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A Spanish Adaptation of the Emotion Regulation Questionnaire

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Abstract. The Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) is widely used to assess individual differences in reappraisal and suppression. The present study tests the psychometric properties, reliability, and validity of a Spanish adaptation of the ERQ on a broad sample of participants of Spanish nationality aged 18–80 years (38% males, 62% females). Results of the confirmatory factor analysis showed the expected two-factor structure. Results also indicated adequate internal consistency, test-retest reliability, and convergent and discriminant validity. In terms of affective functioning, reappraisal use was positively associated with positive emotion, whereas suppression use was negatively associated with positive emotion. In terms of social functioning, reappraisal use was positively associated with social functioning, whereas suppression use was negatively associated with social functioning. These findings suggest that the Spanish version of the ERQ is a valid instrument for evaluating strategies of emotion regulation in the Spanish-speaking population, and can be used for laboratory and applied studies.

Keywords: emotion regulation, reappraisal, suppression, Spanish adaptation

Introduction

Research on emotion regulation has seen an exponential increase since the 1990s (Gross & Barrett, 2011), with numerous studies investigating the different strategies individuals use to regulate their responses to emotional situations (Gross, 1999; Rusting & Nolen-Hoeksema, 1998; Stanton, Kirk, Cameron, & Danoff-Burg, 2000; Thompson, 1994). The results of these studies indicate that adequate emotion regulation strategies are linked to higher quality of subjective well-being and of social relations (Fernández-Berrocal & Extremera, 2008; Gross, Richards, & John, 2006; John & Gross, 2004; Leible & Snell, 2004; Salovey, 2001) as well as to more effective cognitive processing (Ochsner & Gross, 2008).

The process model of emotion regulation proposed by Gross (1999) posits that emotion regulation can occur either before or after the generation of emotion; such emotion regulation is referred to as antecedent-focused and response-focused, respectively. Gross (2001) points out two principal strategies: *cognitive reappraisal*, which refers to a cognitive change that occurs prior to the generation of the emotion and modifies the emotional impact of the situation (e.g., during a discussion with a colleague, viewing his/her arguments as offering a new and interesting perspective, rather than constituting a personal attack); and *expressive suppression*, which involves the inhibition of emotion-expressing behavior after the emotional response has been generated (e.g., during an upsetting interaction with your boss, keeping a poker face

even though you are feeling very angry; Gross & John, 2003).

Studies that have examined these regulation strategies showed that reappraisal is a cognitive strategy that allows a person to anticipate the emotional consequences of a given situation, such that he or she need not experience the situation in order to regulate his or her emotional response to it (Gross & John, 2003; Lazarus & Alfert, 1964). By contrast, individuals who typically use emotion-centered strategies such as emotional suppression exert cognitive and behavioral control that is expressed only at the behavioral level, such that the subjective experience is maintained (John & Gross, 2004). These studies highlight the fundamental role of antecedent-focused emotion regulation strategies for maximizing the personal and social well-being of the individual.

Given that these two emotion-regulation strategies function at different points in the emotion-generative process, they also have different implications for various aspects of an individual's personal and social life (Gross, 2002; Gross & John, 2003; Lopes, Salovey, & Straus, 2003). To analyze the differential consequences of habitual use of one strategy or another, Gross and John (2003) developed a scale of emotion regulation called the Emotion Regulation Questionnaire (ERQ).

The ERQ consists of 10 items, 6 of which evaluate cognitive reappraisal (e.g., “When I want to feel more positive emotion, I change what I’m thinking about the situation”); the remaining 4 evaluate expressive suppression (e.g., “I keep my emotions to myself”). In addition to items about

emotions in general, the Reappraisal and Suppression scales include at least one item asking about regulation of negative emotion (illustrated using examples of sadness or anger) and one asking about regulation of positive emotion (using examples of joy or amusement). These items ask participants to indicate their degree of agreement with statements using a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*).

Gross and John (2003) showed that these items had a two-factor structure and adequate internal consistency for both subscales in samples of different ages and cultures ($\alpha = .79$ for cognitive reappraisal, $\alpha = .73$ for expressive suppression). In addition, the test-retest reliability at an interval of 3 months was good for both subscales ($r = .69$) (Gross & John, 2003, Study 1). Indicators of convergent and discriminant validity were also adequate (for a review, see Gross & John, 2003, Study 2). Across a number of samples, women consistently reported less use of suppression than men. Lastly, this work also showed the implications of the use of these emotion-regulation strategies on affective and social functioning. Compared to suppressors, reappraisers have greater positive mood, social functioning, and psychological well-being as well as lower negative and depressive mood (Gross & John, 2003, Studies 3–5).

A transcultural study confirmed the internal consistency of the subscales of the original ERQ in different English-speaking countries (Matsumoto et al., 2008). Recent studies confirmed the psychometric properties of the German version of the ERQ (Abler & Kessler, 2009) and the Italian version (Balzarotti, John, & Gross, 2010).

Thus, studies carried out so far on the ERQ scale point to its reliability, validity, and utility for evaluating strategies of emotion regulation in community populations of different cultures and countries. However, a version in Spanish has not yet been validated or published, which poses an obstacle to laboratory and applied studies, including transcultural investigations. The present study sought to develop and validate a Spanish version of the ERQ and test it on a Spanish sample to confirm whether its psychometric properties and relations to other constructs are similar to those of the original scale.

In particular, we hoped to confirm the original two-factor structure (reappraisal and suppression) and to show that the two factors are independent of each other. We also hoped to show that the scale is stable after an interval of 3 months, and that women suppress less than men, as shown in previous studies.

In a second set of analyses, we examined the convergent validity using theoretically related variables such as coping strategies and perceived emotional intelligence. As in previous studies, we measured discriminant validity using the Big Five personality dimensions, expecting that any observed associations should not be very large because these personality dimensions operate at a much broader level than the more specific emotion-regulation strategies of reappraisal and suppression (Gross & John, 2003).

Finally, we analyzed the relationship between reapprais-

al and suppression of expression, on the one hand, and certain affective and social indicators, on the other hand. Affective indicators included the level of positive and negative affectivity, and social indicators included the extent of positive relations with other people, social support, and negative interactions with friends. Specifically, we hypothesized that reappraisers would experience more positive affect and less negative affect, while suppressors would show the opposite pattern. We further postulated that reappraisers would show better social functioning than suppressors.

Method

Participants and Procedure

A total of 866 participants (37.6% males, 62.4% females), ranging in age from 18 to 80 (mean age = 39.80, $SD = 14.82$), completed the Spanish version of the ERQ. A subset of 423 participants (35.9% males, 64.1% females), ranging in age from 19 to 80 (mean = 38.71, $SD = 15.05$), completed additional tests to evaluate coping strategies, perceived emotional intelligence, personality, affectivity, and social functioning. To evaluate the test-retest reliability, 115 participants of the initial sample (20% males, 80% females), ranging in age from 20 to 38 (mean = 22.09, $SD = 2.18$), completed the Spanish version of the ERQ a second time, 3 months after the first administration. Participants were volunteers and received nothing for their participation in the study.

Measures

The ERQ (Gross & John, 2003) is a self-report questionnaire and assessment of two emotion-regulation strategies: cognitive reappraisal (6 items) and expressive suppression (4 items). Thus, the scale consists of 10 items and participants respond using a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). The Spanish translation of the ERQ was created using a backtranslation procedure involving two independent translators, both of whom have PhDs in psychology and who are experts in the topic.

The Emotional Approach Coping (EAC; Stanton et al., 2000) is an 8-item, self-report questionnaire that consists of two scales assessing two emotion coping strategies: emotional processing (4 items) and emotional expression (4 items). The 8 items are rated on a 7-point Likert scale ranging from *strongly disagree* to *strongly agree*. The original version of the EAC has shown high internal consistency and adequate test-retest reliability after 4 weeks (emotional processing, $\alpha = .72$, $r = .73$; emotional expression, $\alpha = .82$, $r = .72$). The EAC was translated into Spanish using a backtranslation procedure involving two independent translators with PhDs in psychology (Extremera, Cabello, & Fernández-Berrocá, 2012). Item and factor anal-

yses showed good internal consistency of the subscales in this study (emotional processing, $\alpha = .73$; emotional expression, $\alpha = .71$).

The Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) was designed to assess how people reflect upon their moods, and it is considered an index of perceived emotional intelligence (Salovey, Stroud, Woolery, & Epel, 2002). The scale has three factors that provide three subscale scores: attention to feelings, which relates to monitoring emotions; clarity of feelings, which relates to perceived ability to discriminate between emotions; and mood repair, which relates to perceived ability to regulate unpleasant moods or maintain pleasant ones. We used the well-validated shorter version of the TMMS in Spanish (Fernández-Berrocal, Extremera, & Ramos, 2004). The original 48 items were subjected to principal component analysis with a varimax rotation. The items with a loading of .40 were removed. The shortened Spanish version includes 24 items from the original version (eight for each subscale). Cronbach's α in this study was .88 for attention to feelings, .85 for clarity of feelings, and .84 for mood repair.

The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) is the instrument most frequently used to assess positive and negative affect. It has been translated into several languages and has demonstrated robust psychometric properties; validation of the Spanish version was reported by Joiner, Sandin, Chorrot, Lostao, and Marquina (1997). The PANAS consists of 20 positive and negative adjectives, and respondents are asked to rate on a 5-point Likert scale to what extent they usually feel the indicated adjectives (e.g., active, determined, excited, nervous, scared, distressed). A number of different timeframes have been used with the PANAS, but in the current study the timeframe adopted was "during the past year." The Positive Affect scale ($\alpha = .76$) reflects the level of pleasant engagement, whereas the Negative Affect scale ($\alpha = .83$) reflects a general dimension of negative engagement and distress. Cronbach's α in this study was .83 for positive affect and .86 for negative affect.

The Spanish Big Five Inventory-44 (BFI-44; Benet-Martinez & John, 1998) is a widely used and standardized 44-item personality inventory that assesses the basic dimensions of the Five Factor Model of personality: Extraversion/Energy, Agreeableness, Conscientiousness, Neuroticism, and Openness. Items are rated on a 5-point Likert scale ranging from *absolutely false* to *absolutely true*. In our data set, Cronbach's α values for the five scales were .84 for Extraversion, .65 for Agreeableness, .80 for Conscientiousness, .83 for Neuroticism, and .82 for Openness.

The Scales of Psychological Well-Being (SPWB; Ryff, 1989) consist of six dimensions of 20 items each: Self-acceptance, Positive Relations with Others, Environmental Mastery, Purpose in Life, Personal Growth, and Autonomy. The shortened version of SPWB was used in this

study, and it showed an internal consistency from .82 to .90 and an acceptable fit to the original theoretical model (Ryff, Lee, Essex, & Schmutte, 1994). In this study, we used the Positive Relations with Others subscale, which uses 14 items to assess an individual's satisfaction with the quality of his or her engagement in, and support obtained from, the social domain of life. This subscale has previously shown internal consistency of .78 in a Spanish sample (Van Dierendonck, Díaz, Rodríguez-Carvajal, Blanco & Moreno-Jiménez, 2008). Cronbach's α in our study was .81.

The Network of Relationships Inventory (NRI; Furman, 1996; Furman & Buhrmester, 1985) consists of 30 items assessing three dimensions: social support, negative interaction, and power imbalance. We used an abridged, 18-item version of the NRI that assesses only social support (12 items) and negative interaction (6 items). The social support factor taps into companionship, intimacy, affection, and alliance. The negative interaction factor taps into conflict and antagonism. Participants should evaluate to what extent each of the statements occurs in their relations with friends, using a 9-point Likert scale. The psychometric properties of this scale have been well demonstrated, not only for the original version (Furman, 1996) but also for the Spanish one (.88 and .94; Lopes et al., 2011). Cronbach's α in our study was .95 for social support and .93 for negative interaction.

Data Analyses

The SPSS statistical package was used to compute descriptive statistics, correlation analyses, internal consistency and *t*-test analyses. EQS 6.1 (Bentler, 1995) was used to compute confirmatory factor analysis (CFA). CFA was carried out using the maximum likelihood (ML) method. Since departures from multivariate normality can have a significant impact on maximum-likelihood estimation, we calculated descriptive analytical measures prior to conducting CFA analysis. Since univariate and multivariate kurtosis statistics were found to indicate nonnormality, the Satorra-Bentler scaled ML correction was used to adjust the model chi-square (Hu, Bentler, & Kano, 1992). According to Schweizer's recommendations (Schweizer, 2010), additional measures of model fit were used: (1) root mean square error of approximation (RMSEA); (2) the Bentler comparative fit index (CFI), and (3) standardized root mean square residual (SRMR). For the CFI, values exceeding 0.90 signify acceptable fit. For the RMSEA, values below 0.08 are considered an acceptable fit, whereas values below 0.05 are indicative of good fit. Finally, values of the SRMR are expected to stay below 0.10 (Schweizer, 2010). We compared two, two-factor models: a less parsimonious model, in which the factor intercorrelation was freely estimated; and a more parsimonious model, the independence model, in which the factor intercorrelation was set to 0 to represent the factor structure of the original ERQ.

Table 1. Confirmatory factor loadings for reappraisal and suppression items

Item #	English item original and Spanish translation (in <i>italics</i>)	Standardized factor loadings
Reappraisal items		
1.	When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about. <i>Cuando quiero incrementar mis emociones positivas (p.ej. alegría, diversión), cambio el tema sobre el que estoy pensando.</i>	.60
3.	When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about. <i>Cuando quiero reducir mis emociones negativas (p.ej. tristeza, enfado), cambio el tema sobre el que estoy pensando.</i>	.57
5.	When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm. <i>Cuando me enfrento a una situación estresante, intento pensar en ella de un modo que me ayude a mantener la calma.</i>	.45
7.	When I want to feel more positive emotion, I change the way I'm thinking about the situation. <i>Cuando quiero incrementar mis emociones positivas, cambio mi manera de pensar sobre la situación.</i>	.71
8.	I control my emotions by changing the way I think about the situation I'm in. <i>Controlo mis emociones cambiando mi forma de pensar sobre la situación en la que me encuentro.</i>	.74
10.	When I want to feel less negative emotion, I change the way I'm thinking about the situation. <i>Cuando quiero reducir mis emociones negativas, cambio mi manera de pensar sobre la situación.</i>	.68
Suppression items		
2.	I keep my emotions to myself. <i>Guardo mis emociones para mí mismo.</i>	.62
4.	When I am feeling positive emotions, I am careful not to express them. <i>Cuando estoy sintiendo emociones positivas, tengo cuidado de no expresarlas.</i>	.60
6.	I control my emotions by not expressing them. <i>Controlo mis emociones no expresándolas.</i>	.82
9.	When I am feeling negative emotions, I make sure not to express them. <i>Cuando estoy sintiendo emociones negativas, me aseguro de no expresarlas.</i>	.60

Notes. $N = 866$. Items ©2003 by James J. Gross and Oliver P. John; reprinted with permission.

Results

Factor Structure

We first tested the less parsimonious or augmented model. This model provided a good fit to the data: S-B χ^2 ($df = 34$) = 197.78, $p < .001$; normed $\chi^2 = 5.81$; RMSEA = 0.07 (90% CI = 0.06–0.08); CFI = 0.91; SRMR = 0.05. The standardized correlation of the latent factors was .09 and the zero-order correlation was $r = .06$. The more parsimonious one also provided a good fit to the data: S-B χ^2 ($df = 35$) = 201.59, $p < .001$; normed $\chi^2 = 5.75$; RMSEA = 0.07 (90% CI = 0.06–0.08); CFI = 0.91; SRMR = 0.06. Moreover, the less parsimonious or augmented model did not show a better fit than the more parsimonious one, the independence model: $\Delta\chi^2$ (1) = 3.48; ns , just as in the original ERQ. Standardized factor loadings for the independence model are displayed in Table 1.

Reliability and Gender Differences

We assessed reliability using Cronbach's α and test-retest correlation. Cronbach's α coefficients were $\alpha = .75$ for Suppression, with the item-total correlation ranging from .51 to .56; and $\alpha = .79$ for Reappraisal, with the item-total correlation ranging from .41 to .62. Test-retest reliability

over 3 months was .66 ($p < .001$) for Suppression and .64 ($p < .001$) for Reappraisal.

In light of prior reports of gender differences in suppression, we performed t -tests to analyze gender differences in the emotion regulation scales. As predicted, the Suppression score for men ($M = 3.80$, $SD = 1.22$) was higher than that for women ($M = 3.15$, $SD = 1.24$), $t(858) = 7.26$, $p < .001$. The effect size of this difference was moderate, Cohen's $d = 0.51$. For Reappraisal, there were no significant differences between men ($M = 4.73$, $SD = 1.03$) and women ($M = 4.85$, $SD = 1.00$), $t(858) = -1.66$; ns , Cohen's $d = 0.15$.

Convergent and Discriminant Validity

Convergent validity was examined by analyzing the relationships between Suppression and Reappraisal, on the one hand, and other measures related to emotion regulation on the other (including trait metamood dimensions and emotional coping strategies: see Table 2). Reappraisal was significantly positively related with all variables related to emotion regulation. The highest correlations were found for emotional processing and mood repair. Suppression, in contrast, showed significant negative correlations with attention to feelings, clarity of feelings, and emotional coping strategies. Of these negative correlations, the strongest was with emotional expression.

To examine discriminant validity, we analyzed the rela-

Table 2. Convergent and discriminant validity and relations with affective and social functioning

	Reappraisal	Suppression
Measures conceptually related to emotion regulation		
Attention to feelings	.13**	-.21**
Clarity of feelings	.22**	-.16**
Mood repair	.46**	-.09
Emotional processing	.36**	-.27**
Emotional expression	.25**	-.48**
Big Five		
Extraversion	.17**	-.36**
Agreeableness	.20**	-.15**
Conscientiousness	.07	.06
Neuroticism	-.16**	-.12*
Openness	.25**	-.18**
Affective functioning		
Positive affect	.23**	-.14**
Negative affect	.001	.05
Social functioning		
Social support	.12*	-.28**
Negative interaction	-.10*	.08
Positive relationships with others	.17**	-.34**

Notes. $N = 423$. * $p < .05$, ** $p < .01$.

tionships between Suppression and Reappraisal with Big Five personality traits. As can be observed in Table 2, the relationships between emotion regulation scales and personality traits were modest in size, ranging from .06 to -.36. The strongest correlation was found between Suppression and Extraversion.

Together, these findings confirm the convergent and discriminant pattern of relationships between Suppression and Reappraisal with other variables related to emotion regulation.

Affective and Social Functioning

Given the known associations of emotion regulation with affective and social functioning, we examined the associations between Suppression and Reappraisal, on the one hand, and measures of affective and social functioning on the other (see Table 2).

In the affective domain, significant correlations were found between emotion regulation scales and positive affect: Whereas a higher level of Reappraisal was positively related with positive affect, a higher level of Suppression was related with low levels of positive affect. No significant correlations were found with negative affect.

In the social domain, Reappraisal and Suppression again showed differential relationships with social functioning. Reappraisal was related to better social functioning: It showed a positive correlation with social support and with positive relationships with others, and a negative correla-

tion with negative interaction. Nevertheless, the magnitude of these correlations was low. Suppression, in contrast, was more strongly and negatively related with social functioning: Those who usually used suppression were less likely to report higher levels of social support or positive relationships with others. However, no significant relationship was found with negative interactions.

Discussion

The theoretical model of emotion regulation developed by Gross has found support in several empirical studies that have used the ERQ scale to demonstrate cognitive differences (Gross & John, 2003; Richards & Gross, 2000) and socioemotional differences (Gross & John, 2003; Haga, Kraft, & Corby, 2009) between people who tend to use suppression and those who tend to use cognitive reappraisal. The present study aimed to analyze the psychometric properties of the Spanish version of the ERQ.

Psychometric Properties, Reliability, and Validity

Analysis of the factor structure of the Spanish version of the ERQ confirmed the existence of two independent factors, both of which showed adequate internal consistency and test-retest reliability. This factor structure is similar to that found not only in the original test version but also in the versions adapted to other populations (Balzarotti et al., 2010). These findings indicate that while both strategies may seek to regulate emotion, they have different cognitive and socioemotional consequences (Gross, 2007). We also replicated prior reports of gender differences, with women reporting lower levels of suppression than men. This indicates that the gender differences in suppression in a Spanish cultural context are similar to those in other Western cultures, as might be expected given widespread norms that men are taught from childhood to minimize certain emotions related to sadness, guilt, vulnerability, and fear to a greater degree than women (Brody & Hall, 2000; Gross & John, 2003).

Our analysis of convergent validity showed that, as expected, the Spanish ERQ scale correlated significantly with the coping strategies of the EAC scale and with TMMS dimensions. However, the correlations were not so high as to suggest that the same construct was involved. Our correlation analysis further indicated moderate associations with personality traits, which means that an individual's personality can be differentiated from his or her tendency to choose one or the other emotion-regulation strategy. Specifically, as in previous studies, we found that cognitive reappraisal was associated with adaptive and healthy personality traits (i.e., more extraversion, openness and agreeableness, and less neuroticism) and emotional suppression with a less positive side of personality (John & Gross, 2004).

Taken together, our results provide evidence that the Spanish version of the ERQ shows reliability and both convergent and discriminant validity for evaluating tendencies in emotion regulation. These findings bolster the international validity of Gross and John's (2003) ERQ scale (e.g., Abler & Kessler, 2009; Balzarotti et al., 2010; Matsumoto et al., 2008), and they allow the scale to be used reliably with Spanish samples in studies of emotion regulation.

Affective and Social Functioning

As expected, positive emotions were associated with greater use of cognitive reappraisal and less use of suppression, indicating that those who tend to engage in reappraisal rather than suppression experience more positive emotions. However, negative emotions were not associated with the use of reappraisal or suppression, contrary to our expectations and to what was found with the original version of the ERQ (Gross & John, 2003). It bears noting that, in the Italian version, the association between negative affect and reappraisal and suppression was low ($r = -.14$) and not significant ($r = .04$), respectively (Balzarotti et al., 2010). Comparable results for Italian and Spanish samples suggest the existence of cultural differences in the association between emotion-regulation strategies and negative emotions. It is not yet clear, however, what features of collectivist cultures (such as Italy and Spain) may be responsible for these differential effects (Hofstede, 2001).

The use of one strategy or another affects an individual's interpersonal relationships. Our results follow the same line as those of Gross and John (2003), indicating that the use of reappraisal is linked to perceptions of greater positive relationships with other people and of greater social support from friends. Frequent use of suppression shows the opposite pattern: It is associated with perceptions of fewer positive relationships with other people and of less social support from friends. The perception of negative relationships with friends is lower when a person habitually uses reappraisal and it is not associated with the use of suppression. The observation that suppression is not related to this negative aspect of social relations may reflect the fact that people suppress both positive and negative emotions. Suppressors may believe that, by not expressing negative emotions to friends, they will reduce the probability of negative interactions and conflicts with them (Lopes et al., 2011). However, suppressors pay a price because they cannot connect in a constructive and positive way with others.

Limitations and Future Directions

Although our sample included a broad age range and had balanced gender composition, it did not contain different cultures with which we could have compared the performance of the scale. Future investigations should include more diverse samples that evaluate the invariance of the

scale across different cultural groups. In addition, it would be interesting in future work to use observational instruments to evaluate social functioning, complementing the results obtained with self-report tests.

Some of the differences found between the original ERQ and the Spanish version may be due to differences between Spain and the United States in important cultural dimensions, such as individualism versus collectivism and masculinity versus femininity (Hofstede, 2001). For example, Americans are more individualistic and feminist than Spaniards. Such differences can influence the way people manage their reappraisal and suppression of positive and negative emotions. Indeed, the fact that Spain is a Mediterranean culture may explain the similarities in results obtained with the Spanish ERQ and the Italian version (Balzarotti et al., 2010). In future work, it would be interesting to more closely examine the factors responsible for apparent crosscultural differences in emotion regulation related processes (Matsumoto et al., 2008).

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