Forgivingness and subjective well-being in adulthood: the moderating role of future time perspective

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Forgivingness and Subjective Well-Being in Adulthood:

The Moderating Role of Future Time Perspective

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Abstract

This cross-sectional study tested the hypothesis that future time perspective moderates the association between forgivingness and subjective well-being. Results from a sample of adults ($N = 962$, 19 to 84 years) indicate that time perspective and forgivingness were strongly associated with positive affect, life satisfaction and optimism. In support of the hypothesis, forgivingness was more strongly associated with positive well-being for those who perceived their future time as limited as compared to those with an open-ended time perspective. The moderating effect of future time perspective holds over and above the effect of chronological age. Moderating effects were not found for negative affect and pessimism. The results underscore the importance of perceived time horizons for the interplay between forgivingness and well-being.

Keywords: forgivingness; subjective well-being; adulthood; future time perspective

Introduction

Theoretical and empirical work suggests that forgiveness is associated with subjective well-being (McCullough, 2000; Toussaint & Webb, 2005). Cross-sectional studies have evidenced positive associations between the dispositional tendency to forgive others and various indicators of subjective well-being. For example, forgiving individuals report more positive affect, greater life satisfaction, optimism, happiness, environmental mastery, and self-acceptance (Hill & Allemand, 2010, 2011; Krause & Ellison, 2003; Maltby, Day, & Barber, 2005; Sastre, Vinsonneau, Neto, & Mullet, 2003). By contrast, forgiving individuals tend to be less prone to negative affect, anxiety and depressive symptoms (Berry, Worthington, O'Connor, Parrott, & Wade, 2005; Brown, 2003; Thompson et al., 2005). Moreover, longitudinal research has demonstrated that changes in forgiveness are positively related to changes in subjective well-being and adjustment, and negatively to changes in negative affect and physical symptoms (Bono, McCullough, & Root, 2008; Orth, Berking, Walker, Maier, & Znoj, 2008). Finally, findings from experimental and intervention studies support the forgiveness and well-being relation as well (Karremans, Van Lange, Ouwerkerk, & Kluwer, 2003; Worthington, Witvliet, Pietrinie, & Miller, 2007). As research continues to find a significant positive association between forgiveness and subjective well-being, it raises questions about conditions that might change this relationship. Accordingly, one direction for research is to understand potential moderators of this association. The present study thus sought to investigate future time perspective as a potential moderator for the associations between dispositional forgiveness and various indicators of subjective well-being.

Forgivingness

Forgiveness can either be considered as a contextualized psychological process of change with respect to a given transgressor and a given transgression (McCullough, Fincham, & Tsang, 2003) or as a disposition (Allemand & Steiner, 2012; Hill & Allemand, under review). Dispositional forgiveness—also called forgivingness—refers to individual

differences in the tendency to forgive others regardless of the given transgressor and the given transgression. Forgivingness is thus a trait-like characteristic that is related to other dispositional variables. For example, forgiving individuals tend to experience less dispositional anger, rumination, and revenge seeking, and the tendency to forgive serves to promote social relations with others (e.g., Berry et al., 2005; Brown, 2003). Moreover, forgiving individuals tend to score lower on neuroticism but higher on agreeableness (Steiner, Allemand, & McCullough, in press). Although conceptualized as a dispositional tendency, forgivingness is narrower and more context-specific than the broader and more inclusive global Big Five traits. Forgivingness is particularly relevant in social settings that call for it and is usually displayed in specifiable situations such as following negative interpersonal interactions. In many cases, interpersonal problems and conflicts result in negative emotions, cognitions, and behaviors that have to be dealt with. The primary function of forgivingness thus appears to be down-regulating and reducing these negative affective states and stressful reactions (Brown, 2003; Worthington & Scherer, 2004). Indeed, research has shown that forgiving individuals tend to show high levels of dispositional abilities to down-regulate negative affective states and to disengage from ruminative thoughts as compared to less forgiving individuals (Allemand, Job, Christen, & Keller, 2008).

The Influence of Future Time Perspective

The concept of future time perspective describes how much time individuals believe they have left in life and whether they perceive that time as open-ended or limited in duration. The theory of socioemotional selectivity suggests that the subjective perception of time remaining in life has important implications for the selection of goals, activities, and preferences (Carstensen, Isaacowitz, & Charles, 1999). More specifically, the theory asserts that with the perception of limited time priorities change. When future time is perceived as open-ended or expansive, as is typical in young adulthood, individuals are strongly motivated to optimize the future by pursuing information and knowledge-related social goals. They

attempt to expand their horizons, gain knowledge, and are more interested in seeking new

social relationships. When individuals view their future as limited, as is typical in later life,

positive emotional experience assumes primacy and the focus shifts from the optimization of

future possibilities to the maximization of meaningful activities in the present. Individuals

with perceived limited time are thus more motivated to pursue emotion-focused goals. They

attempt to maintain emotional and social well-being and to keep close relationships while

distancing from peripheral social partners (Lang & Carstensen, 2002). They also tend to

engage in behaviors that maximize positive emotional rewards and achieve short-term

emotional benefits by means of regulating affective states in the present (Carstensen, Mikels,

& Mather, 2006; Charles & Carstensen, 2010). These shifts of priorities are thought to reflect

not the objective chronological age per se but rather the subjective perception of remaining

time in life. Because chronological age is inherently related to future time perspective (i.e.,

older individuals tend to perceive the time remaining in life as limited), systematic

associations between age and perceived time remaining in life appear. For example, Lang and

Carstensen (2002) reported a substantial negative association ($r = -.70$) between increasing

age and open-ended time perspective. But more important, findings from experimental and

correlational studies demonstrated the incremental effect of perceived future time perspective

over and above the effect of chronological age (Carstensen et al., 1999, 2006).

Age is not the only factor that is related to future time perspective. Other factors, such

as serious illnesses, natural disasters, terrorist attacks, wars, geographic relocations, or

temporary time constraints such as college graduation and retirement can also influence the

perception of time horizons. Specifically, when younger individuals imagine conditions in

which time is limited or they experience real-life time constraints they tend to optimize

emotional outcomes and to pursue emotional satisfaction similar to older individuals who

perceive their time horizon as shrinking (e.g., Carstensen & Fredrickson, 1998; Fung &

Carstensen, 2006; Fung, Carstensen, & Lutz, 1999).

Numerous studies have provided empirical evidence for the notion that the perception of future time has important implications for emotion, cognition, motivation, and social relationships (for reviews, see Carstensen, Fung, & Charles, 2003; Charles & Carstensen, 2010; Scheibe & Carstensen, 2010). For example, recent findings suggest that individuals who perceive their future time as open-ended tend to score higher on positive affect and meaning in life but lower on negative affect (Hicks, Trent, Davis, & King, in press). More important, studies have consistently demonstrated the moderating role of future time perspective (Carstensen et al., 1999; Charles & Carstensen, 2010). Hicks et al. (in press) found that positive affect becomes increasingly associated with meaning in life as the perception of future time becomes limited. Finally, results indicate that prioritizing emotionally meaningful goals is associated with greater social well-being and less social strain when future time is perceived as limited, whereas no such association seems to be present when individuals perceive their future time as open-ended (Lang & Carstensen, 2002). Research has also begun to investigate the role of future time perspective with respect to forgiveness. For example, Allemand (2008) found that individuals are more willing to forgive violations of social expectations when they perceive their own remaining time or the remaining time with their social partner as limited. Similarly, Cheng and Yim (2008) demonstrated that individuals are more forgiving under a limited time condition as compared to a time-expanded or neutral condition.

Forgiveness may play an important role for individuals' well-being, in particular when they view their time horizon as limited. Avoidant behaviors following conflicts can evoke negative consequences if individuals harbor feelings of anger and resentment they never express. By forgiving, individuals may regulate their negative feelings and thoughts and let go the conflict, sustaining favorable relationships without getting resentful (cf. Fingerman & Charles, 2010). Hence, forgiving others might reflect a particularly useful strategy to maintain

emotional and social well-being, as is typical for individuals who perceive their future time as limited.

The Present Study

The main goal of the present cross-sectional study was to test whether future time perspective moderates the association between forgivingness and subjective well-being. To do so, we included three indicators of positive well-being (positive affect, life satisfaction, and optimism) and two indicators of negative well-being (negative affect and pessimism). First, we expected positive associations between perceived open-ended future time and indicators of positive subjective well-being and negative associations with indicators of negative well-being (Hicks et al., in press). Second, based on theoretical and empirical work on future time perspective (Carstensen et al., 1999; Charles & Carstensen, 2010) we tested the following moderation hypothesis. With the perception that time is limited, forgivingness should become increasingly associated with subjective well-being. If individuals are more engaged in maintaining the emotional and social well-being when time is perceived as limited, then it makes sense that the tendency to forgive others would relate more strongly to well-being. Specifically, we predicted that forgivingness and positive affect, life satisfaction, and optimism would be more strongly related when time is perceived as limited as compared to perceived open-ended future time.

It should be noted that this moderation effect might not occur with respect to negative affect and pessimism. As we argued above, a primary function of forgivingness appears to be down-regulating and reducing negative affective states and stressful reactions to interpersonal conflicts (e.g., Allemand et al., 2008; Worthington & Scherer, 2004). Accordingly, we predicted that the level of future time perspective would not influence the relations between forgivingness and low negative affect and low pessimism. Put differently, a central benefit of forgivingness is that it allows individuals to "attenuate the negative," and thus this effect might be less susceptible to possible moderators.

Methods

Participants and Procedure

Nine hundred sixty-two participants (57.3% women) ranging in age from 19 to 84 years (M = 52.4 years, SD = 17.7) participated in a large-scale survey. With respect to educational attainment, 7.0% reported having a basic education (primary and secondary school) as the highest level of education, 39.7% reported having attained high school education or equivalent (e.g., vocational school), 24.4% completed a degree from a technical school, and 28.9% attained a university degree. Regarding marital status, 35.3% participants were single, 45.8% were married, 12.5% were either separated or divorced, and 6.5% were widowed.

The sampling procedure included an age-stratified random selection of prospective study participants accomplished by the registration office of the city of Zurich. From each one-year age group (1929 to 1989), we included 66 adults with an approximately equal ratio of men and women, resulting in 4,026 prospective German-speaking participants. To avoid problems due to lack of linguistic skills the random selection only included German-speaking individuals. This sampling procedure was successfully used in previous studies (Hill & Allemand, 2010; Steiner, Allemand, & McCullough, 2011).

Prospective study participants received a package consisting of a personalized letter including a description of the study and its required time commitment, information about protection of data privacy, a sociodemographic questionnaire, the study materials including several questionnaires, and a postage-paid business reply envelope for mailing the material back to the researchers. The large-scale survey consisted of four parts. The first part referred to well-being and health. The second part included personality questionnaires such as the items on forgivingness. The future time perspective scale was included in the third part of the survey. The final part referred to demographic variables. Due to protection of privacy the procedure included the deletion of all postal addresses after sending the package to prospective participants. Consequently, we were not able to remind participants to fill out the

questionnaire. In light of this fact the response rate of 24% is notable. All participants were unpaid volunteers.

To determine the degree of sample selectivity, we compared the initial sample of prospective participants ($N = 4{,}026$) with the final sample ($N = 962$) with respect to age and gender, as we only have information about age and gender of prospective participants. The mean age in the final sample ($M = 52.4$, $SD = 17.7$) was slightly higher than in the entire sample ($M = 50.0$, $SD = 17.6$). In terms of effect sizes this difference is small, $d = .14$. Slightly more women (56.9%) participated in the study as compared to the sample of all prospective participants (51.3%).

Measures

Forgivingness. The Tendency to Forgive Scale (TTF; Brown, 2003) was used to measure individual differences in forgivingness. Example items are "I tend to get over it quickly when someone hurts my feelings," and "When people wrong me, my approach is just to forgive and forget." Participants rated each item on a 7-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The alpha reliability estimate for the TTF was .68. Several studies provided support for the TTF as a reliable and valid instrument that also demonstrated favorable self-informant correlations. Moreover, TTF is related to several individual and social outcomes, such as higher levels of perspective taking and positive social relations, and lower levels of depression and negative affect (Brown, 2003; Brown & Phillips, 2005; Hill & Allemand, 2010).

Subjective well-being. Several indicators of subjective well-being were assessed. *Positive affect* was measured with the following six adjectives: satisfied, happy, confident, hopeful, active, and energetic. *Negative affect* was measured with the adjectives: disappointed, sad, anxious, worried, sluggish, and exhausted (Brunstein, 1999). Participants were asked to rate how strongly they felt each affect on average. Participants rated each adjective on a 6-point Likert-type scale from 1 (*not at all*) to 5 (*extremely*). The alpha

reliabilities were α = .87 (positive affect) and α = .82 (negative affect). The Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) was used to measure global *life satisfaction*. Participants rated their level of agreement to the five-item scale on a 7-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items include "In most ways my life is close to my ideal" and "The conditions of my life are excellent." The alpha reliability was α = .88. Additionally, the Life Orientation Test (LOT-R; Scheier, Carver, & Bridges, 1994) was used to measure individual differences in *optimism* and *pessimism*. The LOT-R is a self-report measure assessing generalized expectancies for positive and negative outcomes. Participants were asked to rate the extent to which they agreed with each statement on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Following Herzberg, Glaesmer, and Hoyer (2006) we distinguished between *optimism* and *pessimism* factors. Sample items are "In uncertain times, I usually expect the best" (optimism) and "I rarely count on good things happening to me" (pessimism). The alpha reliabilities for the two three-item subscales were α = .65 (optimism) and α = .61 (pessimism).

Future time perspective. The Future Time Perspective Scale (FTPS; Lang & Carstensen, 2002) was used to measure self-reported future time perspective. Participants rated their level of agreement to the ten-item scale on a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items are "I have the sense that time is running out (reverse)," and "My future seems infinite to me." Higher scores indicate a more open-ended time perspective. The internal consistency was α = .92.

Statistical Analyses

To test the hypothesis that future time perspective affects the strength of the association between forgivingness and subjective well-being we performed several moderation analyses separately for each of the subjective well-being constructs. We used the MODPROBE computational procedures for probing interactions provided by Hayes and Matthes (2009).

The MODPROBE macro produces the usual regression output, as well as estimates of the effect of the focal predictor variables at values of the moderator variable (for details, see Hayes & Matthes, 2009). More specifically, we estimated several ordinary least squares (OLS) regression models with each of the subjective well-being indicators as outcome variables, forgivingness as the focal predictor (F) and future time perspective as the moderator (M) and the interaction ($F \times M$). To rule out the possibility that the associations between forgivingness and subjective well-being are confounded by chronological age, we controlled for age in all moderation analyses and also for gender. In each regression model we therefore included age (W_1: in years) and gender (W_2: 0 = male, 1 = female) as covariates to control for their potential influence on regression coefficient estimates. The focal predictor and moderator variables as well as age were mean centered. All predictors and covariates were treated simultaneously in the regression models. The MODPROBE generates the squared multiple correlation for the full model that includes the interaction term and additionally the proportion of the variance in the outcome uniquely attributable to the interaction.

To visualize statistically significant interactions the MODPROBE macro estimates the conditional effects of or simple slopes for the focal predictor at low (one *SD* below the mean), moderate (sample mean), and high (one *SD* above the mean) values of the moderator (i.e., future time perspective), resulting in three groups of participants with limited, indefinite (i.e., neither limited nor open-ended), and open-ended time perspectives (cf. Lang & Carstensen, 2002).

Results

Means, standard deviations, and correlations among study variables are depicted in Table 1. Forgiving individuals tended to be higher on positive affect, satisfaction with life, optimism, and lower on negative affect and pessimism (see Hill & Allemand, 2011 for a fuller presentation of these results). Future time perspective was positively related to indicators of

positive subjective well-being such as satisfaction with life, and negatively to indicators of

negative well-being such as negative affect. This indicates that individuals viewing their

future as open-ended tended to have a better subjective well-being than those individuals who

view their future as limited. Future time was unrelated to forgivingness ($r = -.02$). In line with

other research (e.g., Lang & Carstensen, 2002), future time perspective was found to be

strongly negatively related to chronological age ($r = -.66, p < .001$). Moreover, women

tended to perceive their future as slightly more open-ended than men ($r = .10, p < .05$).

Tables 2 and 3 contain the results of the regression models. The findings indicate strong

effects for forgivingness and future time perspective as predictors of subjective well-being

controlled for age and gender. Future time perspective seems to be an even stronger predictor

of well-being than forgivingness. Perhaps more important, we found support for the

moderation hypothesis. The interaction effects in Table 2 were significant, although weak

with respect to explained variance. For ease of presentation, we discuss the results of the tests

for the proposed interaction effects separately for the indicators of positive and negative

subjective well-being as outcome variables.

Indicators of Positive Subjective Well-being

Positive affect. The results in Table 2 (column 1) reveal that the combined effects of

forgivingness and future time perspective on positive affect are statistically significant (B =

$-0.04, t(933) = -2.44, p < .05$). This implies that the impact of forgivingness depends on the

level of perceived time perspective. The unstandardized coefficient associated with the

multiplicative term suggests that for individuals one unit higher on future time perspective,

the coefficient for forgivingness predicting positive affect is 0.04 less (see Figure 1). As

expected the strength of association between forgivingness and positive affect is larger for

participants with limited time perspective (B = 0.14, $SE = 0.02$, $t(933) = 6.69, p < .001$, 95%

CI = 0.10; 0.18) and indefinite time perspective (B = 0.10, $SE = 0.02$, $t(933) = 6.76, p < .001$,

95% CI = 0.07; 0.13) than for participants with an open-ended time perspective (B = 0.07, SE

= 0.02, $t(933)$ = 3.33, p < .001, 95% CI = 0.03; 0.11). The regression model explained 26% of

variance in positive affect, whereby 1% of the variance in the outcome variable was uniquely

attributable to the interaction (Table 2). Although the interaction effect is weak in terms of

explained variance, it should be noted that effect sizes for moderator effects are generally

rather small (Chaplin, 1991, 2007).

Life satisfaction.   We evidenced a significant interaction between forgivingness and

future time perspective with respect to life satisfaction as outcome variable (B = −0.08, $t(933)$

= −2.78, p < .01) (Table 2). The interaction is visualized in Figure 1. The strength of the

positive relationship between forgivingness and life satisfaction was stronger among those

participants with limited time perspective (B = 0.21, SE = 0.03, $t(933)$ = 6.12, p < .001, 95%

CI = 0.14; 0.28) and indefinite time perspective (B = 0.15, SE = 0.03, $t(933)$ = 5.69, p < .001,

95% CI = 0.10; 0.20) as compared to those participants with an open-ended time perspective

(B = 0.08, SE = 0.04, $t(933)$ = 2.32, p < .05, 95% CI = 0.01; 0.15). The regression model

explained 20% of variance in satisfaction with life. The interaction term uniquely predicted

1% of variance (Table 2).

Optimism.   As can be seen from Table 2, forgivingness and future time perspective

significantly interact (B = −0.05, $t(935)$ = −2.88, p < .01) in predicting optimism (Figure 1).

Again, the results show that the strength of association between forgivingness and optimism is

larger for participants with limited time perspective (B = 0.17, SE = 0.02, $t(935)$ = 7.16, p <

.001, 95% CI = 0.13; 0.22) and indefinite time perspective (B = 0.13, SE = 0.02, $t(935)$ =

7.01, p < .001, 95% CI = 0.09; 0.16) than for participants with an open-ended time

perspective (B = 0.08, SE = 0.02, $t(935)$ = 3.21, p < .01, 95% CI = 0.03; 0.13). The predictors

explained 23% of variance in optimism, whereby the interaction predicted 1% of the variance

(Table 2).[1]

Indicators of Negative Subjective Well-being

Negative affect. Forgivingness and future time perspective did not interact in predicting negative affect (Table 3). That is, the negative association between forgivingness and negative affect did not statistically significantly vary as a function of future time perspective. Forgivingness remained a significant predictor even when controlling for future time perspective and the interaction. In contrast to the results for indicators of positive subjective well-being, gender was a significant positive predictor of negative affect, suggesting that females tended to show a higher negative affect. Gender did not interact with forgivingness in predicting negative affect.

Pessimism. Similar to negative affect, we did not evidence an interaction between forgivingness and future time perspective in predicting pessimism, implying that the negative association between forgivingness and pessimism did not vary as a function of future time perspective (Table 3). Forgivingness remained a significant predictor even after controlling for the other variables. Gender negatively predicted pessimism, implying that men tended to demonstrate higher scores in pessimism. Gender did not interact with forgivingness in predicting pessimism.

Discussion

The primary goal of the present cross-sectional study was to test the hypothesis that future time perspective moderates the associations between forgivingness and subjective well-being. The results support our hypothesis. As a starting point for this study, we established the association between forgivingness and subjective well-being in a large sample of adults. Consistent with previous theoretical and empirical work we evidenced positive associations between forgivingness and indicators of positive subjective well-being and negative associations with negative affect and pessimism (Hill & Allemand, 2010; McCullough, 2000; Toussaint & Webb, 2005). Put differently, forgiving individuals tended to experience more positive affect, satisfaction with life, and optimism, and less negative affect and pessimism (for a more detailed discussion, see Hill & Allemand, 2011).

In line with our prediction we found positive associations between future time perspective and indicators of positive subjective well-being and negative associations with indicators of negative well-being. Those participants who perceived their time remaining in life as open-ended tended to report more positive affect, satisfaction with life, and optimism and less negative affect and pessimism. These associations reflect medium-sized effects. However, it appears that future time perspective was more strongly related to positive affect than to negative affect (rs = .39; −.19). A similar differential association was also reported by Hicks et al. (in press, Study 4; rs = .48; −.31). Moreover, Hicks and colleagues found a stronger association between positive affect and meaning in life for individuals with a limited future time perspective as compared to individuals with a more open-ended time perspective.

The Moderating Role of Future Time Perspective

In addition to the strong effects of future time perspective and forgivingness, we found evidence for the combined effects of the two variables for positive subjective well-being. The time perception moderated the association between forgivingness and indicators of positive well-being. In particular, forgivingness related more strongly to positive affect, life satisfaction, and optimism, respectively, for individuals who view their future as limited. Smaller associations were found for individuals with self-reported open-ended time perspectives. As expected, future time perspective was strongly negatively correlated with chronological age, indicating that younger adults reported more open time horizons than older adults (Lang & Carstensen, 2002). Therefore, it is noteworthy that the moderating effect of perceived future time perspective occurred over and above the effect of chronological age. The present results add further empirical evidence for the notion that the perception of future time perspective systematically influences our emotional and social life (Carstensen et al., 2003; Charles & Carstensen, 2010).

Future time perspective did not moderate the associations between forgivingness and negative affect and pessimism, respectively. It should be noted, however, that although the

interaction effects were significant for positive but not for negative well-being, the unstandardized values for the coefficients were relatively similar in values (e.g., -.04 and .03 for positive and negative affect, respectively). We have argued that the primary function of forgivingness is the down-regulation of negative emotional states, as interpersonal conflicts and transgressions typically elicit negative emotions as well as negative cognitions, motivations, and behaviors that have to be dealt with (Allemand et al., 2008; Worthington & Scherer, 2004). The results thus have shown that in addition to perceived future time perspective, forgivingness is a helpful dispositional strategy that is related to lower negative affect and lower pessimism *both* for individuals who perceive their future as either more open-ended or as limited. The differential pattern that we found for positive and negative well-being indicators seems to follow other work showing that positive affect is not the opposite of negative affect (Lucas, Diener, & Suh, 1996) and that optimism is not just the opposite of pessimism (Chang, Maydeu-Olivares, & D'Zurrila, 1997; Hertzberg et al., 2006).

The present results contribute to a better understanding of the association between forgivingness and subjective well-being by introducing an important condition that can change this relation. More broadly, these results emphasize the importance of looking at the boundaries of specific traits or trait-like characteristics within given situations. We evidenced that forgivingness was more strongly related to indicators of positive subjective well-being for individuals who perceive their time horizons as limited. The results thus suggest that the level of forgivingness is particularly important for positive subjective well-being when future time is perceived as limited. In such cases, low forgivingness is detrimental for well-being, whereas low forgivingness is less detrimental for well-being when individuals perceive their time as open-ended. The moderating role of future time perspective also suggests that traits such as forgivingness may have different effects in different contexts such as perceived time horizons. Although the perception of time contexts is internal, the perception is likely influenced by objective external factors such as health or age.

Limitations and Outlook

Some limitations of the present study have to be noted. First, the hypothesis underlying the present study implies a causal influence of forgivingness on subjective well-being. However, the cross-sectional and correlational nature of the study leaves open the possibility for alternative hypotheses and explanations for the associations between the variables of interest and thus demands caution in the interpretation of the data. For example, low and high levels of forgivingness might reflect conditions that impact the associations between the perception of time remaining in life and indicators of subjective well-being. Then, one possible interpretation is that forgivingness buffers the negative effects of perceived limited time on positive well-being. Put differently, high levels of forgivingness will become increasingly evident as a stress-buffering function for those individuals who view their future as limited. Although it is not possible to draw clear conclusions about the direction of the effects in this study, theory and research from longitudinal (e.g., Bono et al., 2008) and experimental studies (e.g., Karremans et al., 2003) clearly support the claim that forgiveness can help to maintain subjective well-being in interpersonal situations. Nevertheless, future studies should use longitudinal designs to replicate the present findings, but also might investigate the alternative hypothesis that forgivingness buffers the negative effects of limited time perspective on subjective well-being. This is particularly important because individual differences in perceptions of time remaining in life are not necessarily the same as within-individual change.

Second, findings were based on self-reports. This method leaves open the possibility that participants responded on the basis of their ideas about what would be socially desirable, as opposed to what they would actually do. Moreover, the order in which the questionnaires were administered in the large-scale survey might be an issue of possible priming. Future studies should replicate the present findings using experimental settings with manipulations of future time perspective, observer reports and behavioral measures as well. Studies may also

test the moderation hypothesis in samples with real-life time constraints. For example, theoretical assumptions about the role of future time perspective have been investigated under naturalistic conditions such as serious illnesses (Carstensen & Fredrickson, 1998), sociopolitical time constraints (Fung et al., 1999), the September 11 attacks and the SARS epidemic (Fung & Carstensen, 2006). However, as the perception of time remaining in life is a highly subjective phenomenon, the self-report seems to be an adequate way to measure how individuals view their future (Lang & Carstensen, 2002). Finally, the sizes of interactions between forgivingness and future time perspective were small.

An avenue for future research would be to test the moderation hypothesis of future time perspective with respect to other conceptualizations of subjective well-being such as the concept of psychological well-being (Ryff & Keyes, 1995), particularly given that Hill and Allemand (2010) reported positive associations between forgivingness and some of these well-being scales (i.e., self-acceptance, positive relations with others, and environmental mastery). Moreover, as this study focused exclusively on dispositional forgiveness, future studies may test the moderating hypothesis with respect to classical transgression-level conceptions of forgiveness. Finally, future studies may test the moderating role of future time perspective with respect to other socioemotional traits and variables. For example, it is possible that the extent and manner in which individuals generally perceive (or provide) social support might be influenced by the perception of the time remaining in life.

In conclusion, this study provides a first valuable insight into an important condition that influences the association between forgivingness and positive subjective well-being. First, the results show that perceived limited time is associated with lower levels of positive well-being and higher levels of negative well-being. Second, the results support the prediction that with perceived limited time, forgivingness is more strongly related to positive affect, satisfaction with life, and optimism as compared to perceived open-ended time. Finally,

results for negative affect and pessimism demonstrate a boundary of the moderating role of

future time perspective.

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Footnotes

1.   We also tested the alternative hypothesis that positive well-being interacts with future time perspective in predicting forgivingness. We thus ran a model predicting forgivingness with positive affect (as focal predictor), future time perspective (as moderator), and their interaction, controlling for age and gender effects. The results show that positive affect did not interact with future time perspective in predicting forgivingness (B = .03, *SE* = .06, *t*(933) = 0.55, *p* = .58, *b* = .02). Also, life satisfaction did not interact with future time perspective in predicting forgivingness (B = −.01, *SE* = .04, *t*(933) = −0.35, *p* = .73, *b* = −.01). Finally, the combined effects of optimism and future time perspective did not reach statistical significance (B = −.07, *SE* = .05, *t*(935) = −1.33, *p* = .18, *b* = −.04).

Table 1: Means, standard deviations, and correlations for variables of interest.

	1	2	3	4	5	6	7	8	9
1. Forgivingness	—								
2. Positive Affect	.25**	—							
3. Negative Affect	−.31**	−.68**	—						
4. Satisfaction with Life	.23**	.70**	−.59**	—					
5. Optimism	.26**	.53**	−.44**	.46**	—				
6. Pessimism	−.12**	−.38**	.32**	−.42**	−.31**	—			
7. Future Time Perspective	−.02	.39**	−.19**	.32**	.35**	−.29**	—		
8. Age	.22**	−.06	−.10*	−.03	−.04	.23**	−.66**	—	
9. Gender (0 = male, 1 = female)	−.12**	.02	.13**	−.01	−.05	−.11*	.10*	−.18**	—
Potential range	1-7	1-5	1-5	1-6	1-5	1-5	1-5	19-84	—
Mean	3.82	3.92	2.14	4.51	3.74	2.41	3.09	52.40	—
SD	1.13	0.60	0.61	0.95	0.67	0.72	0.86	17.65	—

Note. $N = 962$; the correlations with gender are point biserial correlations; *$p < .01$, **$p < .001$.

Table 2: OLS regression estimating indicators of positive subjective well-being from forgivingness, future time perspective, and their interaction, controlling for age and gender. Unstandardized (B) and standardized (b) regression coefficients are reported.

	Positive affect				Satisfaction with life				Optimism			
	B	*SE*	*b*	*t*	B	*SE*	*b*	*t*	B	*SE*	*b*	*t*
Constant	3.90	0.03	—	150.90***	4.51	0.04	—	104.60***	3.76	0.03	—	125.32***
Age (W_1)	0.01	0.00	.29	7.30***	0.01	0.00	.26	6.28***	0.01	0.00	.26	6.42***
Gender (W_2)	0.04	0.04	.03	1.18	0.01	0.06	.01	0.20	−0.04	0.04	−.03	−0.97
Forgivingness (F)	0.10	0.02	.20	6.76***	0.15	0.03	.18	5.69***	0.13	0.02	.21	7.01***
FTP (M)	0.40	0.03	.58	15.13***	0.55	0.04	.49	12.44***	0.41	0.03	.52	13.47***
$F \times M$	−0.04	0.02	−.07	−2.44*	−0.08	0.03	−.08	−2.78**	−0.06	0.02	−.08	−2.88**

Note. FTP: Future time perspective; the focal predictor (F), moderator (M), and control variable (W_1) were mean centered prior to the analyses; positive affect: $R^2 = .26$, $F(5, 933) = 66.39$, $p < .0001$, $R^{2\text{inter}} = .01$, $F = 5.97$, $p < .05$; satisfaction with life: $R^2 = .20$, $F(5, 933) = 45.84$, $p < .0001$, $R^{2\text{inter}} = .01$, $F = 7.73$, $p < .01$; optimism: $R^2 = .23$, $F(5, 935) = 57.38$, $p < .0001$; $R^{2\text{inter}} = .01$, $F = 8.30$, $p < .01$.

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

Table 3: OLS regression estimating indicators of negative subjective well-being from forgivingness, future time perspective, and their interaction, controlling for age and gender. Unstandardized (B) and standardized (*b*) regression coefficients are reported.

	Negative affect				Pessimism			
	B	*SE*	*b*	*t*	B	*SE*	*b*	*t*
Constant	2.07	0.03	—	74.65***	2.47	0.03	—	71.83***
Age (W_1)	−0.01	0.00	−.28	−6.83***	0.00	0.00	.10	2.39*
Gender (W_2)	0.12	0.04	.10	3.22**	−0.12	0.05	−.08	−2.62*
Forgivingness (*F*)	−0.13	0.02	−.24	−7.83***	−0.10	0.02	−.15	−4.65***
FTP (*M*)	−0.27	0.03	−.38	−9.55***	−0.18	0.04	−.22	−5.12***
F × *M*	0.03	0.02	.05	1.62	0.02	0.02	.03	0.91

Note. FTP: Future time perspective; the focal predictor (*F*), moderator (*M*), and control variable (W_1) were mean centered prior to the analyses; negative affect: $R^2 = .19$, $F(5, 927) = 43.48$, $p < .0001$, $R^{2\text{inter}} = .002$, $F = 2.61$, $p > .10$; pessimism: $R^2 = .11$, $F(5, 933) = 23.76$, $p < .0001$, $R^{2\text{inter}} = .001$, $F = 0.82$, $p > .10$.

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

Figure Captions

Figure 1: Indicators of positive subjective well-being as functions of forgivingness and future time perspective. Future time perspective values are the sample mean and +/- one *SD* from the mean. Low and high forgivingness reflect forgivingness value end-points.