# Development and structural validation of a scale to assess regulation of anger and sadness in interpersonal situations[*]

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*The purpose of this research was to develop and validate a new instrument to assess the regulation of anger and sadness in interpersonal situations, covering a wide range of emotion regulation strategies. Two studies were carried out, both of them using purposively selected samples. In Study 1 we created a set of items based on previous studies of emotion regulation, applied a preliminary version of this scale to a pilot sample of undergraduate students (n = 400), and then selected, using exploratory factor analysis (EFA), the best 28 items to include in a brief version of the instrument, the Scale of Emotion Regulation in Interpersonal Situations (SERIS). In Study 2 we tested the resulting scale in a new sample of undergraduate students (n = 259) by means of confirmatory factor analysis. Study 2 validated the factor structure identified in the EFA. Results showed that the scale has adequate internal consistency and psycho-metric properties. The new scale also identifies the strategies that are most frequently used in the* anger *and* sadness *scenarios, showing differential patterns which are consistent with previous literature on emotion regulation. We discuss the limitations of the study and acknowledge that future studies addressing the scale's convergent and discriminant validity are now required.*
Keywords: *Emotions, emotion regulation, interpersonal situations, structural validation.*

# Desarrollo y validación estructural de una escala para evaluar la regulación de la ira y la tristeza en situaciones interpersonales

*El objetivo de este trabajo es desarrollar una escala para evaluar la regulación emocional de la ira y la tristeza en situaciones interpersonales y que incluya un amplio rango de estrategias de regulación. Se realizaron dos estudios, contando ambos con muestras seleccionadas de manera intencional. En el estudio 1, se construyó un banco de ítems a partir de la revisión de la literatura, se aplicó a una muestra de estudiantes universitarios (n = 400) y se seleccionaron, mediante análisis factorial exploratorio, los mejores 28 indicadores para conformar una escala breve llamada Escala de Regulación Emocional en Situaciones Interpersonales (ERESI). En el estudio 2 se validó en una nueva muestra, compuesta también por estudiantes universitarios (n = 259), la estructura factorial de la escala desarrollada en el estudio 1, aplicando un análisis factorial confirmatorio. Los resultados validaron la estructura factorial extraída del estudio 1, y señalaron que el instrumento cuenta con adecuada consistencia interna y validez estructural. También se verificó que el instrumento permite identificar las estrategias más aplicadas en las situaciones de ira y de tristeza, hallando patrones diferenciales para cada emoción, y consistentes con la literatura existente sobre regulación emocional. Se discutieron las limitaciones y la necesidad de continuar con estudios de validación convergente y discriminante.*
*Palabras clave: emociones, regulación emocional, situaciones interpersonales, validación estructural.*

## Introduction

Emotions influence our everyday experiences and play a key role in many aspects of our life. The ways in which people regulate their emotions is therefore an issue of central importance.

Emotion regulation (ER) refers to strategies aimed at redirecting the spontaneous flow of emotions by modifying the quality or the intensity of the emotional experience. ER processes become central when our spontaneous emotional experiences do not contribute to the achievement of our goals, since it is through ER that we seek to attain those goals, satisfying our needs or maintaining our self-concept (Koole, Van Dillen, & Sheppes, 2011). ER processes also have a protective value when dealing with adversity, since they serve as buffers against stress and post-traumatic stress disorder (Blanchard-Fields, 2007; Boden, Bonn-Miller, Kashdan, Alvarez, & Gross, 2012).

## *Types and assessment of emotion regulation*

Although there is not a single model for ER one of the most influential is that proposed by Gross (2014). This author considers that ER involves changes

in the latency, rise time, magnitude, duration, and offset of the emotion response, and he proposes five families of ER processes: 1) situation selection, 2) situation modification, 3) attentional deployment, 4) cognitive change, and 5) response modulation. These processes would apply to different stages of the emotion-generative cycle. From this perspective, processes which start before the emotion arises (antecedent-focused strategies) are deemed to be more adaptive than those occurring once the emotion is already underway (response-focused strategies), because they imply a preventive modulation rather than a reaction to an emotion already generated.

The empirical evidence supporting this model has assessed ER by means of self-reports or psychophysiological measures (cf. Gross, 2014). Gross developed the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003), which is focused on two strategies: cognitive reappraisal and expressive suppression. Garnefski and Kraaij (2007) focused on the cognitive aspects of ER, identifying nine different strategies: 1) rumination, 2) catastrophizing, 3) self-blame, 4) blaming others, 5) putting into perspective, 6) acceptance, 7) positive refocusing, 8) positive reappraisal, and 9) refocus on planning. Although this approach extends the scope of assessment, it focuses solely on cognitive strategies.

Even though both approaches recognize the role of context in relation to regulation processes, they still assess ER from a trait perspective, regardless of the specific emotion and the context within which emotions are generated. However, these latter aspects have proved to be relevant to the selection and application of ER strategies.

### *The role of the interpersonal context and the type of emotion*

It has been argued that the suitability of ER strategies depends on, among other factors, the coherence of the strategy with respect to the person's goals and on the context in which it is applied. In this vein, research has shown that psychopathology symptoms are not predicted by the use of ER strategies traditionally classified as adaptive or maladaptive (Aldao & Nolen-Hoeksema, 2012), and neither does this distinction account for the recovery of well-being after stressful events (Schraub, Turgut, Clavairoly, & Sonntag, 2013). These findings call into question the traditional approach to ER assessment, and suggest that contextual factors must be included in order to increase its predictive value (Aldao, 2013).

ER is relevant in interpersonal contexts because it communicates internal states and guides social interactions. Emotional expression is essential for social ties (English, John, & Gross, 2013), and efficient ER can therefore help to avoid interpersonal conflicts and maintain better relationships.

The type of emotion also has an influence on ER. Anger and sadness are frequent in interpersonal situations (Rivers, Brackett, Katulak, & Salovey, 2007) and each emotion trigger different responses. Anger triggers fight responses and may lead to violence and mistreatment if it is not appropriately regulated. Conversely, its adequate expression has been associated with conflict resolution and positive change within interpersonal relationships (Kennedy-Moore & Watson, 1999). In the case of sadness, effective regulation has been related to altruism and empathy, whereas deficits in this area been linked to anxiety and depression (Zeman, Shipman, & Suveg, 2002). A more detailed assessment of ER, which takes into account the contextual factors (Aldao, 2013) and the characteristics of the emotion in question (Izard, 2010), would allow us to understand under which conditions different ER strategies might be beneficial or harmful for relationships (English et al., 2013).

Some studies (e.g. Oberst, Sánchez, Oriol-Granado, & Páez, 2013) have tried to assess ER in accordance with these premises, asking participants to recall lived situations and the ER strategies they applied. Although such studies have provided valuable insight to an ecologically valid study of ER, using personal memories hinders the generalization and comparison of results, since the event that triggers the emotion is not homogenous.

Blanchard-Fields (2007) has proposed an alternative that balances the standardization of the situation that triggers ER processes and the focus on ecological validity. In her studies, she has used vignettes showing conflicts among friends (Coats & Blanchard-Fields, 2008). However, it also presents some limitations. First, application of the questionnaire to other cultural contexts is problematic because it is mainly based on data obtained in qualitative studies. Second, the questionnaire does not cover the full range of ER strategies identified in previous studies and it does not specify the emotion being assessed, which could increase the variability of responses.

The present research seeks to fill this gap and has the following objectives.


## Objectives

The purpose of this research was to develop and validate a new instrument to assess ER strategies in interpersonal situations of anger and sadness. The proposed scale incorporates vignettes in order to facilitate the respondent's identification with the situation and his or her experience of emotions which are explicitly mentioned.

In order to achieve this goal we conducted two studies. Study 1 aimed to develop a brief scale to assess the regulation of anger and sadness in the context of family ties. The objective of Study 2 was to validate the scale's factor structure in a new sample.

**Study 1**

**Method**

*Participants*

This study used a convenience sample of 400 first-year, second-year, and third-year undergraduates studying Business Administration, Economy, and Psychology at the National University of Mar del Plata (Argentina). The mean age of the sample was 22.8 years ($SD$ = 6.5), and there were 307 females and 90 males (3 students did not indicate their gender).

*Instruments*

A questionnaire with two sections was designed and administered to participants. Section 1 covered sociodemographic information (age and gender). Section 2 included the self-administered scale regarding ER of anger and sadness in the context of family ties, the instrument developed in this study. The design of the scale was based on the model proposed by Coats and Blanchard-Fields (2008) and included vignettes that allow participants to identify with the situation and with the emotional experience described in order to respond to the items. To assure the realism and representativeness of the vignettes, they were selected from local studies in which participants were asked to provide typical situations in which they felt anger or sadness (Giuliani, 2012). It was found that both emotions arise with particular frequency and intensity within family relationships, which is consistent with international studies (e.g. Fingerman, Hay, & Birditt, 2004). .

As recommended by Hughes (2004), we included in the vignette the contextual cues triggering the selected emotion (e.g. transgression in the case of anger), as well as the interpersonal scenario in which it appears (e.g. type and quality of the bond). In order to avoid a limitation of previous vignette-based instruments, the emotion elicited by the situation was explicitly mentioned. We selected just two vignettes to have an instrument as brief as possible, which allows for its inclusion in studies exploring constructs that might be related to ER.

In the case of *sadness*, the vignette was as follows: «Un familiar muy querido está pasando un mal momento personal, se está separando de su pareja de muchos años y esto le duele profundamente. Te sientes muy triste por esta situación *[A relative you love dearly is going through a rough time. He/she is separating from his/her partner after many years together and feels terribly hurt. You feel really sad about this]*». In the case of *anger*, the vignette was as follows: «Últimamente

te resulta complicado llevarte bien con un familiar al que quieres mucho porque está teniendo actitudes que te molestan. Durante una cena discutís intensamente con él y te enojas mucho *[Lately you have been finding it very hard to get along with a relative you love dearly because his/her attitude upsets you. Over dinner one day you have an argument and you get really mad with him/her]»*.

After reading the vignette, participants were asked to indicate the degree to which they agreed with 62 statements representing different reactions to the emotional experience and the situation described, using a scale ranging from 1 ("not at all like me") to 5 ("this is very like me").

Eight strategies were taken into account: cognitive reappraisal (Cabello, Salguero, Fernández Berrocal, & Gross, 2013), expressive suppression (Cabello et al., 2013), emotional repair (Fernández-Berrocal, Extremera, & Ramos, 2004), seeking emotional support (Perczek, Carver, Price, & Pozo-Kaderman, 2000), situation modification (Perczek et al., 2000), selection of situations (Carstensen, Fung, & Charles, 2003), attentional deployment (Urry & Gross, 2010), and acceptance (Cebolla, García, Soler, Guillen, Baños, & Botella, 2012).

A set of sentences based on the definition of each strategy was created, including some items extracted from existing instruments. A panel of three independent experts in the field judged the adequacy and clarity of the items. After reviewing the panel's suggestions 62 items were conserved and randomly ordered in the scale. Six items belonged to the strategy "selection of situations" and eight items to each of the other strategies considered.

Two versions of the instrument were developed, one for the *anger* situation and the other for the *sadness* situation. Items were identical in both scales, and changes were only introduced when the emotion was explicitly mentioned in the sentence (e.g., "I think feeling sad is understandable, I wouldn't do anything to change it" and "I think feeling angry is understandable, I wouldn't do anything to change it").

### Procedure

Tutors on the undergraduate study programs previously mentioned were approached by the first author of this study. After explaining the objectives of the study and the procedure for data gathering, she sought their agreement to participate.

Data were gathered by means of a self-administered questionnaire. The first page consisted of a statement regarding voluntary participation in the study and the confidential and anonymous use of data. The questionnaire also included brief information on the goals of the research and an informed consent document which participants were asked to sign. Only questionnaires that were returned with the consent form signed were included in the final sample.

The questionnaire was applied collectively in university lecture rooms but was answered individually. Of the total number of participants, 234 answered the *anger* version of the scale and 166 the *sadness* version. Doubts arose only exceptionally and were clarified orally by the researcher. The administration took a maximum of 20 minutes.

## Results

An analysis of missing data showed that in no case did this represent more than 5% of the data. Missing data were then estimated using the multiple imputations method (Kline, 2011). An exploratory factor analysis (EFA) was performed with the results of the scale for 1) the *anger* situation (Bartlett's test of sphericity $\chi^2(1891) = 8984$, $p < .001$; KMO = 0.84), 2) the *sadness* situation (Bartlett's test of sphericity $\chi^2(1891) = 6549$, $p < .001$; KMO = 0.77), and 3) both situations considered altogether (Bartlett's test of sphericity $\chi^2(1891) = 13960$, $p < .001$; KMO = 0.87). In light of these results, subsequent analyses were performed with data derived from the EFA for both situations considered altogether. The EFA´s results were similar, with the exception of three items whose factor loadings differed between the *anger* and *sadness* situations and which were therefore excluded from the final item pool.

The EFA used the maximum likelihood method and Promax rotation. Given the potentially high correlations among the factors an oblique rotation was applied (Ferrando & Anguiano-Carrasco, 2010). In order to select the optimal number of factors a parallel analysis was carried out (Pérez & Medrano, 2010). As a result, seven of the eight factors considered were retained, all with eigenvalues higher than 1.

In order to create a shorter version of the scale with adequate psychometric properties, four items were selected from each dimension. This selection was made on the basis of three criteria: 1) The EFA results, retaining items with higher loadings on their corresponding factor and lower loadings on other factors; 2) the Cronbach's alpha index; and 3) the item content, prioritizing items that were not repetitive. These criteria were applied in all but two cases. First, in the case of Expressive Suppression and Seeking Emotional Support, items loading positively on the first strategy presented a negative loading on the second, and vice versa. Second, some items corresponding to Cognitive Reappraisal presented moderate loadings on Situation Modification. In order to maximize the independence of factors, items meeting the abovementioned criteria and presenting lower loadings on other factors were retained. Table 1 shows the items selected for the final version of the scale, along with their factor loadings and the percentage of variance accounted by each factor. The table also includes Cronbach's alpha values, which were adequate and ranged from .75 to .87.

TABLE 1. EXPLORATORY FACTOR ANALYSIS WITH THE MAXIMUM LIKELIHOOD METHOD FOR THE 28-ITEM VERSION OF THE EMOTION REGULATION SCALE, CONSIDERING BOTH SITUATIONS (ANGER AND SADNESS) TOGETHER. THE FIRST COLUMN SHOWS THE ORDER OF ITEMS IN THE SCALE (ITEM TRANSLATION INTO ENGLISH IS PROVIDED FOR HELPING NON-SPANISH SPEAKERS TO UNDERSTAND WHAT THE MEANING OF EACH ITEM IS).

| N | Items | SE | ES | AD | SM | AC | CR | SS |
|---|-------|----|----|----|----|----|----|----|
| 27 | Buscaría charlar con alguien íntimo para contarle como me siento [I would try to talk with someone close to me about how I feel] | .86 | | | | | | |
| 12 | Le contaría a alguien cercano lo que siento [I would tell someone close to me about how I feel] | .83 | | | | | | |
| 25 | Me reuniría con mis amigos u otros familiares para poder contarles como me siento [I would meet with friends or relatives so as to tell them how I feel] | .77 | | | | | | |
| 1 | Hablaría con alguien de confianza sobre lo que pasó [I would talk with someone I trust about what had happened] | .72 | | | | | | |
| 17 | Guardaría mis emociones para mí para que nadie vea como me siento [I would keep my emotions to myself so that others couldn't see how I was feeling] | -.35 | .83 | | | | | |
| 9 | Me aseguraría de no expresar lo que siento [I would make sure I kept my feelings to myself] | -.34 | .80 | | | | | |
| 26 | Preferiría que nadie sepa lo que siento, no lo expresaría [I would prefer it if nobody knew how I was feeling, I wouldn't let on] | -.47 | .74 | | | | | |
| 3 | Preservaría para mí mis emociones, no las expresaría o comunicaría [I would keep my feelings to myself, I wouldn't disclose them or communicate them to others] | -.39 | .73 | | | | | |
| 21 | Haría actividades que me ayuden a distraerme [I would engage in activities to take my mind off things] | | | .81 | | | | |
| 15 | Buscaría ocuparme de otras cosas que me ayuden a sentirme mejor [I would try to keep busy with other things that helped me feel better] | | | .78 | | | | |
| 8 | Buscaría hacer cosas para no pensar más en esto [I would try to keep busy as a way of not thinking about it] | | | .69 | | | | |
| 13 | No pensaría más en esto, me concentraría en otras cosas que me hagan sentir bien [I would stop thinking about it, I would concentrate on other things that made me feel better] | | | .69 | | | | |
| 22 | Buscaría alguna forma de arreglar algún aspecto de lo que pasó [I would try to find a way of making amends for some of what had happened] | | | | .77 | | | |
| 16 | Pensaría en que pasos dar para cambiar algo de la situación [I would think about what steps I'd need to take to change the situation] | | | | .72 | | | |
| 10 | Trataría firmemente de conseguir que las cosas sean de otra forma [I would try really hard to make things different] | | | | .63 | | | |
| 7 | Intentaría que la relación funcionara de otra manera en el futuro [I would try to ensure that the relationship worked differently in the future] | | | | .57 | | | |

TABLE 1. CONT.

| N | Items | SE | ES | AD | SM | AC | CR | SS |
|---|-------|----|----|----|----|----|----|----|
| 18 | Creo que sentir ira es normal en esta situación, no deseo cambiar lo que siento [I think feeling angry is understandable in this situation, I wouldn't do anything to change it] | .77 | | | | | | |
| 5 | Tengo mis razones para sentirme así, no trataría de cambiar mis emociones [I have my reasons for feeling like this, I wouldn't try to change what I feel] | | | | | .73 | | |
| 4 | Creo que está bien sentirme así, no haría esfuerzos para cambiar lo que siento [I think it's OK to feel like this, I wouldn't make an effort to change what I feel] | | | | | .68 | | |
| 24 | Aceptaría mis emociones, no me interesa sentir otra cosa [I would accept my emotions, I can't see the point of feeling otherwise] | | | | | .60 | | |
| 19 | Trataría de ser más racional y ver lo que ocurrió desde otra perspectiva [I would try to be more rational and see things from another perspective] | | | | .31 | | .74 | |
| 23 | Trataría de pensar "en frío" acerca de lo que está pasando [I would try to calmly consider what it is happening] | | | | | | .52 | |
| 28 | Haría un esfuerzo por pensar más fríamente sobre la situación [I would make an effort to think more calmly about the situation] | | | | .37 | | .67 | |
| 13 | Dejaría mis emociones a un lado y repensaría la situación más racionalmente [I would put my emotions to one side and rethink the situation more rationally] | | | | | | .63 | |
| 20 | En el futuro haría lo posible por evitar este tipo de situaciones, no considero que valga la pena sentirme así [I would try to avoid this kind of situation in the future, I don't think its worthwhile feeling like this] | | | | | | | .76 |
| 11 | Sentirme así no vale la pena, haría lo posible para que no me vuelva a pasar [Feeling like this isn't worth it, I'd do my best to ensure that something like this didn't happen to me again] | | | | | | | .70 |
| 2 | Evitaré estas situaciones en el futuro, creo que no tiene sentido sentirse así [I will avoid these situations in the future, I don't think it makes any sense feeling like this] | | | | | | | .70 |
| 6 | Si hubiese sabido que me sentiría así, hubiese evitado la situación [If I'd known I was going to feel like this, I'd have avoided the situation] | | | | | | | .64 |
| | *% of the total variance explained* | *15.51* | *12.65* | *8.19* | *6.11* | *5.42* | *3.65* | *3.34* |
| | *Cronbach's α* | *.87* | *.85* | *.82* | *.77* | *.78* | *.75* | *.79* |

*Note.* The table only includes items with loadings of at least .30. Values in italics indicate item loads on that factor. SE: Seeking Emotional Support, ES: Expressive Suppression, AD: Attentional Deployment, SM: Situation Modification, AC: Acceptance, CR: Cognitive Reappraisal, SS: Selection of Situations.

Regarding the correlation between dimensions, positive and moderate correlations were found between Situation Modification and Cognitive Reappraisal ($r = .32$, $p < .01$), Situation Modification and Selection of Situations ($r = .32$, $p < .01$), and Selection of Situations and Attentional Deployment ($r = .30$, $p < .01$). In addition, a negative and moderate correlation was found between Seeking Emotional Support and Expressive Suppression ($r = -.48$, $p < .01$).

The scale developed was called as Scale of Emotion Regulation in Interpersonal Situations (SERIS). In Study 2 we tested the scale resulting from Study 1 using confirmatory factor analysis (CFA) with a sample of similar characteristics.

## Study 2

## Method

### *Participants*

This study used a convenience sample of 259 first-year, second-year, and third-year psychology undergraduates from the National University of Mar del Plata (Argentina). The mean age of the sample was 22.2 years ($SD = 5.3$), and there were 197 females and 60 males (2 students did not indicate their gender).

### *Instruments and Procedure*

A questionnaire with two sections was administered to participants. Section 1 covered sociodemographic information and Section 2 included the scale for assessing the ER of anger and sadness in the context of family ties (SERIS), developed in Study 1.

The procedure used in this study was identical to that used in Study 1. Of the total number of participants, 130 answered the *anger* version of the scale and 129 the *sadness* version. The administration took about 10 minutes.

## Results

The missing data analysis showed that in no case did this represent more than 5% of the data. Thus, as in the previous study, missing data were estimated using the multiple imputations method (Kline, 2011). We then calculated values of Cronbach's alpha and correlations between dimensions. Internal consistency coefficients ranged from .73 (Situation Modification) to .87 (Seeking Emotional Support). Correlations between dimensions were lower than .30, with the exception of

those between Cognitive Reappraisal and Attentional Deployment ($r$ = .31, $p$ < .01), Expressive Suppression and Seeking Emotional Support ($r$ = -.43, $p$ < .01), Selection of Situations and Situation Modification ($r$ = .45, $p$ < .01), and Selection of Situations and Attentional Deployment ($r$ = .38, $p$ < .01).

TABLE 2. CORRELATIONS AMONG DIMENSIONS OF THE SERIS, MEANS, STANDARD DEVIATIONS AND ESTIMATES OF INTERNAL CONSISTENCY.

| Dimensions | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1. Cognitive Reappraisal | - | | | | | | |
| 2. Expressive Suppression | .04 | | | | | | |
| 3. Seeking Emotional Support | .07 | -.43[**] | | | | | |
| 4. Situation Modification | .31[**] | -.01 | .19[**] | | | | |
| 5. Selection of Situations | .19[**] | .20[**] | .02 | .45[**] | | | |
| 6. Acceptance | -.11 | .17[**] | .01 | -.20[**] | -.20[*] | | |
| 7. Attentional Deployment | .33[**] | .20[**] | .10 | .16[*] | .38[**] | .01 | |
| *M* (4-20) | 13.75 | 7.79 | 14.78 | 14.00 | 11.54 | 9.58 | 13.85 |
| *SD* | 3.19 | 3.44 | 4.06 | 3.31 | 3.85 | 3.47 | 3.50 |
| Cronbach's α | .76 | .80 | .87 | .74 | .76 | .75 | .82 |

*$p$<,05 **$p$<,01

Finally, a confirmatory factor analysis (CFA) was conducted using SPSS AMOS 21. As a previous step, the data distribution was analyzed. Results showed that skewness and kurtosis did not deviate from a normal distribution. Three factor analytic models were then compared:

1. A seven independent factors structure, as suggested by the results of the EFA, in which the factors were permitted to correlate between them.
2. A seven-factor structure with a global second-order latent factor, called the ER factor.
3. A seven-factor structure with two second-order latent factors, one encompassing the antecedent-focused strategies (Cognitive Reappraisal, Situation Modification, Attention Deployment, and Selection of Situations) and the other the response-focused strategies (Seeking Emotional Support, Expres-

sive Suppression, and Acceptance), as in the model proposed by Gross (2014).

In order to explore the factor structure of the scale the fit of the different models was assessed using the maximum likelihood estimation technique. Chi-square values and goodness-of-fit indexes were evaluated following the criteria established by Hu and Bentler (1998).

The results showed that none of the models fitted the values indicated by the literature (Hu & Bentler, 1998). However, of the three models the seven independent factors model yielded better goodness-of-fit indexes. Consequently, we tested a new model generated from a revision of the modification indexes (MI; Kline, 2011) of this first model. Modification indexes estimate the amount by which the fit between the data and the model would improve if the analysis were repeated, eliminating the restrictions applied to items. High MI values suggest that items may have a common source of error that is not represented in the model. The standard procedure to improve the goodness-of-fit of the model was followed, consisting in including a correlation between the errors of the items, provided that items belonged to the same factor. Items with MI values higher than 13 (the highest found) and belonging to the same dimension were modified. Thus, the errors of items 7 and 8 (Acceptance), 11 and 12 (Situation Modification), and 25 and 26 (Cognitive Reappraisal) were correlated. This procedure means that CFA becomes a multidimensional measurement model, in other words, a non-standard CFA (Kline, 2011). The new model showed more appropriate GFI, CFI, and RMSEA values than did the previous ones (see table 3).

TABLE 3. GOODNESS-OF-FIT INDICES FOR THE MODELS
TESTED BY CONFIRMATORY FACTOR ANALYSIS.

|   | *Model* | $\chi^2$ | *df* | $\chi^2/df$ | *CFI* | *GFI* | *RMSEA* |
|---|---------|----------|------|-------------|-------|-------|---------|
| 1 | Seven factors | 609.7 | 339 | 1.80 | .89 | .85 | .05 |
| 2 | Seven factors, one global second-order factor | 714.0 | 343 | 2.08 | .86 | .80 | .07 |
| 3 | Seven factors, two second-order factors | 740.9 | 345 | 2.14 | .85 | .83 | .07 |
| 4 | Model 1 modified | 550.05 | 336 | 1.67 | .92 | .87 | .05 |

Invariance of configuration was assessed using R Software. Model 1 (modified) was used for both subsamples (anger and sadness) to validate the structural equivalence of the instrument in both scenarios. The tests examined if the scale measure properties are similar for both groups (Brown, 2012). A specific proce-

dure for small samples (ratio equal or less than one participant for each two esti-mated parameters) was applied, consisting of a correction of the maximum likeli-hood chi-square statistic for the estimation of noncentrality-based fit measure, as proposed by Swain (Herzog & Boosma, 2008). Results suggested an adequate goodness of fit, both for the sadness situation (CFI: .87, TLI: .88 and RMSEA: .06) and for the anger situation (CFI: .89, TLI: .88 and RMSEA: .05).

Finally, we compared the frequency of use of ER strategies in both situa-tions. Results showed that seeking emotional support and attentional deployment were more frequent in the sadness situation, whereas situation modification and selection of situations were more frequent in the anger situation. Acceptance, cognitive reappraisal, and expressive suppression showed no significant differences (see table 4).

TABLE 4. MEANS, STANDARD DEVIATIONS, AND 'T' VALUES OF ER STRATEGIES
WITH RESPECT OF THE ANGER SITUATION AND THE SADNESS SITUATION.

|  | Anger M (DT) | Sadness M (DT) | t value |
|---|---|---|---|
| Acceptance | 9.22 (3.45) | 9.95 (3.47) | -1.70 |
| Seeking Emotional Support | 14.25 (4.34) | 15.31 (3.71) | 2.11* |
| Situation Modification | 14.84 (3.17) | 13.14 (3.23) | 4.29** |
| Attentional Deployment | 13.19 (3.44) | 14.51 (3.34) | -3.10** |
| Expressive Suppression | 7.66 (3.34) | 7.92 (3.55) | -0.61 |
| Selection of Situations | 12.48 (3.52) | 10.51 (3.95) | 4.04** |
| Cognitive Reappraisal | 13.51 (3.14) | 13.99 (3.24) | 1.21 |

*$p<,05$ ; **$p<,01$

## Discussion

This paper describes the development and validation of a new instrument to assess ER, the SERIS. This instrument considers a full range of strategies, takes into account the relational context of emotions, and explicitly mentions the emo-tion in question. This instrument is aimed at improving the ecological validity of ER assessment (Aldao, 2013) while keeping a degree of standardization that al-lows for interindividual and intergroup comparisons.

The results of Study 1 suggest that items created from previous literature on ER were empirically consistent in both the *anger* and *sadness* situations. In fact, the dimensions identified by the EFA were the same in both situations. The di-mensions of Situation Modification, Cognitive Reappraisal, Selection of Situa-

tions, and Attentional Deployment were moderately and positively correlated. This is consistent with the modal model of emotions (Gross, 2014), which asserts that all these strategies can be considered as antecedent-focused strategies.

Study 2 was aimed at validating the scale's factor structure identified in the EFA. The final version of the instrument has 28-item, organized in 7 independent factors, which is a common structure in instruments measuring ER from a multi-dimensional perspective (Gross & John, 2003). Internal consistency coefficients were adequate in both studies, and correlations between sub-scales were also similar.

A noteworthy result of our research is the identification of differences in the selection of ER strategies according to the emotion which is experienced. Attentional deployment and seeking emotional support were more frequent in the sadness situation. Both are focused on subjective changes, either by undertaking individual efforts or by communicating with others. In the case of the *anger* situation, by contrast, participants were more prone to choose avoidance strategies (e.g. selection of situations) or strategies involving manipulation of the environment. These results are consistent with previous literature (Páez, Martínez, Sevillano, Mendiburo, & Campos, 2012).

Our results do, however, need to be interpreted with caution due to the limitations of the study. First, the sample was gathered using a non-probabilistic procedure and comprised participants with relatively homogeneous sociodemographic characteristics (e.g. mostly women and undergraduate students). This prevents the results from being generalized, and further studies involving a larger and more diverse sample of participants are now necessary in order to validate and test the scale in different populations and contexts. Further research is also required to obtain additional estimates of the instrument's reliability and validity. For instance, it would be of considerable interest to explore the concurrent validity of the instrument with measures of ER, coping, well-being, or satisfaction with social relationships. Regarding discriminant validity, studies addressing the validity of ER scales usually include variables that were not assessed in this study, such as alexithymia (Páez et al., 2012) or negative affectivity (Cabello et al., 2013).

Despite these limitations our research nonetheless offers a new self-administered instrument for assessing ER. Unlike most instruments designed for this purpose, our scale incorporates contextual and emotional explicit information, and it includes subscales covering a wider range of ER strategies. Although these characteristics could increase the complexity of the instrument and reduce the trans-situational generalization of results, the data obtained have greater ecological validity and are closer to the everyday behaviors investigated. This will facilitate the design of interventions aimed at improving ER within interpersonal contexts and, therefore, the well-being, quality, and satisfaction that is experienced through interpersonal ties.

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