

## Comparison of self-reported attachment in young adults from Spain and the United States

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### Abstract

**Background:** Previous studies have provided mixed evidence in support of the structure of Bartholomew's attachment framework. The current study examined the comparability of the correlations among the attachment prototypes as well as the underlying factor structure of the Relationship Questionnaire in independent samples of Spanish and American young adults. **Method:** Participants were 547 students from the Universitat Autònoma de Barcelona and 1425 from the University of North Carolina at Greensboro who completed the Relationship Questionnaire. **Results:** Secure attachment was negatively correlated with fearful attachment, as was preoccupied attachment with dismissing attachment. The secure-fearful association in the American sample represented a medium effect size, whereas the remaining correlations represented small effect sizes. Except for the secure-fearful association, the correlations among prototypes were comparable in magnitude across samples. A principal components analysis yielded two factors that explained similar amounts of variance in the two samples. The pattern of loadings was relatively comparable in both samples; however, it was not entirely consistent with the theoretical model. **Conclusions:** The findings provided only partial support to the structure of the theoretical framework invoked. We discuss an alternative interpretation of the two factors, as well as further measurement considerations and directions for future research.

**Keywords:** attachment, Relationship Questionnaire, dimensions, prototypes, factor structure, cross-cultural.

### Resumen

**Comparación del apego en adultos jóvenes de España y Estados Unidos.**

**Antecedentes:** investigaciones previas han arrojado datos inconsistentes sobre la estructura del modelo de apego de Bartholomew. Este estudio investigó la comparabilidad de las correlaciones entre los prototipos de apego y la estructura factorial del Cuestionario de Relación en muestras independientes de jóvenes españoles y americanos. **Método:** un total de 547 estudiantes de la Universitat Autònoma de Barcelona y 1.425 de la University of North Carolina, Greensboro, completaron el Cuestionario de Relación. **Resultados:** el apego seguro y el temeroso correlacionaron negativamente, al igual que el preocupado y el rechazante. La asociación seguro-temeroso en la muestra americana representó un tamaño de efecto mediano, mientras que el resto de correlaciones representaron un tamaño de efecto pequeño. A excepción de la asociación seguro-temeroso, la magnitud de las correlaciones entre prototipos fue comparable en ambas muestras. El análisis de componentes principales arrojó dos factores que explicaron porcentajes similares de la varianza en las dos muestras. El patrón de cargas factoriales fue relativamente comparable en ambas muestras, pero no del todo consistente con lo esperado teóricamente. **Conclusiones:** los resultados proporcionaron apoyo parcial a la estructura del modelo teórico. Se presenta una interpretación alternativa de los factores, así como consideraciones de medición y direcciones para futuras investigaciones.

**Palabras clave:** apego, Cuestionario de Relación, dimensiones, prototipos, estructura factorial, comparación cultural.

Attachment theory conceptualizes the human propensity to form close affectional bonds that serve to provide a sense of emotional security and regulate distress throughout the lifespan (Bowlby, 1973, 1980, 1982). One of the central tenets of this theory is that early interactions with attachment figures become cognitively and affectively encoded in the form of "internal working models" of the self (i.e., one's own worthiness and competence) and others (i.e., others' responsiveness and availability). These models provide the basis of an individual's attachment style—defined as the pattern of needs, expectations, emotions, and behaviors that is developed

through internalizing previous attachment experiences (Fraley & Shaver, 2000; Mikulincer & Shaver, 2007).

The measurement of adult attachment styles through self-report questionnaires began in the late 1980's. Since that time, increasing evidence has accumulated supporting their use for assessing individual differences in attachment, as well as their applicability for understanding relational processes, affect regulation strategies, and psychopathology (Mikulincer & Shaver, 2007). However, there are crucial measurement issues in the field that are yet to be fully elucidated. Among them is the question of how best to conceptualize adult attachment phenomena. Although the use of taxometric techniques has suggested that adult attachment functioning is best captured in dimensional terms (Fraley & Waller, 1998), controversy remains as to whether prototype ratings, categories or dimensions are preferable for theoretical, psychometric, and clinical purposes (Bartholomew, 1997; Bifulco, Mahon, Kwon, Moran, & Jacobs, 2003; Shaver & Mikulincer,

2009; Ravitz, Maunder, Hunter, Sthankiya, & Lancee, 2010). A second key issue that has received increasing attention refers to the universality of attachment phenomena. In this sense, the question remains as to whether the underlying structure of adult attachment instruments is generalizable across different cultures (Schmitt et al., 2004; Yalçinkaya, Rapoza, & Malley-Morrison, 2010).

One of the most widely researched models of individual differences in adult attachment is that developed by Bartholomew and colleagues (Bartholomew, 1990; Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994a). These authors systematized Bowlby's (1973) concept of internal working models and proposed a four-prototype scheme based on two underlying dimensions, the positivity of a person's Model of Self (MS) and the positivity of a person's Model of Others (MO). MS is associated with the degree to which a person fears rejection and abandonment by a significant other, whereas MO is associated with the degree to which a person avoids closeness and intimacy with others (the two dimensions may also be conceptualized as representing attachment anxiety and avoidance, respectively) (Brennan, Clark, & Shaver, 1998; Griffin & Bartholomew, 1994b). According to Bartholomew's framework, the two independent dimensions can be combined to define four attachment prototypes: secure (positive self/positive others), dismissing (positive self/negative others), preoccupied (negative self/positive others), and fearful (negative self/negative others). Each prototype is associated with a different profile of cognitive-affective responses and interpersonal functioning (Griffin & Bartholomew, 1994b). The structure of the model suggests that the secure and fearful prototypes are opposites, and so are preoccupied and dismissing.

The Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) was the first self-report designed to assess this attachment framework. Even though more psychometrically refined instruments have been developed (e.g., Brennan et al., 1998), the RQ is currently still one of the most extensively used self-reports of adult attachment (Maas, Laan, & Vingerhoets, 2011; Roth-Hanania & Davidov, 2004). The RQ contains four statements describing each of the attachment prototypes. Respondents are asked to provide a rating for each statement according to how well it describes them. Although the RQ does not directly assess the two underlying dimensions, Griffin and Bartholomew (1994a) suggested that the MS and MO scores could be obtained by computing linear combinations of the four prototype ratings. They indicated that the score for MS could be derived by adding together the ratings of the patterns with positive self-models (secure and dismissing) and then subtracting the sum of the ratings of the patterns with negative self-models (preoccupied and fearful). Similarly, they suggested that an MO score could be derived by summing the ratings of the patterns with positive other-models (secure and preoccupied) and subsequently subtracting the sum of the ratings of the patterns with negative other-models (dismissing and fearful) (Griffin & Bartholomew, 1994a). However, this combinatory strategy is problematic on conceptual, empirical, and measurement grounds. First of all, Bartholomew's model suggests that MS and MO are the building blocks of the four attachment prototypes and thus that the attachment prototypes convey information both about self and others. It appears that combining the MS and MO building blocks to compose measures of the prototypes is feasible; however, decomposing the single-item measures of the multifactorial attachment prototypes into ratings of MS and MO by linear combinations is problematic. The formulae for MS and MO basically result in two short scales that contain the same four

items—the scales differ only in that the sign of the dismissing and preoccupied items are reversed. This, in essence, entails that the reliability of at least one (if not both) of the scales will be poor. Furthermore, the composition of the MO and MS scores means that they will artificially constrain each other such that as scores on one scale increase in absolute magnitude (i.e., higher or lower), scores on the other scale are artifactually constrained to be in the middle range. Thus, participants cannot score high on both dimensions, low on both dimensions, or high on one and low on the other dimension.

An alternative method for considering the factors underlying the attachment prototypes is to explore their structure using factor analytic tools. There is general consensus among attachment researchers that two dimensions underlie self-report attachment measures (Brennan et al., 1998; Mikulincer & Shaver, 2007); however, the two factors obtained in previous studies have been interpreted in different ways and, in recent years, three-factor solutions have been suggested (Bäckström & Holmes, 2001, 2007). With respect to the RQ, few researchers have performed factor analysis on this measure alone; rather, most studies have conducted factor analysis with data corresponding to several self-report measures (including the RQ). For example, in a study conducted with 650 undergraduates, Griffin and Bartholomew (1994b) found that a principal components analysis (PCA) of the prototypes from the RQ and those from the RSQ (a multi-item self-report grounded in the same theoretical model) yielded two clear factors, representing forty-five degree rotations from the MS and MO dimensions. Along the same lines, Stein and colleagues (2002) performed a PCA of the subscales from five different self-report attachment measures (including the RQ) and also obtained a two-component solution. These authors, however, suggested a different conceptualization of the underlying dimensions by arguing that individual differences in attachment might be best explained by an "insecurity" factor (from secure to fearful) and a factor reflecting the "strategy" for coping with insecurity (from preoccupied to dismissing). They postulated that preoccupied and dismissing prototypes, rather than being polar opposites, are different ways to manage interpersonal difficulties.

Only a few studies have conducted factor analysis with RQ items exclusively, and the results have been mixed. Bäckström and Holmes (2007) reported that, in a sample of 84 dating couples in the United States, a two-factor solution did not adequately represent their data. They found that even after rotation, the dismissing prototype loaded higher on the secure-fearful factor, and they postulated that a three-factor solution offered a feasible alternative to the traditional two-dimensional structure. In a large multinational study, Schmitt et al. (2004) tested the universality of Bartholomew's model in 62 cultural regions by means of the RQ. These authors found that the secure and fearful items negatively correlated in 63% of the cultures whereas the preoccupied and dismissing items negatively correlated in only 25% of them. A PCA with varimax rotation showed that a two-factor solution was adequate to explain the variance among the prototypes in all cultural regions. However, the two-dimensional structure underlying the prototypes was not the same across cultures. For example, they found that in North America, the findings fit well with Bartholomew's framework, whereas in other regions (such as South America, Western Europe, and the Middle East), the insecure prototypes clustered together and contrasted with the secure prototype.

The current study collected data from two large non-clinical samples of Spanish and American young adults. This allowed for the assessment of whether the structure of Bartholomew’s model is cross-nationally and cross-linguistically comparable. The goals of the study were twofold. First, to examine whether there was a strong negative association between secure and fearful attachment, and between preoccupied and dismissing attachment, and whether the pattern of associations among attachment prototypes was comparable across the two samples. Secondly, given that the factor structure of the RQ has been found to vary across different studies, we conducted a PCA in both samples in order to determine its fit with Bartholomew’s model, which suggests that the MS and MO dimensions independently underlie the four prototypes of adult attachment. Given that there has been inconsistency in the factor structure reported in previous studies, we opted to use PCA (an exploratory procedure) rather than confirmatory factor analysis. We sought to examine whether the number of factors, the variance accounted for by each factor, and the factor loadings were comparable across samples.

Method

Participants

Five hundred and forty-seven (455 women, 92 men) students from the Universitat Autònoma de Barcelona (UAB) and 1425 (1090 women, 335 men) students from the University of North Carolina at Greensboro (UNCG) volunteered to take part in the study. The mean age was 20.6 (*SD* = 4.1) in the UAB sample and 19.8 (*SD* = 3.9) in the UNCG sample.

Procedures

At both universities, participants completed the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991; Schmitt et al., 2004), among other self-report measures. The questionnaires were administered in classroom settings and written informed consent was obtained from all participants. The UAB Ethics Committee (in Spain) and the UNCG Institutional Review Board (in the United States) approved the study.

Instrument

The RQ contains four short paragraphs, each describing a prototypical attachment pattern as it applies in close adult relationships. Participants score each attachment prototype on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Participants also choose which of the four attachment prototypes best describes them. As an example, the paragraph describing the dismissing pattern states, “I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.”

Data analysis

The continuous ratings of each of the four attachment prototypes were used for analyses. Descriptive statistics were calculated for the prototype ratings in both samples, and independent-samples *t*-tests were used to compare the Spanish and American samples.

Pearson’s correlations were conducted among the prototype ratings in the two samples in order to examine if the pattern of associations was consistent with Bartholomew’s theoretical model. Fisher’s *Z* test was used to compare the magnitude of the correlations among the attachment prototypes across the two samples. Finally, PCA with Promax (oblique) rotation was used (separately for each sample) in order to explore the factor structure of the instrument. Contrary to most previous studies, we opted for an oblique rotation rather than an orthogonal rotation, as the latter would force independence between the factors and would not allow us to examine whether there are significant relations among the underlying factors identified by the PCA. The alpha level was set at .001 for all analyses due to the large sample sizes and the number of analyses computed, with the goal of minimizing Type I error and reducing the likelihood of reporting statistically significant but inconsequential findings.

Results

Table 1 provides descriptive statistics for each of the attachment prototypes in both the Spanish and American samples. The samples did not differ significantly in their ratings of preoccupied and fearful attachment, although the scores for the secure and dismissing prototypes were higher in the American sample than in the Spanish sample. Following Cohen (1992), the effect size for the differences in dismissing attachment was small, whereas the differences in secure attachment represented a medium effect size.

The Pearson correlations among the attachment prototype ratings in the two samples are displayed in Table 2. The intercorrelations among all prototypes are presented for the sake of completeness, although note that the specific aims were to examine the secure-fearful and dismissing-preoccupied associations. According to Cohen (1992), correlations of .10 indicate small effect sizes, .30 indicate medium effect sizes, and .50 indicate large effect sizes. In both samples, secure attachment showed a significant negative correlation with fearful attachment. The size of the effect was medium in the American sample and small in the Spanish sample. There was also a negative correlation between preoccupied and dismissing attachment in both samples, although the size of the effect was small. Fisher’s *Z* test revealed a significant difference for the association between secure and fearful attachment ( $z = 4.24, p < .001$ ), whereas the rest of correlations among attachment prototypes were comparable in magnitude across the two samples.

Prototype	Spanish sample			American sample			t-value	Cohen's d
	Mean	SD	Range	Mean	SD	Range		
Secure	4.2	1.5	1 - 7	4.9	1.7	1 - 7	9.19*	.45
Dismissing	3.6	1.6	1 - 7	3.9	1.8	1 - 7	3.94*	.19
Preoccupied	3.4	1.7	1 - 7	3.6	1.9	1 - 7	2.18	.11
Fearful	3.5	1.8	1 - 7	3.6	2.0	1 - 7	1.21	.06

Note: Small Cohen's *d* index is .20, medium is .50, and large is .80  
\*  $p < .001$

Table 3 shows the results of the PCA with Promax rotation computed separately for the Spanish and American samples. Bartlett's Test of Sphericity (Spanish sample:  $\chi^2(6) = 94.51, p < .001$ ; American sample:  $\chi^2(6) = 406.22, p < .001$ ) suggested that the correlations among items were sufficiently large for PCA (Field, 2009). In both samples, a two-factor solution emerged that accounted for comparable amounts of the total variance (62.1% in the Spanish sample and 66.4% in the American sample). The two factors were uncorrelated in both samples (Spanish sample:  $r = .06, ns$ ; American sample:  $r = .03, ns$ ). Using a cut-off of .40 for interpreting factor loadings, the factor structure was relatively comparable in the two samples. In both samples, the fearful, dismissing, and secure prototypes all had loadings above .40 on the first factor. Note that the direction and ordering of magnitude was comparable between the Spanish and American samples. In terms of the second factor, both dismissing and preoccupied prototypes had loadings above .40, although the magnitudes were not comparable across samples. Note also that the direction of the loadings was reversed in the two samples - although dismissing and preoccupied prototypes loaded in opposite directions in each sample. It is worth noting that contrary to theoretical expectation, in both samples dismissing attachment loaded onto both factors and in the American sample it had a higher loading on Factor 1.

Discussion

The current study examined the pattern of means and correlations among the RQ attachment prototypes as well as the

instrument's underlying factor structure in independent samples of Spanish and American young adults. The main goals were to assess the cross-cultural consistency of the findings and to determine their correspondence with the predictions that follow from Bartholomew's attachment framework. Our findings were generally comparable between the Spanish and American samples, but provided only partial support for the predictions derived from the theoretical model, suggesting that alternative interpretations might also contribute to the understanding of the complexities of individual differences in adult attachment as measured by the RQ.

The means of the dismissing and secure prototypes were found to be higher for the American sample than for the Spanish sample. One way of interpreting this finding is in terms of the individualism-collectivism worldview, which has been postulated to be one of the most important dimensions for capturing cultural differences (Triandis, 1994). In this sense, it may be suggested that some of the features that these two prototypes share in common (e.g., positive self-views and low-dependency needs) are consistent with the characteristics of highly individualistic cultures (such as the United States) that tend to encourage attributes such as self-reliance and independent self-construal (Markus & Kitayama, 1991). It is interesting to note that despite the mean differences in secure attachment, in both samples the secure prototype had the highest mean score of the four attachment prototypes. In their study, Schmitt et al. (2004) also found that secure attachment was the highest rated prototype in their Spanish and American samples. Our results in this regard resonate well with research indicating that attachment security tends to be normative across different cultural regions (van IJzendoorn & Sagi-Schwartz, 2008).

The findings regarding the intercorrelations among attachment prototypes did not lend strong support to Bartholomew's framework. Results in both samples showed that secure and fearful attachment were negatively correlated, and so were preoccupied and dismissing attachment. However, the effect sizes were small (except for the medium effect size found for the secure-fearful correlation in the American sample) and, therefore, the results only partially supported the theoretical predictions conceptualizing these pairs of prototypes as polar opposites. In comparing these results with previous studies, the associations were weaker than those reported by Bartholomew and Horowitz (1991), but were similar to the values reported for the Spanish and American samples in the Schmitt et al. (2004) study. Of note, with the exception of the secure-fearful correlation, the magnitude of the correlations among all attachment prototypes was comparable across samples, thereby highly supporting the cross-cultural consistency of the pattern of associations.

The results of the present study also showed that in both samples, two essentially independent dimensions underlie the four attachment prototypes and that the amount of variance accounted for by each factor is similar across the two samples. On the basis of this finding, results are consistent with Bartholomew's framework and support the contention that the two-dimensional structure of self-reported adult attachment seems to be a universal phenomenon (Schmitt et al., 2004). However, when examining the factor loadings across samples, we found that the attachment prototypes did not align entirely as would be theoretically expected. For example, contrary to the assumption of the model, dismissing attachment correlated with both factors and, in the American sample, it loaded higher onto the first factor. These findings parallel the results obtained by Bäckström and Holmes (2007) and draw attention to their earlier concern regarding previous attachment studies largely

*Table 2*  
Pearson correlations of the RQ attachment prototypes in the Spanish (n=547) and American (n=1425) samples

Prototype	1	2	3	4
Spanish sample				
1. Secure	-			
2. Dismissing	-.04	-		
3. Preoccupied	-.03	-.16*	-	
4. Fearful	-.17*	.25*	.18*	-
American sample				
1. Secure	-			
2. Dismissing	-.18*	-		
3. Preoccupied	.04	-.12*	-	
4. Fearful	-.36*	.22*	.20*	-

\*  $p < .001$

*Table 3*  
Principal components analysis with promax rotation for the RQ attachment prototypes in the Spanish (n=547) and American (n=1425) samples

Prototype	Spanish sample		American sample	
	Component 1	Component 2	Component 1	Component 2
Secure	-.527	.039	-.745	.039
Dismissing	.482	.739	.594	-.419
Preoccupied	.354	-.779	.063	.911
Fearful	.833	.053	.783	.356
Variance (%)	33.34	28.72	38.13	28.29

neglecting the fact that dismissing attachment tends to correlate with both factors (Bäckström & Holmes, 2001). Although our factor analytic results do share similarities with Bartholomew's theoretical model, the pattern of findings across samples seems to fit closer with the interpretation of Stein and colleagues (2002), who proposed that conceptualizing the first dimension as tapping "attachment insecurity" (secure to fearful) and the second dimension as tapping the "strategies" for dealing with insecurity (preoccupied and dismissing) has a better heuristic value and might be more empirically useful. Characterizing preoccupied and dismissing as different ways to manage interpersonal difficulties reconciles the fact that these two prototypes do not show a high negative correlation (Stein et al., 2002). In support of this interpretation, other researchers have also highlighted that measuring insecurity independently of the specific strategies to cope with it is in line with attachment theory's main postulates (Bäckström & Holmes, 2007) and is of primary importance in the prediction of psychopathology (Bifulco et al., 2003).

Present trends in attachment research suggest focusing on the measurement of the underlying dimensions of adult attachment patterns; nevertheless, as previously mentioned, opinion remains divided as to whether categories, prototypes or dimensions are more clinically and theoretically relevant (Bartholomew, 1997; Bifulco et al., 2003; Shaver & Mikulincer, 2009). In fact, the 'types versus dimensions' debate is not limited to the attachment field. For example, the debate has also been ongoing with respect to psychiatric classification and assessment, but in recent years researchers in that field have appreciated the considerable value of combining categories and dimensions and have suggested that each conceptualization may aid different purposes (Rutter, 2006). We believe that such conclusions are also applicable to the measurement of attachment. With regards to the RQ, the results from the current study point to the significant value of the attachment prototypes, particularly when considering that the formulae for obtaining the MS and MO dimensions are problematic, and that our results only partially supported the structure of Bartholomew's framework. Indeed, Griffin and Bartholomew (1994b) postulated that the prototypes add interpretational power beyond the dimensions and

other authors have emphasized the clinical relevance of typological approaches (Bifulco et al., 2003; Ravitz et al., 2010).

It is important to consider the results in light of the limitations of single-item measures such as the RQ. As compared with multi-item instruments, single-item measures are limited from a psychometric perspective in terms of how fully they can represent a complex construct, the fact that the internal reliability of the scales cannot be estimated, and that they are more impacted by measurement error (Nunnally & Bernstein, 1994). However, in spite of these shortcomings, it is important to note that the RQ offers a quick and simple assessment of adult attachment that is practical for large-scale surveys, it has been validated against interview measures, and its test-retest reliability estimates are adequate (Bartholomew & Horowitz, 1991; Maas, Laan, & Vingerhoets, 2011; Scharfe & Bartholomew, 1994). Furthermore, the fact that the RQ is extensively used in attachment research underscores the importance of evaluating how it functions psychometrically across cultures. The present results suggest that the RQ is comparable across two samples of Spanish and American young adults. Future work is warranted to expand this examination to other population groups such as more gender-balanced samples, samples with a wider age range, and with greater variability in terms of socio-demographic characteristics. Continued exploration of the cultural variability in attachment will contribute to expand and enrich attachment theory's formulations and it is hoped that future studies will help to elucidate further the origins and correlates of individual differences in attachment across cultures.

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