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Relationships between present/future orientation and life satisfaction over two decades

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Abstract

This study sought to explore the relationships between present orientation (i.e., endorsing a live-for-today approach), future orientation (i.e., valuing planning for the future) and life satisfaction over two decades. A sample of American adults ($N = 6{,}464$) across three waves was used. The temporal within-person associations between the variables were examined using the random-intercept cross-lagged panel model. Participants who reported higher present orientation also reported lower life satisfaction in the future. Although it is often assumed that future orientation leads to higher future well-being, the present results demonstrated that higher life satisfaction prospectively predicted future orientation, and not the other way around. The longitudinal trajectories of the variables were also examined using latent growth curve modeling. The results indicated that life satisfaction remained stable, present orientation increased and future orientation decreased over the course of the study. Overall, life satisfaction exhibited greater temporal stability than time orientation.

KEYWORDS
future orientation, life satisfaction, longitudinal, MIDUS, present orientation, RI-CLPM

1 | INTRODUCTION

Psychologists have studied concepts related to present orientation (PO) and their consequences for the levels of well-being. For example, a related variable is playfulness defined by Proyer (2017, p. 114) as 'an individual differences variable that allows people to frame or reframe everyday situations in a way such that they experience them as entertaining, and/or intellectually stimulating, and/or personally interesting'. Research has documented positive associations between playfulness and various aspects of subjective well-being (e.g., Proyer, 2013; Yue, Leung, &

Hiranandani, 2016). The well-being consequences of the present-hedonistic time perspective have also been studied. This concept 'relates to a hedonistic, risk-taking and pleasure-oriented attitude towards life, with high impulsivity and little concern for future consequences of one's actions' (Stolarski, Fieulaine, & van Beek, 2015, p. 8). Research has also found positive associations between this variable and subjective well-being (e.g., Boniwell, Osin, Alex Linley, & Ivanchenko, 2010; Zhang & Howell, 2011; Zimbardo & Boyd, 1999; for a review, see Cunningham, Zhang, & Howell, 2015). Therefore, it seems that the results of previous empirical studies support the popular advice that PO is beneficial for well-being.

However, there are also ample studies that show that PO may jeopardize long-term well-being. For example, compared to future-oriented people, present-oriented people show less moral concern (Agerström & Björklund, 2013), are more likely to discount risks of smoking (Peretti-Watel, L'Haridon, & Seror, 2013) and unsafe sex (Rothspan & Read, 1996), are more likely to engage in risky driving (Zimbardo, Keough, & Boyd, 1997), and have unhealthier lifestyles (Zhang & Rashad, 2008). Thus, it seems that whereas self-reported PO and subjective well-being are positively associated when measured concurrently, these concurrent correlations may mask some of the long-term costs of PO.

PO and future orientation (FO) form correlated but independent concepts rather than being the two opposite poles of a single continuum (Carelli, Wiberg, & Wiberg, 2011) and thus investigating the relationships between PO and LS would not reveal much about the relationships between FO and LS. Although the relationship between FO and subjective well-being has been found to be inconsistent across studies (for a review see, Cunningham et al., 2015), FO and planning are associated with an array of adaptive behaviours (Cooper, 2018; Cunningham et al., 2015) and are considered as markers and predictors of psychological well-being (Cunningham et al., 2015; Ryff, 1995).

2 | THE PRESENT STUDY

There is some evidence to suggest that both FO and PO are positive predictors of well-being. However, much of the existing evidence on the relationship between time orientation and well-being is cross-sectional, and thus not much is known about the temporal within-person relationships between time orientation and well-being. The present study sought to examine the long-term associations between PO and FO and subjective well-being in a longitudinal study spanning about two decades. As explained below, this study used a statistical technique that enables an investigation of the within-person (intra-individual) associations between the variables. Thus, the directionality of the associations between the variables can be determined with some confidence. As a supplementary aim, the longitudinal trajectories of the variables of the study were also investigated.

3 | ANALYTIC APPROACH

3.1 | Cross-lagged analysis

To investigate the prospective cross-relationships, this study used the Random-Intercept Cross-Lagged Panel Model (RI-CLPM). This model is a variation of the conventional cross-lagged panel model, with the additional feature of disentangling within- and between-person sources of variance (Hamaker, Kuiper, & Grasman, 2015). The between-person component reflects variance due to differences that exist between individuals, whereas the within-person component reflects variances due to fluctuations within individuals over time. In the RI-CLPM, random intercepts are used to partial out the trait-like stability of the variables. The stable trait factors are considered random because their values can vary across individuals. They are thus reflective of individual differences in expected levels of the

variables. The state components in the within-person part of the model capture people's deviations from their expected scores. The lagged effects at the within-person level reflect the confluences of the state-like time-varying parts of the variables over time. Directionality can be inferred from the cross-lagged effects. The autoregressive effect of a variable shows whether changes from one's expected score are predicted from preceding deviations from one's expected score, reflecting rank-order consistency (or carry-over effect) across time points (Hamaker et al., 2015; Mund & Nestler, 2019).

3.2 | Latent growth curve modelling

To investigate the longitudinal trajectories of the variables, three separate linear growth models were tested. In growth models, intercept and slope factors are used to describe trait changes over time (Newsom, 2015). The intercept factor represents the expected value of a variable usually at the first time point. The slope factor represents the rate of change for the variable over time. A slope factor mean that is significantly different from zero would suggest a non-trivial change in the levels of the variable over time. A negative value would suggest a longitudinal decline, and a positive value would suggest an upward trend. Significant intercept and slope variances would suggest the existence of individual differences in the initial levels and trajectories of the variables.

4 | METHODS

4.1 | Participants

The sample is from the Midlife in the United States project (MIDUS; midus.wisc.edu). The data for Wave 1 (collected during 1995–1996), Wave 2 (2004–2006) and Wave 3 (2013–2014) were included in the present study. The present study included participants that provided scores for at least one dependent variables in at least one wave ($N = 6,464$, 52.5% females, mean age = 46.83, median age = 46.00, $SD = 12.926$ at Wave 1). In other words, only participants with missing values for all dependent variables across all waves were excluded from this study.

4.2 | Measures

4.2.1 | Life satisfaction

Life satisfaction was assessed using five items capturing satisfaction with overall life, work, health, relationship with spouse/partner and relationship with children. Each item was rated on a scale from $0 = $ *the worst possible* to $10 = $ *the best possible*.

4.2.2 | Time orientation

The present and FO were measured using items from the Prenda and Lachman's (2001) future planning measure rated on a scale from $1 = $ *a lot* to $4 = $ *not at all*. The items were reverse-coded to calculate the variables. A principal axis factoring with Promax rotation using the data of the first wave showed that the six time-orientation items

TABLE 1 The results of exploratory factor analysis

	Factor loading	
Item	Future orientation	Present orientation
Like to make plans for future	**.775**	−.064
Know what I want out of life	**.707**	.103
Helpful to set goals for near future	**.636**	−.029
Too many things today to worry about tomorrow	−.029	**.608**
I live 1 day at a time	.100	**.596**
No sense in planning too far ahead	−.058	**.593**
Eigenvalues	1.776	.828
Variance explained	29.592	13.801

Note: Loadings > .4 are in boldface.

loaded on two distinct factors as expected. The eigenvalues, percentages of explained variance and factor loadings are presented in Table 1, all supporting a two-factor structure for these items. The latent correlation was −.338.

Internal consistencies are presented in Table 2. The items of the scales used in this study are presented in Appendix S1.

4.2.3 | Model estimation

Models were estimated with observed variables and robust maximum likelihood (MLR) in *Mplus* 8.4, using all available data under missing data theory. A minimum cutoff of .95 for the comparative fit index, a maximum cutoff of .06 for the root mean square error of approximation and a maximum cutoff of .08 for the standard root mean square residual were considered as indicative of good fit (Kline, 2015). In the growth models, the coding scheme (i.e., numbers used for the slope factor loadings) was 0, 1 and 2. Thus, the intercept factors are interpreted as the initial value of the variables, and the slope factors capture linear trajectories. With only three time points, examining non-linear trajectories would not be reliably possible. In the cross-lagged models, the paths between state variables were held equal over time. Age and gender were included as time-invariant predictors of observed variables at Times 2–3.

4.2.4 | Attrition

The number of participants who provided answers for at least one of the dependent variables in the first wave was 6,464. This number dropped to 4,167 (attrition = 35.53%) in second wave and 2,654 (attrition = 58.94%) in third wave. The results of three *t* tests showed that people who participated in all waves scored higher on LS ($t[6,183.711] = -6.560$, $p < .001$, Cohen's $d = .163$), FO ($t[5,865.684] = -2.988$, $p = .003$, $d = .076$) and PO ($t[6294] = -6.741$, $p < .001$, $d = .172$). Although the effect sizes are small, these results suggest that people who dropped out of the study may have different scores on the dependent variables of the study than those who did not. Thus, a binary variable was included in the analyses as an auxiliary variable (1 = people with no missing wave, 0 = people who did not respond to any of the dependent variables in one or two waves). Auxiliary variables are not of interest per se, they just contribute to more optimal parameter estimation by taking into account missingness patterns (Kline, 2015).

TABLE 2 Descriptive statistics, reliabilities, R^2 values and intercorrelations

Variable	M	SD	α	R^2	1	2	3	4	5	6	7	8
1. LS1	7.702	1.306	0.67	-	1							
2. FO1	3.156	0.664	0.74	-	.296	1						
3. PO1	2.302	0.741	0.62	-	-.101	-.222	1					
4. LS2	7.761	1.245	0.65	.06	.541	.222	.099	1				
5. FO2	3.111	0.671	0.74	.04	.264	.572	.184	.330	1			
6. PO2	2.296	0.719	0.62	.01	-.062	-.190	.526	-.122	-.185	1		
7. LS3	7.785	1.317	0.63	.05	.462	.196	.116	.585	.273	.143	1	
8. FO3	3.078	0.679	0.75	.04	.243	.501	.181	.279	.573	.208	.351	1
9. PO3	2.249	0.709	0.60	.01	-.061*	-.156	.506	-.077	-.176	.563	-.193	-.218

Note: LS = life satisfaction (range = 0–10). FO = future orientation (range = 1–4). PO = present orientation (range = 1–4). SD = standard deviation. All correlation coefficients are significant at p < .001, except the one marked with a start which is significant at p < .01. R^2 values pertain to the random-intercept cross-lagged panel model.

5 | RESULTS

The descriptive statistics and inter-correlations between all variables are presented in Table 2.

5.1 | Growth models

The three latent growth curve models provided good fit to the data (Table 3). Inspecting the mean estimates for the slope factors (Table 4) suggests that life satisfaction scores remained largely stable throughout the study. FO slightly declined and PO slightly increased throughout the study. These results are not in full accordance with the observed means reported in Table 2. This is because the growth model estimates are based on latent variable modelling under missing data theory (i.e., no person with missing data is excluded), whereas Table 2 presents observed means excluding participants with missing values.

5.2 | Cross-lagged model

The main model of the study (model with auxiliary variable) fitted the data very well (Table 3). The R^2 values are presented in Table 2, and other parameter estimates are presented in Table 5. At the between-person level, LS was negatively associated with PO and positively associated with FO. FO and PO were negatively correlated. These correlations are in line with the correlations between manifest variables reported in Table 2. Yet, between-person correlations are not temporal and do not indicate directionality (Hamaker et al., 2015). Directionality can be inferred from cross-lagged effects, at the within-person part of the model. There were two significant cross-lagged effects: PO was a negative predictor of future LS and LS was a positive prospective predictor of FO.

TABLE 3 Fit indices

	X^2	df	p	RMSEA	RMSEA 90% CI	CFI	SRMR
Growth—life satisfaction	0.519	1	.471	0.000	0.000–0.029	1.000	0.013
Growth—present orientation	10.786	1	.001	0.039	0.020–0.061	0.997	0.033
Growth—future orientation	1.391	1	.238	0.008	0.000–0.035	1.000	0.012
RI-CLPM—whole sample and auxiliary variable	37.435	12	.000	0.018	0.012–0.025	0.997	0.033
RI-CLPM—participants having data for at least 2 waves	44.526	12	.000	0.026	0.018–0.034	0.996	0.034
RI-CLPM—whole sample	39.700	12	.000	0.019	0.013–0.026	0.997	0.031

Abbreviations: CFI, comparative fit index; RI-CLPM, random-intercept cross-lagged panel model; RMSEA, root mean square error of approximation; SRMR, standard root mean square residual.

TABLE 4 Parameter estimates for growth models

	Life satisfaction		Future orientation		Present orientation	
	Estimate	p	Estimate	p	Estimate	p
Intercept (M)	7.697	.000	3.154	.000	2.307	.000
Slope (M)	−0.032	.070	−0.047	.000	0.020	.037
Intercept (V)	0.992	.000	0.286	.000	0.297	.000
Slope (V)	0.122	.000	0.031	.000	0.017	.049

Note: M = mean. V = variance.

Auto-regressive effects primarily reflect rank-order consistency than consistency in absolute levels (i.e., means) of variables. All the auto-regressive paths were significant, implying consistencies in the individuals' deviations from their expected means across time points. In other words, if a participant scores lower (or higher) than their expected score at one time point, he or she is likely to score lower (or higher) at the next time point as well. However, the sizes of the effects imply that life satisfaction was more temporally stable than PO and FO. PO showed the smallest rank-order stability.

5.3 | Additional analyses

In two separate analyses, the lagged model was tested in the whole sample ($N = 6,464$) and in the group of individuals who participated in at least two waves ($N = 4,141$), with no auxiliary variable in both analyses. The results are reported in Tables S1 and S2, respectively. As can be seen, the cross-lagged estimates are largely similar to the main model. The only notable difference in the cross-lagged effects is that in the model with the whole sample and no auxiliary variable, the lagged effect from PO to LS was only marginally significant ($p = .051$; Table S1). However, in the main model (Table 5) and the other post hoc model (Table S2), this path was statistically significant at $p < .05$.

TABLE 5 Parameter estimates for model with auxiliary variable

Predictor	Outcome	Unstandardized coefficient	p	95% CI Low	95% CI Up	Standardized coefficient
Autoregressive						
LS1	LS2	0.200	.001	0.084	0.316	0.209
LS2	LS3					0.191
PO1	PO2	0.066	.048	0.001	0.132	0.070
PO2	PO3					0.069
FO1	FO2	0.148	.000	0.077	0.219	0.144
FO2	FO3					0.146
Cross-lagged						
PO1	LS2	−0.115	.033	−0.221	−0.010	−0.066
PO2	LS3					−0.060
FO1	LS2	0.077	.259	−0.056	0.209	0.039
FO2	LS3					0.038
LS1	PO2	−0.002	.923	−0.037	0.034	−0.003
LS2	PO3					−0.003
FO1	PO2	−0.034	.259	−0.092	0.025	−0.031
FO2	PO3					−0.034
PO1	FO2	−0.046	.060	−0.092	0.025	−0.051
PO2	FO3					−0.047
LS1	FO2	0.044	.015	0.009	0.079	0.088
LS2	FO3					0.083
Covariance (between)						
Trait LS	Trait PO	−0.091	.000	−0.124	−0.058	−0.212
Trait LS	Trait FO	0.172	.000	0.135	0.209	0.420
Trait PO	Trait FO	−0.073	.000	−0.088	−0.058	−0.310

Note: The predictive paths are constrained to equality across time.
Abbreviations: CI, confidence interval; FO, future orientation; LS, life satisfaction; PO, present orientation.

Considering that this effect was replicated in two of the models, it is concluded that there is a weak prospective effect of PO on LS. As for auto-regressive paths, in one of the post hoc models (Table S1), the autoregressive path for PO was not significant ($p = .064$). Yet, it was significant at $p < .05$ in the other two models.

6 | DISCUSSION

The results suggest that being present-oriented may lead to lower levels of well-being in the long term. This negative cross-legged relationship between state PO and state LS means that people who score higher than their expected PO score at one time point are likely to score lower than their expected score of LS at the next time point. This finding is in keeping with studies showing that unrealistic optimism has negative consequences (for a review see, Shepperd, Waters, Weinstein, & Klein, 2015), and studies showing that in some contexts, pessimism may be more adaptive than optimism (e.g., Dillard, Midboe, & Klein, 2009). This finding is, however, incompatible with prior cross-sectional research reporting positive associations between PO-related concepts and well-being (e.g., Proyer, 2013; Zhang & Howell, 2011), indicating that the cross-sectional findings may mask the potential long-term costs of PO by failing to partition the variance into the within- and between-person components. Although variables related to PO may be synchronously associated with higher well-being, they may still have potentially negative long-term consequences.

It is generally assumed that FO leads to higher well-being (e.g., De Ridder & Gillebaart, 2017; Joshanloo, Jovanović, & Park, 2020). The present results, however, indicate that LS is more likely to be predictive of FO, not the other way around. In fact, there is evidence across fields to suggest that having satisfactory life conditions facilitates long-term orientation. For example, research shows that children with better (vs. worse) living conditions (e.g., with higher SES) are better at self-control and delaying gratification (Watts, Duncan, & Quan, 2018). Degree of future discounting increases by the unpredictability of one's childhood environment (Hill, Jenkins, & Farmer, 2008). Similarly, research on life history strategies has shown that harsh and unpredictable conditions prompt individuals to adopt faster life history strategies involving a shorter and less delayed reward allocation preference, higher impulsivity and lower risk avoidance (Han & Chen, 2020).

Psychologists, therapists and practitioners can use these insights when designing policies and interventions. For example, the results suggest that a heightened PO may be a risk factor for future dissatisfaction. Thus, measures of PO can be used to identify individuals at risk for reduced well-being. Additionally, reducing an excessive emphasis on the present and promoting a long-term orientation can be a beneficial component of well-being and clinical interventions. Another insight that can be used in therapeutic contexts is that dissatisfaction with life precedes diminished FO. Hence, the optimal time to focus on planning and FO skills during the course of the intervention is after the client has reached some optimum level of satisfaction and emotional balance.

It is noteworthy that the present findings provide insights into the long-term associations between PO and well-being, with decade-long intervals. When the interval between measurement occasions is shorter (e.g., days, weeks and months), the direction and strengths of the effects might be different. For example, in a randomized placebo-controlled study, Proyer, Gander, Brauer, and Chick (2020) found a significant prospective effect of playfulness on well-being. Thus, more longitudinal studies are needed with different time lags. The latter study also suggests that playfulness may be a more beneficial aspect of PO, yet PO may have other components with more adverse effects on well-being. It might be that playfulness serves as a coping resource to deal with daily stressors with minimum or no long-term well-being costs. Thus, different aspects of PO (and FO) need to be investigated separately in future research. Similarly, other aspects of well-being such as affect, psychological well-being and social well-being also need to be included in future studies. Considering that the reliabilities of the scales used in this study were not particularly high (Table 2), future studies are also encouraged to use more reliable scales.

Another noteworthy finding is that based on estimates of absolute consistency (changes in mean levels over time, i.e., the slope means in the growth models) as well as rank-order consistency (autoregressive effects), life satisfaction is more stable than PO and FO. Previous longitudinal research also shows considerable levels of long-term stability in life evaluations (Anglim, Weinberg, & Cummins, 2015; Galambos, Krahn, Johnson, & Lachman, 2020). With regards to time orientation, the present results indicate that as adults age, they become more present-oriented and less future-oriented. This finding is in line with the results of large-scale studies showing that the incidence of worry decreases with age in North America (Fortin, Helliwell, & Wang, 2015, assuming that less worrying signifies a PO). Ostensibly, these trends may seem to be at odds with the general finding that individuals show increasing signs of personality maturity with age (e.g., Jones & Meredith, 2000; Roberts & Mroczek, 2008). For example, research suggests that conscientiousness (related to FO) increases throughout the lifespan (Ashton & Lee, 2016). However, aging comes with certain opportunities that if grasped may lead to more stability in late adulthood than early adulthood. These include career development, stable earnings, more crystallized cognitive abilities and family leadership (Infurna, Gerstorf, & Lachman, 2020). Thus, late adulthood may call for less FO and more PO if a certain level of life stability is achieved. Notably, these trends are not merely reflective of personality development and are also tied to societal influences, including welfare policies and changes in societal attitudes concerning time orientation and well-being in American society during the course of this study (Drewelies, Huxhold, & Gerstorf, 2019; Hertzog, Small, McFall, & Dixon, 2019).

The R^2 values (Table 2) and cross-lagged effects (Table 5) were small, suggesting weak effect sizes. However, in practice, cross-lagged effects in panel models are typically small. In these models, the previous score of a variable is included as a predictor, which is typically the strongest predictor of that variable. By including autoregressive effects in panel models to account for rank-order stability, a large portion of the variance in the outcomes is removed. This results in typically small cross-lagged effects (Adachi & Willoughby, 2015). Thus, it is misleading to use the same guidelines used in cross-sectional studies to interpret longitudinal effect sizes. Small effects may be meaningful when predicting change because 'they can suggest, for example, that the predictor is associated with change in levels of the outcome over time during a particular period of development ... Furthermore, predictive effects on change in levels of the outcome may reflect an ongoing process of cumulative effects and thus may have a substantial impact on the outcome over time' (Adachi & Willoughby, 2015, p. 119).

In sum, three main findings of this study are (a) PO has negative long-term consequences for subjective well-being, (b) it is LS that prospectively predicts FO, not the other way around, and (c) life satisfaction is more temporally stable than time orientation. These results need to be replicated in future studies, with different measures, samples and time lags. Researchers are also encouraged to go beyond cross-sectional investigation to uncover temporal associations between the variables, upon which more accurate inferences of directionality can be made.

DATA AVAILABILITY STATEMENT

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