

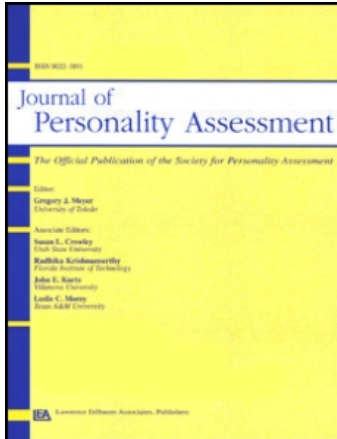
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## Journal of Personality Assessment

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t775653663>

### Adjective Checklist to Assess the Big Five Personality Factors in the Argentine Population

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Online publication date: 22 December 2010

**To cite this Article** Ledesma, Rubén D. , Sánchez, Roberto and Díaz-Lázaro, Carlos M.(2011) 'Adjective Checklist to Assess the Big Five Personality Factors in the Argentine Population', Journal of Personality Assessment, 93: 1, 46 – 55

**To link to this Article:** DOI: 10.1080/00223891.2010.513708

**URL:** <http://dx.doi.org/10.1080/00223891.2010.513708>

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# Adjective Checklist to Assess the Big Five Personality Factors in the Argentine Population

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The aim of this work was to develop an adjective checklist to assess the Big Five personality factors in the Argentine population. The new instrument was administered to pilot ( $n = 112$ ), validation ( $n = 372$ ), and replication ( $n = 309$ ) samples. The final version of the checklist included 67 adjectives encompassing its 5 dimensions. Factor analysis results were consistent with the Five-factor model. Internal consistency of scales was very good and convergent correlations with the Big Five Inventory (BFI; John, Donahue, & Kentle, 1991) were substantial. Face validity, as evaluated by 2 independent raters, was good. Preliminary evidence of validity for the checklist is presented. Finally, the Adjective Checklist for Personality Assessment and BFI are compared, taking into consideration their psychometric properties in our cultural context. Study limitations and future research are discussed.

Since the early 1990s there has been a reemergence of personality psychology as a significant and influential field within psychology. It can be argued that personality psychology has now reached a status that it had never reached before. Developments in trait models and particularly the Big Five model of personality (B5M; Costa & McCrae, 1999; Digman, 1990; John & Srivastava, 1999; McCrae & Costa, 1990; McCrae et al., 2000; McCrae & John, 1992; Widiger, 2005) are key reasons for this emergence. The B5M has been convincingly established to the extent of appearing almost ubiquitous in the current literature (Funder, 2001). According to the founders of the model, Costa and McCrae (1999), the Five-factor model (FFM) has set the tone for rival models with respect to personality structure. It has demonstrated how five biologically based dimensions (Agreeableness, Conscientiousness, Extraversion, Neuroticism, and Openness to Experience) can encompass most personality traits. The model also includes lower level traits, called facets, which are grouped within each of the “big” factors. These personality dimensions share considerable consensus among researchers.

Factorial models in general and the FFM specifically are known for their emphasis on the development of measurement scales. Several instruments have been developed to operationalize the FFM (Paunonen, Jackson, Trzebinski, & Forsterling, 1992; Widiger & Trull, 1997). The Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1985, 1992) is the best known and most important of these instruments. The NEO PI-R has been translated into numerous languages, including Spanish (Costa & McCrae, 1999). As in the case of other personality inventories such as the Big Five Inventory (BFI; John, Donahue, & Kentle, 1991), the NEO PI-R items probe for attitudes or behavioral preferences, from which the inventory infers basic dimensions of personality. Another measurement format

consists of using adjective lists describing different personality traits (García, Aluja & García, 2004; Goldberg, 1990, 1992; Saucier, 1994; Saucier & Goldberg, 1996). As compared to the item statement format, the adjective format has the advantage of being easier for participants to read and understand, as well as requiring less administration time. In addition, results obtained with its use are fairly consistent with the FFM (García et al., 2004; Goldberg, 1990, 1992).

Developments in trait psychology have driven a renewed interest for cross-cultural studies in the field of personality (Church, 2001; Church & Lonner, 1998; Hofstede & McCrae, 2004; McCrae, 2000; Schmitt, Allik, McCrae, & Benet-Martínez, 2007). These studies attempt to understand the extent to which differences in personality are based on universal processes as opposed to culture-specific factors. It is within this particular framework that the FFM has been demonstrated to be a reasonable and sensible model to study variations in personality trait structure across cultures and languages. As a notable example of this line of work, Allik and McCrae (2004) published a study in which personality profiles of 36 different cultures were compared through the administration of the NEO PI-R (Costa & McCrae, 1992). Results of this study show cultural differences in personality. Nevertheless, these differences could be explained within the FFM, which makes a theoretical differentiation between basic tendencies (biologically based) and characteristic adaptations (culturally influenced). In further support of the model’s cross-cultural validity, Schmitt et al. (2007) found that the five-factor structure held across different cultures in evaluating personality with BFI versions in 28 different languages representing 56 countries.

Gender differences have also been widely analyzed in FFM studies. For instance, Costa, Terracciano, and McCrae (2001) examined gender differences in 26 cultures and found that women presented with higher levels of Neuroticism and Agreeableness as compared with men. In Spain, a study using a Spanish-version of the BFI found gender differences in the same two dimensions (Benet-Martínez & John, 1998). In another study conducted in Spain, De Miguel-Negredo (2005)

Received December 28, 2009; Revised July 12, 2010.

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and Manga, Ramos, and Morán (2004) found equivalent results using the NEO PI-R and its reduced version, the NEO FFI, respectively. Schmitt, Realo, Voracek, and Allik (2008) reported cross-cultural findings based on 55 nations, using the BFI. These authors noted that women tend to show higher levels of neuroticism, extraversion, agreeableness, and conscientiousness as compared with their male counterparts across most nations. However, with the exception of differences in neuroticism, in most of the studies effect sizes are small and vary from culture to culture. It is also worth noting that the size of these gender differences tend to be small as compared with the size of the individual discrepancies found (Costa et al., 2001).

With regard to age differences, a review of the literature and data from more than 5,000 people who completed the NEO FFI across five countries (Germany, United Kingdom, Spain, Czech Republic, and Turkey) concluded that the Big Five factors change across the life span as result of “intrinsic maturation processes” (McCrae et al., 2000). Specifically, there is a reported decrease in Neuroticism, Extraversion, and Openness to Experience, as well as an increase in Agreeableness and Conscientiousness. The authors pointed out that these changes appear to be restricted to the 17- to 30-year-old age interval and the observed effect sizes tend to be small. Across the different countries sampled mean correlations with age were very low and were observed primarily in Neuroticism (−.17), Extraversion (−.21), and Conscientiousness (.23). In Openness to Experience (−.08) and Agreeableness (.09) factors, correlations were even lower. Notwithstanding, we must note that the relationship between personality and age is still not clear. For example, using a meta-analysis, Roberts, Walton, and Viechtbauer (2006) challenged the idea that personality traits stop changing at a given age. This work also demonstrates that the relationship between age and personality traits could be more complex than what we might believe, many times manifesting itself at the facet level and in specific life-span moments.

In summary, the FFM has received a lot of theoretical and empirical attention, including the generation of important cross-cultural studies on personality as well as the development of assessment instruments. It should be underscored, however, that as in other areas of psychological science, developments have not been consistent across the globe. In particular, Latin America appears rarely represented in most of the cross-cultural research; when it is represented, data tend to be quite limited, calling into question the validity of these comparisons. For instance, in Costa et al.'s (2001) study the region was only represented by a college student sample collected in Perú. The scant information and reliable data published on this region of the globe could be attributed to, among other things, the lack of instruments adapted to or developed in these countries

#### PURPOSE OF THE THIS STUDY

Cultural and linguistic differences justify the development and utilization of new instruments by taking into account the specific contexts and populations to more accurately measure desired constructs (Brislin, 1985). Instrument development cannot be limited to language translations of already existing instruments. Cultural equivalency of an instrument in different cultural contexts cannot be assumed, even in cases where the language is the same. Problems with instrument equivalency are particularly exemplified in the case of adjectives, where the

meaning of a particular concept changes in different cultures. It has been recommended that to find a structural personality model generalizable across cultures, adjectives selected for an instrument have to be easily recognized and frequently used by members of the culture studied (Ashton & Lee, 2005). For instance, the adjective *quarrelsome*, used in the Ten-Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003), could be Spanish-translated as *peleonero* in Mexico, but this expression would not be appropriate in Argentina and several other Spanish-speaking countries in Latin America where the term *peleador* is used instead to express the same concept. Other examples of translation problems can be identified in the Argentine version of the BFI (Castro-Solano, 2002; Castro-Solano & Casullo, 2001). For instance, Item 26 states “I see myself as someone who has an assertive personality,” which in Spanish has been translated to “*Me veo a mi mismo como alguien que tiene una personalidad asertiva.*” The translation maintains the meaning of the original item and it is literally correct. However, in Argentina the term *assertive* is used almost exclusively among psychologists and is unknown to most lay persons. This was also identified by Benet-Martinez and John (1998), who in their Spain BFI validated version modified the item by adding a phrase to the item: “I see myself as someone who has an assertive personality, who does not fears expressing what he/she wants (*que no teme expresar lo que quiere*).” The addition of “*no teme expresar lo que quiere*” serves to define the meaning of *asertivo* for those not knowing the term. Another example from the Argentine BFI involves the translation of the Conscientiousness's item “I see myself as someone who is a reliable worker.” Here *reliable* is translated as *confiable*, which in our context could be associated more with the Agreeableness than with the Conscientiousness factor (“reliable” is someone you can trust). In fact, in the BFI's exploratory factor analysis (EFA) it can be observed that this item loads on both factors, with a superior loading in Agreeableness.

Along the same line, a particular term could have multiple interpretations within a given culture, therefore influencing an instrument's validity. For example, the term “complex,” also from the TIPI, has been translated into Spanish as *complejo* (*complex*). However, in Argentina, the accepted meaning of the term does not necessarily fall within the Openness to Experience factor as is the case in the English version. The term *complejo* could also be interpreted as *complicado* (complicated), a meaning more closely aligned with the Neuroticism factor. It would be more appropriate to translate it, for example, as *con múltiples intereses* (with multiple interests) to keep it in the Openness to Experience dimension. In summary, these examples demonstrate how translations can influence the validity of research instruments.

The primary objective of this study is to assess the psychometric properties of a new Spanish-language adjective checklist developed to evaluate personality according to the FFM. We named the new instrument the Adjective Checklist for Personality Assessment (AEP), from the Spanish-language *Listado de Adjetivos para Evaluar Personalidad*. Furthermore, the study seeks to contribute to the existing literature on the replicability of the five-factor structure in the Argentine context. Gender and age differences are analyzed as well, to compare these with previous results found in literature. In addition, we compared the properties of the AEP and BFI and assessed the relationship between these instruments. The BFI had been previously translated

and administered in the Argentine population by Castro-Solano and Casullo (2001). No other studies in Argentina have reported using the BFI. The results presented by the instrument authors suggest some problems. More specifically, factor analysis does not entirely fit the expected model and reliability levels are relatively low on three of its scales (Cronbach's  $\alpha < .70$ ). However, it should be noted that Castro-Solano and Casullo worked with a limited sample (13–19-year-old adolescents), which could explain some of the problems found. In this study we compared the BFI and AEP in a general population sample.

Notwithstanding the possibility of minor problems with the BFI, we worked under the assumption that the AEP and BFI measure the same construct, and thus will have convergent validity. Furthermore, it is relevant to note that we worked under the assumption the AEP does not replace the BFI, but offers a measurement alternative in its adjective checklist format. However, we did expect the AEP to offer a more valid and reliable measure in our country as would be evidenced by a better factorial solution and higher levels of internal consistency for its scales. Because the AEP is a new instrument, we also made a few complementary analyses, which included a factorial analysis in a replication sample and a face validity test with expert judges. In summary, we present a new instrument for personality assessment according to the FFM and offer evidence of its reliability and validity in the Argentine context.

## METHOD

### *Preliminary Adjective Review and Selection*

In developing the FFM personality scales, we considered the recommendations suggested by Saucier and Goldberg (2002): (a) avoid unclear or ambiguous adjectives, (b) select adjectives with high factor loadings in their own dimension, (c) maximize the internal consistency of each scale, and (d) develop an instrument that is as short as possible. We implemented the following procedures using the aforementioned principles as a guide. First, we surveyed items from diverse sources that included Goldberg's instruments (Goldberg, 1990, 1992), Saucier's Mini-Markers (Saucier, 1994), and the TIPI (Gosling et al., 2003). Also included in the selection process were items from two Spanish versions of the BFI (Benet-Martinez & John, 1998; Castro-Solano, 2002; Castro-Solano & Casullo, 2001) and from the Spanish version of the NEO FFI (Costa & McCrae, 1999), which were evaluated with the purpose of identifying key adjectives. In all cases the adjectives were carefully evaluated for their familiarity level and comprehension in the Argentine population to avoid problems mentioned in the introduction. In the adjective selection process there was an intentional attempt at covering the different facets of each factor. With that in mind, various adjectives were added by taking into account factor facets. This process resulted in a first draft of the instrument containing 75 adjectives.

In a second step, the 75-adjective version was administered to a pilot sample of 112 participants from the general population (see the Procedure section for a more detailed description of the administration process). Results from this pilot study were consistent with a five-factor structure, but poor performance of several adjectives suggested the need to modify and broaden the original list. The problems found were: (a) adjectives with factor loadings  $< .30$  (e.g., *inquieto*, *firme*, *huraño*, *inflexible*, *liberal*, etc.) or with high factor loadings on more than one di-

mension (e.g., *competente*, *equilibrado*, *competitivo*), and (b) few negative markers of Neuroticism as well as few positive markers of Openness to Experience in the factorial solution. A content evaluation of several adjectives led us to hypothesize these could be interpreted as having multiple meanings (e.g., the adjective *Estable/Stable*). In these cases existing adjectives were reworded for more specificity or alternative adjectives were identified and included (e.g., *estable* was reworded as *Emocionalmente-Estable/Emotionally Stable*). In short, we decided to eliminate some adjectives, modify others, and include 20 additional ones. In this later case, our efforts focused primarily on the selection of new positive indicators for the Openness to Experiences domain and negative indicators for the Neuroticism domain. This process resulted in a second list of 85 adjectives, which is the one we analyzed and discussed in this article.

### *Participants*

A nonprobabilistic sample of 372 adults drawn from the general population, all residents in the city of Mar del Plata, Argentina, participated in our study. Data were collected over a 6-month period. There were more women than men (58.1% women). Participants' ages ranged from 18 to 80 years ( $M = 30.65$ ,  $Mdn = 26$ ,  $SD = 12.95$ ). Most participants (94%) reported an educational attainment of at least high school. An additional 309 participants made up our replication sample. Data for our replication sample were gathered through an online AEP version (see Procedure section) following a nonprobabilistic sampling method (snowball sampling). Participants were recruited over a 60-day period. The age of the participants ranged from 18 to 68 years ( $M = 30.37$ ). Women accounted for 70% of the sample. Most participants (98%) reported an educational attainment of at least high school.

### *Measures*

The AEP, an original instrument developed for this study, was used to assess the Big Five factors of personality. This scale includes 85 adjectives describing personally traits. Participants are asked to read each adjective and indicate on a 5-point scale the degree to which each describes them, with responses ranging from 1 (*does not describe me at all*) to 5 (*totally describes me*). We also used an Argentine version of the BFI as a validation measure (Castro-Solano, 2002; Castro-Solano & Casullo, 2001). The BFI is a 44-item self-report to assess the Big Five dimensions. It employs a Likert scale of five possible responses ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Finally, a brief structured questionnaire was used to measure socio-demographic variables, including age, gender, and educational level.

### *Procedure*

Validation sample participants were recruited by psychology students who served as surveyors assisting with data collection. They approached adults from the general population and asked for their consent to participate in the study. No financial compensation was offered for taking part in the study. On prospective participant's acceptance, the questionnaire was provided and completed on an individual basis. Surveys were anonymously completed in an average time of 15 min. Field workers were available to assist participants in case of inquiries and check

that no response fields were unintentionally left blank. Data were collected anonymously and treated as such. A subsample ( $n = 245$ ) responded to both the AEP and the BFI, and the rest of the sample completed only the AEP.

Replication sample participants were recruited to participate via email. Although it could be argued to be a more practical recruitment procedure, email lists were not used. We opted for a more personalized approach to increase the chances of a higher participant response rate. More specifically, a series of personal invitations were sent, followed by a snowball sampling strategy where email recipients suggested other potential participants. Participants were invited to complete the AEP through a Web site on which they were briefly informed on the type of research and the specific purpose of the collected data. No financial compensation was offered for taking part in the study. The Web site included specific information regarding the confidentiality of participant responses. Finally, an electronic consent for participation in the study was also included in the study's Web site. Response format was exactly the same as that of the paper-and-pencil version of the instrument. Once the adjective list had been completed, participants clicked a button that elicited an automatic submission of their responses to the researchers by email. The response rate was very high (>95%). However, eight surveys were discarded due to a high number of missing data.

### Data Analyses

The following analyses were performed: (a) EFA (extraction: maximum likelihood; rotation: varimax; number of factor selection: parallel analysis) on the AEP adjectives; (b) classical item analysis and reliability analysis of the AEP subscales; (c) multivariate analysis of variance (MANOVA) to examine gender and age-group (18–29 and  $\geq 30$ ) differences in the AEP scores, and a correlation analysis with the age as a quantitative variable; (d) convergent correlation analysis between AEP and BFI scales; (e) comparison of Cronbach's alpha coefficients of AEP and BFI; and (f) percentages of expert judge's classification of AEP adjectives in each factor as compared with our own categorization and the judges' interrater reliability serving as face validity indicator. Most analyses were performed using the Statistical Package for the Social Sciences (SPSS 11.5 for Windows; SPSS, Inc., 2002). Effect size measures and parallel analysis were computed using ViSta "The Visual Statistics System" (Young, 1996). Reliability coefficient comparison between AEP and BFP was analyzed with the AlphaTest (Lautenschlager & Meade, 2008).

## RESULTS

### Exploratory Factor Analysis and Factor Scale Construction

A first EFA on the 85 adjectives revealed the need for purifying the adjectives list. We identified some problems, such as adjectives with factor loading below .30. We dropped these adjectives and repeated the factor analysis on the remaining adjectives. A five-factor solution appeared in this second EFA according to the parallel analysis (see Appendix). The five-factor solution accounts for the 36% of the total variance. Table 1 shows the factor loadings and summary statistics for the 67 adjectives that comprise the final version of the AEP. The first factor (Agreeableness) includes 16 adjectives and accounts for 12% of the variance. The second factor (Neuroticism) is

made up of 18 adjectives accounting for 8.2% of the total variance. The third factor (Conscientiousness) consists of 13 adjectives accounting for 7.3% of the variance. The fourth factor (Extraversion) is described by 10 adjectives and accounts for 4.9% of the variance. The fifth and final factor (Openness) has 10 adjectives, which account for 3.6% of the variance. Scores for each of the five-factor scales were computed by averaging the adjectives loading on each dimension (negative items were reverse-scored). Table 2 provides statistical information on the resulting scales in the validation and replication samples.

### Gender and Age Differences

MANOVA revealed significant differences by gender,  $F(5, 346) = 5.99, p < .01$ , and age groups,  $F(5, 346) = 9.82, p < .01$ . Univariate analysis of variance (ANOVA) indicated that gender differences were significant in Neuroticism,  $F(1, 350) = 9.31, p < .001$ . An examination of group means (see Table 3) revealed that women scored higher on this scale, Cohen's  $d = .53$ . Univariate ANOVA also indicated age differences on Conscientiousness,  $F(1, 350) = 15.18, p < .001$ , and Openness,  $F(1, 350) = 3.5, p < .01$ . An examination of the group means (see Table 3) revealed that young people scored higher on Openness, Cohen's  $d = .30$ , and lower in Conscientiousness, Cohen's  $d = -.69$ .

In making the same analysis with the BFI, multivariate effects were obtained for gender,  $F(5, 231) = 6.70, p < .01$ , and age groups,  $F(5, 231) = 7.60, p < .01$ . Univariate ANOVA indicated gender differences in Neuroticism,  $F(1, 235) = 26.6, p < .001$ . Women scored higher ( $M = 26.2, SD = 6.3$ ) than men ( $M = 21.8, SD = 6.01$ ) in this scale, Cohen's  $d = .70$ . Univariate ANOVA also suggested age differences in Conscientiousness,  $F(1, 235) = 37.57, p < .001$ , but not in Openness,  $F(1, 235) = .34, p > .05$ . Young people scored lower ( $M = 30.8, SD = 6.3$ ) than adults ( $M = 35.4, SD = 5.01$ ) on Conscientiousness, Cohen's  $d = -.80$ .

In analyzing the relationship between AEP scores and age as a continuous variable (noncategorical), Pearson correlations were: Neuroticism =  $-.16 (p < .01)$ ; Extraversion =  $.06 (p > .05)$ ; Openness to Experience =  $-.26 (p < .01)$ ; Agreeableness =  $.11 (p < .05)$ ; and Conscientiousness =  $.35 (p < .01)$ , respectively. The same analysis in the BFI yielded the following results: Neuroticism =  $-.06 (p > .05)$ ; Extraversion =  $-.03 (p > .05)$ ; Openness to Experience =  $.01 (p > .05)$ ; Agreeableness =  $.20 (p < .01)$ ; and Conscientiousness =  $.39 (p < .01)$ , respectively.

### Convergent Correlations

Table 4 presents the Pearson correlations between the AEP and the BFI scales. All correlations were substantial and significant, with levels ranging from .60 to .78. Overall, these convergent correlations (with a mean of .69) far exceeded the off-diagonal correlations, none of which exceeded .33. On the other hand, the off-diagonal correlations were similar across both measures. Neuroticism was negatively correlated with almost all factors, but especially with Agreeableness ( $-.18$  to  $-.32$ ). Agreeableness correlated positively with Conscientiousness (.31 to .34) and to a lesser degree with Extraversion (.15 to .29). Openness was positively correlated with Extraversion (.21 to .33).

In comparing scale reliability of both instruments (see Table 4 diagonal), AEP demonstrated better reliability in the

TABLE 1.—Factor loadings and summary statistics for the Adjective Checklist for Personality Assessment adjectives in the validation (V) and replication samples (R).

Spanish Adjective (Translation)	Factor Loadings										Summary Statistics					
	A		N		C		E		O		M		SD		Corrected Item- Total Correlation	
	V	R	V	R	V	R	V	R	V	R	V	R	V	R	V	R
<i>Amable</i> (Kind)	<b>.64</b>	<b>.65</b>	-.05	.01	.08	.01	-.22	-.06	.09	-.04	4.21	4.07	.83	.80	.58	.58
<i>Bondadoso</i> (Good-natured)	<b>.62</b>	<b>.62</b>	-.01	-.05	-.11	-.01	-.13	-.01	.00	.01	3.95	3.80	.92	.81	.56	.63
<i>Generoso</i> (Generous)	<b>.59</b>	<b>.46</b>	.05	.08	.01	.01	-.18	-.09	-.04	.10	4.08	3.76	.86	.87	.54	.50
<i>Comprensivo</i> (Understanding)	<b>.58</b>	<b>.46</b>	.01	-.02	.03	-.01	.04	-.05	.12	.03	4.15	3.99	.91	.75	.56	.43
<i>Cordial</i> (Cordial)	<b>.57</b>	<b>.57</b>	.02	.10	.18	-.01	-.13	-.15	.02	-.01	4.05	3.90	.90	.83	.53	.49
<i>Considerado</i> (Considerate)	<b>.53</b>	<b>.46</b>	.03	-.04	.11	.07	.08	.05	.04	.05	3.88	3.82	.93	.80	.49	.44
<i>Solidario</i> (Supportive)	<b>.50</b>	<b>.41</b>	.05	-.01	.04	.07	-.11	-.20	.06	.17	3.99	3.96	.97	.92	.47	.42
<i>Conciliador</i> (Conciliatory)	<b>.49</b>	<b>.50</b>	-.10	-.18	.15	.01	-.03	.07	.11	-.01	3.79	3.77	1.05	1.05	.45	.45
<i>Confiable</i> (Reliable)	<b>.48</b>	<b>.45</b>	.02	.03	.07	.15	-.01	.01	-.08	.05	4.47	4.52	.81	.65	.43	.42
<i>Modesto</i> (Modest)	<b>.47</b>	<b>.37</b>	.01	.01	.14	.07	.07	.08	-.05	-.02	3.42	3.39	1.08	.96	.44	.34
<i>Cálido</i> (Warm)	<b>.44</b>	<b>.53</b>	-.02	-.05	.07	.02	-.08	-.16	.08	.01	3.73	3.68	.97	.90	.37	.49
<i>Pacífico</i> (Peaceful)	<b>.40</b>	<b>.45</b>	-.37	-.20	.03	-.12	.22	<b>.37</b>	.03	-.08	3.59	3.57	1.19	1.12	.35	.30
<i>Egoísta</i> (Selfish)	-.39	-.25	.14	<b>.39</b>	-.01	-.09	.13	.12	.05	-.02	4.20	2.01	1.02	1.05	.39	.39
<i>Arrogante</i> (Arrogant)	-.38	-.22	.16	<b>.30</b>	-.06	-.01	-.03	.01	.00	.28	4.01	1.80	1.12	1.02	.39	.28
<i>Sincero</i> (Sincere)	<b>.38</b>	.22	.01	-.03	.20	.19	-.18	-.17	-.01	.04	4.37	4.18	.84	.78	.39	.29
<i>Esperanzado</i> (Hopeful)	<b>.34</b>	<b>.35</b>	-.03	-.02	.10	.01	.01	-.07	.20	.14	3.93	3.84	1.05	.96	.31	.45
<i>Nervioso</i> (Nervous)	-.02	-.11	<b>.66</b>	<b>.65</b>	-.01	.10	-.01	-.01	-.03	-.01	2.99	3.17	1.31	1.23	.59	.59
<i>Calmo</i> (Calm)	.18	.28	-.58	-.30	.01	-.14	.24	<b>.54</b>	.01	-.04	3.14	2.84	1.27	1.14	.49	.27
<i>Ansioso</i> (Anxious)	.02	.05	<b>.57</b>	<b>.51</b>	-.0	.02	-.07	-.16	.07	.08	3.92	3.87	1.15	1.17	.50	.48
<i>Melancólico</i> (Melancholic)	.13	.09	<b>.53</b>	<b>.58</b>	-.12	-.16	.13	.12	-.03	.03	2.94	2.99	1.33	1.32	.52	.50
<i>Inseguro</i> (Insecure)	.01	.03	<b>.52</b>	<b>.52</b>	-.23	-.20	.29	.24	-.01	-.18	2.63	2.87	1.24	1.16	.56	.52
<i>Depresivo</i> (Depressive)	.01	-.05	<b>.52</b>	<b>.56</b>	-.17	-.14	.31	.27	-.13	-.05	2.07	1.82	1.17	1.03	.54	.51
<i>Quejoso</i> (Whiny)	-.14	-.06	<b>.52</b>	<b>.59</b>	-.04	-.20	.03	-.02	-.01	-.01	2.93	2.72	1.27	1.24	.49	.53
<i>Celoso</i> (Jealous)	.02	.02	<b>.50</b>	<b>.47</b>	-.02	-.02	-.03	-.09	.03	-.05	3.34	3.12	1.31	1.25	.46	.45
<i>Impulsivo</i> (Impulsive)	-.14	-.04	<b>.49</b>	<b>.40</b>	-.18	.05	-.15	-.39	.07	.22	3.25	3.16	1.37	1.31	.44	.34
<i>Tenso</i> (Tense)	-.06	-.03	<b>.49</b>	<b>.54</b>	.06	.20	.03	.08	.02	.01	2.87	2.78	1.24	1.19	.42	.47
<i>Relajado</i> (Relax)	.13	.19	-.47	-.34	-.09	-.29	-.02	.18	.06	.04	3.06	2.70	1.07	1.08	.41	.33
<i>Triste</i> (Sad)	.01	-.10	<b>.45</b>	<b>.54</b>	-.13	-.05	.31	.32	-.00	-.06	2.17	2.15	1.08	1.05	.46	.46
<i>Desconfiado</i> (Mistrustful)	-.05	-.07	<b>.45</b>	<b>.45</b>	.09	.07	.13	.10	-.02	.05	3.16	2.93	1.22	1.23	.40	.39
<i>Emocionalmente estable</i> (Emotionally stable)	.21	.24	-.43	-.46	.30	.11	-.07	.09	-.02	-.13	2.71	3.39	1.17	1.11	.46	.50
<i>Agresivo</i> (Aggressive)	-.33	-.22	<b>.39</b>	<b>.43</b>	-.13	.00	-.01	-.02	.00	.17	2.01	1.93	1.13	1.02	.37	.37
<i>Vulnerable</i> (Vulnerable)	.18	.10	<b>.37</b>	.27	.08	-.07	.02	.03	.03	.01	3.01	3.35	1.14	1.11	.31	.27
<i>Indeciso</i> (Indecisive)	.07	.08	<b>.35</b>	<b>.31</b>	-.23	-.17	.26	.25	-.06	-.17	3.11	3.10	1.29	1.22	.37	.30
<i>Sensible, frágil</i> (Sensitive, fragile)	.26	.17	<b>.34</b>	<b>.46</b>	-.01	.02	-.02	.02	.05	-.08	3.62	3.64	1.20	1.15	.31	.43
<i>Responsable</i> (Responsible)	.25	<b>.32</b>	.03	.04	<b>.62</b>	<b>.57</b>	-.07	-.03	-.15	-.10	4.23	4.39	.92	.74	.60	.54
<i>Haragán</i> (Lazy)	-.01	.01	.09	.22	-.56	-.50	.13	.27	.10	-.02	3.83	2.08	1.22	1.20	.49	.39
<i>Organizado</i> (Organized)	.08	.12	.01	-.00	<b>.52</b>	<b>.63</b>	.10	.05	-.11	-.01	3.57	3.58	1.24	1.13	.50	.61
<i>Desordenado</i> (Messy)	.07	.17	.08	.08	-.52	-.55	.01	-.12	.10	.07	3.39	2.70	1.38	1.35	.49	.43
<i>Descuidado</i> (Careless)	-.02	.03	.09	.08	-.50	-.39	.01	.05	.10	.05	3.70	2.13	1.18	1.14	.49	.36
<i>Perseverante</i> (Persistent)	.10	.24	.02	-.03	<b>.49</b>	<b>.48</b>	.03	-.07	.08	.14	3.83	3.84	1.07	1.04	.40	.50
<i>Desprolijo</i> (Untidy)	-.02	.09	.07	.07	-.48	-.47	.05	.00	.07	.11	3.74	2.18	1.28	1.20	.48	.39
<i>Precautivo</i> (Cautious)	.27	.28	.02	.21	<b>.48</b>	<b>.34</b>	.01	.26	.02	-.09	3.58	3.47	1.07	1.04	.47	.35
<i>Previsor</i> (Far-sighted)	.20	.20	.02	.19	<b>.46</b>	<b>.37</b>	.05	.18	-.02	-.08	3.69	3.49	1.08	1.10	.43	.32
<i>Productivo</i> (Productive)	.23	.28	-.02	.08	<b>.38</b>	<b>.52</b>	-.13	-.23	.14	.22	3.81	3.78	1.00	.92	.35	.44

TABLE 1.—Factor loadings and summary statistics for the Adjective Checklist for Personality Assessment adjectives in the validation (V) and replication samples (R) (Continued).

Spanish Adjective (Translation)	Factor Loadings										Summary Statistics					
	A		N		C		E		O		M		SD		Corrected Item- Total Correlation	
	V	R	V	R	V	R	V	R	V	R	V	R	V	R	V	R
<i>Inconstante</i> (Changeable)	-.01	.01	<b>.34</b>	.37	<b>-.38</b>	<b>-.47</b>	-.04	.01	.06	.04	3.62	2.50	1.18	1.25	.34	.41
<i>Activo</i> (Active)	.18	.17	.07	-.02	<b>.35</b>	<b>.38</b>	<b>-.38</b>	<b>-.39</b>	.10	.21	4.04	3.72	.98	1.04	.32	.30
<i>Controlado</i> (Controlled)	.27	<b>.32</b>	-.12	-.04	<b>.31</b>	.11	.14	<b>.31</b>	-.09	-.11	3.11	3.11	1.22	1.15	.30	.20
<i>Callado</i> (Quiet)	.05	-.02	-.12	.03	.03	-.04	<b>.66</b>	<b>.75</b>	-.03	-.06	3.64	2.37	1.33	1.27	.54	.69
<i>Tímido</i> (Shy)	.10	.09	.02	.15	.02	-.09	<b>.65</b>	<b>.56</b>	-.09	-.14	3.34	2.72	1.30	1.25	.54	.51
<i>Simpático</i> (Nice)	<b>.34</b>	<b>.42</b>	-.02	.01	-.12	-.07	<b>-.59</b>	<b>-.52</b>	.13	-.02	4.00	3.83	.94	.96	.60	.57
<i>Sociable</i> (Sociable)	<b>.39</b>	<b>.31</b>	-.06	-.07	.06	-.01	<b>-.59</b>	<b>-.64</b>	.10	.05	4.01	3.94	1.07	1.01	.59	.65
<i>Retraído</i> (Withdrawn)	.01	.01	.17	.19	-.05	-.07	<b>.48</b>	<b>.56</b>	-.09	-.07	3.86	1.93	1.07	1.07	.43	.54
<i>Conversador</i> (Talkative)	.26	.15	.17	.11	.05	-.03	<b>-.46</b>	<b>-.61</b>	-.02	.01	3.65	3.60	1.19	1.15	.43	.53
<i>Alegre</i> (Happy)	<b>.31</b>	.29	-.10	-.22	-.06	-.01	<b>-.46</b>	<b>-.36</b>	.14	.17	3.94	3.88	.95	.87	.45	.43
<i>Solitario</i> (Lonely)	.01	-.02	.21	<b>.33</b>	.06	.03	<b>.41</b>	<b>.38</b>	-.14	-.01	3.35	2.73	1.38	1.39	.37	.41
<i>Distante</i> (Distant)	-.22	-.12	.16	<b>.32</b>	-.04	-.05	<b>.36</b>	<b>.53</b>	-.13	.04	3.69	2.39	1.08	1.09	.44	.54
<i>Espontáneo</i> (Spontaneous)	.19	.19	.15	.10	.04	-.06	<b>-.32</b>	<b>-.42</b>	.22	.26	3.78	3.63	1.10	.99	.33	.39
<i>Imaginativo</i> (Imaginative)	.18	.17	.01	.13	.12	-.12	-.02	.05	<b>.67</b>	<b>.61</b>	3.84	3.79	1.18	1.10	.49	.53
<i>Creativo</i> (Creative)	.17	.14	-.05	.06	.11	.08	-.09	.01	<b>.64</b>	<b>.73</b>	3.61	3.47	1.13	1.14	.49	.55
<i>Fantástico</i> (Imaginative)	.11	.08	.18	.24	-.21	-.22	-.01	.01	<b>.52</b>	<b>.35</b>	3.42	3.18	1.37	1.37	.44	.30
<i>Aventurero</i> (Adventurous)	.03	.11	.00	.01	-.26	.02	-.16	-.11	<b>.48</b>	<b>.44</b>	3.20	3.05	1.37	1.27	.49	.37
<i>Convencional</i> (Conventional)	.11	.13	.09	.13	.12	.06	.14	.20	<b>-.46</b>	<b>-.45</b>	3.23	2.62	1.11	1.051	.44	.50
<i>Original</i> (Original)	.20	.17	.05	-.01	-.01	.02	-.10	.01	<b>.46</b>	<b>.74</b>	3.56	3.33	1.01	1.08	.38	.59
<i>Tradicional</i> (Traditional)	.25	.15	.01	.17	.22	.17	.11	.19	<b>-.41</b>	<b>-.43</b>	2.86	2.90	1.20	1.17	.49	.47
<i>Curioso</i> (Curious)	.12	.11	.25	.25	-.00	-.07	-.04	-.11	<b>.37</b>	<b>.30</b>	3.95	3.72	1.12	1.10	.33	.28
<i>Rutinario</i> (Monotonous)	.12	.03	.19	.20	.19	-.11	.10	.24	<b>-.37</b>	<b>-.46</b>	2.85	2.85	1.31	1.17	.36	.42
<i>Conservador</i> (Conservative)	.19	.21	.10	.22	.15	.20	.13	.23	<b>-.30</b>	<b>-.35</b>	2.91	2.88	1.25	1.16	.35	.36

Note. All factor loadings >.30 are in bold. A = Agreeableness; N = Neuroticism; C = Conscientiousness; E = Extraversion; O = Openness to Experience.

Agreeableness,  $\chi^2(1, N = 245) = 24.47, p < .0001$ ; Neuroticism,  $\chi^2(1, N = 245) = 25.90, p < .0001$ ; and Conscientiousness,  $\chi^2(1, N = 245) = 6.38, p = .011$ , scales. No differences were found in Openness to Experience,  $\chi^2(1, N = 245) = 0.12, p = .73$ , or Extroversion,  $\chi^2(1, N = 245) = 2.89, p = .09$ ,

scales. On the other hand, we compared the AEP scale reliabilities with those reported by Castro-Solano and Casullo (2001), and found AEP to score higher in four scales: Neuroticism,  $\chi^2(1, N = 245,337) = 32.52, p < .0001$ ; Extroversion,  $\chi^2(1, N = 245,337) = 13.71, p < .0001$ ; Agreeableness,  $\chi^2(1, N =$

TABLE 2.—Descriptive statistics for the Adjective Checklist for Personality Assessment (AEP) scales in the validation and replication samples.

AEP Scales	Number of Adjectives	Cronbach's Alpha		M		SD	
		Validation Sample	Replication Sample	Validation Sample	Replication Sample	Validation Sample	Replication Sample
Agreeableness	16	.84	.81	3.99	3.90	.52	.46
Neuroticism	18	.85	.84	2.94	2.92	.65	.60
Conscientiousness	13	.80	.77	3.70	3.67	.62	.58
Extraversion	10	.79	.83	3.73	3.66	.68	.71
Openness to Experience	10	.74	.77	3.05	3.33	.62	.67

TABLE 3.—Means and standard deviations in Adjective Checklist for Personality Assessment (AEP) factors by gender and age group.

AEP Scale	Age Group <sup>a</sup>	Gender	<i>M</i>	<i>SD</i>	<i>N</i>
Neuroticism	Young	Female	3.09	.64	110
		Male	2.81	.63	66
		Total	2.98	.65	176
	Adult	Female	3.06	.66	96
		Male	2.68	.56	82
		Total	2.89	.65	178
	Total	Female	3.07	.65	206
		Male	2.74	.60	148
		Total	2.93	.64	354
Agreeableness	Young	Female	3.96	.52	110
		Male	3.93	.44	66
		Total	3.95	.49	176
	Adult	Female	4.07	.51	96
		Male	3.98	.59	82
		Total	4.03	.55	178
	Total	Female	4.01	.52	206
		Male	3.96	.53	148
		Total	3.99	.53	354
Conscientiousness	Young	Female	3.49	.59	110
		Male	3.50	.62	66
		Total	3.49	.60	176
	Adult	Female	3.90	.52	96
		Male	3.93	.64	82
		Total	3.91	.58	178
	Total	Female	3.68	.59	206
		Male	3.74	.66	148
		Total	3.70	.62	354
Extraversion	Young	Female	3.74	.74	110
		Male	3.67	.71	66
		Total	3.71	.73	176
	Adult	Female	3.70	.60	96
		Male	3.80	.68	82
		Total	3.75	.64	178
	Total	Female	3.73	.68	206
		Male	3.74	.69	148
		Total	3.73	.68	354
Openness to Experience	Young	Female	3.12	.62	110
		Male	3.20	.58	66
		Total	3.15	.61	176
	Adult	Female	2.92	.59	96
		Male	2.99	.64	82
		Total	2.96	.62	178
	Total	Female	3.03	.62	206
		Male	3.09	.62	148
		Total	3.05	.62	354

Note. Multivariate analysis of variance (MANOVA) effect: Gender,  $F(5, 346) = 5.99, p < .01$ ; age group,  $F(5, 346) = 9.82, p < .01$ .  
<sup>a</sup>Young people were younger than 30 years old.

245,337) = 29.79,  $p < .0001$ ; and Conscientiousness,  $\chi^2(1, N = 245,337) = 3.99, p < .05$ .

Finally, a BFI EFA yielded five factors based on the Scree test and parallel analysis (37% of explained variance). The five factors broadly fit the B5M (see Table 5), although two problems need to be noted: Six items loaded on factors other than those theoretically driven, and two items did not load on any of the factors.

*Face Validity*

Two independent judges classified the 67 adjectives from the final version of the instrument into each of the five factors. The judges, who were not aware of our own categorization of the adjectives, were instructed to classify each adjective in

only one factor. The mean of correct classification percentages from the two judges was 88.8% (Judge 1, 91%, and Judge 2, 86.6%), meaning that there was a concordance between the judges' opinions and the belonging of each adjective to a factor. Interjudge agreement was high, with a kappa coefficient of .80 ( $p < .001$ ).

*Factor Analysis of the AEP in a Replication Sample*

In the replication sample, the EFA revealed a five-factor solution according to the parallel analysis (37% explained variance). The first factor is made up of adjectives in the Neuroticism factor (explained variance = 11.3%); the second factor groups adjectives in the Extraversion factor (explained variance = 8.2%); the third, Agreeableness (explained variance = 7.8%); the fourth, Conscientiousness (explained variance = 5.8%); and the fifth, Openness (explained variance = 4.4%). Only two adjectives present with loadings below .30 (*vulnerable* and *sincero*), although loading in their primary factors (see Table 1). In the replication sample, only 3 of the 67 adjectives loaded in factors other than the ones in the validation sample. Selfish and arrogant loaded in Neuroticism instead of Agreeableness, and control loaded in Agreeableness as opposed to Conscientiousness.

DISCUSSION

Instruments evaluating the FFM have been validated across cultures in a variety of formats. Nevertheless, these developments have been scarce in Argentina and other Latin American countries. In this article we presented an adjective checklist to assess the FFM for the Argentine population. Overall, this first study provides preliminary evidence of reliability and validity of the AEP in our milieu. In both samples analyzed, the factor analysis revealed a five-factor solution consistent with the FFM (Costa & McCrae, 1999; Digman, 1990; John & Srivastava, 1999; McCrae & Costa, 1990; McCrae et al., 2000; McCrae & John, 1992; Widiger, 2005). This finding concurs with previous studies reporting an invariant factorial structure across different cultures and languages (Caprara, Barbaranelli, Bermudez, Maslach, & Ruch, 2000; Schmitt et al., 2007). The following adjective by scale distribution (67 adjectives in five scales) was found: 16 adjectives for Agreeableness, 18 for Neuroticism, 13 for Conscientiousness, 10 for Extroversion, and 10 for Openness. Regarding the reliability of the AEP, the five scales present satisfactory values of internal consistency, ranging between .74 and .85. Furthermore, item analysis reveals good discrimination indexes (corrected item-total correlation). Percentages on the degree of agreement between judges' classification of adjectives into scales and our categorization revealed good face validity. An interesting finding worth noting is that the selected adjectives allowed us to cover almost all of the facets of each factor, with the exceptions being assertiveness from the Extroversion factor, and aesthetics and feeling from the Openness to Experience factor. From the beginning of our search it became apparent that it was more challenging to find adjectives for the Openness factor than for other factors. Nevertheless, we believe that in general terms the results are satisfactory, as 27 of 30 facets are covered.

Gender differences were found on Neuroticism, in both the AEP and the BFI. As expected, and in accordance with the

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TABLE 4.—Convergent correlations between Adjective Checklist for Personality Assessment (AEP) and the Big Five Inventory (BFI).

	AEP-A	AEP-N	AEP-C	AEP-E	AEP-O	BFI-A	BFI-N	BFI-C	BFI-E	BFI-O
AEP-A	.84									
AEP-N	-.18**	.85								
AEP-C	.31**	-.23**	.80							
AEP-E	.29**	-.15**	.08	.79						
AEP-O	.10*	.02	-.17**	.28**	.74					
BFI-A	<b>.60**</b>	-.31**	.24**	.20**	-.01	.72				
BFI-N	-.18**	<b>.76**</b>	-.12	-.17**	-.15*	-.32**	.78			
BFI-C	.26**	-.24**	<b>.78**</b>	.05	-.13*	.25**	-.12	.75		
BFI-E	.16*	-.13*	.07	<b>.70**</b>	.33**	.14*	-.11	.13*	.75	
BFI-O	.26**	-.21**	.09	.21**	<b>.60**</b>	.28**	-.25**	.10	.25**	.75

Note. Reliability values are shown diagonally. Convergent correlations are noted in bold. A = Agreeableness; N = Neuroticism; C = Conscientiousness; E = Extraversion; O = Openness to Experience.

\* $p < .05$ . \*\* $p < .001$ .

literature, women presented with higher scores than men in this domain (Benet-Martinez & John, 1998; Costa et al., 2001; De Miguel-Negredo, 2005; Manga et al., 2004; Schmitt et al., 2008). We did not find gender differences in other factors as previous reported in the literature (Schmitt et al., 2008). Nevertheless, this finding is not surprising, as gender differences reported in the literature tend to be quite small and these vary from culture to culture (Costa et al., 2001). In this regard we believe that the most important finding is the differences obtained on Neuroticism, as this is the factor where gender differences are most consistent and pronounced across cultures (Schmitt et al., 2008).

With regard to age differences, findings are quite consistent with previous literature (De Miguel-Negredo, 2005; McCrae et al., 2000; Roberts et al., 2006). With the AEP we found decrements in Neuroticism and Openness to Experience as well as increments in Agreeableness and Conscientiousness. The most elevated differences were found in Openness to Experience and Conscientiousness, when considering both Pearson correlations as well as age group comparisons. In the BFI only an increase in Agreeableness and Conscientiousness was observed. None of these two instruments detected a decrease in Extraversion, as suggested by the literature (McCrae et al., 2000). We could then conclude that, as compared with the BFI, results on the AEP are more consistent with previous research findings.

Moreover, the results of this study provide support for the convergent and discriminant validity of the AEP. All AEP scales were positively and significantly correlated with the BFI domains. Convergent validity coefficients range from .60 (for Agreeableness) to .78 (for Conscientiousness). Discriminant validity coefficients were low and appreciably smaller than the convergent validity coefficients. Besides, the correlations' patterns between traits are similar across both measures. We are aware that the BFI has several problems, as mentioned previously. However, we believe that for the most part it continues to measure the same construct as the AEP, which is the reason we selected it as our validation measure. Furthermore, we consider the BFI as a viable Big Five measure, although based on the results here presented we understand the AEP as presenting a superior alternative.

It should be noted that the AEP demonstrated better scale characteristics than the BFI in two regards. First, AEP scale reliabilities are significantly higher than those of the BFI for three scales: Agreeableness, Neuroticism, and Conscientious-

ness. Also, when comparing AEP to BFI reliabilities as reported in Castro-Solano and Casullo (2001), better values are obtained for all AEP scales, with the exception of Openness to Experience. Of course, the increase in reliability we observe is partly due to AEP having more indicators than the BFI. What it is more important, though, is that this increase in length is reflected in a significant increase in the instrument's reliability, as is the case with the AEP. Second, the factor structure of the AEP in the validation and replication samples resulted in a better fit to the B5M as compared to BFI's factor structure. BFI factor analysis results computed for this study produced similar problems to that observed by Castro-Solano and Casullo (2001). Several items had significant loadings on factors other than those theorized. For instance, as in the aforementioned study, negative items in Agreeableness showed high loadings on the Neuroticism factor.

These results suggest that the AEP could have better validity for our sociocultural context. In addition to its use in Argentina, we consider it potentially applicable to countries in the region sharing linguistic and cultural similarities, such as Uruguay and neighboring countries such as Paraguay and Chile. The instrument could also serve as a foundation for the development of adjective-based instruments in other countries of the region. To that end, we believe that the AEP could prove to be less vulnerable to translation variations across Spanish-speaking cultures.

More research is needed to systematically assess its incremental validity over other instruments. The results presented here indicate that the AEP is an adequate measure to assess personality based on the B5M. Moreover, as a valid, reliable, and inexpensive tool, this instrument contributes significantly to the personality research in our geographical region. However, this study has some limitations. First, it needs to be replicated with other samples from the general population and in different contexts to determine the extent of its applicability to other population groups. Second, studies are needed to evaluate the influence of sociocultural factors (particularly of the socio-educational level) in the semantic comprehension of the adjectives. Third, the measure's performance with other age groups, like adolescents or older adults, should be determined. Finally, the AEP is a self-report measure and as such could be sensitive to a number of response biases. A detrimental consequence related to this is the difficulty to determine if between-group differences (e.g., gender, age, etc.) represent genuine differences or are the result of response biases. The measurement model's equivalency throughout different populations and its robustness against

TABLE 5.—Rotated factor-loading matrix for the Big Five Inventory (BFI) data.

BFI Items (Item Identification and Short Level)	O	N	A	C	E
25.O—Is inventive	<b>.81</b>	-.06	-.03	.06	.20
15.O—Is ingenious, a deep thinker	<b>.71</b>	-.00	.03	.14	.04
20.O—Has an active imagination	<b>.69</b>	-.13	.05	.020	.22
05.O—Is original, comes up with new ideas	<b>.67</b>	-.06	-.07	.055	.13
40.O—Likes to reflect, play with ideas	<b>.53</b>	-.12	.20	.09	.04
30.O—Values artistic, aesthetic experiences	<b>.45</b>	-.05	.18	.03	-.13
41.O—Has few artistic interests	<b>-.44</b>	.12	-.16	.08	.08
44.O—Is sophisticated in art, music, or literature	<b>.41</b>	-.09	.03	-.09	-.05
39.N—Gets nervous easily	.01	<b>.67</b>	-.01	-.03	-.03
14.N—Can be tense	-.09	<b>.66</b>	-.09	.12	-.05
29.N—Can be moody	.02	<b>.61</b>	.08	-.13	-.03
09.N—Is relaxed, handles stress well	.15	<b>-.54</b>	-.01	.04	-.01
24.N—Is emotionally stable, not easily upset	.23	<b>-.49</b>	.04	.11	-.10
04.N—Is depressed, blue	-.20	<b>.48</b>	-.04	-.02	-.22
34.N—Remains calm in tense situations	<b>.30</b>	<b>-.45</b>	.11	.15	-.06
19.N—Worries a lot	.17	<b>.43</b>	.38	.29	-.04
12.A—Starts quarrels with other <sup>a</sup>	-.01	<b>.48</b>	-.17	-.12	.11
02.A—Tends to find fault with others <sup>a</sup>	-.01	<b>.42</b>	-.11	-.12	-.04
27.A—Can be cold and aloof <sup>a</sup>	.01	<b>.37</b>	-.17	-.10	-.26
37.A—Is sometimes rude to others <sup>a</sup>	-.01	<b>.36</b>	-.34	-.15	.03
17.A—Has a forgiving nature	.23	-.25	<b>.41</b>	-.07	.13
32.A—Is considerate and kind to almost everyone	.15	-.21	<b>.71</b>	.08	.10
42.A—Likes to cooperate with others	.01	.02	<b>.69</b>	.02	.13
07.A—Is helpful and unselfish with others	.23	-.06	<b>.59</b>	.08	.06
13.C—Is a reliable worker <sup>a</sup>	.02	.02	<b>.42</b>	.36	.04
22.A—Is generally trusting	.16	-.21	<b>.31</b>	-.04	.16
28.C—Perseveres until the task is finished	.12	.07	.17	<b>.62</b>	-.01
23.C—Tends to be lazy	-.06	.07	.101	<b>-.61</b>	-.22
03.C—Does a thorough job	-.07	-.02	.38	<b>.56</b>	-.03
18.C—Tends to be disorganized	.07	.15	.01	<b>-.49</b>	.09
08.C—Can be somewhat careless	.10	.10	.10	<b>-.41</b>	.00
38.C—Makes plans and follows through with them	.20	-.05	.19	<b>.52</b>	.01
43.C—Is easily distracted	-.07	.17	-.02	<b>-.49</b>	-.07
33.C—Does things efficiently	.17	-.06	.30	<b>.34</b>	.03
21.E—Tends to be quiet	.04	-.06	.01	.05	<b>-.75</b>
01.E—Is talkative	.03	.20	.24	-.00	<b>.61</b>
31.E—Is sometimes shy, inhibited	-.04	.17	.04	-.08	<b>-.54</b>
36.E—Is outgoing, sociable	.06	-.03	.29	-.02	<b>.53</b>
11.E—Is full of energy	.30	-.20	.16	.21	<b>.45</b>
16.E—Generates a lot of enthusiasm	<b>.41</b>	-.18	.19	.14	<b>.43</b>
06.E—Is reserved	-.01	-.08	.26	.16	<b>-.42</b>
26.E—Has an assertive personality	.18	-.07	.13	.11	<b>.35</b>
10.O—Is curious about many different things	.27	.09	.11	.01	.11
35.O—Prefers work that is routine	-.16	.19	.02	.17	-.04

Note. O = Openness to Experience; N = Neuroticism; A = Agreeableness; C = Conscientiousness; E = Extraversion.

<sup>a</sup>Items loading on factors other than those theoretically driven.

potential response biases are two issues that require further study. Despite these limitations, we believe results are promising and that the AEP provides a good alternative for the evaluation of the FFM in our milieu. We hope this study encourages further research on this topic in our country as well as in neighboring countries.

ACKNOWLEDGMENT

This work was funded by the Fundación de la Atlántida Argentina (Universidad Atlántida Argentina).

REFERENCES

Allik, J., & McCrae, R. (2004). Toward a geography of personality traits: Patterns of profiles across 36 cultures. *Journal of Cross-Cultural Psychology, 35*, 13–28.

Ashton, M. C., & Lee, K. (2005). The lexical approach to the study of personality structure: Toward the identification of cross-culturally replicable dimensions of personality variation. *Journal of Personality Disorder, 19*, 303–308.

Benet-Martinez, V., & John, O. (1998). Los cinco grandes across cultures and ethnic groups: Multitrait multimethod analyses of the Big Five in Spanish and English. *Journal of Personality and Social Psychology, 75*, 729–750.

Brislin, R. (1985). The wording and translation of research instruments. In W. Lonner & J. Berry (Eds.), *Field methods in cross-cultural research* (pp. 137–164). Beverly Hills, CA: Sage.

Caprara, G. V., Barbaranelli, C., Bermudez, J., Maslach, C., & Ruch, W. (2000). Multivariate methods for the comparison of factor structures in cross-cultural research: An illustration with the Big Five Questionnaire. *Journal of Cross-Cultural Psychology, 31*, 437–464.

Castro-Solano, A. (2002). *Técnicas de evaluación psicológica en los ámbitos militares* [Psychological evaluation techniques in the military]. Buenos Aires, Argentina: Paidós.

Castro-Solano, A., & Casullo, M. M. (2001). Rasgos de personalidad, bienestar psicológico y rendimiento académico en adolescentes argentinos [Personality traits, psychological well-being and academic achievement in Argentine adolescents]. *Interdisciplinaria, 18*(1), 65–85.

Church, A. T. (2001). Personality measurement in cross-cultural perspective. *Journal of Personality, 69*, 979–1006.

Church, A. T., & Lonner, W. J. (1998). The cross-cultural perspective in the study of personality: Rational and current research. *Journal of Cross-Cultural Psychology, 29*, 32–62.

Costa, P. T., & McCrae, R. R. (1985). *The NEO Personality Inventory manual*. Odessa, FL: PAR.

Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.

Costa, P. T., & McCrae, R. R. (1999). *NEO-PI-R: Inventario de la personalidad NEO revisado (NEO-PI-R) e Inventario NEO Reducido de Cinco Factores (NEO-FFI) manual profesional* [Revised NEO Personality Inventory (NEO-PI-R) and Short-Five-Factor Inventory (NEO-FFI) professional manual]. Madrid, Spain: TEA Ediciones.

Costa, P. T., Jr., Terracciano, A., & McCrae, R. R. (2001). Gender differences in personality traits across cultures: Robust and surprising findings. *Journal of Personality and Social Psychology, 81*, 322–331.

De Miguel-Negredo, A. (2005). Diferencias de edad y género en el NEO-PI-R en dos muestras con distinto nivel académico [Age and gender differences on the NEO-PI-R in two samples with different academic levels]. *International Journal of Psychology and Psychological Therapy, 5*(1), 13–31.

Digman, J. M. (1990). Personality structure: Emergence of the Five-factor model. *Annual Review of Psychology, 41*, 417–440.

Funder, D. (2001). Personality. *Annual Review of Psychology, 52*, 197–221.

García, O., Aluja, A., & García, L. (2004). Psychometric properties of Goldberg's 50 personality markers for the Big Five model. *European Journal of Psychological Assessment, 20*, 310–319.

Goldberg, L. R. (1990). An alternative “description of personality”: The Big-Five factor structure. *Journal of Personality and Social Psychology, 59*, 1216–1229.

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment, 4*, 26–42.

Gosling, S., Rentfrow, P., & Swann, W. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*, 504–528.

- Hofstede, G., & McCrae, R. (2004). Personality and culture revisited: Linking traits and dimensions of culture. *Cross-Cultural Research*, 38(1), 52–88.
- John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The Big Five Inventory—Versions 4a and 54*. Berkeley: University of California, Berkeley, Institute of Personality and Social Research.
- John, O., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 102–138). New York, NY: Guilford.
- Lautenschlager, G. J., & Meade, A. W. (2008). AlphaTest: A Windows program for tests of hypotheses about coefficient alpha. *Applied Psychological Measurement*, 32, 502.
- Manga, D., Ramos, F., & Morán, C. (2004). The Spanish norms of the NEO Five-Factor Inventory: New data and analyses for its improvement. *International Journal of Psychology and Psychological Therapy*, 4, 639–648.
- McCrae, R. R. (2000). Trait psychology and the revival of personality and culture studies. *American Behavioral Scientist*, 44(1), 10–31.
- McCrae, R. R., & Costa, P. T. (1990). *Personality in adulthood: A five-factor theory perspective*. New York, NY: Guilford.
- McCrae, R. R., Costa, P. T., Ostendorf, F., Angleitner, A., Harcaron, M., Avia, M., . . . Smith, P. (2000). Nature over nurture: Temperament, personality, and life span development. *Journal of Personality and Social Psychology*, 78, 173–186.
- McCrae, R. R., & John, O. (1992). An introduction to the Five-factor model and its applications. *Journal of Personality*, 60, 174–214.
- Paunonen, S. V., Jackson, D. N., Trzebinski, J., & Forsterling, F. (1992). Personality structure across cultures: A multimethod evaluation. *Journal of Personality and Social Psychology*, 62, 447–456.
- Roberts, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: A meta-analysis of longitudinal studies. *Psychological Bulletin*, 132, 3–27.
- Saucier, G. (1994). Mini-markers: A brief version of Goldberg's unipolar Big-Five markers. *Journal of Personality Assessment*, 63, 506–516.
- Saucier, G., & Goldberg, L. R. (1996). Evidence for the Big Five in analyses of familiar English personality adjectives. *European Journal of Personality*, 10(1), 61–77.
- Saucier, G., & Goldberg, L. R. (2002). Assessing the Big Five: Applications of 10 psychometric criteria to the development of marker scales. In B. de Raad & M. Perugini (Eds.), *Big Five assessment* (pp. 30–54). Ashland, OH: Hogrefe & Huber.
- Schmitt, D., Allik, J., McCrae, R., & Benet-Martínez, V. (2007). The geographic distribution of Big Five personality traits: Patterns and profiles of human self-description across 56 nations. *Journal of Cross-Cultural Psychology*, 38, 173–212.
- Schmitt, D. P., Realo, A., Voracek, M., & Allik, J. (2008). Why can't a man be more like a woman? Sex differences in Big Five personality traits across 55 cultures. *Journal of Personality and Social Psychology*, 94, 168–182.
- Widiger, T. A. (2005). Five factor model of personality disorder: Integrating science and practice. *Journal of Research in Personality*, 39, 67–83.
- Widiger, T., & Trull, T. J. (1997). Assessment of the Five-Factor model of personality. *Journal of Personality Assessment*, 68, 228–250.
- Young, F. W. (1996). *ViSta: The Visual Statistics System* (Research Memo. No. 94-1). L. L. Thurstone Psychometric Laboratory, University of North Carolina, Chapel Hill.

## APPENDIX

## PARALLEL ANALYSIS OF THE AEP AND BFI DATA

## APPENDIX 1.—Parallel Analysis of the AEP data (validation sample)

Model: (Principal Component of correlation matrix)

Method: (Normal Data Simulation)

Number of simulated samples: 300

	Observed	Mean	Perc99
Eigenvalue1	8.02	1.95	2.08
Eigenvalue2	5.49	1.87	1.96
Eigenvalue3	4.82	1.81	1.90
Eigenvalue4	3.25	1.76	1.84
Eigenvalue5	2.42	1.72	1.79
Eigenvalue6	1.72	1.68	1.74
Eigenvalue7	1.66	1.65	1.69

## APPENDIX 2.—Parallel Analysis of the AEP data (replication sample)

Model: (Principal Component of correlation matrix)

Method: (Normal Data Simulation)

Number of simulated samples: 300

	Observed	Mean	Perc99
Eigenvalue1	7.58	2.07	2.23
Eigenvalue2	5.50	1.98	2.08
Eigenvalue3	5.20	1.91	1.99
Eigenvalue4	3.90	1.85	1.93
Eigenvalue5	2.93	1.81	1.88
Eigenvalue6	1.80	1.77	1.84
Eigenvalue7	1.76	1.75	1.78

## APPENDIX 3.—Parallel Analysis of the BFI data

Model: (Principal Component of correlation matrix)

Method: (Normal Data Simulation)

Number of simulated samples: 300

	Observed	Mean	Perc99
Eigenvalue1	7.02	1.92	2.06
Eigenvalue2	3.50	1.81	1.93
Eigenvalue3	3.33	1.74	1.82
Eigenvalue4	2.78	1.67	1.75
Eigenvalue5	2.31	1.61	1.68
Eigenvalue6	1.29	1.56	1.63
Eigenvalue7	1.20	1.50	1.56