Personality traits as predictors of forgiveness and gratitude/awe: a two-wave longitudinal study

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Abstract

Cross-sectional studies have shown that individual differences can be associated with pro-social emotions. However, little is known about how personality may predict subsequent forgiveness and gratitude/awe. This study investigates the longitudinal influence of the Big Five traits (assessed by the Ten-Item Personality Inventory), supplemented by narcissism (assessed by the Single Item Narcissism Scale), on decisional and emotional forgiveness (assessed by the Decisional and Emotional Forgiveness Scales), as well as gratitude/awe (assessed by the Gratitude/Awe Questionnaire). Data were gathered from 292 respondents (64% women) from Poland who completed questionnaires at Time 1 (T1) and 6 months later at Time 2 (T2). Structural equation modelling showed that agreeableness at T1 positively predicted decisional forgiveness at T2; extraversion at T1 and emotional stability at T1 positively predicted emotional forgiveness at T2; and openness at T1 positively predicted gratitude/awe at T2, albeit all effects were weak. Our findings suggested that personality traits play a more minor role than one might think based on cross-sectional studies in determining individuals' capacity for forgiveness and gratitude/awe. However, it is essential to note that these results are specific to the Polish population, underscoring the necessity for future research incorporating a more diverse demographic representation.

Keywords Forgiveness · Gratitude/awe · Personality · Big five · Narcissism

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Forgiveness and gratitude/awe are significant emotional and behavioral responses that may contribute to human well-being (Büssing et al., 2014; Skalski-Bednarz et al., 2024). Researchers have long been interested in what triggers these responses, exploring factors such as morality, situational perception, and personality traits as potential influences (Exline et al., 2004; Bassett et al., 2006). This study aims to deepen our understanding by examining how specific personality characteristics, including those in the Big Five model and supplemented by traits like narcissism, affect the propensity to forgive and the experience of gratitude/awe. Our research aims to elucidate the psychological mechanisms underlying these valuable positive emotions and pro-social behaviors.

Forgiveness involves letting go of negative emotions and granting absolution for a transgression (Worthington & Wade, 2020), while gratitude/awe represents a positive psychological response to benefits received in interpersonal interactions and 'extraordinary' experiences of something transcendent in situations, nature, music, or people (Konaszewski et al., 2022). forgiveness and gratitude/awe have long been recognized as enduring aspects of human

existence in various ancient theories of well-being (Emmons & McCullough, 2003; McCullough & Worthington, 1999), and their positive impact on the promotion of human welfare is also supported by numerous scientific studies (Büssing et al., 2014; Griffin et al., 2015; Krause, 2006; Lawler et al., 2005; Lawler-Row et al., 2011; Skalski et al., 2022; Skalski-Bednarz, 2024; Toussaint et al., 2016, 2023).

Forgiveness and gratitude/awe share several commonalities regarding their psychological characteristics and beneficial effects. For example, forgiveness and gratitude/awe involve positive psychological responses in interpersonal contexts (Eyring et al., 2020). Forgiveness entails letting go of negative emotions, resentment, and the desire for revenge (Worthington, 2015). In contrast, gratitude/awe involves acknowledging and appreciating the positive aspects of one's life and the actions and qualities of others (Emmons & McCullough, 2003; Skalski et al., 2020). Researchers have highlighted that forgiveness and gratitude/awe are associated with increased well-being, improved psychological health, decreased psychological distress, and enhanced interpersonal relationships (Algoe et al., 2008; Griffin et al., 2015; Toussaint et al., 2014, 2016). Experiencing forgiveness and gratitude/awe can also protect against psychopathology by reducing its symptoms (Vernon et al., 2009; Wood et al., 2009). Furthermore, forgiveness and gratitude/awe are considered emotions that promote pro-social behaviours (Skalski-Bednarz et al., 2022; Webb et al., 2012). Finally, both phenomena emerged to both help humans solve problems in social interactions related to caretaking and cooperation and broaden one's mindset and resources (Fredrickson, 2012; Tugade & Fredrickson, 2004).

Decisional and emotional forgiveness

Due to its complex nature, forgiveness is understood in multi-dimensional terms, and the most common distinction is between its *decisional* and *emotional* dimensions. The former refers to the cognitive decision to let go of resentment and adopt a more positive and benevolent stance towards the offender, regardless of one's emotional state (Mróz et al., 2022; Worthington et al., 2007). It involves a deliberate choice to release feelings of anger and seek reconciliation without necessarily experiencing a complete emotional transformation (Toussaint & Webb, 2005). The emotional dimension encompasses the felt aspect of forgiveness, involving reducing negative emotions and the development of positive feelings toward the offender (Davis et al., 2015). It entails a genuine shift in emotional responses, including empathy, compassion, and even a potential rebuilding of trust (Witvliet et al., 2014). While decisional forgiveness may precede emotional forgiveness, the two processes can

co-occur, highlighting the independent nature of cognitive and affective components within forgiveness (Lichtenfeld et al., 2015). Undoubtedly, complete forgiveness will include both its decisional and emotional dimensions.

Gratitude/awe and its relationship with forgiveness

Gratitude/awe goes beyond a mere response to someone's kindness and refers to a state of conscious perception (Konaszewski et al., 2022). It can be experienced when individuals temporarily suspend their daily routines and engage in reflective moments, creating a sense of time standing still (Büssing et al., 2018). These instances involve pausing, daydreaming, and encountering something sacred. Cultivating gratitude and the experience of awe may enhance individuals' ability to let go of negative emotions, empathize with the offender, and foster forgiveness (Eyring et al., 2020b; İlbay & Sarıçam, 2015; Lambert et al., 2009; Lindsey, 2013; Mooney et al., 2016; Rodrigues et al., 2022; Van Cappellen et al., 2013). Despite their distinct conceptual frameworks, forgiveness and gratitude/awe exhibit overlapping mechanisms and positive outcomes contributing to individuals' overall psychological and social functioning.

Personality predictors of forgiveness and gratitude/awe

Since gratitude/awe and forgiveness are personal choices, their processes and outcomes may depend on individual differences, for instance personality traits (Enright & Fitzgibbons, 2004; Kaleta & Mróz, 2018; Riek & Mania, 2012; Walker & Gorsuch, 2002). Using the Big Five personality trait taxonomy/model seems to be a reasonable solution to assess these differences because it is a widely accepted model for describing personality (Gosling et al., 2003). DeYoung (2015), in the *Cybernetic Big Five theory*, argued for the possibility of an integrative approach in the view of personality and pointed to causal dynamics between personality traits and characteristic adaptations. Thus, he linked the functions and dysfunctions of traits and distinctive adaptations, showing their importance in explaining psychopathology, health, and well-being.

Previous studies showed that the tendency to forgive and episodic forgiveness strongly relate to two dimensions of the Big Five personality domains: agreeableness and neuroticism (McCullough, 2001; Mullet et al., 2005). Accumulated meta-analytic evidence suggests that agreeableness is the most robust predictor of forgiveness (Riek & Mania, 2012) and interpersonal conflict (Bettencourt et al., 2006), while there is less consensus regarding the role of neuroticism (Rey & Extremera, 2016). Individuals high in

agreeableness, characterized by greater trust, empathy, and a preference for peaceful resolutions, tend to provide higher forgiveness scores (Koutsos et al., 2008; Rey & Extremera, 2016). In contrast, *neurotic* individuals, prone to stress, tend to engage in negative rumination and experience negative emotions, leading to lower levels of forgiveness following perceived harm by others (Brose et al., 2005; Maltby et al., 2008). Some researchers also point to positive associations of forgiveness with extraversion and conscientiousness (Hafnidar, 2013; Nashori et al., 2020). *Extraverted* individuals are characterized by their energetic, assertive, active, and sociable nature, often experiencing a greater frequency of positive emotions. Conversely, *conscientious* people are well-organized, responsible, reliable, thorough, and hardworking (Gosling et al., 2003). Among the various personality traits, general 'openness to experience' has shown the weakest correlation with forgiveness (Abid et al., 2015). Those *open to experience* are characterized by open-mindedness, divergent thinking, and creativity (Sorokowska et al., 2014).

Like forgiveness, several studies have connected gratitude/awe to each Big Five personality trait. Findings indicate that individuals who exhibit gratefulness and admiration for others and the world tend to display higher levels of extraversion, agreeableness, openness, and conscientiousness while demonstrating lower levels of neuroticism (Aghababaei et al., 2018; Szcześniak et al., 2020; Wood et al., 2009; Yaden et al., 2018a, 2018b). Grateful individuals often display traits such as sociability, empathy, emotional stability, and open-mindedness. They tend to appreciate aesthetics and approach their responsibilities with a strong sense of principle. Those who experience high levels of gratitude and awe often seek a connection with a higher power through silence and prayer, demonstrating a peaceful attitude and treating others with respect. They also show particular care for those in need (Büssing et al., 2014). Additionally, people who experience gratitude often engage in experiential spirituality, which emphasizes the emotional impact of being moved by specific moments, places, or nature. This involves taking mindful pauses to experience 'wonder,' interrupting the routine of daily life and leading to feelings of gratitude (Büssing et al., 2021).

Exline et al. (2003) suggested that research on the personality correlates of pro-social emotions and behaviours, which is most often based on the Big Five model, should be expanded to include the construct of *narcissism*, which is characterized by self-admiration, a sense of superiority, and interpersonal exploitativeness (Konrath et al., 2014). It is common knowledge that individuals with narcissistic characteristics have been found to exhibit more aggressive responses to insults and negative feedback compared to others (Kjærvik & Bushman, 2021), and they report a

higher frequency of interpersonal transgressions in their daily interactions (Fatfouta et al., 2022). Exline et al. (2004) found that narcissistic entitlement predicts a lower tendency to forgive. This notion is supported by further research demonstrating that narcissists perceive difficulties forgiving others (Fatfouta et al., 2015, 2017; Kluwer et al., 2020). From the perspective of gratitude/awe, when narcissistic individuals believe they are superior to others, they often question the intentions of their benefactors. This is attributed to what is known as the illusion of autonomy, where high narcissism leads to a belief in self-sufficiency and diminishes the recognition of others' contributions (Solom et al., 2016). The concept of narcissists acting as 'thieves of thankfulness' has also been supported by empirical studies (de Zavala, 2019; Elliott, 2021; Zhang et al., 2021).

The role of personality traits in shaping pro-social emotions and behaviours like forgiveness and gratitude/awe has sparked both interest and debate in the literature. While some studies indicate robust associations between certain personality traits and these emotions (Aghababaei et al., 2018; Szcześniak et al., 2020), others suggest more nuanced relationships (Exline et al., 2003). However, much of this research has relied on cross-sectional designs, leaving questions about the temporal dynamics and causal relationships between personality and these emotions unanswered. This study addresses this gap by examining how the Big Five traits, augmented by narcissism, longitudinally influence decisional and emotional forgiveness, as well as gratitude/awe. By adopting a longitudinal perspective, we aim to deepen understanding of how personality shapes individuals' capacities for forgiveness and gratitude/awe over time, contributing significantly to the existing literature.

Objective of the study

Given that both forgiveness and gratitude/awe are considered self-transcendent responses to the behaviour of others and have been linked to well-being, while interventions for them can improve psychophysical health, it is essential to expand knowledge of their predictive factors to promote these adaptive resources. Our study focused on personality predictors of episodic forgiveness and gratitude/awe. Based on previous investigations, we hypothesized that extraversion, agreeableness, conscientiousness, emotional stability (opposite to neuroticism), and openness would be positively related to decisional and emotional forgiveness and gratitude/awe. At the same time, narcissism would be negatively associated with those pro-social variables. Due to the predominantly cross-sectional nature of existing studies in this field, we created a longitudinal design to verify

whether individual variables are related in the way proposed by germane theories.

Materials and methods

Participants and procedure

This longitudinal two-wave study was conducted with the approval of a university's ethics committee. The data collection took place between 2022 and 2023 and involved Polish individuals. The study's invitations were disseminated through social media platforms like Facebook, and for survey distribution, we employed Qualtrics. Before participation, each individual provided informed consent. The survey date was recorded in each participant's chart, and a repeat set was made available 6 months later at a follow-up measurement. Participants were instructed to sign both surveys with an invented ID name unrelated to their real identities to ensure anonymity. During the first time point (T1), participants were asked to provide an email address for future invitations to the second time point (T2). The email addresses remained unlinked to the survey results to safeguard participants' confidentiality. After 6 months, all T1 participants were invited via email to partake in the T2 measurement. The participant retention rate was 53%. Data from 292 participants aged 18 to 65 ($M_{Age} = 40.6$, $SD = 13.5$) who completed questionnaires during both waves were analysed (64% women). The participants displayed diversity in terms of educational attainment (3% elementary, 2% middle school, 65% high school, 3% vocational school, 27% higher education), residency (20% from small towns, 29% from cities with up to 100,000 inhabitants, 51% from larger towns), and marital status (31% single, 58% in relationships, 8% divorced, 3% widowed). Most participants (76%) identified as Christians (specifically, Catholics), while the remainder identified as agnostics or non-believers. The survey procedure for both phases involved completing questionnaires that assessed personality traits and forgiveness. It took approximately 6 min to finish the survey. Before completing the questionnaires at Time 1, participants were prompted to recall instances of "harm" they had experienced from an offender. At Time 2, participants were explicitly instructed to focus on the same transgression mentioned at Time 1. This ensured coherence in their recall and assessment of forgiveness over the 6-month period.

Measures

In order to assess personality traits based on the Big Five Inventory (BFI; Costa & McCrae, 2011), the Ten-Item Personality Inventory (TIPI, or BFI-10) developed by Gosling

et al. (2003) and subsequently translated into Polish by Sorokowska et al. (2014) was used. The inventory includes 10 statements that are categorized into five factors, including extraversion ($\alpha = 0.68$), conscientiousness ($\alpha = 0.58$), agreeableness ($\alpha = 0.75$), emotional stability ($\alpha = 0.72$), and openness ($\alpha = 0.47$). All alphas reported in the measures section are calculated from the present study data. It should be noted that obtaining high alpha coefficients for instruments such as the TIPI, which aim to assess broad areas with only two items per dimension and using items at both ends of the spectrum (positive and negative), is almost impossible. Consequently, researchers have highlighted that calculating alphas on scales with limited item counts can be deceptive (Wood & Hampson, 2005). A better metric in these cases would be test-retest reliability. In this regard, original psychometric work showed that TIPI scales had an average test-retest reliability coefficient of 0.72 and in the present data the average test-retest reliability coefficient was 0.64 (see Table 1). Participants indicate their agreement with each statement on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items from the scale include: "I see myself as extraverted, enthusiastic" and "I see myself as critical, quarrelsome."

The Single Item Narcissism Scale (SINS) by Konrath et al. (2014) was used to measure narcissistic personality. In the validation study, the SINS was significantly correlated with longer narcissism scales but uncorrelated with self-esteem. It also had high test-retest reliability. The scale's one item is: "To what extent do you agree with this statement: 'I am a narcissist'? (Note: The word narcissist means egotistical, self-focused, and vain)." Participants indicate their agreement on a 7-point Likert scale, ranging from 1 (*not very true of me*) to 7 (*very true of me*).

The Decision to Forgive Scale (DTFS), developed by Davis et al. (2015) and adapted by Mróz et al. (2022), was used to assess decisional forgiveness, defined as "the cognitive letting go of resentment and bitterness and need for vengeance" (DiBlasio, 1998, p. 78). Decisional forgiveness encompasses an intellectual dimension and modifies one's intentions underlying one's behaviour toward a transgressor, particularly motivation for revenge and avoidance (Exline et al., 2003). The DTFS includes five statements organized into a single factor ($\alpha = 0.91$). Participants indicate their agreement with each statement on a 5-point Likert scale, ranging from 1 (*extremely uncharacteristic*) to 5 (*extremely characteristic*). Sample items from the scale include: "My choice is to forgive them" and "I decided to forgive them."

The Emotional Forgiveness Scale (EFS) developed by Hook et al. (2012) and adapted to the Polish context by Mróz et al. (2022) was employed to assess emotional forgiveness and the attainment of inner tranquillity regarding a specific transgression. The EFS ($\alpha = 0.75$) includes eight

Table 1 Means and correlations (*N* = 292)

| | M (SD) | Time 1 | | | | | | | | Time 2 | | | | | | | | |
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
1. Decisional forgiveness T1	11.8 (4.4)	-																	
2. Emotional forgiveness T1	16.8 (5.5)	0.37***	-																
3. Gratitude/Awe T1	22.9 (6.5)	0.13*	0.48***	-															
4. Extraversion T1	9.9 (2.7)	0.07	0.13*	0.12*	-														
5. Agreeableness T1	11.3 (1.8)	0.34***	0.20***	0.09	0.12*	-													
6. Conscientiousness T1	10.2 (2.4)	0.21***	0.11	0.15*	0.26***	0.44***	-												
7. Emotional Stability T1	7 (2.6)	0.06	0.15*	0.02	0.42***	0.07	0.19***	-											
8. Openness T1	9.1 (2)	0.22***	0.12*	0.11	0.42***	0.21***	0.20***	0.19***	-										

Table 1 (continued)

	M (SD)	Time 1									Time 2								
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
9. Narcissism T1	2.2 (1.4)	-0.13*	-0.15*	0.02	0.04	-0.41***	-0.19***	-0.05	-0.15*	-									
10. Decisional forgiveness T2	17.4 (5.2)	0.68***	0.30***	0.37***	0.01	0.26***	0.13*	0.06	0.16**	-0.17**	-								
11. Emotional forgiveness T2	24.2 (5.5)	0.35***	0.52***	0.28***	0.03	0.18**	0.08	0.20***	0.15*	-0.13*	0.42***	-							
12. Gratitude/Awe T2	11.8 (4.1)	0.15*	0.34***	0.50***	0.11	0.21**	0.12*	0.08	0.21***	-0.11	0.15*	0.21***	-						
13. Extraversion T2	10 (2.7)	0.08	0.12*	0.05	0.76***	0.11	0.27***	0.39***	0.46***	0.15*	-0.03	0.12*	0.05	-					
14. Agreeableness T2	11.5 (1.8)	0.16**	0.13*	0.16**	0.19***	0.55***	0.27***	0.14*	0.05	-0.26***	0.14*	0.17**	0.18**	0.04	-				
15. Conscientiousness T2	10.6 (2.2)	0.19***	0.10	0.23***	0.21***	0.40***	0.75***	0.11	0.20***	-0.06	0.15*	0.09	0.25***	0.26***	0.24***	-			
16. Emotional Stability T2	7.2 (2.9)	-0.01	0.14*	-0.03	0.49***	0.04	0.22***	0.66***	0.10	-0.02	0.11	0.12*	0.22***	0.40***	0.20***	0.26***	-		

Table 1 (continued)

	M (SD)	Time 1									Time 2								
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
17. Openness T2	8.8 (2.1)	0.17**	0.13*	0.19***	0.31***	0.01	0.09	0.06	0.49***	0.12*	0.13*	0.16**	0.06	0.39***	0.02	0.08	0.06	-	
18. Narcissism T2	2.3 (1.5)	-0.26***	-0.14*	0.04	0.05	-0.41***	-0.22***	-0.01	-0.07	0.55***	-0.15*	0.01	0.19***	0.05	-0.29***	-0.21***	0.01	0.08	-
Age	40.6 (13.5)	0.04	0.06	0.13*	0.06	-0.01	0.11	0.10	0.08	-0.07	0.02	0.02	-0.16**	0.10	-0.07	0.11	0.11	0.12	-0.05
Gender (0=female, 1=male)		0.02	-0.16**	0.05	0.23***	0.08	0.09	0.04	-0.01	-0.02	0.08	-0.18**	0.12	0.17**	0.09	0.08	0.11	-0.08	-0.03

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

items that measure both the presence of positive and pro-social emotions directed towards the offender and a reduction in negative emotions associated with the wrongdoer. Participants indicate their agreement with each statement on a 5-point Likert scale, ranging from 1 (*extremely uncharacteristic*) to 5 (*extremely characteristic*). Sample items from the scale include: "I no longer feel upset when I think of him or her" and "I feel sympathy toward him or her."

The Gratitude/Awe Questionnaire (GrAw-7) developed by Büssing et al. (2018) and translated into Polish by Konaszewski et al. (2022) was used to assess self-transcendent emotions, encompassing gratitude and awe. This expanded scale was specifically designed to capture the experiential aspects of both feeling deeply moved and touched by specific moments and natural environments and subsequent reactions, like pausing during daily activities and experiencing feelings of awe and gratitude. The questionnaire consists of a single factor ($\alpha = 0.85$) made of up seven statements. Participants indicate their agreement with each statement on a 4-point Likert scale, ranging from 0 (*never*) to 3 (*regularly*). Sample items from the scale include: "I have a feeling of wondering awe" and "In certain places I become very quiet and devout."

All measures utilized in this study are applicable to individuals regardless of their religious beliefs or lack thereof. Forgiveness and gratitude/awe, the latter often referred to as secular spirituality, extend beyond religious frameworks and are rooted in secular moral philosophy. Validation studies have confirmed the appropriateness of these measures for use among both believers and non-believers (Büssing et al., 2018; Davis et al., 2015; Hook et al., 2012). Thus, the tools employed in our study are inclusive and applicable across diverse religious and non-religious contexts, ensuring their relevance and validity across different belief systems.

Statistical analyses

Data analysis was conducted using IBM SPSS Statistics (version 28) and IBM SPSS Amos (version 28). The normality of the data distributions was assessed through the Kolmogorov-Smirnov test. Pearson's r correlation analysis and structural equation modelling (SEM) were employed to examine the relationships between variables. The goodness-of-fit indices employed in the SEM included: the comparative fit index (CFI) with a minimum desired value of 0.9, the root mean square error of approximation (RMSEA) with a maximum acceptable value of 0.08, and a statistically non-significant χ^2 test value (Byrne, 2016). The significance level was set at $p \leq .05$. To determine sample size, we utilized G*Power version 3.1.9.7, which employs power and sample size estimation equations to determine the minimum

number of subjects required for sufficient statistical power to detect a causal effect in a study. According to these calculations, the study sample should be at least 115 participants.

Results

The normality of distribution was assessed for all nine variables at T1 and T2. None of the variables had skewness or kurtosis levels above 1, which suggests normality. Thus, the data were retained in their original form. A correlation matrix showed that decisional forgiveness was positively related to emotional forgiveness, gratitude/awe, agreeableness, conscientiousness, and openness and negatively related to narcissism. Emotional forgiveness was positively associated with gratitude/awe, extraversion, agreeableness, emotional stability, and openness and negatively associated with narcissism. Gratitude/awe was positively correlated with agreeableness, conscientiousness, and openness and negatively correlated with narcissism. All obtained effects were significant at both time measurement points (T1, T2). The means and values of correlation coefficients are shown in Table 1.

Age was positively related with gratitude/awe. Sex (0 = female, 1 = male) was positively associated with extraversion and negatively associated with emotional forgiveness. Educational attainment, residency, marital status, and faith were insignificantly correlated with scores.

SEM, using a maximum likelihood estimation, was conducted to determine whether the measured personality traits predicted decisional and emotional forgiveness and gratitude/awe. A general model with three outcome variables did not fit the data well. Therefore, we tested three separate models. In each model, paths were drawn from each personality trait to either forgiveness or gratitude/awe at T2, while accounting for autoregressive paths and covariances among all variables at T1.

The model of decisional forgiveness was a good fit to the data, $x^2_{(37)} = 44.23$, $p = .295$, CFI = 0.938, RMSEA = 0.061, 90% CI [0.059, 0.071]. Our analyses showed that agreeableness at T1 ($\beta = 0.11$, $p = .037$) was a significant predictor of decisional forgiveness at T2 (see Fig. 1). The model explained 48% of the variance concerning decisional forgiveness at T2 (variance accounted for personality predictors alone is 12%).

Our emotional forgiveness model was a satisfactory fit for the data, $x^2_{(37)} = 50.23$, $p = .072$, CFI = 0.923, RMSEA = 0.07, 90% CI [0.061, 0.082]. Significant predictors of emotional forgiveness at T2 were extraversion at T1 ($\beta = 0.15$, $p = .039$) and emotional stability at T1 ($\beta = 0.13$, $p = .016$; see Fig. 2). This model accounted for 46% of the variance of emotional forgiveness at T2 (variance accounted for personality predictors alone is 11%).

For gratitude/awe, the model was also a good fit to the data, $x^2_{(37)} = 44.23$, $p = .192$, CFI = 0.934, RMSEA = 0.068, 90% CI [0.043, 0.078]. This variable at T2 was significantly predicted by *Openness* at T1 ($\beta = 0.16$, $p = .013$). The model
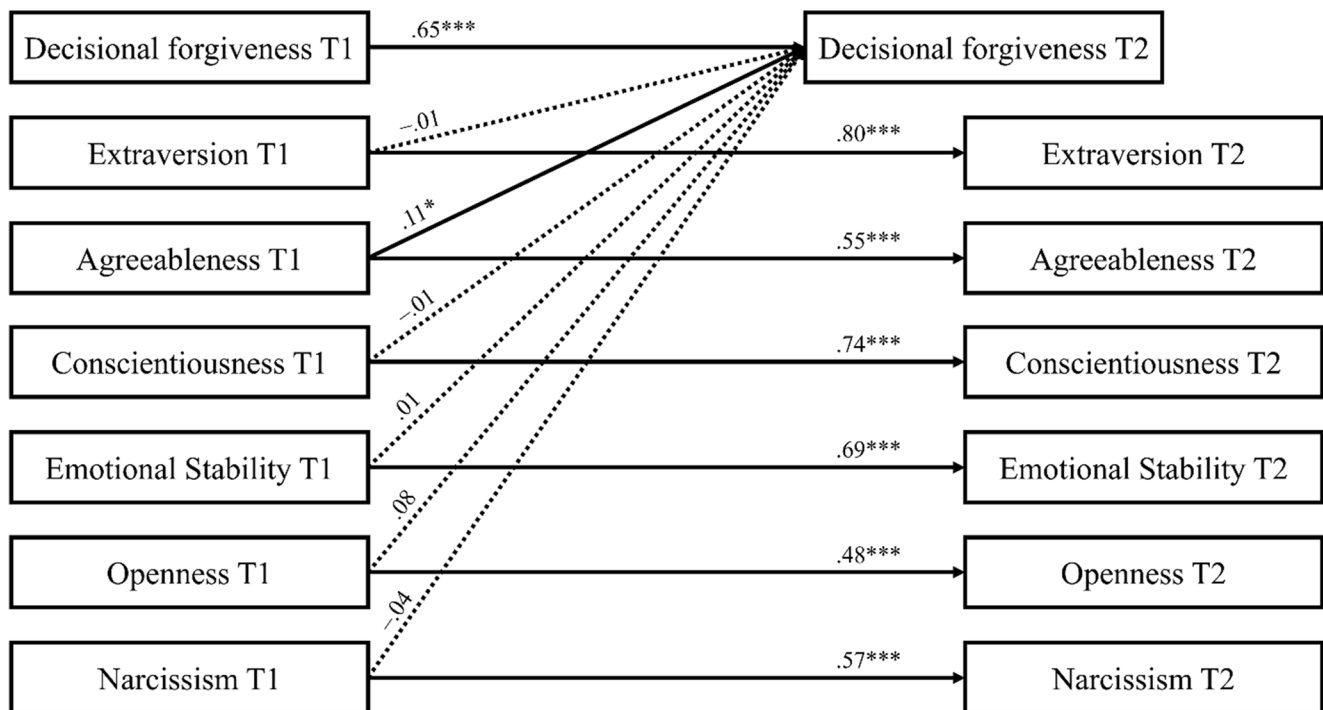

Fig. 1 Paths estimated in the model of personality predictors of decisional forgiveness (standardized coefficients; *p < .05, ***p < .001)
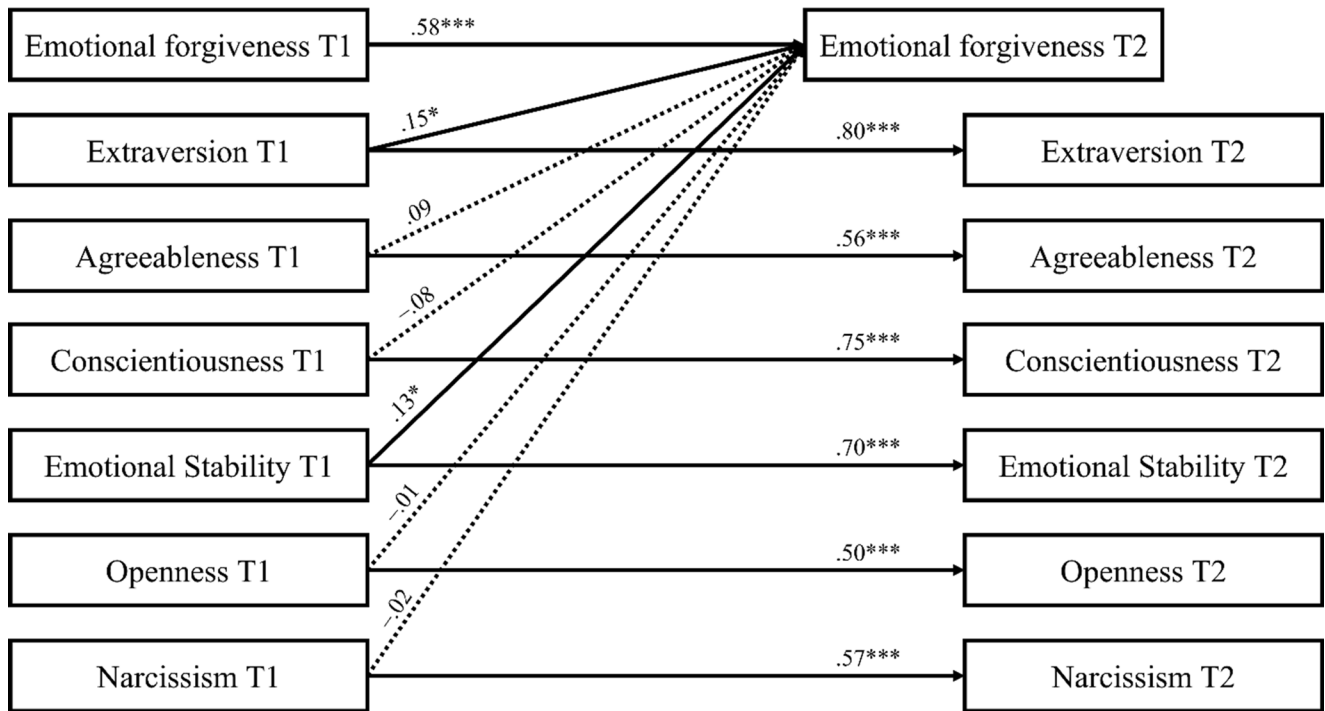
Fig. 2 Paths estimated in the model of personality predictors of emotional forgiveness (standardized coefficients; *p < .05, ***p < .001)
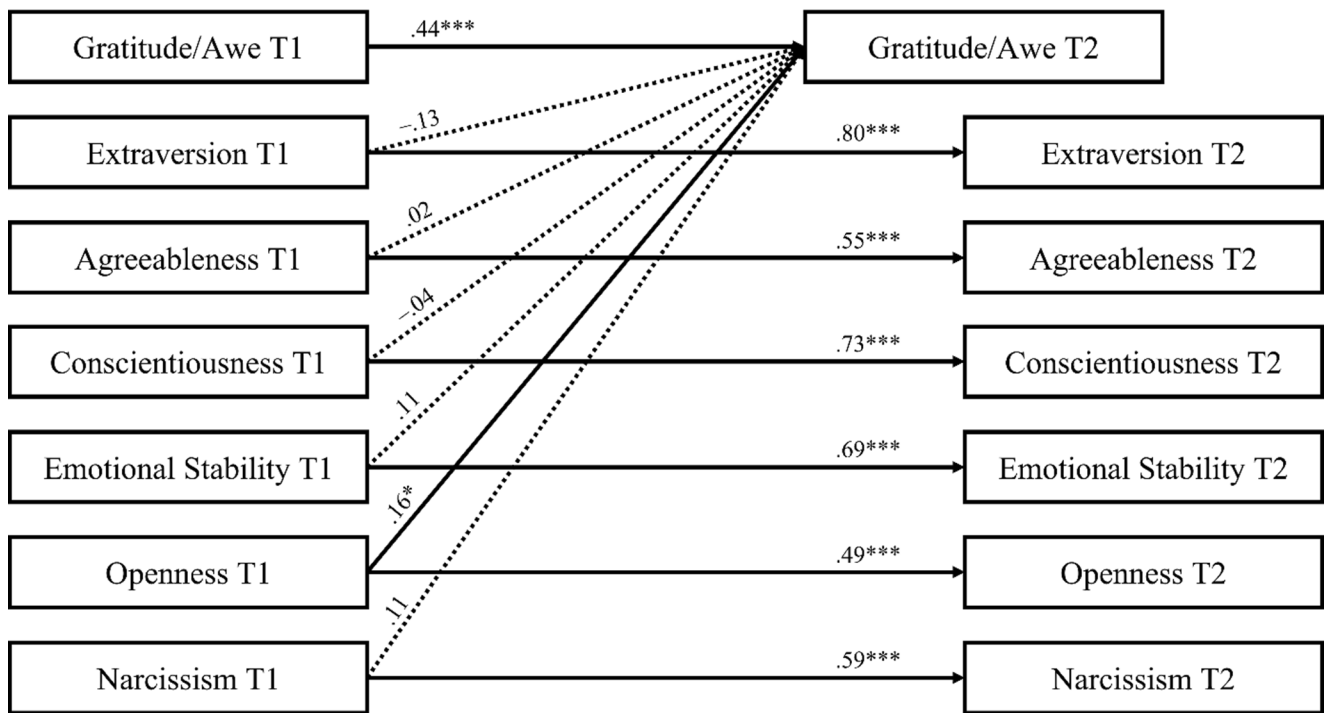

Fig. 3 Paths estimated in the model of personality predictors of gratitude/awe (standardized coefficients; *p < .05, ***p < .001)

explained 41% of the variance concerning emotional forgiveness at T2 (variance accounted for personality predictors alone is 9%) (Fig. 3).

Discussion

With the present study we investigated the concurrent and longitudinal links among the Big Five personality traits extended by the trait narcissism with decisional and

emotional forgiveness and gratitude/awe. Despite expectations, our findings indicate that agreeableness (measured at T1) is the only predictor significantly associated with decisional forgivingness (measured at T2), albeit with a weak effect. This means that agreeable individuals may be characterized by a slightly larger preference for peaceful resolutions and be more forgiving towards others who have caused them harm (Kaleta & Mróz, 2018; McCullough, 2001; Mullet et al., 2005). Our analysis also showed that emotional stability and extraversion were weakly significant predictors of subsequent emotional forgiveness, which means individuals high in emotional stability might be slightly better equipped to regulate their emotions and less prone to experiencing negative affect, making them more likely to engage in forgiveness by letting go of negative emotions associated with a transgression (Hafnidar, 2013; Nashori et al., 2020). At the same time, extroverted individuals, characterized by their sociability and positive affect, may be more inclined to engage in emotional forgiveness to maintain positive interpersonal relationships and preserve their overall well-being (Maltby et al., 2004). The last significant result in this study was that openness was the only weak predictor of subsequent gratitude/awe. Thus, open individuals, characterized by their openness to new experiences, creativity, and open-mindedness, can be more likely to perceive and appreciate the beauty and wonder of the world around them, leading to higher gratitude/awe (Aghababaei et al., 2018). Furthermore, individuals high in openness may possess a greater capacity for introspection and reflection, allowing them to recognize and acknowledge the assistance of others in their lives (Szcześniak et al., 2020).

The present study's contribution to the literature is to show weak directional relationships in which some personality traits can influence forgiveness and gratitude/awe. Thus, these findings challenge the temporal sequence inferred from previously reported cross-sectional correlates of forgivingness and gratitude/awe (Aghababaei et al., 2018; Hafnidar, 2013; Kaleta & Mróz, 2018; Koutsos et al., 2008; Nashori et al., 2020; Szcześniak et al., 2020; Walker & Gorsuch, 2002). Earlier studies relying solely on cross-sectional correlations may have exaggerated the perceived directional relationship between personality traits and forgivingness and gratitude/awe. Our results indirectly correspond with the outcomes of three waves of surveys by Lau et al. (2021), who demonstrated only a weak association between conscientiousness and subsequent levels of dispositional forgivingness. While our study similarly found weak effects of personality traits on forgiveness and gratitude/awe, it is noteworthy that Lau et al. (2021) also observed predictive effects of forgiveness in developing more positive moods and personality characteristics, such as emotional stability and agreeableness, while reducing negative moods. This

underscores the importance of forgiveness as a mediator for emotional well-being, which aligns with our findings regarding the role of personality in shaping pro-social emotions and behaviours. Wood et al. (2008) reported that gratitude contributes to well-being beyond the effects of the Big Five personality traits. This suggests that studying gratitude offers valuable insights into people's lives beyond what can be explained solely by superordinate personality traits. As a side note, it should be mentioned that our effects differ from those shown by Wood et al. (2008) in that in our study openness was the only significant predictor of subsequent gratitude/awe, but in the study by Wood et al. (2008), openness was the only one of the Big Five traits that was not a significant predictor of gratitude, while the strongest relationships in their study concerned openness. However, it is important to remember the differences underlying these different outcome variables. In the light of comparisons between both reports, agreeableness, which shows strong links with empathy (Rey & Extremera, 2016), seems to be an important determinant of gratitude, while openness, characterized by open-mindedness (Sorokowska et al., 2014), may promote conscious perception. By comparing our findings with those of Lau et al. (2021) and Wood et al. (2008), we underscore the significance of our study in contributing to a deeper understanding of the complex interplay between personality, forgiveness, gratitude/awe, and emotional well-being. This comparative analysis highlights both the consistency and the unique contributions of our findings to the existing literature, emphasizing the importance of considering multiple perspectives to advance knowledge in this field.

While acknowledging the presence of weak effect sizes is essential for interpreting the results accurately, delving deeper into the potential implications of these findings on practical significance can provide valuable insights. Understanding the real-world impact of these relationships is paramount for contextualizing the study's relevance. For instance, even though the effects of personality traits on forgiveness and gratitude/awe may be modest, they could still have meaningful implications for interventions aimed at promoting pro-social behaviours and emotional well-being. By elucidating how these weak effects translate into tangible outcomes in everyday life, our study can contribute to the development of targeted interventions and strategies for fostering forgiveness and gratitude/awe in various contexts.

Our study not only has practical implications but also significant theoretical implications. Specifically, our findings expand the current understanding of gratitude/awe and forgiveness by highlighting the nuanced influence of personality traits on these emotions and behaviours. While traditional theories have predominantly emphasized situational factors and moral judgments as primary determinants of these

pro-social emotions and behaviours, our results reveal that personality traits also play a role, albeit to a lesser extent. This adds a new dimension to existing theories, which have primarily focused on external circumstances and ethical considerations in shaping forgiveness and gratitude/awe. By elucidating the complex relationship between personality traits and these emotions, our study contributes to a deeper understanding of the intricate interplay between individual characteristics and pro-social behaviours. Looking ahead, integrating personality factors into theoretical frameworks of forgiveness and gratitude/awe can provide a more comprehensive perspective, enriching our understanding of the psychological mechanisms underlying these fundamental aspects of human experience.

Reflection on the two-wave longitudinal design utilized in this study reveals both strengths and limitations. The primary strength lies in its ability to track changes in variables over time, providing insights into the dynamic nature of forgiveness and gratitude/awe. This design facilitated the examination of temporal relationships between personality traits and pro-social emotions, offering valuable information on the directionality of effects. However, limitations include the relatively short duration between assessments, potential bias introduced by attrition rates, the inability to establish causality definitively, and the reliance on self-report measures, which may introduce common method bias and social desirability biases. Additionally, the study's reliance on recruitment through social media platforms, particularly Facebook, may introduce a selection bias, raising concerns about the generalizability of the findings to the broader population and limiting external validity. The study also lacks clarity on whether forgiveness and gratitude/awe may exhibit distinct relationships with the lower-order personality traits that constitute the Big Five model. However, within the framework of the five-factor model, personality is conventionally construed as hierarchically organized, with subordinate traits nested under each of the Big Five domains. Moreover, this model serves as an integrative framework within psychology (Wood et al., 2009), validating our chosen research approach. Furthermore, the specific cultural context of the sample (Poland) and the need for more diverse demographic representation are notable limitations. Another limitation is the absence of detailed information regarding the type of transgressions participants were instructed to recall, which could influence forgiveness and gratitude responses. Previous research underscores the importance of situational factors, such as the severity of the transgression, the dynamics of the victim-offender relationship, and the presence of an apology, all of which were not explicitly addressed in this study.

Conclusions

Although the findings from our two-wave longitudinal design must be viewed cautiously, it can be argued that personality traits play a more minor role than one might think in determining individuals' capacity for forgiveness and gratitude/awe, and the factors that predict them may come from different psychosocial domains that remain largely unknown. Given that forgiveness and gratitude/awe are inherently relational, their development may be less influenced by individual predispositions and more by contextual factors such as experiences within specific relationships (such as dynamics within couples fostering forgiveness), connections with nature, or transcendent experiences of forgiveness by the Creator/God (Büssing, 2021; Skalski et al., 2022).

Data availability The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This study was approved by the Ethics Committee of the University of Economics and Human Sciences in Warsaw.

Consent to participate Informed consent was obtained from all individual participants included in the study.

Competing interest All authors certify that they have no financial or personal conflict of interest associated with this work to disclose.

References

Abid, M., Shafiq, S., Naz, I., & Riaz, M. (2015). Relationship between personality factors and level of forgiveness among college students. *International Journal of Humanities and Social Science, 7*, 149–154.

Aghababaei, N., Błachnio, A., & Aminikhoo, M. (2018). The relations of gratitude to religiosity, well-being, and personality. *Mental Health Religion & Culture, 21*(4), 408–417. https://doi.org/10.1080/13674676.2018.1504904

Algoe, S. B., Haidt, J., & Gable, S. L. (2008). Beyond reciprocity: Gratitude and relationships in everyday life. *Emotion, 8*(3), 425–429. https://doi.org/10.1037/1528-3542.8.3.425

Bassett, R. L., Bassett, K. M., Lloyd, M. W., & Johnson, J. L. (2006). Seeking forgiveness: Considering the role of moral emotions. *Journal of Psychology and Theology, 34*(2), 111–124. https://doi.org/10.1177/009164710603400201

Bettencourt, B. A., Talley, A., Benjamin, A. J., & Valentine, J. (2006). Personality and aggressive behavior under provoking and neutral conditions: A meta-analytic review. *Psychological Bulletin, 132*(5), 751–777. https://doi.org/10.1037/0033-2909.132.5.751

Brose, L. A., Rye, M. S., Lutz-Zois, C., & Ross, S. R. (2005). Forgiveness and personality traits. *Personality and Individual Differences, 39*(1), 35–46. https://doi.org/10.1016/J.PAID.2004.11.001

Büssing, A. (2021). Wondering awe as a perceptive aspect of spirituality and its relation to indicators of wellbeing: Frequency of perception and underlying triggers. *Frontiers in Psychology, 12*, 4403. https://doi.org/10.3389/FPSYG.2021.738770/BIBTEX

Büssing, A., Wirth, A. G., Reiser, F., Zahn, A., Humbroich, K., Gerbershagen, K., Schimrigk, S., Haupts, M., Hvidt, N. C., & Baumann, K. (2014). Experience of gratitude, awe and beauty in life among patients with multiple sclerosis and psychiatric disorders. *Health and Quality of Life Outcomes, 12*(1), 1–11. https://doi.org/10.1186/1477-7525-12-63

Büssing, A., Recchia, D. R., & Baumann, K. (2018). Validation of the gratitude/awe questionnaire and its association with disposition of gratefulness. *Religions 2018, 9*(4), 117. https://doi.org/10.3390/REL9040117

Büssing, A., Recchia, D. R., Dienberg, T., Surzykiewicz, J., & Baumann, K. (2021). Awe/Gratitude as an experiential aspect of spirituality and its association to perceived positive changes during the COVID-19 pandemic. *Frontiers in Psychiatry, 12*, 385. https://doi.org/10.3389/FPSYT.2021.642716/BIBTEX

Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Routledge, Ed.

Costa, P. T., & McCrae, R. R. (2011). The five-factor model of personality and its relevance to personality disorders. *Journal of Personality Disorders, 343*(4), 343–359. https://doi.org/10.1521/PEDI.1992.6.4.343

Davis, D. E., Hook, J. N., Van Tongeren, D. R., DeBlaere, C., Rice, K. G., & Worthington, E. L. (2015). Making a decision to forgive. *Journal of Counseling Psychology, 62*(2), 280–288. https://doi.org/10.1037/COU0000054

de Zavala, A. G. (2019). Collective narcissism and in-group satisfaction are associated with different emotional profiles and psychological wellbeing. *Frontiers in Psychology, 10*(FEB), 435008. https://doi.org/10.3389/FPSYG.2019.00203/BIBTEX

DeYoung, C. G. (2015). Cybernetic big five theory. *Journal of Research in Personality, 56*, 33–58. https://doi.org/10.1016/j.jrp.2014.07.004

DiBlasio, F. A. (1998). The use of a decision-based forgiveness intervention within intergenerational family therapy. *Journal of Family Therapy, 20*(1), 77–96. https://doi.org/10.1111/1467-6427.00069

Elliott, K. (2021). Can gratitude interpretation bias modification training reduce the effects of narcissism? *EWU Masters Thesis Collection*. https://dc.ewu.edu/theses/677

Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life. *Journal of Personality and Social Psychology, 84*(2), 377–389. https://doi.org/10.1037/0022-3514.84.2.377

Enright, R. D., & Fitzgibbons, R. P. (2004). Helping clients forgive: An empirical guide for resolving anger and restoring hope. *Helping Clients Forgive: An Empirical Guide for Resolving Anger and Restoring Hope*. American Psychological Association. https://doi.org/10.1037/10381-000

Exline, J. J., Worthington, E. L., Hill, P., & McCullough, M. E. (2003). Forgiveness and justice: A research agenda for social and personality psychology. *Personality and Social Psychology Review: An Official Journal of the Society for Personality and Social Psychology Inc, 7*(4), 337–348. https://doi.org/10.1207/S15327957PSPR0704_06

Exline, J. J., Bushman, B. J., Baumeister, R. F., Campbell, K., W., & Finkel, E. J. (2004). Too proud to let go: Narcissistic entitlement as a barrier to forgiveness. *Journal of Personality and Social Psychology, 87*(6), 894–912. https://doi.org/10.1037/0022-3514.87.6.894

Eyring, J. B., Leavitt, C. E., Allsop, D. B., & Clancy, T. J. (2020). Forgiveness and gratitude: Links between couples' mindfulness and sexual and relational satisfaction in new cisgender heterosexual marriages. *Journal of Sex & Marital Therapy, 47*(2), 147–161. https://doi.org/10.1080/0092623X.2020.1842571

Fatfouta, R., Gerlach, T. M., Schröder-Abé, M., & Merkl, A. (2015). Narcissism and lack of interpersonal forgiveness: The mediating role of state anger, state rumination, and state empathy. *Personality and Individual Differences, 75*, 36–40. https://doi.org/10.1016/J.PAID.2014.10.051

Fatfouta, R., Zeigler-Hill, V., & Schröder-Abé, M. (2017). I'm merciful, am I not? Facets of narcissism and forgiveness revisited. *Journal of Research in Personality, 70*, 166–173. https://doi.org/10.1016/J.JRP.2017.07.007

Fatfouta, R., Rogoza, R., Brud, P. P., & Rentzsch, K. (2022). Too tempting to resist? Self-control moderates the relationship between narcissism and antisocial tendencies. *Journal of Research in Personality, 96*, 104156. https://doi.org/10.1016/J.JRP.2021.104156

Fredrickson, B. L. (2004). Gratitude, like other positive emotions, broadens and builds. *The Psychology of Gratitude, 145*, 166. https://doi.org/10.1093/acprof:oso/9780195150100.003.0008

Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the big-five personality domains. *Journal of Research in Personality, 37*(6), 504–528. https://doi.org/10.1016/S0092-6566(03)00046-1

Griffin, B. J., Worthington, E. L., Lavelock, C. R., Wade, N. G., & Hoyt, W. T. (2015). Forgiveness and mental health. *Forgiveness and Health*, 77–90. https://doi.org/10.1007/978-94-017-9993-5_6

Hafnidar, L. C. (2013a). The relationship among five factor model of personality, spirituality and forgiveness. *International Journal of Social Science and Humanity, 3*, 167–170.

Hafnidar, L. C. (2013b). The relationship among five factor model of personality, spirituality and forgiveness. *International Journal of Social Science and Humanity, 3*, 167–170.

Hook, J. N., Worthington, E. L., Utsey, S. O., Davis, D. E., Gartner, A. L., Jennings, D. J., Van Tongeren, D. R., & Dueck, A. (2012). Does forgiveness require interpersonal interactions? Individual differences in conceptualization of forgiveness. *Personality and Individual Differences, 53*(5), 687–692. https://doi.org/10.1016/J.PAID.2012.05.026

Kaleta, K., & Mróz, J. (2018). Personality traits and two dimensions of forgivingness. *Annals of Psychology, 21*(2), 147–162. https://doi.org/10.18290/RPSYCH.2018.21.2-3

Kjærvik, S. L., & Bushman, B. J. (2021). The link between narcissism and aggression: A meta-analytic review. *Psychological Bulletin, 147*(5), 477–503. https://doi.org/10.1037/BUL0000323

Kluwer, E. S., Van Der Wal, R. C., Visser, M., & Finkenauer, C. (2020). Predictors of forgiveness among divorced parents. *Journal of Family Psychology, 35(*4), 566–572. https://doi.org/10.1037/fam0000799.supp

Konaszewski, K., Skalski-Bednarz, S. B., Büssing, A., & Surzykiewicz, J. (2022). Adaptation and preliminary evaluation of the psychometric properties of the Polish version of the gratitude/awe questionnaire (GrAw-7). *Journal of Beliefs & Values*, 1–18. https://doi.org/10.1080/13617672.2022.2153352

Konrath, S., Meier, B. P., & Bushman, B. J. (2014). Development and validation of the single item narcissism scale (SINS). *PLOS ONE, 9*(8), e103469. https://doi.org/10.1371/JOURNAL.PONE.0103469

Koutsos, P., Wertheim, E. H., & Kornblum, J. (2008). Paths to interpersonal forgiveness: The roles of personality, disposition to forgive and contextual factors in predicting forgiveness following a specific offence. *Personality and Individual Differences, 44*(2), 337–348. https://doi.org/10.1016/J.PAID.2007.08.011

Krause, N. (2006). Gratitude toward God, stress, and health in late life. *Research on Aging, 28*(2), 163–183. https://doi.org/10.1177/0164027505284048

Lau, E. Y. Y., Hui, C. H., Lam, J., Cheung, S. F., & Cheung, S. H. (2021). Temporal relationships of forgivingness with personality and moods: A three-wave panel study. *Personality and Individual Differences, 178*, 110858. https://doi.org/10.1016/j.paid.2021.110858

Lawler, K. A., Younger, J. W., Piferi, R. L., Jobe, R. L., Edmondson, K. A., & Jones, W. H. (2005). The unique effects of forgiveness on health: An exploration of pathways. *Journal of Behavioral Medicine 2005, 28:2*(2), 157–167. https://doi.org/10.1007/S10865-005-3665-2. 28.

Lawler-Row, K. A., Hyatt-Edwards, L., Wuensch, K. L., & Karremans, J. C. (2011). Forgiveness and health: The role of attachment. *Personal Relationships, 18*(2), 170–183. https://doi.org/10.1111/J.1475-6811.2010.01327.X

Lichtenfeld, S., Buechner, V. L., Maier, M. A., & Fernández-Capo, M. (2015). Forgive and forget: Differences between decisional and emotional forgiveness. *PLOS ONE, 10*(5), e0125561. https://doi.org/10.1371/JOURNAL.PONE.0125561

Lindsey, S. C. (2013). *The morality and emotion of forgiveness: How three moral concerns and four emotions are relevant to forgiveness decisions*. University of Nevada.

Maltby, J., Day, L., & Barber, L. (2004). Forgiveness and mental health variables: Interpreting the relationship using an adaptational-continuum model of personality and coping. *Personality and Individual Differences, 37*(8), 1629–1641. https://doi.org/10.1016/j.paid.2004.02.017

Maltby, J., Wood, A. M., Day, L., Kon, T. W. H., Colley, A., & Linley, P. A. (2008). Personality predictors of levels of forgiveness two and a half years after the transgression. *Journal of Research in Personality, 42*(4), 1088–1094. https://doi.org/10.1016/J.JRP.2007.12.008

McCullough, M. E. (2001). Forgiveness: Who does it and how do they do it? *Current Directions in Psychological Science, 10*(6), 194–197. https://doi.org/10.1111/1467-8721.00147

McCullough, M. E., & Worthington, E. L. (1999). Religion and the forgiving personality. *Journal of Personality, 67*(6), 1141–1164. https://doi.org/10.1111/1467-6494.00085

Mróz, J., Kaleta, K., & Sołtys, E. (2022). Decision to forgive scale and emotional forgiveness scale in a Polish sample. *Current Psychology, 41*(6), 3443–3451. https://doi.org/10.1007/S12144-020-00838-6/TABLES/5

Mullet, E., Neto, F., & Rivière, S. (2005). Personality and its effects on resentment, revenge, forgiveness, and self-forgiveness. In E. L. Worthington (Ed.), *Handbook of forgiveness* (pp. 159–181). Routledge.

Nashori, F., Rachmy Diana, R., Syamila, M. R., Hidayat, B., Kurniawan, Y., & Afsari, N. (2020). *Forgiveness among javanese college students: the role of cultural values and personality trait*. Proceedings of the 1st International Conference on Religion and Mental Health. https://doi.org/10.4108/EAI.18-9-2019.2293461

Rey, L., & Extremera, N. (2016). Agreeableness and interpersonal forgiveness in young adults: The moderating role of gender. *Terapia Psicológica, 34*(2), 103–110. https://doi.org/10.4067/S0718-48082016000200003

Riek, B. M., & Mania, E. W. (2012). The antecedents and consequences of interpersonal forgiveness: A meta-analytic review. *Personal Relationships, 19*(2), 304–325. https://doi.org/10.1111/J.1475-6811.2011.01363.X

Skalski, S., & Pochwatko, G. (2020). Gratitude is female. Biological sex, socio-cultural gender versus gratitude and positive orientation. *Current Issues in Personality Psychology, 8*(1), 1–9. https://doi.org/10.5114/CIPP.2020.93624

Skalski, S. B., Konaszewski, K., Niesiobędzka, M., Gladysh, O., Toussaint, L. L., & Surzykiewicz, J. (2022). *Anger toward God and well-being in Ukrainian war refugees: The serial mediating influence of faith maturity and decisional forgiveness*. https://doi.org/10.31234/OSF.IO/9MBFH

Skalski-Bednarz, S. B. (2024). Effects of Christian REACH forgiveness intervention to reduce aggressiveness in adolescents with conduct disorder. *Psychology in the Schools*. https://doi.org/10.1002/pits.23161

Skalski-Bednarz, S. B., Konaszewski, K., Toussaint, L. L., Büssing, A., & Surzykiewicz, J. (2022). Positive religious coping acts through perception of nature and silence in its association with well-being and life satisfaction among Polish Catholics. *Frontiers in Public Health, 10*, 4170. https://doi.org/10.3389/FPUBH.2022.1020007

Skalski-Bednarz, S. B., Toussaint, L. L., Konaszewski, K., & Surzykiewicz, J. (2024). Episodic forgiveness in young American adults and its pathways to distress by health, outlook, spirituality, aggression, and social support. *Health Psychology Report*. https://doi.org/10.5114/hpr.185739

Solom, R., Watkins, P. C., McCurrach, D., & Scheibe, D. (2016). Thieves of thankfulness: Traits that inhibit gratitude. *The Journal of Positive Psychology, 12*(2), 120–129. https://doi.org/10.1080/17439760.2016.1163408

Sorokowska, A., Słowińska, A., Zbieg, A., & Sorokowski, P. (2014). Polska Adaptacja Testu Ten Item Personality Inventory (TIPI)–TIPI-PL– wersja standardowa i internetowa [Polish adaptation of the ten item personality inventory (TIPI-PL)– standard and online version]. *WrocLab*. https://doi.org/10.13140/2.1.4811.5521

Szcześniak, M., Rodzeń, W., Malinowska, A., & Kroplewski, Z. (2020). Big five personality traits and gratitude: The role of emotional intelligence. *Psychology Research and Behavior Management, 13*, 977–988. https://doi.org/10.2147/PRBM.S268643

Toussaint, L., & Webb, J. R. (2005). Theoretical and empirical connections between forgiveness, mental health, and well-being. In E. L. Worthington (Ed.), *Handbook of forgiveness* (pp. 349–362). Routledge. Jr.

Toussaint, L., Barry, M., Bornfriend, L., & Markman, M. (2014). Restore: The journey toward self-forgiveness: A randomized trial of patient education on self-forgiveness in cancer patients and caregivers. *Journal of Health Care Chaplaincy, 20*(2), 54–74. https://doi.org/10.1080/08854726.2014.902714

Toussaint, L. L., Shields, G. S., & Slavich, G. M. (2016). Forgiveness, stress, and health: A five-week dynamic parallel process study. *Annals of Behavioral Medicine, 50*(5), 727–735. https://doi.org/10.1007/S12160-016-9796-6

Toussaint, L., Skalski-Bednarz, S. B., Lanoix, J. P., Konaszewski, K., & Surzykiewicz, J. (2023). The relationship between forgiveness, health, and happiness among French people living with HIV. *AIDS and Behavior*. https://doi.org/10.1007/s10461-023-04052-w

Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology, 86*(2), 320–333. https://doi.org/10.1037/0022-3514.86.2.320

Van Cappellen, P., Saroglou, V., Iweins, C., Piovesana, M., & Fredrickson, B. L. (2013). Self-transcendent positive emotions increase spirituality through basic world assumptions. *Cognition and Emotion, 27*(8), 1378–1394. https://doi.org/10.1080/02699931.2013.787395

Vernon, L. L., Dillon, J. M., & Steiner, A. R. W. (2009). Proactive coping, gratitude, and posttraumatic stress disorder in college women. *Anxiety Stress & Coping, 22*(1), 117–127. https://doi.org/10.1080/10615800802203751

Walker, D. F., & Gorsuch, R. L. (2002). Forgiveness within the big five personality model. *Personality and Individual Differences, 32*(7), 1127–1137. https://doi.org/10.1016/S0191-8869(00)00185-9

Webb, J. R., Toussaint, L., & Conway-Williams, E. (2012). Forgiveness and health: Psycho-spiritual integration and the promotion of better healthcare. *Journal of Health Care Chaplaincy, 18*(1–2), 57–73. https://doi.org/10.1080/08854726.2012.667317

Witvliet, C., van Mohr, O. H., Hinman, A. J., N. G., & Knoll, R. W. (2014). Transforming or restraining rumination: The impact of compassionate reappraisal versus emotion suppression on empathy, forgiveness, and affective psychophysiology. *The Journal of Positive Psychology, 10*(3), 248–261. https://doi.org/10.1080/17439760.2014.941381

Wood, S. A., & Hampson, S. E. (2005). Measuring the big five with single items using a bipolar response scale. *European Journal of Personality, 19*, 373–390. https://doi.org/10.1002/per.542

Wood, A. M., Maltby, J., Gillett, R., Linley, P. A., & Joseph, S. (2008). The role of gratitude in the development of social support, stress, and depression: Two longitudinal studies. *Journal of Research in Personality, 42*(4), 854–871. https://doi.org/10.1016/j.jrp.2007.11.003

Wood, A. M., Joseph, S., & Maltby, J. (2009). Gratitude predicts psychological well-being above the big five facets. *Personality and Individual Differences, 46*(4), 443–447. https://doi.org/10.1016/J.PAID.2008.11.012

Worthington, E. L. (2015). *Forgiveness and reconciliation: Theory and application*. Routledge.

Worthington, E. L. Jr., Hook, J. N., Utsey, S. O., Williams, J. K., & Neil, L. (2007). R. Decisional and emotional forgiveness. In *Paper Presented at the International Positive Psychology Summit*.

Yaden, D. B., Kaufman, S. B., Hyde, E., Chirico, A., Gaggioli, A., Zhang, J. W., & Keltner, D. (2018). The development of the Awe Experience Scale (AWE-S): A multifactorial measure for a complex emotion. *The Journal of Positive Psychology, 14*(4), 474–488. https://doi.org/10.1080/17439760.2018.1484940

Zhang, M., Li, L., Ye, Y., Yu, S., & Zhong, J. (2021). The effects of feelings of awe on the relationship between consumers' narcissism and impulsive consumption behaviors: A mediated moderation model. *Current Psychology, 42*(8), 6693–6710. https://doi.org/10.1007/S12144-021-02005-X/FIGURES/6