives				
	Future	Fatalistic	Hedonistic	Past-positive	Past-negative
Life-history	.33***	-.07	.11	.36***	-.21**
Big Five					
Openness	-.04	.13	.25***	.06	.03
Conscientiousness	.67***	-.33***	-.15*	.02	-.19**
Extraversion	.02	.09	.31***	.17*	-.34***
Agreeableness	.19**	.00	.18*	.29***	-.26***
Neuroticism	.19**	.13	-.16*	-.14*	.47***
Identity Commitment	.41***	-.24**	-.10	.10	-.27***

* $p < .05$, ** $p < .01$, *** $p < .001$

The results can be seen in Table 2. All of the regression models accounted for a significant amount of variance in the TPs.

As indicated by the total R^2 together the demographic variables and levels of personality accounted for a large amount of variance in future TP. However, only conscientiousness, neuroticism, and identity commitment accounted for unique variance. The regression model predicting the present-fatalistic TP accounted for far less variance and only the Big Five traits of conscientiousness, extraversion, and neuroticism accounted for unique variance. For the present-hedonistic TP; openness, conscientiousness, extraversion, agreeableness, and the demographic variable of age were all unique predictors. For the past-positive TP life history strategy and

Table 2 Summary of standardized regression weights and R^2 for the regressions predicting the TPs

Variables	Time Perspectives				
	Future	Fatalistic	Hedonistic	Past-positive	Past-negative
Age	-.00	-.01	-.17*	-.09	-.03
Sex	.05	-.09	.00	-.07	-.04
Life-history	.11	.00	.07	.34***	-.10
Big Five					
Openness	-.07	.13	.25***	.01	.08
Conscientiousness	.57***	-.31***	-.19*	-.15	-.02
Extraversion	-.06	.20**	.29***	.08	-.16*
Agreeableness	.01	.13	.15*	.19*	-.07
Neuroticism	.27***	.19*	-.07	-.04	.40***
Identity Com	.19**	-.14	-.12	.03	-.09
Total R^2	.55***	.20***	.27***	.20***	.31***

Identity Com = Identity Commitment

* $p < .05$, ** $p < .01$, *** $p < .001$

agreeableness were the only unique predictors. Finally, for the past-negative TP neuroticism and extraversion accounted for unique variance.

Discussion

Zimbardo and Boyd (1999) identified five TPs, constructed a scale to measure the TPs, and demonstrated the validity of the scale by finding that the scale was associated with a large number of important variables. Subsequent research has focused on broadening the scope of variables predicted by the individual differences in TP. The current research was designed to examine predictors of TP by using three levels of personality; life history strategies, Big Five personality traits, and identity.

Research examining the importance of the TPs in psychological phenomena has tended to stress the role played by the future TP (e.g., Holman and Silver 2005; Padawer et al. 2007). The results of the regression analyses indicates that there is good reason for this focus because future TP was strongly associated with the regression function made up of the personality variables. The variables accounted for 55% of the variance in future TP with conscientiousness, neuroticism, and identity accounting for unique variance. The positive relationship between future TP and conscientiousness and identity is consistent with previous research. As seen in the regression weights future TP appears to be strongly related to conscientiousness, but as with Zimbardo and Boyd (1999) the variables are not so strongly tied together to suggest that they are synonymous. Just as telling are the other associations between the Big Five and future TP. Neuroticism accounted for unique variance in future TP, while no relationship was found between future TP and openness and extraversion. These findings are in contrast to the correlations uncovered by Zimbardo and Boyd (1999). Finally, the size of the correlation between life history strategy and future TP ($r=.33$) and the failure of life history strategy to be uniquely associated with future TP suggest it should not be used as a proxy for measuring life-history strategies.

The present-fatalistic TP was uniquely associated with the Big Five traits of conscientiousness, extraversion, and neuroticism. This is generally consistent with the findings of Zimbardo and Boyd (1999), the exception being they also found a positive association between openness and the present-fatalistic TP. We know of no research on the relationship between the present-fatalistic TP and life history strategy and identity and the results of the current investigation suggest that there is no linear relationship between the constructs indicating that such an investigation could be fruitless.

The regression analysis revealed that unique variance in the present-hedonistic TP was explained by agreeableness, extraversion, openness, and conscientiousness. It was positively associated with agreeableness, extraversion, and openness and negatively associated with conscientiousness. The findings with regard to extraversion and conscientiousness replicate those of Zimbardo and Boyd (1999). In contrast, a relationship between agreeableness and the present-hedonistic TP was found, and while the zero-order correlations showed a significant relationship between neuroticism and the present-hedonistic TP the regression analysis showed that this relationship did not hold when controlling for the other variables. The small effect size of the present-hedonistic TP and agreeableness relationship and the fact

that it was not found in the previous research suggests that it should be interpreted with caution. Given the small effect size found for neuroticism and the present-hedonistic TP by Zimbardo and Boyd (1999) and the current results the same caveat is given with regards to interpreting the findings. The present-hedonistic and life history relationship was not significant for the zero-order correlations and the regression analysis. The failure to reject the null hypothesis in both occasions suggests that the two are not associated and it appears clear that the present-hedonistic TP should not be used as a proxy for measuring differences in life-history strategies.

Alternatively, the past-positive TP was associated with differences in life-history strategy in both the zero-order correlations and the regression analysis. While research on life-history and TP has focused on the present-hedonistic and future TPs (e.g., Kruger et al. 2008) the results suggest that life-history strategies are actually more aligned with the past-positive TP. This result is in line with the hypothesized role of childhood experiences in directing life history strategy (Belsky et al. 1991), with positive experiences being positively associated with a Type II strategy. Consistent with Zimbardo and Boyd (1999) an association between agreeableness and the past-positive TP was found, however when entered into the regression analysis the relationship between extraversion and the past-positive TP, which was also found by Zimbardo and Boyd (1999), was no longer significant.

As with Zimbardo and Boyd (1999) the zero-order correlations showed that the past-negative TP was significantly correlated to the Big Five of conscientiousness, agreeableness, neuroticism, and extraversion. Additionally, we found a relationship between the past-negative TP and identity. On the other hand, all of the relationships, save the ones with extraversion and neuroticism, were no longer significant when all the variables were entered in the linear regression.

Limitations and Future Research

Findings showing that individual differences in TP are important psychological variables predicting a vast array of variables continue to accumulate. Due to the importance of the TPs it is important to begin to understand the possible origins of the individual differences. The correlational data used in the current investigation comes with all of the restriction and caveats intrinsic to correlational data. These limitations, of course, make for difficulties in the interpretation of the results. However, while not dismissing the bidirectional effects of TP and personality or the possible role played by other variables, beginning to try and understand the influences on individual differences in TP is important and given the results of the current investigation individual differences in personality appears to be a rational place to start.

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