

## Research report

## Editor:

Dr. Evandro Morais Peixoto

## Conflict of interest:

The authors declare no conflict of interest.

Received: 22/02/2023

Final version: 14/10/2024

Approved: 25/10/2024

<https://doi.org/10.1590/1413-8271202530e272171>**Self-Forgiveness Reasoning Scale: a Cross-Cultural Validation Study**Thalita Lays Fernandes de Alencar<sup>1</sup>Júlio Rique Neto<sup>2</sup>Félix Neto<sup>3</sup><sup>1</sup>Regional University of Cariri, Crato, Ceará, Brazil<sup>2</sup>Federal University of Paraíba, João Pessoa, Paraíba, Brazil<sup>3</sup>University of Porto, Porto, Portugal**Abstract**

In this article, we validate a measure of self-forgiveness reasoning based on a typology that relates the type of self-forgiveness to the offender's socio-cognitive decentering ability. A total of 309 Brazilian and 363 Portuguese college students participated in the study. The factorial validity of the instrument was tested in each country using exploratory factor analyses followed by confirmatory factor analyses. Results showed that the scale is composed of seven items organized into a two-factor structure. The factors demonstrated acceptable internal consistency indices, ranging from .61 to .81. Additionally, the CFI, TLI, and GFI indices were greater than .90 in both samples. Factor analysis revealed that the proposed scale was consistent with the theoretical proposition of self-forgiveness reasoning and sociocognitive typology. The construction and validation of this scale contribute to future studies, as there are few instruments in this area, especially from a sociocognitive perspective.

*Keywords:* forgiveness; reasoning; scale.

**Escala de Raciocínios sobre o Autoperdão: Um Estudo de Validação Intercultural****Resumo**

Neste artigo, validamos uma medida de raciocínio sobre o autoperdão baseada em uma tipologia que relaciona o tipo de autoperdão à capacidade de descentração sociocognitiva do ofensor. Participaram do estudo 309 estudantes universitários brasileiros e 363 portugueses. A validade fatorial do instrumento foi testada em cada país por meio de análises fatoriais exploratórias seguidas de análises fatoriais confirmatórias. Os resultados mostraram que a escala é composta por sete itens organizados em uma estrutura de dois fatores. Os fatores apresentaram índices de consistência interna aceitáveis, variando de 0,61 a 0,81. Os índices CFI, TLI e GFI foram superiores a 0,90 em ambas as amostras. A análise fatorial mostrou que a escala se organizou de modo coerente com a proposição teórica da tipologia sociocognitiva de raciocínios sobre o autoperdão. A construção e validação dessa escala é um contributo para estudos futuros, uma vez que existem poucos instrumentos nessa área, sobretudo numa perspectiva sociocognitiva.

*Palavras-chave:* perdão, raciocínio, escala

**Escala de Razonamiento de Auto-Perdón: Un Estudio de Validación Intercultural****Resumen**

En este artículo validamos una medida de razonamiento sobre el auto-perdón basada en una tipología que la relaciona con la descentralización sociocognitiva del ofensor. Participaron 309 estudiantes universitarios brasileños y 363 portugueses. La validez factorial del instrumento se probó en cada país mediante análisis factoriales exploratorios seguidos de análisis factoriales confirmatorios. Los resultados mostraron que la escala está compuesta por siete ítems organizados en una estructura de dos factores. Los factores presentaron índices de consistencia interna aceptables, oscilando entre .61 y .81. Los índices CFI, TLI y GFI fueron superiores a .90 en ambas muestras. El análisis factorial reveló que la escala se organizó de manera coherente con la propuesta teórica de la tipología sociocognitiva de razonamiento sobre el auto-perdón. La construcción y validación de esta escala es una contribución para futuros estudios, dado que existen pocos instrumentos en esta área, especialmente desde una perspectiva sociocognitiva.

*Palabras clave:* perdón; razonamiento; escala.

**Introduction**

One of the first operational definitions of self-forgiveness is: “a willingness to abandon self-resentment in the face of one’s own acknowledged objective wrong, while fostering compassion, generosity, and love toward oneself” (Enright and the Human Development Study Group, 1996, p. 116). As the concept suggests, self-forgiveness is a

dimension of forgiveness from the offenders' perspective, that is, those who have committed an unjust action with consequent negative feelings. Webb et al. (2017) analyzed the recurrent elements of the self-forgiveness definition in the literature to propose a consensual definition that would characterize genuine self-forgiveness: accountability for wrongdoing, acceptance of the self, reconciliation with the self, community connection, and genuine effort to change the behavior in the future. However, the study carried out by Word et al. (2021) showed that layperson's understanding of self-forgiveness is not always in conformity to advanced conceptual knowledge defended in academic studies. In this sense, they warn about the need to clarify the concept to avoid reducing it to a decrease in negative feelings with one taking no responsibility for one's actions.

The study of self-forgiveness has started to get more attention from researchers (Alencar & Abreu, 2019), which is reflected in the number of measures developed. Regarding the self-forgiveness' measurement, a literature review (McElroy-Heltzel et al., 2020) found the existence of 13 self-reports measures, that either focus on a specific offense (self-forgiveness state) or a personality dimension (self-forgiveness trait). Nonetheless, empirical studies showed that measures that focus on the end-state of self-forgiveness are unable to differentiate it from its pseudo form, characterized by defensive behaviors, such as denying, minimizing, or justifying the offense (Wenzel et al., 2012; Woodyatt & Wenzel, 2013). For this reason, the concern with assessing self-forgiveness process has gained prominence in studies and measures developed to address self-forgiveness internal process (Woodyatt and Wenzel, 2013; Griffin et al., 2018). Despite the advances, we realize that a sociocognitive analysis of considerations for self-forgiveness remains under-investigated in this field of study. We aim to offer, first, a conceptual sociocognitive typology of self-forgiveness that takes into consideration types of sociocognitive decentration and, after, to develop and empirically verify a measure of self-forgiveness reasoning.

#### **Why to study the quality of sociocognitive reasoning about self-forgiveness?**

There is an incentive for internal conflicts to be resolved through self-forgiveness that is based on its evidenced positive impact. This attitude showed potential to contribute to the offender's mental health (Davis et al., 2015; Peterson et al., 2017), being positively related to self-esteem (Woodyatt & Wenzel, 2013), life satisfaction (Beltrán-Morillas & Expósito, 2021; Fincham & May, 2019; Woodyatt & Wenzel, 2013),

personal growth (Beltrán-Morillas & Expósito, 2021; Gilo et al., 2020; Woodyatt et al., 2017), and positive emotions (Martinčková & Enright, 2020; Uzun et al., 2018). Self-forgiveness is also negatively associated with depression (Carpenter et al., 2020; Fincham & May, 2019, 2020; Gençoğlu et al., 2018; Jung et al., 2019; Levi-Belz & Gilo, 2020), anxiety and stress (Gençoğlu et al., 2018), and negative emotions (Martinčková & Enright, 2020; Uzun et al., 2018).

In addition, several studies showed a stronger relation between self-forgiveness and relational/interpersonal benefits (Cornish & Wade, 2015; Cornish et al., 2018; Woodyatt & Wenzel, 2013; Woodyatt et al., 2017), with self-forgiveness being associated with pro-social responses, such as conciliatory behavior towards the victim (Wenzel et al., 2012; Woodyatt & Wenzel, 2013), increased empathy (Woodyatt & Wenzel, 2013) and compassion (Beltrán-Morillas & Expósito, 2021), less victim avoidance (Woodyatt & Wenzel, 2013), and a greater desire for reconciliation (Woodyatt & Wenzel, 2013; Woodyatt et al., 2017). It was also reported the positive contributions of self-forgiveness for people dealing with procrastination (Uzun et al., 2018), addictive behavior (Davis & Thangal, 2021; Vatansever & Ozgur-Ilhan, 2021), eating disorder (Peterson et al., 2017), and suicidal ideation and/or behavior (Carpenter et al., 2020; Cleare et al. 2019; Gilo et al., 2020; Levi-Belz & Gilo, 2020).

Still, it is important to mention that positive consequences are associated with a specific type of self-forgiveness, genuine committed. There are already discussions about the negative impact of self-forgiving when well-being is restored without the offender accepting responsibility for his/her behavior and/or seeking reparative solutions. That is called pseudo-self-forgiveness (Cornish & Wade, 2015; Kim & Enright, 2014; Woodyatt & Wenzel, 2013). Pseudo self-forgiving can end up favoring the continuity of the offensive behavior because it generates intrapersonal benefits for the offender, who returns to feeling good about himself and no interpersonal benefits are obtained. As discussed by Woodyatt and Wenzel (2013) and Woodyatt et al. (2017), it is only genuine self-forgiveness, characterized by accountability for the wrongdoing and the pursuit of resolutions, that relates to intrapersonal and interpersonal gains for the offender.

Thus, we understand that there are different ways to restore well-being after an offense has occurred, which we can consider as different types of self-forgiveness. We warn that some type may not generate the socially positive consequences and, therefore, are

not equally desirable. For this reason, it is crucial that researchers and clinicians clarify the type of reasoning they are working and develop instruments that can distinguish the “types” of self-forgiveness.

In the study of the self-forgiveness process, the literature points out a few elements that characterize the dimension of ideal forgiveness (Webb et al., 2017; Woodyatt & Wenzel, 2020). Some of these elements are identified as essential in ensuring that self-forgiveness is genuine and, therefore, desirable. We highlight four elements considered fundamental for self-forgiveness: (1) acknowledgement of the wrongdoing, (2) acceptance of responsibility (Enright et al., 1996; Holmgren, 1998; Kim & Enright, 2014; Wenzel et al., 2012); (3) engagement in victim-oriented conciliatory or reparative behaviors (Cornish & Wade, 2015; Wenzel et al., 2012; Woodyatt, & Wenzel, 2013; Woodyatt et al., 2017); and (4) offender's effort for changes in the offensive behaviors and attitudes (Cornish & Wade, 2015; Enright et al., 1996; Griffin et al., 2016; Holmgren, 1998).

Although these elements are part of an ideal self-forgiveness process, not all of them will always be included in a person's decision for self-forgiveness, as people can establish different conditions in their decision-making for forgiving or not the self. Therefore, in this introductory study, we aim to understand the sociocognitive types of reasoning under which people forgive themselves.

#### *A Self-Forgiveness Sociocognitive Typology*

Four elements are presented as fundamental for an ideal process of self-forgiveness. We defend that they are related with the decentering ability, which is described by Piaget (1964/2010) as the cognitive ability to step outside one's own point of view, to perceive and understand multiple perspectives, and to articulate them in one's reasoning and decision making. Thus, the proposed typology organizes five types of self-forgiveness, considering that each type should represent the inclusion of one more of the fundamental elements, and that each element might demand progressive levels of decentering ability.

Type 0 is called *Denial* and represents the most egocentric type of reasoning, in which there is no support for self-forgiveness because all the elements are absent, and the offense is not truly acknowledged. Denial or other defense mechanism may be used to avoid the acknowledgement of the wrongdoing and its consequent guilt. Type 1 is called *Forgetfulness or Rationalization* because reasoning shows acknowledgement of

the wrongdoing (first element), but people use defense mechanisms to evade responsibility and restore well-being. They can be vague or much rational to justify the offense for the Self and to reduce guilt. Type 2 shows progressive cognitive decentering expressed through the acknowledgment of the wrongdoing and the willingness to take personal responsibility for the behavior (second element), however the focus is still on the self, which is why it was called *Hedonism*. A person's thinking about self-forgiveness is self-centered, and the willingness to self-forgiving is focused on relieve negative feelings (Woodyatt et al., 2017).

Type 3 is called *Reaffirmation of Values* because one seeks to restore his/her moral identity in the face of the other (Wenzel et al., 2012; Woodyatt, & Wenzel, 2013; Woodyatt et al., 2017). The focus is on offender's justification to feel worthy of self-forgiving, his/her need to demonstrate recognition of the pain they caused to the victim and willingness to show respect and care about the other person's feelings, which should lead to personal motivations to engage in conciliatory or reparative behaviors (third element). Decision making is based on concern for the victim and regain of moral identity. Finally, the Type 4 is called *Personal Evolution* because the focus of the justification goes beyond the offense-specific interpersonal interaction and takes a broader social perspective, concerned with personal change. Offenders decide to forgive themselves based on the learning and development gained from the experience that leads to changes in attitudes and behaviors (fourth element), expressed in moral commitment to avoid similar mistakes in the future (Enright et al., 1996; Holmgren, 1998).

To test this typology, we developed a Self-Forgiveness Reasoning scale (SFERS) to access the quality of justifications about self-forgiveness, that represents the different types of reasoning described in the self-forgiveness sociocognitive typology. We also analyzed the relationship between the types of self-forgiveness and the offender's level of sociocognitive decentering ability, assessed in this study through two dimensions of the empathy (Davis, 1983): empathic concern and perspective-taking. Davis defines empathic concern and social perspective-taking as the affect and the cognitive dimensions of empathy, respectively. Empathy, in turn, is a motivational variable that requires, among other things, affect and cognition decentering abilities to understand the situation from the point-of-view of others (perspective taking) and have appropriate emotional responses to their situation (empathetic consideration). Therefore, we use these variables to represent social decentering ability in this study.

### Objectives of the Study

In this study we aim to verify evidence of factorial validity and reliability of a Self-Forgiveness Reasoning scale (SFRS). To achieve this, a SFRS was tested in participants from Brazil and Portugal, countries that share the same language, but live different cultural realities.

## Method

### Participants

Participants were Portuguese ( $n = 363$ ) and Brazilians ( $n = 309$ ) unpaid volunteers college students. The Portuguese (140 males, 218 females and 5 non-reported) age range was from 18 to 36 years ( $M = 21.03$ ,  $SD = 3.28$ ) and the Brazilians (81 males, 226 females and 2 non-reported) age range was from 18 to 43 years ( $M = 21.16$ ,  $SD = 3.95$ ). Participants' responses were randomly divided into two groups for data analysis purposes. For the exploratory factor analyses were used responses of 177 Portuguese students (71 males, 103 females and 3 non-reported) and 149 Brazilians students (41 males, 106 females and 2 non-reported). For the confirmatory factor analyses were used responses of 186 Portuguese students (69 males, 115 females and 2 non-reported) and 160 Brazilians students (40 males and 120 females).

### Measures

#### Self-Forgiveness Reasoning Scale

The Self-Forgiveness Reasoning scale (SFRS) is a 9-item self-report measure built by the authors of this study and answered in a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree), that represents five types of self-forgiveness reasoning. This scale is composed of two parts. The first part presents the version of Heinz's dilemma adapted by Enright et al. (1989) to verify the quality of forgiveness reasoning. In the original study participants were asked to take the perspective of the victim (Heinz), but for this new measure participants are asked to take the perspective of the pharmacist assuming that he felt guilty about the death of Heinz's wife. Following this request, we ask to complete the following sentence: "To forgive himself, the pharmacist must..." Respondents should read the items and mark their degree of agreement for each item to complete the sentence. Items were developed based on the description of the types of reasoning of the self-forgiveness sociocognitive model. The items were presented to a group of experts, who discussed them

and informed about their agreement and discrepancies verbally. Two items were constructed for each type of self-forgiveness reasoning, except for type 4, which was represented by only one item. Minor adaptations were made in the dilemma to adjust it into Portuguese culture, for example, changes were made in the type of currency (Euro instead of Real) and the name used for cancer disease ("cancro" instead of "câncer").

#### Self-Forgiveness Questionnaire (Mullet et al, 2015)

To check the construct validity of the SFRS, it was compared with another valid and reliable measure of self-forgiveness. The Self-Forgiveness Questionnaire is a 9-item self-report about willingness to forgive the self, defined as a multi-dimensional disposition, composed by three factors with 3-items each: unforgiveness of self (e.g., "I feel unable to forgive myself for the harm done to others even if I have already tried to repair the consequences"), sensitivity to circumstances before forgiving the self (e.g., "I feel it is easier to forgive myself for the harm done to others when I feel good and everything is going well", and conditional self-forgiveness (e.g., "I cannot forgive myself as long as I have not tried to repair the negative consequences of my acts"). Participants answered their degree of agreement with the sentences on an 11-point scale, whose extremes were labeled "Disagree completely" and "Completely agree". Cronbach Alphas reported by the questionnaire authors were .79 for unforgiveness of self, .71 for sensitivity to circumstances, and .78 for conditional self-forgiveness. In this study, the values were, respectively, .86, .75 and .79 for the Portuguese sample, and .87, .66 and .77 for the Brazilian sample.

#### Interpersonal Reactivity Index (Davis, 1983; Koller, Camino, & Ribeiro, 2001)

The Interpersonal Reactivity Index of Davis (IRI) is a self-report measure that addresses empathy as a multidimensional variable. It is composed of four independent subscales with 7-items each: Perspective Taking, Empathic Concern, Personal Distress and Fantasy. In this study, only two subscales were used: Perspective-taking (Cronbach's  $\alpha$  was .67 in the original study; in this study, Cronbach's  $\alpha$  was .77 for the Portuguese sample and .76 for the Brazilian sample), which concerns to the cognitive dimension of empathy, and Empathic Concern (Cronbach's  $\alpha$  was = .63 in the original study; in this study, the Cronbach's  $\alpha$  was .84 for the Portuguese sample and .83 for the Brazilian

sample), which concerns to the affective dimension of empathy. The items are answered on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree).

### *Procedures*

#### *Data collection*

College students were recruited through convenience sampling. For the Brazilian sample, participants were verbally invited in classrooms of large public universities. The instruments were administered collectively but answered individually. For the Portuguese sample, students were contacted in public areas of the university (such as libraries and cafeterias) and invited to contribute to the study. They responded to the measures individually. The measures would take about 20 minutes to complete.

#### *Ethical procedure*

This research was approved by Institutional Review Boards in both countries. It was approved by the ethics committee of the Faculty of Psychology and Educational Sciences of the University of Porto (Approval number: 2019/12-7) and by the ethics committee of the Health Sciences Center of the Federal University of Paraíba (Approval number: 3.062.509; CAAE: 99576818.0.0000.5188).

#### *Analysis procedures*

Exploratory Factor Analyses (EFA) were performed through the program FACTOR, using Robust Diagonally Weighted Least Squares (RDWLS) (Asparouhov & Muthen, 2010) as method for factor extraction and Robust Promin rotation (Lorenzo-Seva & Ferrando, 2019). The factorability of the scale was verified through the Kaiser-Meyer-Oklin statistic and Bartlett's test of sphericity (Dancey & Reidy, 2019). Factor loads equal to or greater than  $|\cdot35|$  were considered as criteria for maintaining the items.

The decision on the number of factors to be retained was made using Parallel Analysis technique with random permutation of the observed data (Timmerman, & Lorenzo-Seva, 2011). The scale's closeness to unidimensionality was assessed by the indicators unidimensional congruence (UniCo), explained common variance (ECV) and mean of item residual absolute loadings (MIREAL). A values of UniCo larger than .95, ECV larger than 0.85 and MIREAL lower than .30 suggests that data can be treated as essentially unidimensional (Ferrando & Lorenzo-Seva, 2018).

The model adequacy was assessed using the fit indices root mean square error of approximation (RMSEA), comparative fit index (CFI) and goodness-of-fit index (GFI). According to the literature (Brown, 2006), RMSEA values must be less than 0.08, and CFI and GFI values must be above 0.90, or preferably, 0.95.

The stability of the factors was assessed using the H index (Ferrando & Lorenzo-Seva, 2018). H values range from 0 to 1, evaluating how well a set of items represents a common factor. High H values ( $> 0.80$ ) suggest a well-defined latent variable, which is more likely to be stable across studies. Low values of H suggest a latent variable that is poorly defined and probably unstable between different studies.

The internal consistency of the factors was assessed using the Overall Reliability of fully-Informative prior Oblique N-EAP scores (ORION) and the Factor Determinacy Index (FDI). The ORION evaluates the reliability of factor scores and values above .70 are considered good. The FDI evaluates the extent to which factor scores represent latent traits and for research purposes values above .80 are considered acceptable. (Ferrando & Lorenzo-Seva, 2016). Additionally, the McDonald's omega ( $\omega$ ) estimator was also calculated using the JASP free software. Values above .70 are considered good and values above .60 are considered acceptable (Dancey & Reidy, 2019).

Confirmatory Factor Analyses (CFA) were performed using the JASP free software. The diagonally weighted least squares method (DWLS) was used for the analyses since the instrument is based on an ordinal scale and multivariate normality could not be assumed. DWLS is particularly suited for ordinal data and employs robust estimation techniques (DiStefano et al., 2019; Shi & Maydeu-Olivares, 2020). To verify the model's acceptability, the following fit indices were analyzed: chi-square ( $\chi^2$ ), chi square to degrees of freedom ratio ( $\chi^2/df$ ), CFI, GFI, Tucker-Lewis index (TLI), RMSEA and standardized root mean square residual (SRMR). According to the literature (Brown, 2006; Byrne, 2010),  $\chi^2$  must be non-significant, the  $\chi^2/df$  ratio values must be below 5, or preferably, below 3; RMSEA value must be less than 0.08, or preferably, below 0.05, and CFI, TLI and GFI values must be above 0.90, or preferably, above 0.95.

In addition, Pearson's correlation coefficients between variables were estimated. The interpretation of these correlations involved considering the magnitude of the coefficients according to established guidelines, being classified as weak  $|\cdot10 - \cdot30|$ , moderate  $|\cdot30 - \cdot50|$  or strong  $|\cdot50|$  (Cohen, 1992).

## Results

### Exploratory Factor Analyses

Exploratory Factor Analyses (EFA) were conducted on the data for each country and results will be presented separately.

### Portuguese Sample

The Bartlett (467.1,  $df = 36$ ,  $p < 0.001$ ) and KMO (.67) sphericity tests suggested interpretability of the item correlation matrix. The parallel analysis suggested two factors as being the most representative for the data. The real data variance of the first factor was 35.4% while the random data variance was 22.7%. In the second factor, the variance was 27% for the real data and 19.4% for the random data. In the third factor, in turn, the variance of the random data (16.4%) was greater than that of the real data (13.2%), justifying the decision to maintain two factors. The unidimensionality of the scale was also refuted by the values of the indicators UniCo (0.674), ECV (0.575) and MIREAL (0.409).

Table 1 shows the factorial loads of eight items, considering that item 6 (Offer Heinz money to feel less guilty) was excluded due to the small factor loading. The reliability indices and the stability estimates of the factors are also reported in Table 1.

The items presented adequate factor loadings in their respective factors and no pattern of cross-loadings was found. Both factors showed good reliability indices (ORION  $> .80$ ; FDI  $> .90$ ). The values of McDonald's omega were also acceptable ( $> .60$ ) according to the literature (Dancey & Reidy, 2019). They also presented good replicability estimates. High H values ( $> .80$ ) suggest a well-defined latent variable, which is more likely to be stable across studies. Finally, it is noteworthy that the factorial structure presented the following fit indices: CFI = 0,937; GFI = 0,999, RMSEA = 0,109.

This two-factor structure explained 62.45% of the variance. The pattern matrix was examined to interpret the factors. Factor 1 was composed by five items that represent the first three types of self-forgiveness reasoning (types 0, 1 and 2), while Factor 2 was composed by three items that represent the types of reasoning 3 and 4 of the self-forgiveness sociocognitive typology. Since

Table 1.  
Results of the EFA Conducted on 8 Items of the SFRS (Portuguese Sample)

Items	Factors	
	ESF*	DSF**
2. Think that what he did was not so bad	.78	-.11
1. Think that there is nothing wrong with his attitude and that it was not his fault	.75	-.29
3. Forget the matter, since there is nothing that can be done	.53	-.02
4. Think that Heinz's wife would die anyway, since her illness was very serious	.51	-.03
5. Think that it is not good to live with guilt and get over it	.49	.23
8. Worry about Heinz and try to help him in some way	.05	.86
7. Show his regret to Heinz, apologizing and showing that he understands his suffering	.09	.81
9. Learn from the wrongdoing made and to change his attitude, being less greedy and thinking more about others	-.23	.52
ORION	0.82	0.85
FDI	0.91	.92
H-Latent	0.85	0.86
McDonald's omega	.66	.79
Explained variance (%)	35.41	27.04
Cumulative variance (%)	62.45	

\* Egocentric self-forgiveness

\*\* Decentering self-forgiveness

the concepts present reasoning with different levels of complexity, which implies more advanced or less advanced levels of perspective taking, the factors were named: egocentric self-forgiveness (ESF) and decentered self-forgiveness (DSF).

#### *Brazilian Sample*

Following the procedures described in the previous sample, the adequacy of the factorability of the items was verified: the KMO was .67 and Bartlett's test of sphericity reached statistical significance [ $\chi^2(36) = 405.5, p < 0,001$ ]. The parallel analysis suggested that the number of factors to be retained is two, as two factors from real data have a higher percentage of explained variance than random data. The variance was 35.8% for the real data and 22.8% for the random data in the first factor, and 27.2% for the real data and 19.5% for the random data in the second factor. The unidimensionality of the scale was also refuted by the values of the indicators UniCo (0.600), ECV (0.583) and MIREAL (0.366).

Once again item 6 did not reach a satisfactory factor load, which confirmed the need to exclude it. Table 2 shows the loadings from an EFA for a two-factor solution with eight items and the reliability indices (ORION, FDI, McDonald's omega) and stability estimates of the factors (H Index). This structure presented the following fit indices: CFI = 0,915; GFI = 0,989; RMSEA = 0,118.

The two-factor solution explained 63% of the variance. The items presented adequate factor loadings in their respective factors, except for item 5, which presented cross-loadings, signaling a possible need for its exclusion. It is observed that the factors were organized in the same way in both samples: items 1 to 5 composed the egocentric self-forgiveness factor (ESF), and items 7 to 9 composed the decentered self-forgiveness (DSF) factor. However, it is worth noting that the order of factors was reversed in the Brazilian sample and the DSF factor was responsible for a greater percentage of explained variance.

The ESF factor presented acceptable internal consistency indices (ORION > .80; FDI > .90; McDonald's

Table 2.  
*Results of the EFA Conducted on 8 Items of the SFRS (Brazilian Sample)*

Items	Factors	
	ESF*	DSF**
2. Think that what he did was not so bad	.81	-.09
1. Think that there is nothing wrong with his attitude and that it was not his fault	.80	-.16
3. Forget the matter, since there is nothing that can be done	.63	.29
5. Think that it is not good to live with guilt and get over it	.51	.47
4. Think that Heinz's wife would die anyway, since her illness was very serious	.49	-.16
7. Show his regret to Heinz, apologizing and showing that he understands his suffering	-.07	.62
9. Learn from the wrongdoing made and to change his attitude, being less greedy and thinking more about others	-.13	.59
8. Worry about Heinz and try to help him in some way	-.29	.64
ORION	.85	.74
FDI	.92	.86
McDonald's omega	.66	.61
H-latent	.86	.78
Eigenvalue	2.18	2.75
Explained variance (%)	27.18	35.82
Cumulative variance (%)	63	

\* Egocentric self-forgiveness

\*\* Decentering self-forgiveness

omega > .60) and H-index estimation (> .80). However, it was observed that the lower reliability indices for the DSF factor, indicating less accurate factor scores, but still acceptable (Ferrando & Lorenzo-Seva, 2016). The measure of replicability of the factorial structure (H-index, Ferrando & Lorenzo-Seva, 2018) suggested that this factor may not be replicable in future studies ( $H < .80$ ), differently from what was observed in the Portuguese sample.

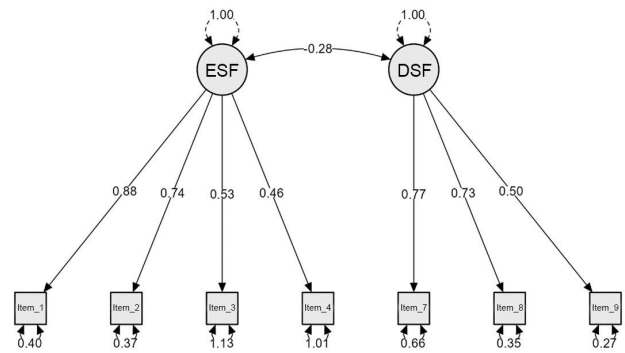
Exploratory factor analysis showed that the proposed scale was consistent with the theoretical proposition of the self-forgiveness sociocognitive typology, since the items were organized based on the type of sociocognitive decentering ability (lower or higher) required to achieve different kind of reasoning. We then proceeded to test this factorial structure with a confirmatory approach.

#### Confirmatory Factor Analyses

Confirmatory Factor Analyses (CFA) were performed to test the model with eight items distributed in two factors: egocentric self-forgiveness (5 items) and decentered self-forgiveness (3 items). However, in both samples, results did not corroborate the adequacy of the model, with fit indices outside acceptable standards. It was observed that item 5 presented a cross-loading pattern in these new analyses, similar to what had happened with the Brazilian sample in the previous analysis. Therefore we decided to redo the analyzes excluding this item, that could be a source of error. CFAs were, then, conducted to test the factor structure of the SFRS with seven items composing two factors. The proposed typology was suitable to the data in both samples (see Figures 1 and 2). Items presented satisfactory factorial loads, with standardized estimates ranging from .41 to .88. The fit indices are presented separately for each sample in Table 3, which also shows that the internal consistency of the factors was corroborated through analyses of Cronbach's alpha and McDonald's omega. It was also observed that the factors presented a weak negative correlation in the Portuguese sample ( $r = -.28$ ;  $p = .006$ ) and a moderate negative correlation in the Brazilian sample ( $r = -.39$ ;  $p < .001$ ).

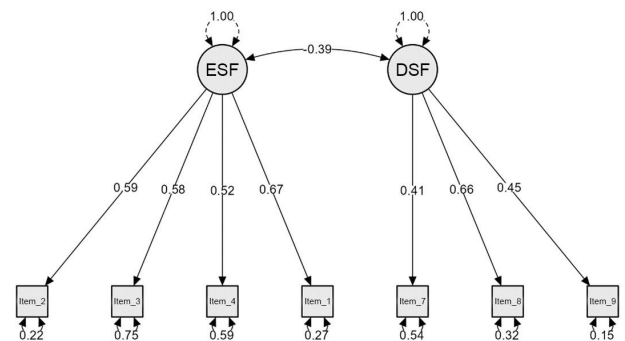
#### Correlations

Pearson's correlations were calculated with the complete sample from both countries (363 Portuguese and 309 Brazilians). Concerning the convergent validity between the Self-Forgiveness Reasoning Scale – SFRS and the Self-Forgiveness Questionnaire – SFQ



Note. Confirmatory analysis of the factors Egocentric Self-Forgiveness (ESF) and Decentered Self-Forgiveness (DSF). All modeled correlations and path coefficients are significant ( $p < .05$ ).

Figure 1. Confirmatory Factor Analysis of the Self-Forgiveness Reasoning Scale (Portuguese Sample)



Note. Confirmatory analysis of the factors Egocentric Self-Forgiveness (ESF) and Decentered Self-Forgiveness (DSF). All modeled correlations and path coefficients are significant ( $p < .05$ ).

Figure 2. Confirmatory Factor Analysis of the Self-Forgiveness Reasoning Scale (Brazilian Sample)

(Mullet et al., 2015), the findings supported theoretical expectations by demonstrating a correlation between the instruments. Nonetheless, it is important to highlight that magnitude of these correlations were weak. There was a positive correlation between the SFRS' "Egocentric self-forgiveness" factor and the SFQ's "Sensitivity to Circumstances before Forgiving the Self" factor, in both samples (Portugal:  $r = .114$ ,  $p = .030$ ; Brazil:  $r = .122$ ,  $p = .032$ ). The SFRS' "Decentered self-forgiveness" factor, in turn, also positively correlated with the "Sensitivity to Circumstances" factor ( $r = .185$ ,  $p < .001$ ), however it showed a stronger

Table 3.  
Fit Indices of the CFA Models

Fit Indices	Portuguese Sample	Brazilian Sample
Chi-square ( $\chi^2$ )	25.15, $p = .002$	16.31, $p = .233$
$\chi^2/df$	1.934	1,254
CFI	.94	.98
TLI	.90	.97
GFI	.96	.97
RMSEA	.07	.04
McDonald's omega - Egocentric Self-forgiveness Factor	.66	.74
McDonald's omega - Decentered Self-forgiveness Factor	.81	.73

correlation with the “Conditional Self-Forgiveness” factor ( $r = .242, p < .001$ ) in the Portuguese sample. In the Brazilian sample, results were in same direction, with “Decentered Reasoning” factor correlating positively with the “Sensitivity to Circumstances” ( $r = .132, p = .021$ ) and “Conditional Self-Forgiveness” ( $r = .171, p = .003$ ) factors.

Finally, regarding the relationship between self-forgiveness' reasoning and the decentering ability, findings from the Portuguese sample showed, the “Egocentric self-forgiveness” factor correlated negatively with “Empathic Concern” ( $r = -.176, p = .001$ ) and with “Perspective Taking” ( $r = -.111, p = .034$ ), while the “Decentered self-forgiveness” factor correlated positively with “Empathic Concern” ( $r = .342, p < .001$ ) and with “Perspective Taking” ( $r = .197, p < .001$ ). In the Brazilian sample, results indicate positive correlation between the “Decentered self-forgiveness” factor and “Empathic Concern” ( $r = .234, p < .001$ ).

### Discussion

The different types of self-forgiveness have been discussed in the literature, and conceptual elements have been pointed out as differentiating aspects of a genuine self-forgiveness (Holmgren, 1998; Kim & Enright, 2014; Webb et al., 2017; Woodyatt et al., 2017). The proposed typology for self-forgiveness was based on the conception that the different types of reasoning about self-forgiveness require different kinds of socio-cognitive decentering ability and would thus be related to socio-cognitive development of the offender. The

specific aim of these studies was to provide initial validation of a Self-Forgiveness Reasoning scale.

The results showed that the instrument has good psychometric properties, providing evidence of validity and reliability. The factorial validity of the instrument was tested using exploratory and confirmatory factor analyses. The items were grouped in two factors following the proposed conceptual organization. The egocentric self-forgiveness factor represents a low capacity for sociocognitive decentering, as it brings together the arguments from self-forgiveness types of reasoning that are based solely on the offender's own interests and that do not include the fundamental elements for self-forgiveness. In type 0 all the elements of genuine self-forgiveness are absent, and in type 1 there is acknowledgement of the wrongdoing (first element), but without the acceptance of responsibility. In both types of reasoning people use defense mechanisms to avoid guilt and restore well-being based in an egocentric perspective.

The decentered self-forgiveness factor, in turn, gathers types of reasoning where the elements acknowledgement of the wrongdoing and acceptance of responsibility are present, and the decentering takes on the complexity necessary to enable the offender to move beyond their own perspective and begin to include others in their reflection, by showing concerns for the victim (type 3), as well as concerns for interpersonal relationships in the future (type 4), which includes the other two fundamental elements of genuine self-forgiveness.

It is worth noting that one of the types of reasoning (type 2) was not represented in the scale, as items

5 and 6 were removed during the analyses. To understand this result, it is important to remember that type 2 reasoning demonstrate differences in sociocognitive perspective taking through acknowledging the wrongdoing and acceptance of responsibility for the behavior, without engagement in conciliatory or reparative behaviors yet making no efforts for changes in one's offensive behaviors and/or attitudes toward others. We treated type 2 of reasoning as an intermediate in the typology, which did not find empirical correspondence from the analysis. It is important that further studies analyze this type of reasoning and the relevance of it for self-forgiveness. Despite this, we consider that the two-factor organization provided by the current analysis showed adequacy of the theoretical assumption that there would be a relationship between the sociocognitive decentering abilities and the type of reasoning about self-forgiveness.

Regarding the results of exploratory factor analysis, it is noted that the assessment of the model's adequacy demonstrated that the factor structure presented contradictory fit indices. In both samples the fit was "good" based on CFI and GFI and "poor" based on the RMSEA. Lai and Green (2016) argue that when RMSEA and CFI offer different evaluations of model fit, the disagreement between the two indices does not imply that the model is incorrectly specified or that there are issues with the data. Instead, this divergence can occur because the indices measure the model's fit from different angles by design, and also the cutoff values used for these indices are arbitrarily set. Therefore, it is not necessary to immediately reject the model because one index does not meet the cutoff. Researchers should aim to understand the reasons behind the disagreement between the indices and consider the implications (Lai & Green, 2016). By exploring these discrepancies, we can achieve a more profound understanding of what defines a good model, but still draws attention to possible weaknesses of the model. It is also important to note that we used a robust estimator in this analysis (RDWLS), which may have impacted the RMSEA values. However, considering other model evaluation indices, it is noticeable that the suitability of the model was also corroborated by the reliability, stability and unidimensionality indices, as well as by the results of the confirmatory factor analysis (CFA), including good RMSEA values in this second analysis.

Concerning McDonald's omega indices, it is important to clarify that in Exploratory Factor Analysis the values reached acceptable, but not desirable, indices.

The reliability indices of the factors varied between .61, .66 and .79. Although values above .70 are accepted as indicative of good reliability, the interpretation must be contextualized. When values are obtained slightly below this limit, this does not automatically invalidate the instrument, but it signals the need for a more cautious analysis. However, these values may still be accepted, depending on the context and purpose of the instrument (Lance, Butts & Michels, 2006). Moderate reliability may limit the applicability of the instrument for accurate diagnoses or highly relevant decisions, especially in clinical contexts. But, for research purposes and exploratory investigations, such indices are considered acceptable.

Furthermore, it is important to highlight that internal consistency indices are sensitive to the number of items of each factor. Factors with a reduced number of items tend to present lower internal reliability values, even when the items are conceptually sound and well related. This occurs because, with fewer items, there is less variability to capture the measured construct, which may result in an underestimation of the reliability indices. Therefore, the observed values can be partially explained by the number of items in the factors.

The CFAs showed that the proposed models were satisfactorily adjusted. Although the  $\chi^2$  (chi square) of the Portuguese sample was statistically significant, which would indicate a discrepancy between the data and the models analyzed, it is known that this value can be influenced by the sample size, and for this reason, it is important to consider other indices of goodness-of-fit. The  $\chi^2/df$  ratio, for example, demonstrated in both cases that the model is adequate, since values of less than 3 are considered favorable (Byrne, 2010). In the samples from both countries the CFI, TLI, GFI and RMSEA values were within acceptable limits, which suggest that there is little variance not explained by the model. (Dancey & Reidy, 2019).

In the four samples that were tested, the factors presented acceptable internal consistency indices (McDonald's omega), ranging from .61 to .81, and all items contributed with significant loads to their respective factors. The McDonald's Omega values were higher in the confirmatory analyses than in the exploratory ones. In these analyses the value was below .70 in only one of the factors of the Portuguese sample. It is possible that this variation is influenced by specific characteristics of the sample or by cultural differences that impact the way respondents interpret the items. Even so, it is necessary to consider that when encountering a

value below .70, it is crucial to acknowledge this in the interpretation and discussion of results. Particularly, a lower value may prompt considerations regarding the generalizability of the findings and their implications, as discussed previously.

Moreover, the hypothesis that decentering ability correlates with the type of reasoning about self-forgiveness was supported by the data. The correlations evidenced were mostly weak but followed the theoretical propositions regarding the direction. As expected, the egocentric self-forgiveness factor correlated negatively with empathic concern and with perspective taking in the portuguese sample. This result was more robust in relation to the decentered self-forgiveness factor, which presented stronger positive correlations with the components of empathy in both samples. This result strengthened the relationship proposed in the model between self-forgiveness and decentering ability, as well as corroborated the factors' interpretation presented above.

Regarding the convergent validity, weak correlations were established between de factors of the Self-Forgiveness Reasoning Scale (SFRS) and the Self-Forgiveness Questionnaire (SFQ). However, it is important to highlight that these instruments address different aspects of self-forgiveness. While the instrument tested in this study address types of reasoning about self-forgiveness, that is, the way people think about self-forgiveness and what they consider when deciding about it, the instrument of Mullet et al. (2015) investigates the disposition for self-forgiveness, that is, the willingness to forgive the self as a trait. People with different dispositions could considerer similar criterions when making the decision about self-forgiveness. Although willingness can make the process easier for some, there is no straight relation with the type reasoning. Being such different aspects of self-forgiveness, strong correlations between these instruments were not expected, but the presence of statistically significant correlations between the factors of the instruments indicates that they deal with a similar construct. Therefore, the correlations can be considered as indicators that both instruments approach self-forgiveness.

#### *Limitations*

It can be considered that the portuguese version of the Self-Forgiveness Reasoning Scale has satisfying cross-cultural validity. Nevertheless, it is worth mentioning some limitations of this study. First, there is the fact that the sample consisted only of young college

students. This is a specific sample, which limits the power to generalize the findings. It is important to expand these analyzes with different samples, so that more representative data is obtained. Still, there is the question that the reasoning about self-forgiveness was evaluated in relation to a hypothetical situation (the dilemma presented in the instrument), without considering the personal experiences of the participants, which could be intervening in their reasoning. The results may have been influenced, for example, by the fact that someone has lived or is currently experiencing an offense, either as a victim or as an offender. It is relevant that future studies seek to address these issues.

Furthermore, it is important for future studies to delve deeper into investigations concerning these variables, addressing potential weaknesses identified in this study, such as the limited number of items used to represent each type of self-forgiveness. This can prevent certain types of reasoning from being under-represented in the scale, as observed in this study. This would also enable us to verify whether the two-factor model is indeed the most appropriate, or if a five-factor model would be more suitable.

### **Conclusion**

The findings of the current study indicate that the Self-Forgiveness Reasoning Scale is a reliable and valid measure, that with few items can appropriately evaluate the self-forgiveness' reasoning. The good and similar results obtained in the samples of the two countries support a positive evaluation of this seven-item scale. In addition to evaluating the instrument, this study made it possible to verify the empirical adequacy of the self-forgiveness sociocognitive typology and the proposed relationships with the offender's decentering ability. The construction and validation of this scale is a contribution to future studies, since there are few instruments in this area, especially in a sociocognitive perspective. This scale must continue to be verified, to give increasing confidence to the instrument and the typology proposed here. Refining this measure could offer an important tool for studies and practices in psychology in an educational and/or clinical context, as well as in research and the production of scientific knowledge.

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About the authors:

**Thalita Lays Fernandes de Alencar** – PhD in Social Psychology at Federal Univesity of Paraíba, Brazil, with a sandwich period at the University of Porto – Portugal. Master's and bachelor's degree in psychology at Federal Univesity of Paraíba. Her interests research are human development, morality, forgiveness, and moral education. She is currently a professor at the University of Pernambuco, Petrolina Campus.

ORCID: <https://orcid.org/0000-0003-3898-6242>

*E-mail:* thalitaalays.alencar@gmail.com

**Júlio Rique Neto** – PhD in Psychology of Human Development at University of Wisconsin-Madison, United States; Master in Social Psychology at Federal University of Paraíba and Clinical Psychologist from the Instituto Paraibano de Educação. He is currently a professor in the Department of Psychology, at Federal Univesity of Paraíba, Brazil. His interests are psychological assessments for forgiveness across cultures, value internality of forgiveness by age, and applied interventions for education and counseling on forgiveness.

ORCID: <https://orcid.org/0000-0001-7383-5111>

*E-mail:* julio.rique@hotmail.com

**Félix Neto** – PhD, is a Professor of Psychology at the University of Porto, Portugal. His research interests include cross-cultural psychology and social psychology (especially migration, subjective well-being, love, loneliness and forgiveness). He is author of 19 books, and over 300 papers.

ORCID: <https://orcid.org/0000-0003-0112-880X>

*E-mail:* fneto@fpce.up.pt

Contact:

Rua Delmiro Gouveia, 630, apto. 201 C, Salesianos  
Juazeiro do Norte-CE, Brasil  
CEP: 63050-216