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STRUCTURE AND MEASUREMENT OF MEXICAN PERSONALITY:

INDIGENOUS AND CROSS-CULTURAL PERSPECTIVES

By

FERNANDO ORTIZ

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the requirements for the degree of

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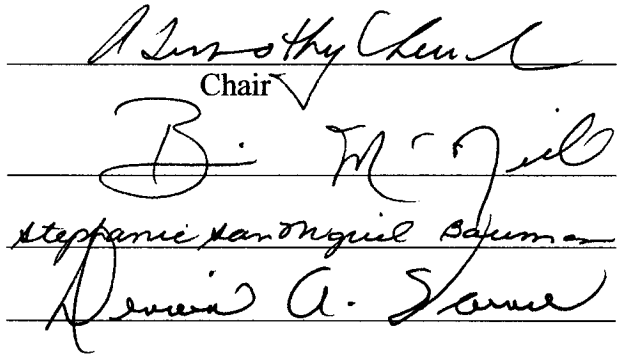

Chair

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STRUCTURE AND MEASUREMENT OF MEXICAN PERSONALITY:

INDIGENOUS AND CROSS-CULTURAL PERSPECTIVES

Abstract

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Cross-cultural psychologists study personality dimensions and their measurement across cultures using *etic* (universal, imported), *emic* (indigenous, culture specific), or a combined *etic-emic* approach. The *etic* approach seeks to identify and assess universal dimensions that generalize well across all cultures. The *emic* approach attempts to identify and measure indigenous personality dimensions that are particular relevant or specific to a given culture. Several researchers have used a combined *etic-emic* approach, in which indigenous and hypothesized universal dimensions are related to determine the extent to which the indigenous dimensions are actually culture-specific.

This dissertation was comprised of two studies. In the first study, I critically examined imported (*imposed-etic*) research on personality structure and measurement, and reviewed indigenous or *emic* theoretical perspectives, research methods, and measures in Mexico. The second study was an empirical follow-up to the critical review in the first study. I addressed three research questions: (a) Does the Five-Factor Model, a hypothesized universal or *etic* model of personality, generalize well to the Mexican setting?; (b) Do the personality dimensions identified in indigenous or *emic* Mexican

measures replicate well across samples?; and (c) Are replicable indigenous dimensions of Mexican personality well-encompassed by the hypothesized universal dimensions of the Five-Factor Model or relatively culture-specific?

794 Mexican college students completed nine indigenous measures of personality and the Revised NEO Personality Inventory, a measure of the Five-Factor Model. I found that the Five-Factor Model replicated well across the total sample (n = 794) and two subsamples used for cross-validation (n = 400; n = 394). Reliability indexes were comparable to those reported for the American normative sample. I used the congruence of factor structures across the Mexican subsamples to determine the number of replicable factors. Although internal consistency reliability estimates were acceptable for most instruments as scored by the test authors, our replication criterion suggested alternative structures of fewer, but more replicable dimensions, for most instruments. I used multiple regression analyses and joint factor analyses to relate the replicable indigenous dimensions to the FFM and found that most of the Mexican indigenous dimensions were well encompassed by the FFM and thus not very culture specific.

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GENERAL INTRODUCTION

This dissertation comprises two parts: (a) a literature review of personality structure in Mexico titled "Personality Structure and Measurement in Mexico: A Review of Imported and Indigenous Perspectives," and (b) an empirical study titled "Indigenous Mexican Dimensions and the Five-Factor Model of Personality."

Literature Review

Several universities and researchers in Mexico have active research programs investigating Mexican personality from an indigenous perspective. The most prominent are the Social Psychology Graduate Program and the Psychosocial Research Unit at the National Autonomous University of Mexico where the Journals *Revista de Psicologia Social y Personalidad* and *Psicologia Social* are published. Mexican psychologists at these two centers have developed multiple instruments to measure personality related constructs. However, most of their findings on Mexican personality are published primarily in Spanish for Latin American conferences. Also, their findings are generally reported in Spanish at national and international audiences. Thus, research findings are not typically indexed in widely known databases such as PsycINFO or PsycLIT. Their contributions to indigenous psychology may not be readily accessible to scholars in other countries, especially indigenous and cross-cultural psychologists. Moreover, this literature has not been critically evaluated.

Thus, this paper had two objectives: (a) a theoretical, conceptual, and methodological review of this Mexican literature, and (b) a synthesis of the findings from both published and unpublished sources. Our goal was an exhaustive coverage of relevant works in the area of Mexican personality structure and measurement and to base

conclusions on this comprehensive information base. To our knowledge, there have been no previous attempts to critically evaluate the existing Mexican literature on personality in the form of a published literature review, meta-analysis, or comprehensive synthesis of findings. We found that some lines of personality research are extensive, as evidenced by the multitude of studies in particular areas (e.g., MMPI studies) and the development of multiple instruments to measure personality relevant constructs (e.g., self-concept).

The review revealed that Mexican indigenous psychologists have used several methodologies to study Mexican personality constructs. They have used an *etic* approach, importing and adapting instruments developed from other countries to study Mexican personality. In some cases, the importation of *etic*-derived concepts has resulted in the development of culturally relevant items (*emic* operationalization of *etic* constructs). Methodologically, most of the etic studies lack a rigorous examination of cross-cultural biases and substantive discussions of psychometric validity and reliability.

Mexican psychologists have used a variety of methodologies to derive indigenous concepts and measures. A review of validation studies raised questions about the lack of replicability of findings. In addition, For example, no study has empirically related the indigenous concepts or measures to an *etic* personality instrument. Other methodological patterns noted in our review include the over-reliance on exploratory factor analysis and the over-factoring in the development of instruments, and the rare use of confirmatory factor analysis to empirically study the structure of personality measures.

Empirical Study

The empirical study addressed some of the methodological and measurement limitations identified in the literature review of Mexican indigenous personality

psychology. We specifically formulated four research questions surrounding the issues of replicability of both *etic* and *emic* measures and how these two personality measurement approaches relate to each other in the Mexican context. We purposefully selected large representative samples of college students from two separate geographic areas (total N = 794). We were comprehensive in the use of indigenously derived instruments and obtained the collaboration of Mexican psychologists (cultural informants), who participated in the examination of instruments prior to administration, collection of data, and interpretation of the results. The study focused on the replicability in Mexico of the Five-Factor Model of personality, as measured by the NEO-PI-R, a widely known instrument that assesses five hypothesized universal personality dimensions: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness (i.e., the "Big Five"). It also examined the replicability of dimensions in nine indigenous measures across two sub-samples.

Consistent with previous studies on the cross-cultural-generalizability of the Five-Factor Model (FFM) in other cultures, and with the limited number of FFM studies in Mexico, our study replicated the structure of the NEO-PI-R in the total Mexican sample and in the two subsamples. Culturally-salient aspects of the Big Five in Mexico were identified and discussed. As expected, some of the factor structures of the Mexican indigenous instruments did not replicate well and our analyses suggested the retention of fewer replicable dimensions. We discussed internal consistency reliability findings in the Mexican context for the imported and indigenous instruments and made recommendations regarding the use and function of the items in these Mexican samples.

Mexican researchers have often adopted unconventional labels for their indigenous factors making it difficult to judge their similiarity to universal constructs such as the Big Five. In the present study, we closely examined the replicability of Mexican indigenous dimensions and assigned labels that are more consistent with conventional personality terminology.

Finally, we used bivariate correlations, multiple regressions, and joint factor analyses to examine the relationships between the imported and indigenous dimensions. On the basis of these analyses, we concluded that most of the Mexican indigenous dimensions overlap conceptually with, and are encompassed well, by the Big Five dimensions. That is, Mexican personality dimensions are not highly culture-specific.

STUDY 1

Personality Structure and Measurement in Mexico: A Review of Imported and Indigenous Perspectives

Abstract

Imported and indigenous perspectives on personality structure and measurement in Mexican psychology are reviewed. Regarding imported perspectives, I address (a) the extent to which imported dimensions and behavioral exemplars of personality traits replicate in Mexican samples, (b) evidence of criterion validity, and (c) the extent to which cross-cultural comparisons of trait means are informative regarding Mexican personality. Regarding indigenous perspectives, I review (a) indigenous theoretical perspectives on the relation between culture and personality, (b) indigenous research methods, and (c) indigenous personality concepts and their measurement. Finally, I address the extent of indigenization of Mexican personality psychology and consider its contributions from an international perspective.

Psychologists are increasingly aware of the significant role of culture in human behavior. In the present article, I review research on personality structure and measurement in Mexico. There are several reasons to review personality findings in diverse cultures (Church, 1987), aside from their intrinsic interest. First, such reviews remind the reader that personality theories, constructs, and measures reflect the cultural context from which they have emerged. It is important that psychology, as the study of all human behavior, take into account the variety of human personality in diverse cultures. Second, reports of personality findings from diverse cultures address the universality versus uniqueness of personality dimensions and their behavioral exemplars. Third, it is informative that significant "indigenization" efforts have taken place in some countries and that European and American psychology, although still dominant around the world, do not provide the only perspective. Even for psychologists who are inclined to remain informed about developments in other countries, it can be difficult to do so because of language and access barriers. Finally, although the focus of the present article is on research in Mexico, some of the findings may also have implications for understanding Mexican Americans, the fastest growing ethnic minority group in the United States (Marotta & Garcia, 2003).

Mexican culture differs from mainstream American culture in many ways. For example, Hofstede (1980, 2001) ranked 53 cultures along four value-based dimensions. On the Individualism dimension, Mexico ranked 32nd and the United States ranked 1st. As noted by others (e.g., Díaz-Loving & Draguns, 1999), Mexican culture is relatively collectivistic, with a strong emphasis on tightly knit family and social relations. On the Power Distance dimension, Mexico ranked much higher (tied for 5th) than the United

States (38th), suggesting a greater acceptance of unequal power and status in Mexican culture. Mexico also ranked higher (6th) than the United States (15th) on the Masculinity dimension, perhaps reflecting the greater differentiation of gender roles in Mexican society. On the Uncertainty Avoidance dimension, Mexico ranked 18th and the United States 43rd, suggesting that there is greater discomfort with uncertainty and ambiguity in Mexican culture than in American culture. In a comparison of behavioral indicators of pace of life in 31 countries, Levine and Norenzayan (1999) ranked Mexico as slowest in pace of life, whereas the United States ranked 16th. Given cultural differences such as these, and assuming that culture impacts personality (Triandis & Suh, 2002), we would expect to find some differences in the salience of various personality constructs in Mexican versus American psychology. Indeed, some of the personality-relevant constructs emphasized by Mexican psychologists (e.g., affiliative obedience, respect, abnegation, non-assertiveness, machismo) seem to reflect salient Mexican values or cultural themes.

The concept and study of personality are not new in Mexico. For example, although Aztec philosophers did not use the term "personality," the indigenous language of the Aztecs, Nahuatl, contains the concept of *ixtli-in yollotl* (literally, of face-heart), which is similar to the Western concept of personality (Padilla & Salgado de Snyder, 1988). The term refers to the unique facial features (*in ixtli)* and psychological experiences (believed to be located in the heart or *yollotl)* that define the individuality of each person (León-Portilla, 1963; Valderrama-Iturbe, 1985). In modern times, Ezequiel A. Chavez (1901), who noted the importance of culture in understanding human behavior, is generally credited with being the first to study the psychology or national

character of the Mexican (Díaz-Loving & Draguns, 1999). The first Mexican social scientist to use quantitative methods to study Mexican character was José Gómez-Robleda (1962), who investigated psycho-cultural factors (e.g., economy, illness, employment) that contribute to the psychosocial ailments of middle-class Mexicans. However, it was Rogelio Díaz-Guerrero (1984c, 1990c) who conducted the first systematic studies of Mexican indigenous psychology, and articulated systematic postulates and hypotheses for the scientific study of the Mexican from an indigenous perspective.

I organize my review around two general approaches to the study of personality structure and measurement across cultures. These approaches are associated with the etic (universal) and emic (indigenous, culture-specific) distinction in cross-cultural psychology (Berry, 1969). In the imposed-etic or imported approach, measures of personality constructs in a source culture (usually Western) are transported to new cultural contexts to see how well they generalize across cultures. In the emic approach, researchers identify and measure personality dimensions that are indigenous to particular cultures. Both approaches can address the cross-cultural universality of personality structure, although the imposed-etic approach may be biased towards conclusions of universality and could miss salient culture-specific dimensions (Church, 2001).

I begin by addressing imposed-etic research on personality structure and measurement in Mexico. I then review the efforts of Mexican ethnopsychologists to develop indigenous or emic theoretical perspectives, personality constructs, research methods, and measures. Finally, I conclude by considering the contributions of indigenous Mexican psychology from an international perspective.

Imported or Imposed-Etic Perspectives

Cross-cultural researchers who administer imported inventories in new cultural contexts generally aim to (a) assess the cross-cultural replicability or universality of the dimensions assessed by such inventories, (b) examine the nomological networks (e.g., behavioral correlates) of personality constructs across cultures, or (c) investigate cultural differences in trait levels. I focus on objective or structured measures of personality in my review. Although projective measures have also been used in research on Mexican personality (e.g, Holtzman, Díaz-Guerrero, & Swartz, 1975; Suarez-Orozco & Suarez-Orozco, 1995), these studies typically do not address the dimensional structure of normal range personality. Research on imported inventories can be organized around several questions, which I use here to address the functioning of imported inventories in Mexican samples.

Structural Replication

How well do the dimensions assessed by imported inventories replicate in Mexican samples? The Big Five or five-factor model, comprised of Extraversion, Agreeableness, Conscientiousness, Emotional Stability versus Neuroticism, and Intellect or Openesss to Experience, has replicated successfully in many cultures (McCrae & Allik, 2002). However, when Rodríguez de Díaz and Díaz-Guerrero (1997) factor analyzed bipolar adjective markers of the Big Five in a large sample of Mexican students, the five-factor solution differed from Goldberg's (1992) results in a United States sample. Extraversion, Emotional Stability, and Conscientiousness factors were identified, but were defined by additional marker scales. Intellect markers tended to split off to load on other factors, and Agreeableness markers failed to cohere on a single dimension.

Rodríguez and Church (2003) factor analyzed the Spanish version of the Big Five Inventory (Benet & Waller, 1995) in a Mexican sample. In a principal components analysis, Extraversion, Neuroticism, and Openness to Experience dimensions were fairly well replicated, but the Agreeableness and Conscientiousness terms divided among the remaining two factors. In a Procrustes solution, all five dimensions were replicated, but replication was weakest for the Agreeableness factor, for which only five of nine items had high factor loadings. McCrae and Terraciano (2005) replicated the Big Five dimensions in a sample of undergraduate Mexican students. Students identified an adult or college-aged man or woman whom they knew well and rated their personality traits using the third person version of the Revised NEO Personality Inventory. Factor analyses in the Mexican culture showed that the normative American self-report structure was clearly replicated. Coefficients of congruence between the two factor solutions, after Procrustes rotations were .96 for Neuroticism, .95 for Extraversion, .89 for Openness to Experience, .95 for Agreeableness, and .95 for Conscientiousness.

Eysenck and Lara (1989) and Barrett, Petrides, Eysenck, and Eysenck (1998) reported good replication in Mexico of the Neuroticism, Extraversion, Psychoticism, and Lie dimensions of the Eysenck Personality Questionnaires (EPQ; Eysenck & Eysenck, 1975). In contrast, Mercado, Fernandéz, and Contreras (1991) concluded that the scales of the Jackson Personality Inventory (JPI; Jackson, 1967), a measure of Murray's (1962) needs, have insufficient factorial validity and item homogeneity in Mexico. Factor analyses were conducted at the item level within each scale, rather than in the item pool as a whole.

Díaz-Loving , Díaz-Guerrero, Helmreich, and Spence (1981) replicated the four dimensions—positive and negative masculinity and femininity—of Spence and Helmreich's (1978) Personal Attributes Scale, but the loadings of some items (e.g., dominant, dictatorial, servile) suggested the presence of culture-specific meanings. Díaz-Loving, Andrade-Palos, and La Rosa (1989) found that the three-dimensional structure of Spence and Helmreich's (1978) Work and Family Orientation Inventory did not replicate well in a Mexican sample, leading them to develop an emic operationalization of these constructs (see also Díaz-Loving, 1998). Flores-Galaz (1989) found three factors, not the original four, when applying the Rathus (1973) Assertiveness Scale in Mexico, and she labeled the factors quite differently.

La Rosa and Díaz-Loving (1991) identified five dimensions in a factor analysis of Rotter's (1966) locus of control scale, thus failing to support Rotter's conception of locus of control as a unidimensional, generalised expectancy of internal versus external control. The multidimensionality of the Rotter measure is not unique to the Mexican context, however. Smith, Dugan, and Trompenaars (1997) conducted a pancultural (i.e., combined sample) factor analysis of locus of control items across 14 countries, including Mexico, and identified four dimensions, Socio-political Control, Effort, Luck, and Active Friendship. The researchers did not attempt to replicate these factors separately within each culture, however.

Nadelsticher-Mitrani, Díaz-Loving, and Nina (1983) adapted an emotional empathy measure developed by Mehrabian and Epstein (1972). A number of items performed poorly in Mexico, and item-level factor analyses produced a scale structure that differed from the original test. Similarly, Díaz-Loving, Andrade-Palos, and

Nadelsticher-Mitrani (1986) adapted Davis' (1983) Interpersonal Reactivity Scale to develop the Multidimensional Scale of Empathy. In a factor analysis, they partially replicated three of the original dimensions (i.e., empathic concern, perspective taking, and personal distress). However, based on the item loading patterns, they relabeled these dimensions to better reflect unique aspects of empathy in Mexican culture (i.e., empathic compassion, cognitive empathy, and self-disturbance). The authors also wrote items for two new dimensions, indifference towards others and emotional contagion, which they thought would be relevant to empathy in Mexico.

A factor analysis of the Piers-Harris Children's Self-Concept Scale by Servin-Terrazas (1994) produced six subscales, as in the original test, but the many differences in item loadings led the author to relabel most of the dimensions. Moscoso (2000) developed the Multicultural Latin-American Anger Expression Inventory by adapting Spielberger's (1988) State-Trait Anger Expression Inventory. In a pancultural factor analysis, conducted across seven Latin American countries including Mexico, Moscoso replicated quite well the seven dimensions in the original instrument. Similarly, replication of the dimensions of the Center for Epidemiological Studies Depression (CES-D) scale (Mariño, Medina-Mora, Chapparro, & Gonzales-Fortera, 1993) and the Beck Anxiety Inventory (Robles, Varela, Jurado, & Paez, 2001) in Mexican samples has been fairly good.

In summary, these studies show that Mexican psychologists have frequently adapted imported measures of personality and have been quite willing to incorporate new items and derive new scale structures, as necessary. Imported personality dimensions sometimes retain their structure in Mexican samples, but often do not. In some cases, this

may reflect limitations of the adapted measures, or the inclusion of new, culture-specific items. However, it also suggests that the domains defined by various personality constructs may differ somewhat in Mexico, as compared to the United States.

Comparability of Behavioral Examplars

How well do the behavioral exemplars of traits generalize to the Mexican context? Relevant evidence would include the following: (a) researcher reports of the need to adapt or exclude items that lack cultural relevance, (b) significant decreases in scale reliability or item factor loadings, and (c) statistical evidence of differential item functioning (DIF).

It has been common practice in Mexico to adapt items to make them more culturally meaningful. Unfortunately, researchers have generally provided illustrations of item modifications, but not reported the proportion of items needing adaptation. In adapting the MMPI, Lucio, Reyes-Lagunes, and Scott (1994) did note that only 3% of the items had to be rewritten to make them more functionally equivalent in Mexico. Such items were identified by a panel of 15 Mexican MMPI experts. Researchers have tried to avoid American idiomatic expressions in MMPI items. For example, Nuñez (1981) changed the expression "on top of the world" to the Mexican saying "como si viviera en las nubes" [as if I was living in the clouds] and the expression "I feel blue" to the non-idiomatic expression "me siento triste" [I feel sad]. Similarly, because the word for "excitement" in Spanish has sexual connotations, Núñez (1987) and Reyes-Lagunes (1996) modified a MMPI item containing this term to obtain better linguistic equivalence.

Internal consistency reliability data also address whether behavioral exemplars of personality constructs cohere as well in different cultures. Mexican researchers

commonly report the reliabilities of imported or adapted scales in Mexican samples, in evaluating the psychometric properties of the adapted versions. However, they have generally not discussed how these reliabilities compare to those obtained in the culture of origin of the test. Nonetheless, the alpha reliabilities reported in Mexico for adaptations of such instruments as the Eysenck Personality Questionnaire (Lara-Cantú, Cortés, & Verduzco, 1992), Millon Index of Personality Styles (Aparicio-García & Sánchez-López, 1998), and Big Five Inventory (Rodriquez & Church, 2003) have generally been about .10 lower than in normative or comparison samples in the cultures of test origin (e.g., Benet-Martinez & John, 1998; Eysenck & Eysenck, 1975; Millon, Weiss, Millon, & Davis, 1994; see also Nadelsticher-Mitrani et al.,1983). In contrast, in a Mexican standardization of the Temperament and Character Inventory (Cloninger, Przybeck, Syrakic, & Wetzel, 1994), Sanchez de Carmona, Paez, Lopez, and Nicolini (1996) reported that the internal consistency reliabilities were comparable to those in the U.S. normative sample, except for one scale measuring Helpfulness ($\alpha = .39$). Nonetheless, given that items fairly frequently fail to load on intended factors, as noted in the above section on structural replication, I expect that internal consistency reliabilities will frequently be lower in Mexican samples than in the cultures of test origin.

Analyses of differential item functioning (DIF) also address the cross-cultural equivalence of behavioral exemplars of traits. In a comparison of Anglo-Americans, English-speaking Hispanics in the United States, and Mexican college students, Ellis and Mead (2000) found differential item and test functioning in each of the 17 scales of The Sixteen Personality Factors Questionnaire (16PF) (Cattell, 1949), although the number of items per scale exhibiting DIF was typically small. Items that exhibit DIF are not

necessarily irrelevant indicators of a personality construct in Mexico. However, such items can reflect cultural differences in how well the behaviors referred to in the items differentiate individuals on the relevant traits. More DIF studies would be useful. Currently, I can only conclude that researchers commonly report that some items are less relevant for their Mexican samples, but I cannot confidently quantify the extent to which behavioral exemplars of traits fail to generalize to the Mexican setting.

Cultural Mean Differences

When Mexican samples are compared with American samples or norms, mean differences are frequently found. Do these differences conform to expectations or tell us something about Mexican personality?

A classic study. In a longitudinal comparison of children from Mexico City and Texas, Holtzman, Díaz-Guerrero, and Swartz (1975) administered several imported personality measures (e.g., Holtzman Inkblot Technique, Human Figure Drawing, Jackson Personality Inventory). Several of the results led the authors to conclude that American children displayed an active style of coping that involved attempts to change the environment, whereas Mexican children displayed a more passive and obedient coping style, involving self-modifying behavior when confronted with stressors (e.g., see Holtzman, 1979). For example, American children dealt with all aspects of the projective inkblot testing in a more active fashion. They were faster than the Mexican children in reaction time, used more definite form in their responses, and exhibited greater integration of parts of the inkblot stimuli in their responses. Comparisons with the Jackson Personality Inventory indicated that Mexican children had greater needs for order and autonomy, whereas the American children had greater needs for play, social

recognition, affiliation, and impulsiveness. Holtzman et al. (1975, p. 319) opined that the greater need for autonomy in Mexican children reflected their increasing awareness that they are highly dependent upon others within the extended family and affiliative network. Some of these personality themes reappear in more recent research of indigenous Mexican psychologists, as noted later in this article.

Recent comparisons. Lara-Cantú et al. (1992) found that Mexican adults averaged higher than British norms on the EPQ Extraversion scale, and commented that this finding is consistent with the social and hospitable nature of Mexicans. Mexican scores on the Neuroticism and Lie scales were close to the British norms, while scores on the Psychoticism scale were difficult to interpret because many items had poor item loadings and discimination. Sánchez de Carmona et al. (1996) did not find significant mean profile differences between Mexican and American standardization samples for the Temperament and Character Inventory (Cloninger et al., 1994).

The largest number of cultural mean comparisons have involved the MMPI-2 (Butcher & Pancheri, 1995). With large sample sizes, these studies typically report a number of significant differences between Mexican and American *T*-scores on the basic validity and clinical scales. However, relatively few scales have shown differences that are practically or clinically significant (i.e., differences exceeding one-half standard deviation, or 5 or more *T*-score points). Lucio-G.M., Reyes-Lagunes, and Scott (1994) noted elevations of this size relative to American norms on scales L (Lie) and 2 (Depression) in both Mexican male and female college students. In addition, they found an even higher elevation ($T > 60$) on scale 5 (Masculinity-Femininity) for Mexican women only. With the Mexican version of the MMPI-A, Lucio-G. M., Ampudia-Rueda,

Dúran-Patiño, Gallegos-Mejía, and León-Guzmán (1999) replicated, with adolescents, the Mexican elevations on scale L, for both men and women, and scale 5 for women. They also found a difference exceeding ½ standard deviation on scale 4 (Pyschopathic Deviate) for women. The authors interpreted the scale 4 elevation in women as suggesting adolescent issues with hostility and rebelliousness. Lucio-G.M., Reyes-Lagunes, and Scott (1994) and Lucio-G.M., Ampudia, Durán, León and Butcher (2001) also reported differences relative to American norms on scale 5 for both Mexican college men and women, with men scoring slightly lower ($T = 47$) and women substantially higher ($T = 64$) than the American norms. Scott, Butcher, Young, and Gomez (2002) also found this elevation on scale 5 in a Mexican sample, relative to Colombian, Peruvian, Spanish, and U.S. Hispanics.

In summary, the most consistent MMPI differences involve elevations on scale L in both Mexican men and women and elevations on scale 5 for women relative to the U.S. norms. Mexican psychologists have interpreted the elevations on L as suggesting that Mexicans answer the inventory in a somewhat defensive manner and seek to present a favorable impression. Moral conservatism or religiosity can also increase L scores, so this is another possible interpretation to consider. Regarding the scale 5 differences, authors have concluded that Mexican women, or at least the more educated women that are typically included in such university studies, tend to conform less to traditional roles of femininity than do women in the United States. Lucio-G. M et al. (1994) opined that Mexican college women need to be more assertive than American college women to counter traditional Mexican sex-type attitudes and to develop nontraditional interests and careers.

These studies suggest that imported inventories may, at least in some cases, provide meaningful scores for cross-cultural comparisons, and that Mexican profiles on measures of psychopathology such as the MMPI may not differ much from U.S. norms. Van de Vijver and Leung (1997), however, have noted that construct, method, and item bias can reduce the direct or full score comparability of inventory scores. The structural replication results reviewed earlier suggest that construct bias is sometimes present. One form of method bias, response styles, has also been investigated. Clarke (2000) found that Mexican students, on average, exhibited higher levels of extreme response style (i.e., used the endpoints of rating scales more) than African-American, French, and Australian students. Finally, Ellis and Mead's (2000) study of differential item and test functioning indicates that item bias can also reduce the direct comparability of scores. In summary, apparent cross-cultural similarities and differences need to be interpreted cautiously because of uncertainties about the cross-cultural measurement equivalence of test scores and the appropriateness of foreign norms.

Criterion Validity

Do imported personality measures predict relevant criteria in Mexican society? Researchers have provided evidence that they can. Many of these studies have involved measures of psychopathology such as the MMPI-2. For example, Lucio-G.M., Palacios, Durán, and Butcher (1999) found significant differences between students and male psychiatric patients on all MMPI-2 basic validity and clinical scales except scale 3 (Hysteria) and scale 5. Boscan et al. (2002) showed that the MMPI-2 can differentiate between male university students and incarcerated criminal offenders in Mexico. For example, inmates averaged 5-14 T-score points higher on scale 4, scale 7 (Psychastenia),

and scale 8 (Schizophrenia), as well as other supplemental and validity scales (e.g., Bizarre Mentation, Cynicism). Students averaged higher than inmates on the Ego Strength and Social Responsibility scales, among others. Lucio, Durán, Graham, and Ben-Porath (2002) found that the MMPI-2 F, F1, and F2 validity scales and the F-K index discriminated adequately between nonclinical adolescents instructed to fake bad and both clinical and nonclinical adolescents who received standard instructions. Lara-Cantu, Verduzco, Acevedo, and Cortes (1993) found that self-esteem was predicted in the manner expected by the EPQ dimensions of Extraversion (r = .42), Neuroticism (r = -.71), Psychoticism (r = -.39), and Social Desirability (r = .19). Patricia-Chavez, Allende, and Tinoco (1989) showed that most scales of the Personality Inventory for Children, a measure of attentional, conduct, personal, and social problems, predicted school achievement levels in relatively normal children and adolescents. Ornelas-Bolado and Whitaker (1990), Almanza-Muñoz, Páez-Agraz, Hernández-Daza, Barajas-Arechiga, and Nicolini-Sánchez (1996), Robles et al. (2001), and Nicolini et al. (1996) have provided evidence of criterion validity for other measures of psychopathology.

Fewer researchers have examined the criterion validity of imported measures of normal range personality. O'Connell, Dovenspike, Norris-Watts, and Hattrup (2001) found that an imported conscientiousness scale predicted organizational citizenship behaviors such as altruism and conscientiousness, whereas a measure of negative affectivity correlated negatively with these behaviors. Rodriguez and Church (2003) found that dimensions of the Spanish Big Five Inventory predicted indigenous Mexican mood dimensions. Kirkcaldy, Furnham, and Levine (2001), in a culture-level analysis of 31 countries including Mexico, found that Spence and Helmreich's (1983) measures of

work ethic, mastery, and competitiveness, and other imported measures of achievement, predicted pace of life indices (walking speed, postal service speed, and public clock accuracy).

Some cultural psychologists have suggested that personality traits may be less predictive of behavior in collectivistic cultures, where the impact of contextual factors may be greater (Church, 2000; Triandis, 1995). From this perspective, a five-culture study by Schimmack, Radhakrishnan, Oishi, Dzokoto, and Ahadi (2000) is noteworthy. Although the influence of Big Five Extraversion and Neuroticism on life satisfaction ratings was largely mediated by hedonic balance (the difference between positive and negative affect) in all five cultures, the two personality traits were stronger predictors of life satisfaction in the individualistic cultures (United States and Germany) than in the collectivistic cultures (Mexico, Ghana, and Japan). From a cultural psychology perspective, we would also expect interrater agreement in trait ratings to be lower in collectivistic cultures, because the behaviors observed by raters in different contexts would be more variable. However, contrary to this prediction, Malloy, Albright, Díaz-Loving, Dong, and Ting-Lee (2004) found that self-other agreement in Big Five trait judgments was as high in Mexico and China as in previous American studies (Malloy, Albright, Kenny, Agatstein, & Winquist, 1997).

In summary, there is good evidence that imported inventories can predict relevant criteria in the Mexican context, but the evidence available for normal range personality measures is limited. In addition, researchers have just begun to test cultural psychology hypotheses regarding the lower predictive validity and interrater agreement of trait measures in collectivistic cultures such as Mexico.

Summary

F. M. Cheung and S. F. Cheung (2003) discussed several issues that need to be addressed when importing instruments into new cultures, including the adequacy and equivalence of the translated and adapted instruments; reliability and validity; standardization and the use of original versus local norms; interpretation of cross-cultural differences in test scores, and possible omission of culture-specific dimensions. As indicated in the above review, efforts have been made to ensure translation adequacy and equivalence (e.g., using backtranslation), but bilingual test-retest studies, in which the scores of bilinguals on both language versions are compared, are scarce. Reliability has typically been examined, but criterion validity has been demonstrated less frequently, particularly for normal range inventories. Some cultural mean differences seem consistent with expectations, but foreign norms may not always be appropriate as a basis for comparison. Cross-cultural measurement equivalence has rarely been studied using methods other than exploratory factor analysis. For example, confirmatory factor analyses and analyses of differential item functioning (DIF) have been rare. Whether imported instruments have significant gaps or miss salient indigenous constructs is addressed by researchers who adopt more indigenous or emic approaches, which I turn to next.

Indigenous or Emic Perspectives

In the 1950s, Mexican psychologists began to question the appropriateness of imported dimensions and tests for the Mexican context (Díaz-Guerrero, 1952, 1983). They began to develop an indigenous theoretical framework for understanding the relationship between culture and Mexican personality (Díaz-Guerrero, 1977, 1992). Efforts to elaborate indigenous constructs and methods, and to construct indigenous measures, followed. Díaz-Loving (2004) points out that, to a certain extent, this indigenous effort in Mexico reflects a "collectivist orientation" in themes and research methods rather than an individualistic emphasis on topics like achievement orientation, equity, attitudes and cognitive dissonance. Mexican psychologists have focused on topics like culture, family, affect, self-concept, masculinity-femininity, personality traits, locus of control, coping styles, and norms. These are usually studied using holistic methodologies that take into account the context of these phenomena. Groups are the basic social units of this research.

A Systemic and Emic View of Culture

Díaz-Guerrero (1984, 2001a,b) developed an indigenous paradigm for studying Mexican personality—the Culture-Counterculture Dialectic, or Theory of the Human Ecosystem. In this perspective, the individual personality is viewed as developing in the midst of a perennial clash between cultural and countercultural forces. Cultural forces can be operationalized as a system of traditional premises endorsed by individuals and institutions that regulate social roles, relationships, attitudes, values, belief systems, and the entire cultural make-up of a society. Countercultural forces, both intraindividual and external, attempt to undermine the traditional cultural systems. These forces stem from

the individual's bio-psychological structure (e.g., the need for individuation) and are strengthened through ecosystemic reinforcement contingencies. There is a mutual interdependence or dialectic between the bio-psychological makeup of the individual and the shared historical and cultural meanings of the society (Díaz-Guerrero, 1986).

Historic-Socio-Cultural Premises

According to Díaz-Guerrero (1967), every culture develops a system of interrelated historic-socio-cultural premises (HSCPs), which give shape to most psychological processes of the individual. An HSCP is an affirmation underlying the specific logic of the group (Díaz-Guerrero, 2001b). These premises are typically endorsed by the majority of the culture's members, because they embody the culture's values, norms, beliefs, traditions, and prescriptions for behavior (Díaz-Guerrero, 1992). Díaz-Guerrero (1993a) categorized the HSCPs as prescriptive or as related to coping style. Nine HSCPs were derived in a factor analysis of 123 belief and value statements: machismo (male supremacy over women), affiliative obedience (obedience toward parents and figures of authority), value of virginity, abnegation (sacrifice of personal needs for the sake of others), fear of authority (fear of authority figures), family status quo (women's faithfulness to husbands and children's emulation of parental traits), respect over love (attitudes towards parents based on respectful obedience), family honor, and cultural rigidity (parental strictness and restrictions on women's work and courting) (Díaz-Guerrero, 1982).

In addition, Díaz-Guerrero (1967, 1973, 1979) distinguished an active self-assertive coping style, characterized by attempts to change the physical and social

environment, especially when facing problems, versus a passive, or self-modifying, coping style, characterized by attempts to adjust oneself to environmental stimuli.

Mexican researchers have long speculated about the personality traits that predispose Mexicans to exhibit affiliative obedience, a key HSCP (Díaz-Guerrero, 2001b). Avendaño-Sandoval and Díaz-Guerrero (1990, 1992) hypothesized that for affiliative obedience to be so prevalent, Mexicans would have to develop the trait of abnegation, a disposition to self-sacrifice in the service of others. Díaz-Guerrero (1993b) maintained that abnegation is a cultural trait that originated as a social requirement in pre-Hispanic societies, but was also a central religious tenet brought to Mexico with Spanish Catholicism. Avendaño-Sandoval and Díaz-Guerrero (1992) demonstrated the prevalence of abnegation behavior experimentally by showing that research participants who received an attractive gift after participation often gave away the reward to a fellow confederate in the study.

Another HSCP that has been singled out for investigation is respect. For example, Peck and Díaz-Guerrero (1967) compared the meaning of respect (*respeto*) in Mexican and American students using a scale with 20 possible meanings that respondents could endorse. For American students, respect suggested a relationship among equals ("To be willing to treat someone else on an equal footing") and a sense of admiration ("To feel admiration for somebody"). The Americans also exhibited relatively detached feelings in relation to respect. In contrast, Mexicans endorsed meanings that suggested a pattern of emotional and involving relationships, obedience, and protection (e.g., "To anticipate a certain degree of protection from the respected person"). The typical targets of respect also varied across the two cultures.

Historic-Socio-Cultural Premises Revisited

The original studies of HSCPs were conducted over 40 years ago, so it is noteworthy that changes over time have been investigated. Researchers administered a questionnaire containing the 123 HSCPs in 1959, 1970 and 1994 to ninth grade students in Mexico City (Díaz-Guerrero, 2003; Lara-Tapia & Gómez-Alegría, 1991). The endorsement percentages for some HSCPs evolved during this period. For example, moderate to large declines were observed in endorsement of HSCPs referring to machismo, affiliative obedience, fear of authority, virginity, and cultural rigidity. Overall, the findings suggested that Mexican students have become less traditional over time. Díaz-Guerrero (1991) attributed this to democratic changes, pluralism, human rights, women's rights, ecological consciousness, habitat changes, and the recent pervasiveness of American culture in Mexico.

An Indigenous Typology

Díaz-Guerrero (2001b) presented a typology of Mexican personality with types based, in part, on acceptance or rejection of traditional HSCPs. The most common type is the *passive-obedient and affiliative type*, described as affectionate, dependent, obedient, pleasing, and self-controlled, and as adhering to traditional HSCPs. In contrast, the *active self-affirming type* is autonomous, independent, impulsive, dominant, intelligent, and rebellious. The *active internal control type* is described by Díaz-Guerrero (2001b) as the ideal type. This type is obedient, affectionate, compliant, courteous, orderly, disciplined, methodical, reflexive, non-aggressive, and non-impulsive. The *passive external control type* represents the antithesis of the active internal self-control type, and is passive, pessimistic, fatalistic, authoritarian, uncontrolled, aggressive, and impulsive. In the view

of Díaz-Loving (1999b, p. 379), this type embodies "the negative and socially undesirable characteristics of collective cultures, many times related to 'machismo.'" Less common types include the *passive cautious type*, *active audacious type*, *autonomous active type*, and *passive interdependent type*.

This conceptual typology has not yet been related to external criteria nor used to classify research participants. The types are descriptive and based on a review of Mexican personality literature, theoretical speculation, and clinical observation. In contrast, recent typological efforts in other cultures have been derived using empirical methods such as cluster analyses of personality scores (e.g., Asendorf, 2002).

Indigenous Research Methods

The development of indigenous methods and measures is a central goal of indigenization efforts in psychology (Church & Katigbak, 2002; Sinha, 1997). Mexican ethnopsychologists have made considerable progress in this area. They have also adapted methods developed outside Mexico to identify and elaborate indigenous personality concepts. Frequently used methods include the semantic differential, free associations, focus groups, and the natural semantic network technique. Díaz-Loving (2004) indicated that symbolic interactionism, which is concerned with how social reality is constructed and it requires the active insertion of the researcher in the world of the people it studies, has led to the development of several of these methodologies and identification of indigenous constructs in Mexico.

Semantic Differential

The semantic differential can be used to measure the affective meaning of concepts. Respondents rate selected concepts (e.g., "self", "love") along various bipolar

adjective scales (e.g., good-bad, strong-weak). Osgood, Suci, and Tannenbaum (1957) showed that concepts can be differentiated along three major dimensions—evaluation, potency, and activity—defined by these bipolar scales. The method is well suited for exploring cross-cultural differences in concept meanings (e.g., Osgood, May, & Miron, 1975).

For example, Holtzman et al. (1975) used the semantic differential to compare the subjective meaning of various emotions for Mexican and American children. Based on the children's ratings of various emotions, Holtzman et al. (1975) concluded that American children perceive aggressive, competitive emotions (e.g., courage, determination) as more active, whereas Mexican children view internalized emotions requiring self-modification (e.g., devotion, sympathy) as more active. American children also rated the concept "I myself" much higher on the activity dimension than did the Mexican children, consistent with other findings regarding active versus passive coping styles in the two cultures.

More recently, Ellis, Kimmel, Díaz-Guerrero, Cañas, and Bajo (1994) used the semantic differential technique to examine the subjective meaning of the concepts of "love" and"power" in Mexico, Spain, and with Anglo- and Hispanic-Americans. One interesting finding was that the concept of "love" was rated lower on the evaluation and potency dimensions by Mexicans than by the other three cultural groups. These results were inconsistent with previous suggestions that Mexicans value love (e.g., affiliation, fraternity) over power (e.g., independence, competitiveness, success) (Díaz-Guerrero, 1977; Díaz-Guerrero & Díaz-Loving, 1988). Anglo and Hispanic Americans did rate the concept of "power" as more potent than Mexicans did, however. In further examples,

Mexican researchers have applied the semantic differential to investigate the subjective meaning of clinical concepts such as suicide, crime, divorce, insanity, and aggression (Díaz-Guerrero, 1984); to develop an indigenous instrument for suicide assessment (Pinto-Loria, Serrano-Pereira, & Flores-Galaz, 1998); and to measure attitudes towards salient concepts such as death, AIDS, and condom use (Díaz-Loving & Rivera-Aragon, 1999; Flores-Galaz, & Díaz-Loving , 1999)

There are potential limitations to the semantic differential method. These include (a) its susceptibility to response styles; (b) the difficulty of making comparisons along dimensions other than evaluation, potency, and activity; (c) the need to tailor bipolar response scales to particular concept domains; and (d) the failure to achieve true bipolarity in the adjectives that anchor opposite poles of the scales (e.g., Cogliser & Schriesheim, 1994; Heise, 1969). Some efforts have been made to address these limitations in Mexican studies. For example, La Rosa and Díaz-Loving (1991) ensured the bipolarity of the adjective pairs in their Multidimensional Scale of Self-Concept by pairing adjectives that had been listed as good antonymns by students and that had high negative correlations in self-rating data. Also, to reduce the impact of response biases, the authors randomly reversed the position of the positive and negative adjectives throughout the instrument.

Free Associations

Free associations have also been used to derive indigenous conceptions. Typically, respondents are presented with stimulus words and asked to write as many free associations to the words as possible. The responses are then categorized and the distribution of various categories of response are analyzed and compared (Szalay,

Windle, & Lysne, 1970). Szalay and Deese (1978) devised a technique called Associative Group Analysis for assessing respondents' subjective images from the distributions of their free associations. One result is a "semantograph," which is a graphical representation showing the differential salience of the main perceptual and evaluative components of the cultural groups' subjective images of the concepts (Szalay & Brent, 1967; Szalay & Maday, 1983).

As an example, Díaz-Guerrero and Szalay (1991), in a cross-cultural study in Mexico, Colombia, and the United States, obtained free associations to concepts such as "family" and "self." The resulting Associative Group Analysis and semantographs suggested that Americans think of "family" predominantly in terms of key roles such as mother, father, brothers, and other relatives. In contrast, in the Mexican view of family, vertical ties such as parent-child relationships were dominant. In addition, whereas Americans viewed the "self" largely as distinct from others, Mexicans viewed the "self" as more related to others, and as including affective references to love and relationships with friends.

Focus Group Interviews

Focus group interviews can be used to identify indigenous constructs, generate conceptual frameworks, and develop adequate wording and response categories for questionnaire items (Hughes & DuMont, 1993). For example, La Rosa and Díaz-Loving (1991) used the method in the construction of the indigenous Multidimensional Self-Concept Scale. They asked participants to brainstorm aspects of self-concept, which were written on the board and screened using criteria of redundancy and item discrimination.

Unique aspects of self-concept were incorporated in the researchers' self-concept measure.

Mexican researchers who have used focus groups have not explicitly addressed their potential limitations. For example, Valdez-Medina (2000) critiqued the use of focus groups by La Rosa and Díaz-Loving (1991) because the leaders who facilitated the brainstorming sessions may have unintentionally biased the results. Participant responses may also be influenced by pressures to conform to the group or to present oneself in a socially desirable manner. Finally, focus group samples are typically small and non-representative, although they can be planned to sample the diversity in a population. Despite these limitations, focus groups may continue to be useful in elaborating indigenous concepts and in developing indigenous measures.

Natural Semantic Networks Technique

The most original methodological contribution of Mexican researchers may be the elaboration of the Natural Semantic Networks Technique (Valdez-Medina & Reyes-Lagunes, 1993; Valdez-Medina, 1994). The technique is based on Quilliam's (1969) "spreading activation," or semantic network model of memory, in which the organization of human knowledge is represented as a network of interconnected nodes, or concepts, which are differentially activated during memory searches. The Mexican cognitive psychologists Figueroa, González, and Solís (1981) applied this semantic network model to study the psychological meaning of indigenous constructs. They labeled the technique "natural" because the networks were generated by humans and not by computer programs sometimes used by cognitive psychologists to generate artificial networks.

In this technique, respondents are asked to define a stimulus expression (i.e., a word, phrase, or question) with a minimum of five words. Respondents then rank order the words based on their level of importance to the stimulus expression. The rank ordering of concepts enables the researcher to derive the semantic distance among the various elements that make up the network. A number of quantitative indices are computed. Basically, the most central elements in defining the concept of interest are discerned by assigning higher weights to words that are ranked higher by each respondent, then accumulating the weighted scores for each word across all respondents. Valdez-Medina and Reyes-Lagunes (1993) and Valdez-Medina and Hernández (1986) added an additional component to the technique, which they named "semantic categories." Based on "relations of synonymity," the researcher clusters defining words based on how synonymous they are in denotative meaning, taking into account the culturally-ascribed meaning of the terms.

A large number of Mexican researchers have used the Natural Semantic Networks Technique to study indigenous meanings of concepts such as family (Andrade-Palos, 1994; Camacho & Andrade, 1992; Mora, González, Vaugier, & Jiménez, 1994), father or mother (Andrade-Palos, 1996), friend (González, Jiménez, Gómez, Berenzon, & Mora, 1994), hero (Meráz, Ramírez & Gori, 1992), citizen (Sanders & Ferreira, 1996), psychologist (García & Andrade-Palos, 1994), power (Rivera-Aragón, Díaz-Loving, Sánchez, & Avelarde-Barrón, 1993), life and death (Díaz & Reyes-Lagunes, 1992), subjective well-being (Anguas-Plata, 2001; Anguas-Plata & Reyes-Lagunes, 1998a), loneliness (Montero, 1993), self-concept (Valdez-Medina, González-Arratia, & Posadas, 1996; Valdez-Medina & Reyes-Lagunes, 1992; Vargas-Núñez, 2000), and such trait

concepts as assertiveness, abnegation, aggression, courtesy, and self-confidence (Flores-Galaz & Díaz-Loving, 1993; Flores-Galaz, Díaz-Loving, Guzmán, Bárcenas, & Godoy, 1992). Some researchers have used the technique to elaborate concepts as part of indigenous test construction projects.

Sarmiento-Silva, Bravo-Flores, Pelcastre-Villafuerte, and Aguilar-Villalobos (1992) noted differences between the free association and Natural Semantic Network Technique, including the rank ordering and subsequent analyses of the data in the latter method. Indeed, Figueroa, González, and Solís (1981) compared the words generated by the two methods, which were somewhat different, and concluded that they involve different cognitive processes. The Natural Semantic Network Technique also differs from the semantic differential method. Whereas the semantic differential method derives primarily connotative (i.e., affective) meanings of concepts using *a priori* adjectival scales, the Natural Semantic Networks Technique elicits the denotative meaning of concepts.

Some limitations of the method have been noted. One uncertainty is whether participants' responses to a stimulus word necessarily capture the most important or centrally associated concepts in semantic memory, or whether recency effects, familiarity, or previous knowledge may affect responses. For example, Castañeda-Figueiras and López-Olivas (1993) found that participants with previous knowledge on a topic exhibited a higher level of "spread" or dispersion of semantic concepts than participants without this knowledge. Another issue is the reliability of the procedure. For example, when Anguas-Plata and Reyes-Lagunes (1998b) applied the method to define the semantic network for the stimulus "work" in two separate groups, only 43% of the

terms generated by the first group and 23% of the terms generated by the second group were common to the two groups. The Pearson correlation computed between the weights assigned to the common terms was only .43. This moderate level of reliability may not be a significant problem in most of the studies conducted to date, because researchers have typically categorized most of the terms derived, rather than only the highly weighted ones.

Indigenous Measures

In reviewing indigenous measures, two questions are most relevant: (a) To what extent do these measures tap constructs or item content that is truly culture-specific, or particularly salient for Mexican personality; and (b) How good are the psychometric qualities of these instruments, including their structural replication, reliability, and validity. The overview of indigenous measures in this section is organized under the following constructs: (a) beliefs and values; (b) self-concept; (c) specific traits; and, (d) well-being and resilience.

Beliefs and Values

Views of Life Questionnaire (Or Questionnaire of Coping Styles). Developed by Peck and Díaz-Guerrero (1967; see Díaz-Guerrero, 1973, 1977), this instrument was used in some of the earliest indigenous studies in Mexican psychology. In a forced choice format, respondents select one item from each of 60 item pairs that best reflects their philosophy of life. Item pairs refer to such contrasts as the intrinsic versus extrinsic value of work, valuing task achievement versus interpersonal relations, competition versus cooperation, belief in earned versus bestowed status, confrontation versus avoidance of conflict, self versus other initiation of behavior, cautiousness versus audacity, and

emotional control versus lack of control, among others. Peck and Díaz-Guerrero (1967) conducted a factor analysis of the items and identified the following active versus passive dimensions of coping: (a) Active Self Assertion versus Affiliative Obedience (i.e., self-reliance versus following others' advice in decision-making); (b) Active Boldness versus Passive Cautiousness (i.e., audacity or courage versus discretion and carefulness in confronting problems); (c) Active Internal Control versus Passive External Control (i.e., changing the environment to fulfill personal needs versus resolving problems through cooperation); and (d) Autonomy versus Passive Interdependence (i.e., coping through independence and detachment versus coping through cooperation and family-centered connections).

Holtzman et al. (1975) provided some early concurrent validity evidence for these dimensions. For example, in their Mexican sample, higher scores on the Active Self-Assertion dimension were associated with better form responses on the Holtzman Inkblot test; less defensiveness on a measure of test anxiety; and, on the Jackson Personality Inventory (JPI), higher needs for autonomy and dominance, and lower needs for order, social recognition, and intellectual curiosity. The other VLQ dimensions also showed sensible correlates.

In a cross-cultural study of African-Americans, Mexican-Americans, and Anglo-Americans, Emmite and Díaz-Guerrero (1990) related these coping styles to grade-point-average. Correlations were generally small and statistically insignificant. However, in all three groups, the passive external coping style was inversely associated, to a modest extent, with grade point averages (GPA) and conduct averages (r's of -.10 to -.25), and positively associated with self-derogation and trait anxiety (r's of .13 to .20). Balcázar-

Nava, Mercado-Maya, and Moysen-Chimal (1994) found that higher GPAs were positively associated with the active self-assertion coping style, a finding that the authors viewed as consistent with the traits defining this style (i.e., independent, decisive, self-affirming). Consistent with the interpretation of the Active Self-Assertion and Active Internal Control coping styles, Díaz-Guerrero (2001b) found that both styles were associated with greater internal locus of control (Rotter, 1966), but inversely associated with field dependence (Embedded Figures Test).

Díaz-Guerrero (1990a) noted that the VLQ was designed for cross-cultural comparisons and recommended that it be further tested in such applications. This scale contains interesting and diverse belief content that may vary across cultures, but the uncertain and shifting factor structure of the instrument across samples is an important limitation (Hosch, Gibson, Lucker, Méndez, & Valdivia, 1990).

Questionnaire of the Mexican Family (or Questionnaire of the Historic-Socio-Cultural Premises; Díaz-Guerrero, 1982*)*. This questionnaire measures historic-socio-cultural premises (HSCPs) underlying Mexican culture, most of which involve traditional Mexican beliefs about the family. Díaz-Guerrero (1972, 1982) developed the items by culling common sayings, axioms, and morals in Mexican culture (e.g., "Life is to be enjoyed"; "The place of the woman is in the household."). The original instrument contained 123 items, but a revised 26-item version was derived based on factor analyses and by selecting items that have exhibited gender differences and longitudinal change. The instrument measures the nine HSCPs described earlier: Machismo; Affiliative Obedience; Value of Virginity; Abnegation; Fear of Authority; Family Status Quo; Respect over Love; Family Honor; and Cultural Rigidity. These nine dimensions have

been replicated across studies using the 123-item version (Avila-Méndez, 1986; Pérez-Lagunas, 1990). Flores-Galaz, Cortés-Ayala, Góngora-Coronado, and Reyes-Lagunes (2002) reported internal consistency reliabilities ranging from .57 to .82 for various scales.

Reyes-Lagunes de Carrillo (1982) and Díaz-Guerrero (1982) found that most or all of the HSCP dimensions are positively correlated with scores on the Embedded Figures Test. This suggests that greater endorsement of traditional HSCPs is associated with greater field dependence, which, in turn, has been linked to greater social conformity in the literature (Witkin, 1974). The most consistent gender difference has involved the Machismo dimension, with men averaging higher in endorsement than women (Balcázar-Nava, Mercado-Maya, & Moysen-Chimal, 1994; Flores-Galaz, Cortés-Ayala, Góngora-Coronado, & Reyes-Lagunes, 2002). Other gender differences have been less consistent across studies, perhaps due to sampling differences. Indeed, Ortega-Estrada (1996) found that nonworking women, who may be more traditional, averaged higher than working women on the Virginity, Abnegation, and Fear of Authority dimensions.

More data on the reliability and validity of this instrument are needed. In addition, a possible limitation of the instrument is that it seeks to measure HSCPs underlying Mexican culture, yet focuses almost exclusively on beliefs about the Mexican family. Presumably, there are basic premises in Mexican culture that address cultural phenomena other than family.

Locus of control scales. Mexican researchers have shown considerable interest in Rotter's (1966) locus of control construct, perhaps reflecting early theory and research suggesting that Mexicans, more than Americans, believe in external control of events

(Díaz-Guerrero , 1973). However, Mexican researchers have tried to assess a more emic conceptualization of the construct. For example, in a sample of Mexican children, Díaz-Loving and Andrade (1984) factor analyzed an adapted American measure (Nowicki & Strickland, 1973) and found a factor they considered particularly relevant to Mexican culture and consistent with the HSCP of Affiliative Obedience. They assigned the label Internal Affective Control to this new dimension, which refers to vicarious and affective manipulation of the environment through significant others (e.g., parents) (Díaz-Loving, 1998). Subsequently, using both Nowicki and Strickland items, plus some new items, Díaz-Loving and Andrade-Palos (1984) constructed a 30-item multidimensional locus of control scale for Mexican children that includes three subscales: (a) Fatalistic (comparable to external locus of control) (α =. 73), (b) Internal-Instrumental (comparable to internal locus of control) (α =. 66); and (c) Internal-Affective, which assesses their new factor (α =. 58).

Reyes-Lagunes (1999) also developed a Locus of Control scale that includes five factors or subscales: External (e.g., external control through God, luck, and destiny), α =. 94; Internal Achievement (e.g., internal control through one's own efforts, skills and intelligence), α =. 92; Social Affective (i.e., accomplishments obtained through nice and agreeable behavior), α =. 79; Affiliation with Internal Locus (e.g., maintenance of affiliative relations through personal effort), α =. 66; and Family Status Quo (i.e., the individual's ability to maintain the family united), α = .74. Garcia-Campos and Reyes-Lagunes (2000) replicated these factors in a geographically diverse sample that varied widely in age. Of special interest was the Social Affective factor, which was conceptually equivalent to the indigenous Internal Affective Control dimension identified by Díaz-

Loving and Andrade-Palos (1984). La Rosa (1986) developed yet another multidimensional locus of control measure, based on a content analysis of imported scales. Although these different measures appear to overlap to some extent, it would be useful to examine their convergence more systematically.

Gender differences have been one focus of research with Mexican locus of control scales. Although the results are not entirely consistent across studies, some findings suggest that Mexican women may be more internal and less fatalistic or external than Mexican men (Aguilar-Velasco & Andrade-Palos, 1994; Andrade-Palos & Reyes-Lagunes, 1996). For example, Flores-Galaz and Diaz-Loving (1994) found the Mexican women exhibited greater internal locus of control than Mexican men in their sexual behavior, particularly in adopting measures that prevent transmission of sexually transmitted diseases. Such findings, combined with findings that women average higher than men on a mastery orientation toward achievement (La Rosa, 1986), led Andrade-Palos and Reyes-Lagunes (1996) to conclude that there is a trend for Mexican women to develop more instrumental traits, perhaps related to their increasing involvement in educational, social, and political areas of Mexican society.

A contribution of Mexican psychologists in this area has been their focus on "secondary control" beliefs (i.e., adapting the self to the environment), in contrast to "primary control" beliefs (i.e., changing the environment to meet one's own needs) (cf. Weisz, Rothbaum, & Blackburn, 1984). In addition, they have introduced a new dimension that involves control via interpersonal relationships and affective strategies. These new foci or elements may not be unique to Mexico. For example, Richaud de

Minzi (1991) identified similar dimensions in developing an indigenous locus of control scale in Argentina. They may be particularly salient in Mexican personality, however.

Values Questionnaire. Valdez-Medina, González-Escobar, Oudhof van Barneveld, and González-Arratia (1998) used the Natural Semantic Network Techniques to develop a 30-item Values Questionnaire. Undergraduate students responded to two questions that asked about their most important values and beliefs and about things that provide them with a sense of meaning in life. Using the analytic methods associated with the Natural Semantic Network Technique, Valdez-Medina et al. (1998) elicited the most salient values. Subsequently, 100 college students rated the importance of these values for themselves. Factor analytic studies resulted in 7 factors: Independence (e.g., confidence, independence), α = .69; Ethical Moral (e.g., justice, respect), α = .69; Social Normative (e.g., sociability, peace), α = .69; Affiliative (e.g., friendship, love), α =. 65; Religious (god, religion), α =. 58; Altruism (e.g., solidarity, sincerity), α = .58; and Personal Development (success, work), α = .57.

Valdez-Medina, Sánchez-Valdorino, and Cambron-Chi (in press) compared the value structure of Mexican and French children using this questionnaire. In both cultures, factor analyses yielded five factors, but the factors in the Mexican sample (i.e., Success, Moral, Social Normative, Affective, Religious) only partially overlapped with the factors in the French sample (e.g., Affective, Religious, Social Normative, Internal Peace, and Altruism). In addition, not all of the seven dimensions originally identified by Valdez-Medina et al. (1998) were replicated in either culture. Because the success and morality factors were unique to the Mexican sample, the researchers concluded that Mexican children are more influenced by these values than are French children. In contrast, the

authors inferred that French children are more influenced by the values of internal peace and altruism. Such conclusions seem questionable based on differential factor structures alone. The authors did not examine cultural mean differences on these values. Further replication or revision of the dimensionality or this instrument would be helpful in clarifying Mexican value structure. These value dimensions could also be related to the hypothesized universal value structure investigated by Schwartz (1992).

Self-Concept

Identification and assessment of indigenous self-concept dimensions has been another significant focus in Mexican psychology. La Rosa and Díaz-Loving (1991) developed the Multidimensional Scale of Self-Concept, beginning with focus groups and a free association task to derive indigenous self-concept categories and relevant trait descriptors in each category. Exploratory and confirmatory factor analyses were conducted on students' ratings of themselves in terms of these traits. The result was the following dimensions: Affiliative Sociability (e.g., courteous, amiable), α = .85; Expressive Sociability (e.g., friendly, communicative), α = .85; Accessibility (e.g., accessible, agreeable), α = .65; Emotional States (e.g., happy, jovial), α = .85; Interindividual Feelings (e.g., tender, loving), α = .81; Emotional Health (e.g., calm, serene), α = .76; Occupational (e.g., reliable, studious, capable), α = .80; Ethical (e.g., loyal, honest, sincere), α = .77; and Initiative (e.g., dynamic, fast), α = .71. Varela et al. (1998) obtained a different structure for this instrument, comprised of four factors: Self-evaluation, α = .92; Sociability, α = .86, Extraversion-Introversion, α = .82, and Impulsivity, α = .66.

Researchers have used this scale with a variety of Mexican populations. For example, the instrument has been used to investigate regional differences in self-concept (e.g., Bonilla, Hernández, Andrade-Palos, & Cordoba, 1996), the relationship between self-concept and expressive and instrumental traits (Luit-Briceno, Osorio-Belmon, Alpuche-Hernández, & Flores-Galaz, 1996), the relationship between birth order and self-concept (Aguilar-Velasco & Andrade-Palos, 1994), self-concepts of incarcerated youth (Zara & Valdez-Medina, 1994), and gender differences in self-concept (Aguilar-Velasco & Andrade-Palos, 1994). For example, regarding gender differences, Aguilar-Velasco and Andrade-Palos (1994) found that high school women averaged higher than high school men on the affiliative sociability, affectivity, interindividual feelings, and ethical dimensions. These results were consistent with the conclusion of Díaz-Loving, Díaz-Guerrero, Helmreich, and Spence (1981) that Mexican women are more emotional, more understanding, and more aware of their own feelings than Mexican men.

Valdez-Medina (1994) developed a multidimensional self-concept scale using the Natural Semantic Networks Technique. He asked students at all levels of the school system to free associate to four stimulus questions (i.e., How am I as a person? How am I as a son? How am I as a friend? How am I as a student?). Students then ranked the words that they viewed as most important in addressing the stimulus question. The rank orders of elicited concepts were similar across all four educational levels. Based on these rankings, Valdez-Medina (1994) concluded that the Mexican self-concept is best defined by 17 semantic categories: responsible, friendly, sincere, sympathetic, good, intelligent, nice, affectionate, angry, understanding, respectful, studious, lazy, obedient, mischievous, generous, and serious. Subsequently, Valdez-Medina (1994) obtained self-ratings from

368 high school students on 70 defining words generated by the earlier students. A factor analysis identified six factors: Social Expressive (e.g., joker, mischievous, talker, friendly); Social Normative (e.g., orderly, responsible, helpful); Expressive Affective (e.g., sentimental, romantic, affectionate); Moral Ethical (e.g., honest, sincere, loyal); Intellectual (e.g., studious, intelligent, applied); and Rebelliousness (liar, faultfinding, stubborn, angry). Alpha reliabilities for scales measuring these factors ranged from .68 to .78.

Several of these dimensions, like those of Diaz-Loving et al. (1991), seem to capture aspects of Mexican personality considered salient by Mexican psychologists. For example, the Social Normative dimension portrays the perceived respectfulness, attentiveness, loyality, and generosity of Mexican personality, and is congruence with the description provided by Diaz-Guerrero (1982) of the affiliative obedience value or trait, which involves a preoccupation for getting along, observing norms of courtesy, and maintaining respectful and honest relationships. Similarly, the Expressive Affective dimension captures the affectivity of the Mexican, which has been described as manifest in romantic, sentimental, and affectionate tendencies (Diaz-Guerrero, 1984; La Rosa & Diaz-Loving, 1991).

This six-dimensional scale of Valdez-Medina (1994) has been used in several studies that examined intracultural variability in self-concept, and in comparisons of Mexicans with individuals in other Spanish-speaking countries (e.g., two-culture comparisons of Mexico vs. Spain, Mexico vs. Peru, etc.) (Balcázar-Nava, 1996; Gonzáles & Valdez-Medina, 1996; Maya, 1996; Valdes-Medina, González-Arratia, Jimenez, & Cañas, 1996; Valdez-Medina, González-Arratia, Arantes, & Santos, 1999; Valdez-

Medina, González-Arratia, & Ochoa, 1998; Valdez-Medina & Reyes-Lagunes, 1993; Valdez-Medina, Reyes-Lagunes & La Cruz, 1996; Valdez-Medina, Saiz, & González-Arratia, 2001). These researchers have generally interpreted their results in terms of the original six dimensions, but have noted differences in the order of emergence or size of factors and some shifting across studies in the nature and number of defining (i.e., high loading) terms. Indices of factor congruence have usually not been reported, although Valdez-Medina, Saiz, and González-Arratia (2001) reported, in a comparison of factors in Mexico and Chile, that salient variable similarity indices (Cattell, 1949) computed between matched factors were only significant for the Social Normative factor. Differences in the order of emergence or size of the self-concept factors have been interpreted as indicative of cultural differences in the salience or importance of the relevant dimensions in self description.

For example, Valdez-Medina, González-Arratia, and Reusche-Lari (2001) compared their Mexican and Peruvian results with previous comparisons of Mexicans with Brazilians and Spanish. Because the Rebelliousness factor emerged first in the Spanish sample, the authors concluded that Rebelliousness was a more salient aspect of self-concept for the Spanish children. In contrast, in the Mexican and Brazilian children, the Social Normative and Expressive Affective dimensions emerged before the Rebelliousness factor, as did the Expressive Affective dimension in the Peruvian children. This led the authors to conclude that the Social Normative and Expressive Affective dimensions are particularly salient aspects of self-concept for children in Mexico, Brazil, and Peru. Although the size of a factor may give some indication of its important or salience (i.e., how many traits cohere on the factor), a comparison of cultural

mean differences on the scales might provide different results regarding the degree to which each dimension is used to describe self in each culture.

In addition, researchers in these studies have focused on the specific trait terms defining the six self-concept dimensions and drawn conclusions about cultural differences in the composition of the traits defining each dimension. Although some of these differences might reveal meaningful cultural differences in the clustering of traits, other differences could indicate the limited stability or simple structure of the dimensions themselves.

There is apparent overlap in the self-concept dimensions identified by La Rosa and Díaz-Loving (1991) and Valdez-Medina (1994). Not surprisingly, then, Díaz-Loving, Reyes-Lagunes, and Rivera Aragón (2002) recently developed an integrative Multidimensional Self-Concept Inventory, starting with a selection of 102 attributes from the two measures. A principal components analysis of self-ratings obtained in a large and geographically representative adult sample yielded nine factors: Social Expressive (friendly, sociable, content); Ethical Normative (honest, decent, loyal); Socio-Emotional Intelligence (tolerant, reserved, relaxed); External Negative-Passive Control (pessimistic, lazy, inflexible); Social-Affiliative (romantic, affectionate, sentimental); Emotive Negative-Self-Affirming (conflictive, unreliable, faultfinding); Instrumental-Constructive (hard-working, punctual, reliable); Emotional Variability (timid, volatile, bitter); and Depressive (melancholic, nervous, anxious). Alpha reliabilities for the associated scales ranged from .58 to .90. An innovation was the use of a seven-point pictorial rating scale format, in which verbal anchors were replaced by increasingly larger circles suggesting a continuum of frequency or amount (Reyes-Lagunes, 1996). The validity of this new

instrument has not yet been investigated, but can probably be inferred to some extent from the validity of the two instruments on which it was based.

Specific Personality Traits

Instrumentality and expressivity. Díaz-Loving, Rocha-Sánchez, and Rivera-Aragón (2004) developed an indigenous measure of instrumental (masculine) and expressive (feminine) traits. Students in focus groups provided culture-specific descriptions of masculinity and femininity (Díaz-Loving, Rivera-Aragón, & Sánchez-Aragón, 2001) and the researchers subsequently obtained self-ratings on the trait descriptors generated. The resulting instrument assesses 117 instrumental and expressive traits, which, based on a factor analysis, were organized under multiple positive and negative instrumental and expressive factors. Positive instrumental factors were as follows: Instrumental Cooperative (e.g., punctual, responsible, hardworking); Instrumental Focused on Achievement (e.g., competent, competitive, persistent), and Instrumental Egocentric (e.g., daring, bold, ambitious). Negative instrumental factors were Instrumental-Machismo (e.g., violent, rude, aggressive); Instrumental Authoritarian (e.g., proud, manipulative, vengeful); and Instrumental Social Rebellious (e.g., discourteous, lack of interest, unthinking behavior). Positive expressivity factors were Affiliative-Affective (e.g., loving, affectionate, tender) and Romantic-Dreamer (e.g., romantic, dreamer, emotional). Negative expressivity factors were Egocentric-Negative-Emotive (e.g., unstable, liar, whiney); Emotional Vulnerable (e.g., jealous, worrisome, fearful); and Passive-Negative External Control (e.g., conforming, undecided, submissive). Alpha reliabilities for associated scales ranged from .67 to .90. This new instrument has not yet been validated against external criteria.

Reyes-Lagunes (1999) used the Natural Semantic Networks Technique, free associations, and focus groups to derive 106 trait adjectives that measure masculinity and femininity in Mexico. The study yielded four factors: Androgyny (e.g., capable, competent, attentive, hard-working, affectionate), α = .97; Normative Expressivity (e.g., gentle, well-mannered, generous, frank, cautious), α = .94; Negative Instrumentality (e.g., self-seeking opportunist, abusive, haughty, scrounger, violent), α = .92; and Negative Emotional Expressivity (e.g., insecure, immature, fearful, negligent, gossiping), α = .80. Ibarra-Sagasta, Laborín-Alvarez, and Vera-Noriega (2002) replicated these four factors, but also showed, using confirmatory factor analysis, that the items could be organized under the three-dimensional model of instrumentality, expressivity, and androgyny proposed by Spence and Helmreich (1978). The apparent differences in the indigenous structure of masculine (instrumental) and feminine (expressive) traits obtained by Díaz-Loving et al. (in press) and Reyes-Lagunes (1999) suggest the need for further studies to clarify the structure of this domain and the convergent validity of these measures.

Abnegation. Avendaño-Sandoval, Díaz-Guerrero, and Reyes-Lagunes (1997) developed a 20-item measure of abnegation, or the behavioral disposition to self-sacrifice for the service or benefit of others. The development sample included 850 respondents sampled in businesses and homes in Mexico City. Factor analysis of the self-rating data resulted in the following three factors: Abnegation Centered on the Family (e.g., I enjoy overworking if it is for my family), α = .77; Abnegation Centered on Social Conduct (e.g., I accept apologies), α =. 72; and Sensitive or Cautious Abnegation (e.g., It embarrasses me to say no), α =. 69. In a concurrent validity study, Flores-Galaz and

Aguilar Ortega (1998) found that these abnegation subscales were generally correlated in the expected (i.e., negative) direction with indigenous measures of assertiveness.

Assertiveness. Flores-Galaz (1989) used a combined etic-emic approach to develop the Multidimensional Scale of Assertiveness. Flores-Galaz, Díaz-Loving and Rivera-Aragón (1987) and Flores-Galaz (1989) both obtained the same alternative (indigenous) structure for the imported Rathus Assertiveness Scale. Flores-Galaz (1989) added new items for each of the three dimensions: (a) Indirect Assertiveness (e.g., "I can express my affection with greater ease through cards and/or letters than personally);" (b) Non-assertiveness (e.g., "It is hard to begin a relationship with people that I have just met"); and (c) Assertiveness (e.g., "I can ask to be taught how to do something that I am not able to do."). Alpha reliabilities for the three scales ranged from .80 to .86, with a total scale reliability of .90. Florez-Galaz and Díaz-Loving (1994) reported a number of sensible correlations between this scale and indigenous measures of locus of control beliefs, achievement orientation, and self-concept. For example, both indirect assertiveness and non-assertiveness correlated positively with belief in fatalism / luck (r =. 49) and other external forms of control, whereas assertiveness correlated negatively with belief in these external forces.

Flexibility. Melgoza-Enríquez and Díaz-Guerrero (1990) developed the 20-item Flexibility Scale because they considered flexibility to be a cardinal trait of the Mexican personality. A factor analysis of self-ratings in a sample of 80 teachers in Mexico City yielded three interpretable factors: Agreeableness (e.g., "I am tolerant," "I like to cooperate"); Obligingness (e.g., "I am accommodating," "I like being generous"), and Flexibility ("I like conceding," "I like consenting"). Alpha reliabilities for the three

dimensions were .75, .56, and .74, respectively. The researchers have hypothesized that these flexibility dimensions will correlate with indigenous measures of affiliative obedience, assertiveness, and abnegation, but this has not yet been investigated. Varela-Macedo, Díaz-Loving, and Reyes-Lagunes (1998) used this instrument in a study of the acculturation process of international students in Mexico.

Well-being and Resilience

Multidimensional Scale to Measure Subjective Well-Being. To derive a culture-specific measure of subjective well-being (SWB), Anguas and colleagues applied the Natural Semantic Network Technique (Anguas-Plata, Covarrubias-Camarillo, Sánchez-Solís, Estrada-Aranda, & Reyes-Lagunes, 2002; Reyes-Lagunes, 1993). In initial studies, respondents were asked to free associate to stimuli such as need, satisfaction, and well-being. Responses were then ranked and aggregrated across respondents as is typical in this method. Analyses of the resulting semantic network of concepts led the authors to assess SWB with two scales. The 30-item Emotional Experience scale measures the frequency and intensity of various positive and negative affects within the past month. The 50-item Affective-Cognitive Evaluation of Life scale measures satisfaction and well-being across four domains: ecosystemic, family, social and individual. Alpha reliabilities in a large geographically representative sample were .90 and .96, respectively.

Separate principal components analyses of the items in the two subscales yielded a number of more specific factors, which were used to identify the most frequent or intense emotional experiences of their Mexican normative sample. For example, specific factors with relatively high means were Positive Affectivity (e.g., love, affection, happiness), Positive Internal Affectivity (e.g., joy, bliss), and Emotional Hedonism (e.g.,

passion, pleasure). Means were moderate for Negative Expressivity (e.g., anger, fury, madness), Nervousness (e.g., tension, preoccupation, desperation), and Emotional Stress (e.g., anxiety, angst), and low for Negative Internal Emotional Expressivity (e.g., frustration, suffering, disillusionment, and fear). In a more traditional sample of respondents from the predominantly Mayan region of Yucatan, Anguas-Plata and Reyes-Lagunes (1999) found similar reliabilities for the two major scales, but modest differences in the specific factors identified within the two general scales.

Anguas-Plata and Reyes-Lagunes (2000) compared the scores of children, parents, and grandparents on the specific SWB factors and scales of the Questionnaire of the Mexican Family, a measure of HSCPs. In general, there were consistent increases in Positive Affectivity, Hope, and Positive Internal Affectivity, and declines in Despair, Negative Affectivity, and Expressivity with generation level. The authors also reported interesting relationships between SWB scores and endorsement of the HSCP's as a function of generation level. For example, children who endorsed the belief that children should obey their parents (i.e., Affiliative Obedience), also tended to report less frequent and intense tension, preoccupation, and desperation (i.e., SWB Negative Nervousness). Parents who endorsed the HSCP of Machismo were less likely to report high Positive Affectivity (i.e., love, affection, happiness). Grandparents who endorsed belief in the Family Status Quo tended to report lower feelings of hopelessness. These results suggest that differential endorsement of various HSCPs has implications for emotional experience and general life satisfaction.

Scale of Personal Strength (Escala de Fuerza Personal). Díaz-Guerrero and Melgoza-Enriquez (1994) developed this short 4-item scale to measure the ability for

self-modification when coping with life challenges. Recall that Holtman et al. (1975) identified a self-modifying coping style among Mexicans. The items, which contain culture-specific and colloquial expressions, ask respondents how they feel about their endurance (i.e., *aguante*) to confront their own crises and emotional problems, their ability "to carry their own cross" (i.e., *cargar con su propia cruz*), and their patience in aiding loved ones and friends with their emotional problems. In a sample of 80 teachers, Díaz-Guerrero and Melgoza-Enriquez (1994) showed that a one-factor solution explained 58% of the variance and alpha reliability was .74.

Ortega-Estrada (1996) found that non-working women averaged slightly higher in personal strength using this scale than did working women and attributed this to the resignation, tolerance, sacrifice, and endurance of traditional nonworking Mexican women. In addition, the author correlated each personal strength item with scores on selected HSCPs. A sample finding was that every personal strength item was significantly positively correlated with the HSCPs of affiliative obedience, abnegation, family status quo, and cultural rigidity. This finding also suggests that personal strength as measured by this scale is associated with endorsement of more traditional Mexican values. Varela-Macedo, Díaz-Loving, and Reyes-Lagunes (1998) found that international students from North American averaged highest on the personal strength scale than international students from other countries around the world and concluded that North Americans possess a greater ability to endure their own and other's problems. No explanation was offered for why this might be the case.

In my review of indigenous measures, I included instruments that seemed most directly relevant to personality traits or dispositions. It should be noted that Mexican

psychologists have developed indigenous theory, constructs, and measures in other areas, as well. Drawing on theoretical principles from the Culture-Counterculture Dialectic theory, Díaz-Loving (2002) has developed an integrative model on the general functioning of couples which includes biological, cultural, social, historical, psychological, behavioral, and ecosystem variables. Research efforts on the compoenents of this model have resulted in the development of indigenous measures of various relationship constructs such as attachment styles (Díaz-Loving , 1999a), intimacy (Osnaya-Moreno, Díaz-Loving, & Rivera-Aragón (1998), jealousy (Díaz-Loving, Rivera-Aragón, & Flores-Galaz, 1989), communication (Nina-Estrella, 1988), power (Rivera-Aragón & Díaz-Loving, 1995) and interpersonal attraction (Rivera-Aragon & Díaz-Loving, 1997). Readers can refer to Díaz-Loving (1999a) for a review of these instruments.

Summary of Indigenous Measures

As noted at the beginning of this section, two questions are particularly relevant in evaluating efforts to development indigenous measures. One involves the psychometric adequacy of the scales. A positive feature is the widespread use of exploratory factor analysis to examine the dimensional structure of the instruments. At the same time, one suspects that item pools have sometimes been over-factored, with many small factors or subfactors extracted. Small factors based on few items are less likely to replicate across samples or to exhibit simple structure. Indeed, for some instruments, structural replication appears to be weak, or not yet demonstrated. Most researchers have reported acceptable internal consistency reliability estimates, but for several measures, validation against external criteria has been limited. Instruments have been applied most frequently to

investigate gender, intracultural, or inter-generational mean differences, or to interrelate traits from different measures. In contrast, the behavior correlates of the indigenous constructs and measures have been less frequently investigated.

A second question addresses the extent to which the indigenous constructs and measures are truly culture-specific, or particularly salient for Mexican personality. To some extent this question can be addressed by considering the varying "levels" of indigenization of the instruments (Church, 2001). Some of the instruments are more purely indigenous, in that constructs and item content were identified using solely emic approaches. For example, the Views of Life Questionnaire, Questionnaire of the Mexican Family (HSCPs), Abnegation scale, and Scale of Personal Strength address indigenous values, beliefs, traits, or means of coping that were initially identified in cultural dictums, proverbs, and widely held beliefs. Similarly, the various self-concept measures, whose categories and items were identified through ethnosemantic methods such as the Natural Semantic Network Technique and free associations, were also developed using fairly pure emic approaches. Other instruments can be conceptualized as "emic operationalizations of etic conceptualizations" (Díaz-Loving, 1998), in that Mexican researchers constructed measures of purported etic or universal constructs (e.g., masculine and feminine traits, locus of control beliefs, assertiveness, subjective well-being) but with indigenous (emic) content, or a combination of etic and emic content. By definition, these latter measures assess constructs that are not unique to Mexican culture, albeit through the use of more indigenous content.

Of particular interest, then, is whether the more purely emic instruments tap constructs that are culture-specific. Presently, this question cannot be answered with

much confidence because the indigenous constructs have not yet been related empirically to constructs or dimensions in other cultures. For example, although the HSCP's identified by Díaz-Guerrero (1994) clearly capture a traditional Mexican orientation, many of these values or beliefs may be local variants of the values of tradition (e.g., respect for tradition, humility, accepting one's portion in life) and conformity (e.g., obedience, honoring parents and elders) encompassed in Schwartz' (1992) universal structure of values, or they may characterize collectivistic cultures more generally (Triandis, 1995). The specific HSCP of Affiliative Obedience shows some resemblance to the widely cited concept of filial piety in East Asian cultures (e.g., Zhang & Bond, 1998). Similarly, the distinction between active self-assertive and passive self-modifying coping styles recalls Weisz et al.'s (1984) distinction between primary control and secondary control, respectively.

If we focus on personality traits, the indigenous measures of self-concept and specific traits reviewed above are particularly relevant. It is conceivable that the trait clusters or factors identified in these studies carve up the personality domain somewhat differently than Western personality models such as Big Five or five-factor model. However, for many readers, these trait factors may recall various aspects of the Big Five dimensions. To examine plausible links with the Big Five domains, in Table 1 I attempted to organize these indigenous trait factors under the Big Five domains, plus on Honesty dimension (Ashton & Lee, 2001), drawing solely on apparent conceptual similarities. This categorization scheme suggests potential hypotheses regarding the relations between the indigenous and Big Five dimensions.

In allocating the indigenous dimensions to the Big Five domains, I observed that none of the indigenous dimensions clearly corresponded to the Big Five Intellect or Openness to Experience domain. This seems to imply that in eliciting the indigenous trait descriptors that were used to describe self-concept, respondents did not generate sufficient numbers of terms in this domain (e.g., creative, artistic, inquisitive, original, curious, broad-minded) to identify separate dimensions in factor analyses. Although some indigenous dimensions included the term "intelligent" (i.e., Intellectual Work, Achievement-Oriented Instrumental, Occupational, and Instrumental-Constructive), most of the terms defining these dimensions refer to the Conscientiousness domain. Another possible candidate is the Romantic Dreamer dimension, which contains a subset of terms (e.g., dreamer, curious, idealist) that might fit under Openness to Experience. However, given the romantic connotations of these terms, and the content of the dimension as a whole, its fit into the Intellect or Openness domain seems questionable. With no indigenous dimensions to list in that domain, I did not include the domain in Table 1. Instead, I added a column for the Honesty dimension. Ashton and Lee (2001) have made a case for inclusion of Honesty as a distinct domain beyond the Big Five and several indigenous Mexican dimensions appear to fit well into that domain conceptually.

Overall, my ability to conceptually organize the indigenous Mexican dimensions under the Big Five and Honesty domains suggests that the indigenous dimensions may not be highly culture-specific. Of course, these hypothesized links would need to be tested empirically in subsequent research.

Insert Table 1 about here

Indigenous Mexican Psychology in International Perspective

More generally, one can ask how indigenous Mexican psychology relates to the larger international field of cross-cultural psychology, and what unique contributions it has made?

One can observe a number of resemblances between the theoretical frameworks and methodologies of indigenous Mexican psychologists and cultural and cross-cultural psychologists elsewhere. For example, basic theoretical tenets of Mexican ethnopsychology that emphasize a link between ecosystems, historic-socio-cultural premises, and psychological phenomena (e.g., Díaz-Guerrero, 1993) recall Berry's (Berry, 1976) eco-cultural model in cross-cultural psychology. Díaz-Guerrero's (2001a) description of HSCPs and the dialectical exchange between sociocultural influences and psychological dispositions foreshadows the perspectives of cultural psychologists regarding the mutually constitutive nature of culture and personality and the idea that cultural meaning systems involve both observable and tacit belief components (e.g., Kitayama, 2002; Markus & Kitayama, 1991; Shweder, 1991). Finally, the emphases on assessment of individual differences, intracultural and cross-cultural comparisons, and integration of imported (imposed-etic) and indigenous (emic) knowledge places Mexican indigenous psychology within the mainstream of cross-cultural psychology (Berry, 2000; Triandis, 2000).

The indigenous research methods used by Mexican ethnopsychologists are not unique to Mexican psychology. Indeed, some procedures resemble the ethnosemantic and cultural informant procedures used by anthropologists (Marsella, Dubanoski, Hamada, &

Morse, 2000). However, their degree of elaboration and widespread use in the identification of indigenous concepts is a significant contribution, which can be informative to indigenous psychologists elsewhere. Indeed, with the possible exception of indigenous psychology in the Philippines, where a large number of indigenous methods have been elaborated (Church & Katigbak, 2002; Pe-Pua & Protacio, 2000), the application of indigenous methods in Mexico may be the most extensive among indigenous psychologies (e.g., see Sinha, 1997). However, whereas in the Philippines, indigenous methods emphasize unstructured conversations and discussions and various degrees of participant observation (Church & Katigbak, 2002), in Mexico, the blending of ethnosemantic methods with quantitative psychometrics seems to predominate.

Indeed, given the points of convergence between Mexican ethnopsychology and indigenous, cultural, and cross-cultural psychology more generally, it is perhaps surprising that the theoretical perspectives and research findings of Mexican ethnopsychologists are not more widely cited in the "mainstream" cultural and cross-cultural psychology literature. Perhaps the language barrier is a contributing factor, as a large proportion of indigenous research on Mexican personality is published in Spanish language journals in Mexico.

In evaluating indigenous efforts in Mexican psychology, more generally, it is useful to distinguish four aspects of indigenization (Church & Katigbak, 2002; Sinha, 1997): (a) theoretical and conceptual indigenization—development of indigenous concepts and theoretical frameworks; (b) methodological indigenization—adaptation or development of methods and instruments that are culturally appropriate; (c) topical indigenization—the extent to which the topics under study are relevant to the concerns of

the society and people; and (d) institutional indigenization—the extent to which institutional and organization structures and processes support the creation and diffusion of indigenous psychological knowledge. As indicated by this review, considerable progress in the personality area has been made in each of these aspects of indigenization.

For example, theoretical and conceptual indigenization is illustrated by Díaz-Guerrero's (2001a) Culture-Counterculture theory of personality, the identification of indigenous HSCPs, and the elaboration of salient Mexican personality concepts (e.g., affiliative obedience, abnegation). Methodological indigenization is indicated by the elaboration of indigenous research methods and the construction of a substantial number of indigenous instruments. Institutional indigenization is illustrated by the availability of indigenous publication outlets (e.g., *Revista Mexicana de Psicología*, *Revista de Psicología Social y Personalidad*, *La Psicología Social en Mexico*), conferences (e.g., Congreso Mexicano de Psicología Social, Congreso Mexicano de Psicología), and the offering of courses relevant to indigenous Mexican psychology at some institutions (e.g., Universidad Nacional Autónoma de Mexico, Universidad Autónoma del Estado de Mexico). In addition, many dissertations continue to be conducted using the indigenous constructs, methods, and instruments reviewed here. Adair (1999) noted, however, that Mexican indigenous research is more frequently transmitted orally through conferences rather than through publications. For example, he found that 40% to 50% of Spanish references to Mexican research in psychological databases refer to conference presentations, 90% of which were never published. Topical indigenization in the personality area is illustrated by the many research projects that address salient self-concept, personality, and value dimensions, aspects of relationships and couples, coping

styles, and subjective well-being in the family, school, and society. Studies of the subjective meanings of such concepts as AIDS, suicide, and condom use also reflect a topical focus on applied problems in society. In short, it seems reasonable to conclude that indigenous developments in personality psychology are at least as strong in Mexico as in other countries with strong indigenous movements (e.g., for comparison, see Church & Katigbak, 2002; Kim & Berry, 1993; Sinha, 1997).

At the same time, I observe that several of the potential pitfalls of indigenous psychologies have been minimized in Mexican ethnopsychology (Adair, 1992; Ho, 1998; Sinha, 1997). For example, Adair (1992) noted the dangers of polemics and cosmetic indigenization, for example, wherein local psychologists adopt the language or slogans of indigenization, but with limited attempts to actually derive and apply indigenous concepts and methods. This has not been the case in Mexico, where indigenous efforts continue to abound. One observation worth noting, however, is that most indigenous efforts have been centered around a relatively small network of researchers at one or two universities. For example, most of the studies on self-concept cited in this article were carried out by psychology faculty from the program at the National Autonomous University of Mexico.

An overreliance on phenomenological methods of uncertain objectivity, reliability, and validity has also been noted as a potential pitfall of indigenous psychologies (Pe-Pua & Protacio-Marcelino, 2000). However, although Mexican ethnopsychologists have relied heavily on the subjective perceptions and free associations of respondents, they have also exhibited significant emphases on the reliability and validity of the methods and measures used. Indeed, indigenous Mexican psychology can be viewed as exemplary in its profitable blend of qualitative (e.g., ethnosemantic) and

quantitative (e.g., psychometric) methodologies. As noted by Adair (1999), however, true experimental designs are underutilized in Mexican indigenous psychology.

Finally, Sinha (1997) warns against insularity or parochialism in indigenous psychologies, which can take the form of extreme cultural relativism, indiscriminant rejection of imported psychological concepts or methods, and the proliferation of indigenous psychologies at the expense of efforts to develop a more universal psychology (Church & Katigbak, 2002; Ho, 1998). This potential pitfall, as well, does not seem to be a significant concern for indigenous Mexican psychology. Prominent Mexican ethnopsychologists continue to be open to theoretical perspectives, concepts, and methods developed elsewhere. This is seen, for example, in the continuing willingness to adapt imported or etic constructs, using emic operationalizations, if necessary. In addition, although Mexican ethnopsychologists understandably publish most frequently in Spanish language journals in Mexico, they have also shared the results of their work with international audiences (e.g., Díaz-Guerrero, 1995; Díaz-Guerrero & Díaz-Loving, 2001; Díaz-Loving, 1998; Díaz-Loving & Draguns, 1999).

Some Thoughts on Future Research

Space does not allow an extensive discussion of future research possibilities. In addition, a basic tenet of indigenous psychology is that research foci are best determined by indigenous psychologists themselves in response to societal needs (Sinha, 1997). However, I briefly note some research possibilities from the perspective of psychologists with an interest in both indigenous and cross-cultural psychology.

From a cross-cultural perspective on personality and its structure, the highest priority need is to integrate the many indigenous constructs that have been identified into

a consensus taxonomy or structure of Mexican personality and to relate the resulting dimensions to personality dimensions in other cultures. For example, studies that relate replicable Mexican personality dimensions to the five-factor model (or alternative models) of personality would address the universality versus culture-specificity of personality. Examples of this type of study are provided by Katigbak et al. (2002) and Cheung et al. (2003), who have related indigenous Philippine and Chinese dimensions, respectively, to the five-factor model. Similarly, indigenous Mexican values and beliefs (e.g., HSCPs) could be systematically related to international models and measures of values (e.g., Schwartz, 1992) and beliefs (Leung et al., 2002).

A logical extension of current ethnosemantic methods would be to develop a comprehensive taxonomy of Mexican personality trait terms by culling terms from a comprehensive dictionary. Self-ratings on large and representative sets of these terms can be factor analyzed to derive an arguably comprehensive set of personality dimensions. In the past decade, this psycholexical approach has been used to develop comprehensive and indigenous personality taxonomies in an increasing number of (mostly European) languages (Saucier & Goldberg, 2001). Benet-Martinez and John (1998) applied a less comprehensive approach in Spain using random culling rather than comprehensive culling of personality terms from a dictionary.

However, a comprehensive lexical approach has not yet been applied in Mexico. Rodriguez and Church (2003) illustrated the approach in the identification of indigenous dimensions of affect or emotion in Mexico and found dimensions that resembled those found in other cultures. Additional priorities for research include: (a) structural replication of dimensions assessed by existing indigenous instruments; (b) further

elaboration of the nomological networks (e.g., behavioral correlates) of indigenous constructs; (c) systematic comparisons of the personality concepts identified using alternative indigenous methods; and (d) intracultural studies, which address both diversity and change within Mexican culture.

Research with imported measures can continue to add useful information about the generalizability of personality dimensions and their behavioral exemplars in Mexico and elsewhere. However, imported instruments should not be used uncritically. When used for personality assessment or diagnosis within Mexican culture, development of local norms will often be important. Mexican psychologists have developed local norms for some instruments, such as the MMPI-2, but not for others. When imported tests are used to make cross-cultural mean comparisons, issues of measurement equivalence become important. In this regard, more cross-cultural studies of structural and item level equivalence (e.g., differential item functioning) would be informative, as well as studies of response style patterns in Mexican respondents. As with indigenous measures, more research on the external validity of imported tests is needed, particularly for measures of normal range personality. Researchers need to move beyond demonstrations of structural equivalence to also determine the equivalence of the behavioral correlates or outcomes of various personality traits.

Finally, in an important development for the viability of the trait concept across cultures, some cultural psychologists have argued that personality traits are less central in self-concepts and behavioral inferences, and less predictive of behavior, in relatively collectivistic cultures such as Mexico, as compared to individualistic cultures (Markus & Kitayama, 1998; Triandis, 1995). Given the significant implications of this contention for

efforts to identify and measure indigenous personality dimensions, research in Mexico and other collectivistic cultures to test this hypothesis will be important (e.g., see Church et al., 2003). It is hoped that the current review will further stimulate both indigenous and cross-cultural personality research involving Mexican samples.

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Table 1

Hypothesized Conceptual Convergence between Mexican Indigenous Dimensions and Big Five Domains

	Big Five Domains				
Mexican Instrument	Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Honesty[b]
Multidimensional Self-Concept Scale (Valdez-Medina, 1994)	Social Expressive	Expressive Affective[a] Rebelliousness (-)	Social Normative Intellectual Work		Ethical Moral
Multidimensional Self-Concept Scale (La Rosa & Díaz-Loving, 1991)	Expressive Sociability Initiative	Affiliative Sociability Inter-individual Feelings Accessibility[a]	Occupational	Emotional States Emotional Health	Ethical
Multidimensional Self-Concept Inventory Normative (Díaz-Loving, Reyes-Lagunes, & Rivera-Aragón, 2002)	Social Expressive	Social Affiliative[a] Emotional Negative Self-Affirming (-)	Instrumental Constructive	Social-Emotional Intelligence External Negative Passive Control (-) Emotional Variability (-) Depressive (-)	Ethical
Scale of Expressive and Instrumental Traits (Díaz-Loving, Rocha-Sánchez, & Rivera-Aragón, 2003)	Instrumental Ego-centric Passive-Negative External Control (-)	Instrumental Machismo (-) Instrumental Authoritarian (-)	Instrumental Cooperative Achievement-Oriented Instrumental	Emotional Vulnerable (-)	

Table 1 Continued

	Big Five Domains				
Mexican Instrument	Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Honesty[b]
		Instrumental Social Rebelliousness (-) Affiliative-Affective Romantic Dreamer Egocentric-Negative Emotive (-)			
Instrumentality and Expressivity Scale (Reyes-Lagunes, 1999)		Normative Expressivity Negative Instrumentality (-)	Androgyny	Negative Emotional Expressivity	
Flexibility Scale (Melgoza-Enríquez & Díaz-Guerrero, 1990)		Flexibility			
Assertiveness Scale (Flores-Galaz, Díaz-Loving, & Rivera-Aragón, 1987)	Assertiveness Indirect Assertiveness (-) Non-Assertiveness (-)				
Abnegation Scale (Avendaño-Sandoval, Díaz-Guerrero, & Reyes-Lagunes, 1997)	Abnegation (-)				

Table 1 Continued

	Big Five Domains				
Mexican Instrument	Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Honesty[b]
Personal Strength Scale (Díaz-Guerrero & Melgoza-Enríquez, 1994)				Personal Strength	

Note. [a]Researchers vary in whether they place traits associated with warmth and affection in the Extraversion or Agreebleness domains (e.g., Costa & McCrae, 1992; John, 1990). We have placed the relevant Mexican scales in the Agreebleness domains but they may overlap to some extent with both the Extraversion and Agreeableness domains. [b]No indigenous scales were classified into the Big Five Intellect/Openness domain, so that domain is not shown in the table. Instead, we included honesty, which Ashton and Lee (2001) have noted appears as a separate dimension in lexical studies in several cultural and languages. Although some researchers view Honesty as an aspect of the Big Five Agreeableness domain, we separate it here because several Mexican researchers have identified a relevant dimension or score.

STUDY 2

Indigenous Mexican Dimensions and the Five-Factor Model of Personality

Abstract

Using a combined emic-etic approach, we investigated a) the replicability in Mexico of the Five Factor Model (FFM) of personality, as assessed by the NEO-PI-R; b) the replicability of Mexican personality dimensions, as assessed by indigenous Mexican instruments; and c) the extent to which Mexican personality dimensions are encompassed by the FFM or relatively culture-specific. Mexican students at three universities (n = 794) completed nine indigenous inventories and the Spanish version of the Revised NEO Personality Inventory (NEO-PI-R). Reliability and exploratory factor analyses revealed that the FFM replicates well in Mexico. We used congruence of factor structures across Mexican subsamples to determine the number of replicable factors in each indigenous instrument. Although internal consistency reliability estimates were acceptable for most instruments as scored by the test authors, our replication criterion suggested alternative structures of fewer, but more replicable dimensions, for most instruments. We used multiple regression analyses and joint factor analyses to relate the replicable indigenous dimensions to the FFM and found that most of the Mexican indigenous dimensions are well encompassed by the FFM and thus are not very culture specific.

Personality traits can be defined as "dimensions of individual differences in tendencies to show consistent patterns of thoughts, feelings, and actions" (McCrae & Costa, 1990). In their Five-Factor Theory, McCrae and Costa (1996) argued that there is a basic personality trait structure, or set of personality dimensions, that is universal across cultures. These dimensions, which comprise the Five-Factor Model (FFM), are Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. In recent years, the universality of this model has been a central issue in research on culture and personality. Although originally identified in the United States, the cross-cultural generalizability of these dimensions, as measured by the Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992), has now been demonstrated in more than 30 cultures (McCrae & Allik, 2002; McCrae, Costa, del Pilar, Rolland, Parker, 1998).

Emics and Etics

Cross-cultural psychologists, however, distinguish between *emic* and *etic* research (Berry, 1969). Cross-cultural studies with the NEO-PI-R illustrate the *imposed-etic* approach, in which instruments developed in one culture (often the United States) are translated and administered in other cultures, where they may impose their structure to some extent. In contrast, in the emic approach, indigenous personality dimensions are independently derived in a culture by drawing on indigenous languages, psychological literature, and cultural informants. The emic method can provide particularly persuasive evidence of universality if, in fact, dimensions emerge that resemble those in other cultures or hypothesized universal dimensions (Church, 2001). Finally, some researchers have used a combined emic-etic approach, in which indigenous (emic) and hypothesized

universal (etic) dimensions are related (e.g., Cheung, Cheung, Leung, Ward, & Leong, 1996; Katigbak, Church, Guanzon-Lapeña, Carlota, & del Pilar, 2002). In the present study, I used a combined emic-etic approach to investigate the indigenous structure or dimensions of personality in Mexico, then related them to the dimensions of the Big Five or FFM (McCrae & Costa, 1997).

Theoretical and Empirical Bases for Expecting Cultural Similarities versus Differences

McCrae and Costa's (1996) Five-Factor Theory provides a theoretical basis for expecting cultural universals in personality dimensions. In their theory, certain basic tendencies, including the dimensions of the FFM, are viewed as having a biological or genetic basis. These basic tendencies combine with environmental influences, including culture, to influence individuals' characteristic adaptations, such as self-concepts, personal strivings, and attitudes. However, the basic tendencies themselves, including the Big Five dimensions, are viewed as independent of culture. As a result, the Big Five dimensions are expected to emerge as replicable dimensions of individual differences in all cultures. A number of evolutionary psychologists have also offered theoretical bases for expecting the Big Five dimensions to be cultural universals (Buss, 1996; Hogan, 1996; MacDonald, 1998). Indeed, there is considerable evidence for the universality of Big-Five-like dimensions from studies with both imported and indigenous inventories (Katigbak et al., 2002; McCrae & Allik, 2002), as well as indigenous lexical studies (Church & Katigbak, 2005; Rolland, 2002; Saucier & Goldberg, 2001).

At the same time, cross-cultural and Mexican researchers have noted a number of differences between Mexican and American culture and personality, which could conceivably impact personality structure. For example, Hofstede (1980, 2001) ranked 53

cultures along four value-based dimensions. On the Individualism dimension, Mexico ranked 32nd and the United States ranked 1st. That is, Mexican culture is relatively collectivistic, with a strong emphasis on tightly knit family and social relations (e.g., Díaz-Loving & Draguns, 1999). On the Power Distance dimension, Mexico ranked much higher (tied for 5th) than the United States (38th), suggesting a greater acceptance of unequal power and status in Mexican culture. Mexico also ranked higher (6th) than the United States (15th) on the Masculinity dimension, perhaps reflecting higher motives to achieve material success and a higher degree of gender differentiation of roles. On the Uncertainty Avoidance dimension, Mexico ranked 18th and the United States 43rd, suggesting that there is greater discomfort with uncertainty and ambiguity in Mexican culture than in American culture. Levine and Norenazayan (1999), in a comparison of behavioral indicators of pace of life in 31 countries, ranked Mexico as slowest in pace of life, whereas the United States ranked 16th.

Diaz-Guerrero (1967) culled statements from Mexican sayings, proverbs, and other forms of popular communication that reflect what he termed the historic-socio-cultural premises underlying Mexican culture (e.g., "Life is to be enjoyed"; "The place of the woman is in the household."). Factor analyses of responses to these statements have yielded nine dimensions: machismo, affiliative obedience, value of virginity, abnegation, fear of authority, family status quo, respect over love, family honor, and cultural rigidity. Diaz-Guerrero (1986) viewed these cultural premises as important in understanding Mexican personality, because they guide behavior in different situations. Other Mexican personality themes mentioned in the literature include a philosophy of life consistent with self-modification (i.e., changing oneself to adapt to the needs and wishes of others), as

opposed to more assertive coping strategies, and a purported cultural script of *simpatia*, which involves an emphasis on agreeable interpersonal behavior and avoidance of conflict (Diaz-Guerrero, 1979; Diaz-Loving & Draguns, 1999; Triandis, Marin, Lisansky & Betancourt, 1984).

Given these Mexican cultural features, and assuming that culture impacts personality (Triandis & Suh, 2002), we expect to find some differences in the salience of various personality constructs in Mexican versus American psychology. What is not clear at this point is whether these differences impact the structure or dimensionality of personality, or merely the mean level of various universal personality traits.

To date, there is little evidence of clearly culture-specific personality dimensions in any of the world's cultures. Indigenous lexical studies have sometimes carved up the personality domain somewhat differently (e.g., Church, Reyes, Katigbak, and Grimm, 1997; Yang & Bond, 1990; Yang & Wang, 2002; Yik & Bond, 1993). Nonetheless, the dimensions have typically exhibited considerable overlap with the Big Five dimensions (Church & Katigbak, 2005; Katigbak et al., 2002). Similarly, the Interpersonal Relations dimension, identified originally by Cheung et al. (1996, 2003) in Chinese samples using an indigenous inventory approach, was at first viewed as a possible culture-specific dimension. However, recent research indicates that it can also be identified in American samples (Cheung et al., 2003; Lin & Church, 2004). A case can be made that the identification and measurement of indigenous personality dimensions is more advanced in Mexico than in other developing nations (Adair, 1999; Ortiz & Church, 2005). However, there is some question about the replicability of these dimensions even within the Mexican culture. Furthermore, they have not yet been systematically related to the

Five-Factor Model. Thus, we do not yet know the extent to which indigenous Mexican personality dimensions are truly culture-specific or merely Mexican operationalizations of universal dimensions.

Studies of Mexican Personality Structure

Big Five Studies in Mexico. Only a few studies of the Big Five of FFM have been conducted in Mexico. Rodriguez de Díaz and Díaz-Guerrero (1997) selected five to seven of Goldberg's (1992) bipolar adjective markers to measure each Big Five dimension. Markers were selected if they had high factor loadings on the relevant Big Five dimension in Goldberg's (1992) United States sample and were judged to be equivalent in psychological meaning once translated into the Spanish language. In a sample of Mexican high school students ($N = 300$), a principal components analysis yielded Extraversion, Emotional Stability, and Conscientiousness factors, although these three dimensions were also defined by some unintended markers. Intellect markers tended to split off to load on other factors, and Agreeableness markers failed to cohere on a single dimension. Although the sample size was fairly large ($N = 300$), the authors noted that this was an exploratory study, which included a limited number of markers for each of the Big Five dimensions.

Rodríguez and Church (2003) factor analyzed the Spanish version of the Big Five Inventory (Benet & Waller, 1995) in a sample of Mexican college students ($N = 351$). In a principal components analysis, Extraversion, Neuroticism, and Openness to Experience dimensions were fairly well replicated, but the Agreeableness and Conscientiousness terms divided among the remaining two factors. In a Procrustes factor solution, all five dimensions were replicated, but replication was weakest for the Agreeableness factor, for

which only five of nine items had high factor loadings. Schimmack, Radhakrishnan, Oishi, Dzokoto, and Ahadi (2002) reported reasonable alpha reliabilities for the Neuroticism (α=.70) and Extraversion (α=. 65) scales of the NEO Five Factor Inventory (Costa & McCrae, 2002) in a small sample (N = 119) of Mexican teachers, but did not conduct a factor analysis of the instrument. The most comprehensive and widely used measure of the Big Five or FFM is the Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992). McCrae and Terraciano (2005) replicated the Big Five dimensions in a sample of undergraduate Mexican students. Students identified an adult or college-aged man or woman whom they knew well and rated their personality traits using the third person version of the Revised NEO Personality Inventory. Factor analyses in the Mexican culture showed that the normative American self-report structure was clearly replicated. Coefficients of congruence between the two factor solutions, after Procrustes rotations were .96 for Neuroticism, .95 for Extraversion, .89 for Openness to Experience, .95 for Agreeableness, and .95 for Conscientiousness.

Indigenous dimensions and measures. Mexican psychologists have developed many instruments to measure indigenous personality dimensions. As noted by Diaz-Loving (1999), the methods used in constructing these instruments have typically reflected, in part, a symbolic interactionist perspective, involving active emersion of the researcher in the world of the research participants, and elicitation of the research participants' subjective meanings for salient constructs. Consistent with this perspective, Mexican psychologists have often drawn on various ethnosemantic methods, free associations, and focus groups to identify indigenous constructs and their meanings for research participants, as well as the behavioral exemplars of these constructs. For

example, in developing the Multidimensional Scale of Self-Concept, La Rosa and Díaz-Loving (1991) began with focus groups and a free association task to derive indigenous self-concept categories and relevant trait descriptors in each category. Exploratory and confirmatory factor analyses were conducted on students' ratings of themselves in terms of these traits. The result was nine indigenous dimensions of Mexican personality. Similar methods have been used to identify and measure other indigenous Mexican dimensions. The most widely used personality measures, which will be administered in the present study, are described in the Instrument section.

Based on a detailed review of these measures, Ortiz and Church (2005) noted a number of positive and negative features of the indigenous Mexican instruments. On the one hand, the methods used to derive the trait concepts and their local meanings ensured that they would be largely emic or indigenous in content. Other positive features include the widespread use of factor analysis (although generally exploratory rather than confirmatory) to examine the dimensional structure of the instruments, and the use of reliability analyses to investigate the internal consistency of the derived dimensions. On the other hand, one suspects that item pools have sometimes been over-factored, with many small factors or sub-factors extracted. Small factors based on few items are less likely to replicate across samples or to exhibit simple structure. Indeed, for some instruments, structural replication appears to be weak, or not yet demonstrated. Although most researchers have reported acceptable internal consistency reliability estimates, external validation of some measures has been quite limited. The instruments have been used most frequently to investigate gender, intracultural, or intergenerational mean

differences, or to interrelate traits from different measures. Behavior correlates of the indigenous constructs and measures have been investigated less frequently.

Overview of the Present Study

The aim of the present study was to identify indigenous dimensions of Mexican personality and to determine the comparability of these dimensions to the dimensions of the Big Five or FFM (McCrae & Costa, 1997). To achieve this, I coordinated the administration of 10 self-report questionnaires, 9 indigenous, plus the imported NEO-PI-R, to college students in Mexico. The following research questions were addressed:

1. Does the FFM, as assessed by the NEO-PI-R, replicate well in Mexico?
2. How well can the dimensions identified in indigenous Mexican measures be replicated?
3. Are the indigenous dimensions culture-specific or are they well encompassed by hypothesized universal dimensions such as the Big Five?

Each of these questions addresses the overarching goal of this study, which is to clarify the structure of Mexican personality, drawing on both emic and etic approaches.

Method

Participants

I sought a fairly representative sample of college students from two geographic areas of Mexico. The final sample was comprised of 794 college students (309 men, 485 women) from the National Autonomous University of Mexico (NAUM-Iztacala; n = 201), the Hidalgan Institute of Higher Learning Studies (HIHLS; n = 199), and the Autonomous University of Yucatan (AUY; n = 294). Data for eight other respondents were discarded because of missing data or because they responded to one or more

instruments in a manner that appeared random or careless. Mean age of the final sample was 19.8 (*SD* = 2.3). The number of participants by educational level was as follows: 530 freshmen, 138 sophomore, 58 juniors, and 68 seniors. Self-reported majors were as follows: psychology (*n* = 478), business (*n* = 100), chemistry (*n* = 108), engineering (*n* = 69), humanities (*n* = 19), biology (*n* = 16), and law (*n* = 4). All of the participants described their ability to speak and read Spanish as good (*n* = 307) or very good (*n* = 487). All of the participants reported their ethnic background to be *Mestizo*. *Mestizo*, which is the predominant ethnic group in Mexico, is a mixture of European (mainly from Spain) and American Indian ancestry. The predominant religious affiliation of the participants was Catholic (81 %). Participants reported living in 77 different municipalities or counties.

Replication subsamples. To assist in determining the number of replicable personality dimensions in various indigenous instruments, I divided the total sample into two subsamples of approximately equal size for replication purposes. One subsample (*n* = 400; 102 men, 298 women) was comprised of participants from (a) the National Autonomous University of Mexico at Iztacala (NAUM-Iztacala), which is located in the southern part of Mexico City, and (b) the Hidalgan Institute of Higher Learning Studies (HIHLS), which is located in the City of Pachuca, 58 miles south of Mexico City. Mean age was 20.4 (*SD* = 2.9). The second subsample was comprised of 394 students (207 men, 187 women) from the Autonomous University of Yucatan at Merida, which is located on the Yucatan Peninsula. Mean ages for the two subsamples were 20.4 (*SD* = 2.9) and 19.2 (*SD* = 1.5), respectively. Although all three universities draw students from across the country, the first subsample has a larger proportion of students for central and

northern Mexico, and the second subsample a larger proportion of students from southeastern Mexico.

Instruments

NEO Personality Inventory-Revised (NEO-PI-R; Costa & McCrae, 1992). The 240-item NEO-PI-R measures the Big Five dimensions and 30 facet subscales, with six facets for each Big Five domain. Items are rated on a five-point scale, ranging from "strongly disagree" to "strongly agree." The official English version of the NEO-PI-R was previously translated into Spanish by a professional translator who is familiar with Spanish as it is spoken in the United States (Gellman, 1994). A bilingual psychologist familiar with the NEO-PI-R assisted with the initial translation. An independent back-translation was then done by a second professional translator. The back-translation was reviewed by the test authors and the consulting bilingual psychologist for potential inequivalencies in the conceptual meaning of translated items. Potential problems were identified in 14 items and these were resolved in the final translation. The Spanish version of the NEO-PI-R has been used previously in Mexico (McCrae & Terraciano, 2005) and other Spanish-speaking countries (Aluja, García, & García, 2002; Boehm, Asendorpf, & Avia, 2002). For the present study, the instrument was reviewed by a clinical psychologist / professor in Mexico and by a Spanish language professor at Washington State University, both of whom were born in Mexico and fluent in Mexican Spanish. Based on their recommendations, some minor corrections in grammar and syntax were made.

Gellman (1994) tested the equivalence of the English and Spanish versions. Bilingual college students in the United States were asked to complete both the English

and Spanish versions of the NEO-PI-R. Most students completed both inventories on the same occasion and the order of language version was counterbalanced. Complete and valid data were obtained from 74 participants. Despite the low ratio of participants to variables, a principal components analysis with varimax rotations on the Spanish version largely replicated the intended five-factor structure, with coefficients of congruence with the U.S. normative solution ranging from .81 to .97. The internal consistency reliability estimates for the Spanish version were described as comparable to those found in the U.S. adult normative sample (Costa & McCrae, 1992). Although the Openness to Actions facet scale had low internal consistency reliability (.42, as compared to .58 for the U.S. normative sample), the scale showed good convergent validity ($r = .83$) across language versions in the bilingual sample and loaded strongly on the intended factor (.64). Extensive validity data has been reported for the NEO-PI-R in a variety of languages and cultures (e.g., McCrae & Allik, 2002). Data on the structure and reliability of the Spanish NEO-PI-R in the present Mexican sample are reported in the Results section.

Multidimensional Self-Concept Scale. La Rosa and Diaz-Loving (1991) conducted a series of studies to develop and validate a multidimensional self-concept inventory. A total of 2,626 respondents from high schools and universities in Mexico City participated in the several stages of the project. The scale consists of 73 bipolar (antonym) trait adjectives presented in a seven point semantic differential format. Factor analyses of student responses yielded nine dimensions with the following internal reliability coefficients: Affiliative Sociability[1] (e.g., courteous, amiable), $\alpha = .85$; Expressive Sociability (e.g., friendly, communicative), $\alpha = .85$; Accessibility (e.g., accessible, agreeable), $\alpha = .65$; Emotional States (e.g., happy, jovial), $\alpha = .85$;

Interindividual Feelings (e.g., tender, loving), $\alpha = .81$; Emotional Health (e.g., calm, serene), $\alpha = .76$; Occupational (e.g., studious, capable), $\alpha = .80$; Ethical (e.g., loyal, honest), $\alpha = .77$; and Initiative (e.g., dynamic, fast), $\alpha = .71$.

Researchers have used this scale with a variety of Mexican populations. For example, the instrument has been used to investigate regional differences in self-concept (e.g., Bonilla, Hernández, Andrade-Palos, & Cordoba, 1996), the relationship between self-concept and expressive and instrumental traits (Iuit-Briceno, Osorio-Belmon, Alpuche-Hernández, & Flores-Galaz, 1994), the relationship between birth order and self-concept (Aguilar-Velasco & Andrade-Palos, 1994), self-concepts of incarcerated youth (Zarza & Valdez-Medina, 1994), and gender differences in self-concept (Aguilar-Velasco & Andrade-Palos, 1994). The factor structure and reliability of this and the other indigenous instruments in the present sample are reported in the results section.

Multidimensional Self-Concept Scale. Valdez-Medina (1994) used the Natural Semantic Network Technique to develop this instrument, which contains 37 trait adjectives. The Natural Semantic Network Technique involved eliciting relevant concepts about the self from informants and then applying various weights that enable the researcher to rank order the importance or salience of each concept. Participants who fill out the instrument rate the degree to which they possess the self-concept attributes (i.e., trait adjectives) on a five-point scale ranging from 1 (totally) to 5 (not at all). The author's factor analysis yielded six factors, and the resulting scales and alpha reliabilities were as follows: Social Expressive (e.g., talker, friendly), $\alpha = .78$; Social Normative (e.g., orderly, responsible), $\alpha = .78$; Expressive Affective (e.g., sentimental, affectionate), $\alpha = .77$; Moral Ethical (e.g., honest, loyal), $\alpha = .77$; Intellectual (e.g., studious, intelligent), α

= .71; and Rebelliousness (e.g., liar, faultfinding), α = .68. Several authors have conducted studies using this six-dimensional scale and replicated the original factor structure of the instrument (Balcázar-Nava, 1996; Gonzáles & Valdez-Medina, 1996; Maya, 1996).

Multidimensional Self-Concept Inventory. Díaz-Loving, Reyes-Lagunes, and Rivera Aragón (2002) developed an integrated 90-item Multidimensional Self-Concept Inventory, starting with a selection of attributes from the self-concept scales of La Rosa and Díaz-Loving (1991) and Valdez-Medina (1994). Participants (N = 2270) in four cities, representing different socio-cultural regions of Mexico, answered the items. Factor and reliability analyses yielded nine scale dimensions: Social Expressive, (e.g., friendly, sociable, content), α = .90; Ethical Normative (e.g., honest, decent, and loyal), α = .86; Socio-Emotional Intelligence (e.g., tolerant, reserved, and relaxed), α = .82; External Negative-Passive Control (e.g., pessimistic, lazy, and inflexible), α =. 82; Social-Affiliative (e.g., romantic, affectionate, sentimental), α = .86; Emotive Negative-Self-Affirming (e.g., conflictive, unreliable, faultfinding), α = .77; Instrumental-Constructive (e.g., hard-working, punctual, reliable), α = .82; Emotional Variability (e.g., timid, volatile, bitter), α =. 58; and Depressive (e.g., melancholic, nervous, anxious), α =. 59. For the present study, I adopted the authors' innovative seven-point pictorial rating scale, in which verbal anchors were replaced by increasingly larger circles suggesting a continuum of frequency or amount (Reyes-Lagunes, 1996). The validity of this new instrument has not yet been investigated, but can probably be inferred to some extent from the validity of the two instruments on which it was based.

Instrumentality and Expressivity Scale. Reyes-Lagunes (1999) used the Natural Semantic Network technique, free association, and focus groups to derive 88 instrumental (masculine) and expressive (feminine) trait adjectives. The test authors administered the instrument to adults in four geographical regions of Mexico ($N = 576$) and the adjectives were rated on a seven-point pictorial scale. Factor analysis yielded four scale dimensions: Androgyny (e.g., capable, attentive), $\alpha = .98$; Normative Positive Expressivity (e.g., gentle, generous), $\alpha = .88$; Negative Instrumentality (e.g., abusive, haughty), $\alpha = .89$; and Negative Expressivity (e.g., insecure, fearful), $\alpha = .76$. Ibarra-Sagasta, Laborín-Alvarez, and Vera-Noriega (2002) replicated these four factors, but also showed, using confirmatory factor analysis, that the items could be organized under the three-dimensional model of instrumentality, expressivity, and androgyny proposed by Spence and Helmreich (1978).

Scale of Expressive and Instrumental Traits. Díaz-Loving, Rocha-Sánchez, and Rivera-Aragón (2004) constructed this measure of socially desirable and undesirable instrumental and expressive attributes in Mexicans. Diaz-Loving et al. (2001) had previously used focus groups to elicit 323 instrumental and expressive attributes and had respondents indicate how typical and ideal these attributes were of males and females in Mexico. Diaz-Loving et al. (2004) drew on these 323 attributes to derive two versions of their scale, a long version containing 117 trait adjectives and a short version comprised of 65 items with the highest factor loadings. In both versions, respondents rate their attributes on a five-point scale ranging from the anchor "absolutely" to "not at all." In a sample of 282 females and 335 males, the test authors factor analyzed the 117–item version and obtained the following dimensions: (a) three positive instrumental factors:

Instrumental Cooperative (e.g., punctual, responsible), $\alpha = .90$; Instrumental Focused on Achievement, (e.g., competent, persistent), $\alpha = .84$; and Instrumental Egocentric (e.g., daring, bold), $\alpha = .67$; (b) three negative instrumental factors: Instrumental Machismo (e.g., violent, rude), $\alpha = .85$; Instrumental Authoritarian (e.g., proud, vengeful), $\alpha = .77$; and Instrumental Social Rebellious (e.g., discourteous, lack of interest), $\alpha = .63$; (c) two positive expressive factors: Affiliative-Affective (e.g., loving, affectionate), $\alpha = .67$; and Romantic Dreamer (e.g., romantic, dreamer), $\alpha = .67$; and (d) three negative expressive factors: Egocentric-Negative-Emotive, (e.g., unstable, liar), $\alpha = .83$; Emotional Vulnerable (e.g., jealous, fearful), $\alpha = .76$; and Passive-Negative External Control (e.g., conforming, undecided), $\alpha = .71$. This new instrument has not yet been validated against external criteria. In the present study, we administered the 65-item version of the instrument.

Flexibility Scale. Melgoza-Enríquez and Díaz-Guerrero (1990) developed this 20-item scale because they considered flexibility to be a cardinal trait of the Mexican personality. A factor analysis of self-ratings in a sample of 80 teachers in Mexico City yielded three interpretable factors: Agreeableness (e.g., I am tolerant), $\alpha = .75$; Obligingness (e.g., I am accommodating), $\alpha = .56$; and Flexibility (e.g., I like conceding), $\alpha = .74$. Bipolar trait items are counterbalanced and rated on a four - point scale. The anchors are four letters ranging from A to D. This instrument needs to be further validated. The researchers have hypothesized that these flexibility dimensions will correlate with indigenous measures of affiliative obedience, assertiveness, and abnegation, but this has not yet been investigated.

Multidimensional Scale of Assertiveness. Flores-Galaz (1989) used a combined etic-emic approach to develop this 45-item scale. Flores-Galaz, Díaz-Loving, and Rivera-Aragón (1987) and Flores-Galaz (1989) had previously obtained the same three-dimensional structure for the imported Rathus Assertiveness Scale (Rathus, 1973), which differed, however, from the factors reported for the original (imported) instrument in United States samples. Flores-Galaz (1989) added new items for each dimension to obtain the following scales: (a) Indirect Assertiveness (e.g., "I can express my affection with greater ease through cards and/or letters than personally"), $\alpha = .86$; (b) Non-Assertiveness (e.g., "It is hard to begin a relationship with people that I have just met"), $\alpha = .85$; and (c) Assertiveness (e.g., "I can ask to be taught how to do something that I am not able to do."), $\alpha = .80$. Items are rated on a 5- point scale, ranging from strongly disagree to strongly agree. Florez-Galaz and Díaz-Loving (1994) reported a number of sensible correlations between this scale and indigenous measures of locus of control beliefs, achievement orientation, and self-concept. For example, both Indirect Assertiveness and Non-Assertiveness correlated positively with belief in fatalism or luck and other external forms of control, whereas assertiveness correlated negatively with belief in these external forces.

Abnegation Scale. Avendaño-Sandoval, Díaz-Guerrero, and Reyes-Lagunes (1997) developed a 20-item measure of abnegation, or the tendency to sacrifice self for others. Factor analysis of the self-ratings of 850 respondents sampled in businesses and homes in Mexico City resulted in three factors: Abnegation Centered on the Family (e.g., I enjoy overworking if it is for my family), $\alpha = .77$; Abnegation Centered on Social Conduct (e.g., I accept apologies), $\alpha = .72$; and Sensitive or Cautious Abnegation (e.g., It

embarrasses me to say no), α =. 69. Items are rated on a three- point scale, with three options (True, Do Not Know, and False). Flores-Galaz and Aguilar Ortega (1998) found that these abnegation subscales were generally correlated in the expected negative direction with indigenous measures of assertiveness.

Scale of Personal Strength. Díaz-Guerrero and Melgoza-Enriquez (1994) developed this 4-item scale to measure the capacity for self-modification when coping with life challenges. The items, which contain culture-specific and colloquial expressions, ask respondents how they feel about their endurance to confront their own crises and emotional problems, their ability "to carry their own cross" (i.e., *cargar con su propia cruz*), and their patience in aiding loved ones and friends with their emotional problems. Items are rated on a four-point scale, ranging from "Not Strong" to "Very Strong". In a sample of 80 teachers, Díaz-Guerrero and Melgoza-Enriquez (1994) showed that a one-factor solution explained 58% of the variance and alpha reliability was .74. Ortega-Estrada (1996) and Varela-Macedo, Díaz-Loving, and Reyes-Lagunes (1998) reported validity evidence for this scale.

Procedure

Volunteer students at each university read a verbal consent script, then completed the ten instruments over three class sessions. The instruments were administered by José de Jesús Vargas-Flores and Joselina Ibáñez at the National Autonomous University of Mexico at Iztacala (NAUM-Iztacala), by Mirta Flores-Galaz and Jorge Iuit-Briceno at the Autonomous University of Yucatan (AUY), and by Jose Miguel Escamilla at the Hidalgan Institute of Higher Learning Studies (HIHLS). The researchers distributed the

instruments in three different orders. The students took an average of three hours (i.e., three regular class periods) to fill out all of the instruments.

Results

Replicability of the Five-Factor Model in Mexico

Internal Consistency Reliability

In Table 1 we show the alpha reliability estimates for the NEO-PI-R domain and facet scales in the total Mexican sample and the two subsamples. The alpha values were quite similar across the three samples. For the five domain scales, they ranged from .80 to .88 in the total sample, .77 to .88 in the first subsample (UNAM-HIHLS), and .80 to .89 in the second subsample (AUY). These values are somewhat lower than the alpha range of .86 to .92 in the U.S. normative sample, but still acceptable. Some facet scales had substantially lower alpha values in our Mexican samples, as compared to the U.S. normative sample. In particular, the alpha values for the following facet scales were lower by .10 or more in a comparison of the Mexican total sample and the U.S. normative sample: N1: Anxiety (.57 vs. .78); E5: Excitement-Seeking (.50 vs. .65); O2: Aesthetics (.56 vs. .76); O4: Actions (.24 vs. .58); O6: Values (.30 vs. .67); A2: Straightforwardness (.61 vs. .71); and C2: Order (.46 vs. .66). Gellman (1994) found a similar drop in alpha values relative to the U.S. normative sample for N1: Anxiety (65 vs. .78), E5: Excitement-Seeking (.59 vs. .72), and 04: Actions (.42 vs. .58) in a comparison of bilingual Latinos in the United States who completed the Spanish NEO-PI-R. These results suggest that some items in the Spanish NEO-PI-R need retranslation or that some of the behaviors referred to in the items are less relevant for Mexican samples. The alpha reliabilities for three facet scales, O4: Actions, O6: Values, and A6: Tender-mindedness,

are clearly marginal. Despite this, these scales did exhibit acceptable factor loadings in the principal components analyses reported next.

Insert Table 1 about here

Replicability of the Five-Factor Structure

To demonstrate the replicability of the NEO-PI-R structure, I conducted principal components analyses with varimax rotations on the facet scales. In the total sample, the pattern of eigenvalues indicated a break after the fifth factor (the first seven eigenvalues were 7.14, 2.92, 2.72, 1.91, 1.63, 1.06, and .94), and the five factors were interpretable as the Big Five dimensions of the Five-Factor Model (FFM). In addition, the five-factor solution replicated well across the two subsamples, with factor congruence coefficients (Tucker, 1951) between matched factors ranging from .91 to .96. The varimax-rotated five-factor solution for the total sample is presented in Table 2. Factor congruence coefficients computed between matched factors in the Mexican total sample and the U.S. normative sample are also shown in Table 2. They range from .91 to .97. The two Mexican subsamples exhibited a comparable level of congruence with the U.S. normative sample, with congruence coefficients ranging from .90 to .95 for the UNAM-HIHLS subsample and from .91 to .97 for the AUY subsample.

Despite the overall level of cross-cultural replication, six facet scales had their highest factor loading on the wrong factor in the varimax solution (see Table 2). Four of the six were Extraversion and Agreeableness facet scales, suggesting that they may be accounted for by subtle variations in the rotational orientation of factors in varimax

solutions (Kallasmaa, Allik, Realo, McCrae, 2000; Rolland, 2002). Indeed, when I applied Procrustes rotations to seek maximum fit with the normative U.S. factor solution (McCrae, Zonderman, Costa, Bond & Paunonen, 1996), cross-cultural replication was further improved and only two facet scales (E3: Assertiveness and O3: Feelings) still loaded somewhat higher on an unintended factor. The Procrustes rotated factor solution is also shown in Table 2. After Procrustes rotation, factor congruence coefficients with the U.S. normative sample ranged from .94 to .97 in the total sample, from .93 to .96 in the first subsample, and from .92 to .98 in the second subsample. In summary, although some facet scales exhibited marginal internal consistency in our Mexican samples, replication of the Five-Factor Model was very good.

Insert Table 2 about here

Replicability of Indigenous Mexican dimensions

Overview of Analyses

To investigate the replicability of the indigenous Mexican dimensions I conducted reliability and factor analyses for each measure. First, I compared alpha reliability coefficients obtained in the total Mexican sample with those reported by the original authors of the respective instruments. In these analyses, I computed alpha reliabilities for the scales as scored by the original test authors. Acceptable alpha values do not, however, imply that the original scales provide the optimal or most replicable structural representation of the items in the instruments. To determine this, I conducted item-level factor analyses for each instrument, using the factor extraction and rotation methods used

by the original researchers. I determined the replicability of factors by examining the congruence of factors across our two subsamples for factor solutions with successive numbers of factors. This enabled me to compare the factor replicability of the authors' preferred number of dimensions, and, where relevant, to make a case for a different number of more replicable factors. Factors were considered replicable if they emerged in comparable form in both subsamples and in the total sample.

For each indigenous instrument, I refer to three tables. In Table 3, I show the alpha reliability estimates for the indigenous scales as scored by the authors. The reliability values in the total Mexican sample are shown next to those obtained by the test authors. In Table 4, I show the mean factor congruence values between best-matched factors in our two subsamples for solutions varying in the number of factors or components. I examined successive factor solutions ranging from one factor to a number of factors that was one more than reported by the original test authors. I also annotated the "optimal" number of factors for each instrument as determined by their replicability across the two subsamples and the total Mexican sample, as well as their interpretability. For each instrument, I also provide a table showing the optimal or most replicable factor structure in the total Mexican sample, along with my preferred labels for each indigenous dimension.

Insert Tables 3 and 4 about here

Self-Concept Measures

Multidimensional Self-Concept Scale. As seen in Table 3, the test authors (La Rosa & Díaz-Loving, 1991) preferred a structure of nine dimensions. The alpha reliabilities for these scales in our total Mexican sample ranged from .72 to .89, and were quite comparable to those reported by the original authors. Thus, the internal consistency reliability of the scales, as scored by the test authors, ranged from adequate to good.

However, my principal axis factoring of the items, with varimax rotations, suggested that factor replicability across our two subsamples was insufficient to recommend the retention of nine dimensions. The mean congruence between best-matched factors in the 9-factor solution was only . 67 (see Table 4). The pattern of eigenvalues in the two subsamples was not definitive regarding the optimal number of factors. The first ten eigenvalues in the UNAM-HIHLS subsample were 16.08, 4.49, 2.63, 2.24, 1.89, 1.78, 1.57, 1.42, 1.33, and 1.31. The first ten eigenvalues in the AUY sub-sample were 16.13, 5.06, 3.64, 2.68, 1.65, 1.56, 1.46, 1.35, 1.24, and 1.17. However, the mean congruence coefficients in Table 4 indicate that the four-factor solution was highly replicable across the two subsamples (mean congruence coefficient of .96) and provided more differentiation than the other replicable solutions, which contained only one or two factors. The four-factor solution also replicated in the total sample. Table 5 shows the rotated factor matrix for the four-factor solution in the total sample and the congruence coefficients between best-matched factors in the two subsamples.

I labeled the first factor Conscientiousness and Competence. A possible Spanish label would be *Laboriosidad y Competencia.* The factor was best defined by trait terms from the authors' Occupational and Ethical dimensions. I labeled the second factor

Inhibition, or in Spanish, *Cohibición* (Introversion is a possible alternative label). The factor was defined primarily by terms from the authors' Expressive Sociability, Initiative, and Emotional States dimensions. I labeled the third dimension Warmth or *Afabilidad.* It was defined primarily by terms from the authors' Interindividual Feelings and Accessibility dimensions. I labeled the fourth factor, which is a good replication (inversely) of the authors' Emotional Health dimension, Temperamentalness or *Genio Áspero*. By scoring each item on the factor where it loaded highest in absolute value, I obtained four scales with the following alpha reliability values: Conscientiousness and Competence, $\alpha = .89$; Inhibition, $\alpha = .89$; Warmth, $\alpha = .87$; and Temperamentalness, $\alpha = .76$. Not surprisingly, given their greater length, these four scales are more reliable than the nine scales reported by the test authors.

Insert Table 5 about here

Multidimensional Self-Concept Scale. As seen in Table 3, the test author preferred a structure of six dimensions for this instrument (Valdez-Medina, 1994). The alpha reliabilities in our total Mexican sample were comparable to those reported by the test author. The pattern of eigenvalues in the two subsamples suggested that five or six factors were needed. The first ten eigenvalues in the UNAM-HIHLS subsample were 9.61, 3.71, 2.21, 1.88, 1.54, 1.22, 1.13, 1.02, .96, and .94, and the first ten eigenvalues in the AUY subsample were 7.31, 3.84, 2.80, 1.96, 1.51, 1.28, 1.20, 1.13, 1.03, and .96. As seen in Table 4, the replication criterion suggested five replicable principal components after varimax rotations. Table 6 shows the factor loading matrix for the five-factor

solution in the total sample and the coefficients of congruence between these factors in the two subsamples.

I labeled the first factor Conscientiousness (or *Laboriosidad*). It was defined primarily by terms from the test authors' Intellectual Work and Social Normative dimensions. The second factor, which I relabeled Agreeableness (or *Agradabilidad*), was largely defined by the five terms from the authors' Ethical Moral dimension (e.g., honest, respectful, loyal, sincere, and self-giving), three terms from the authors' Social Normative dimension (e.g., good, attentive, accommodating), and a term from the Social Expressive dimension (e.g., amiable). For the third factor, I retained the authors' Rebelliousness (*Rebeldía*) label. I labeled the fourth factor Playfulness (or *Relajo*). The authors preferred the broader Social Expressive label. I labeled the fifth factor Affection (or *Cariño*). It was defined by the same items as the authors' Expressive Affective dimension.

Although the test author originally reported a six-dimensional structure, Valdez-Medina, González, Jiménez, and Canas (1996) subsequently reported a five-factor solution that was quite consistent with the one identified in the present study. As in the present study, one factor (which I have labeled Conscientiousness) was a blend of the original Intellectual Work and Social Normative factors. The remaining factors, which Valdez-Medina et al. labeled Rebelliousness, Social Expressive, Expressive Affective, and Ethical Moral, essentially replicated those in their original study. By scoring each item on the factor where it loaded highest in absolute value in the present study, I obtained five scales with the following alpha reliability values: Conscientiousness, α =

.84; Agreeableness, α = .82; Rebelliousness, α =.79; Playfulness, α = .80; and Affection, α = .85.

Insert Table 6 about here

Multidimensional Self-Concept Inventory. This instrument is an integration of the two self-concept measures just addressed. Therefore, one might expect similar dimensions to emerge. As seen in Table 3, the test authors (Díaz-Loving et al., 2002) selected a nine-dimensional structure. For most scales, the alpha reliabilities in the present study, which ranged from .67 to .94, were actually somewhat higher than those reported by Díaz-Loving et al. However, in a principal components analysis with varimax rotations, the factor replication criterion argued against nine factors. The mean of the congruence coefficients for the nine-factor solution was only .75 (see Table 4). The pattern of eigenvalues in the two subsamples suggested six to eight meaningful factors (the first ten eigenvalues were 21.12, 7.90, 5.00, 3.97, 2.58, 2.19, 1.80, 1.66, 1.51, and 1.40 in the UNAM-HIHLS subsample, and 20.41, 8.38, 6.11, 4.68, 3.00, 2.38, 2.03, 1.64, 1.42, and 1.35 in the AUY subsample). The replication criterion suggested seven replicable factors (mean congruence = .92).

Table 7 shows the factor loading matrix in the total sample, as well as the congruence coefficients for these factors across the two subsamples, which ranged from .85 to .97. I retained the authors' Social Expressive (or *Social Expresivo*) label for the first factor. I labeled the second factor Temperamentalness (or *Genio Áspero*). It was a blend of the test authors' Emotive-Negative Self-Affirming and Emotional Vulnerability

dimensions. I labeled the third factor Conscientiousness and Competence (or *Laboriosidad y Competencia*). It largely replicated the test authors' Instrumental Constructive dimension. I labeled the remaining factors Affection (or *Cariño*), a replication of the test authors' Social Affiliative dimension; Honesty (or *Rectitud*), a replication of the test authors' Ethical Normative dimension; Inhibition (or *Cohibición),* a replication of the External Negative Passive Control dimension; and Equanimity (or *Ecuanimidad*), a replication of the Socio-Emotional Intelligence dimension. By scoring each item for the factor on which it loaded highest in absolute value, I obtained five scales with the following alpha reliability values: Social Expressive, $\alpha = .92$; Temperamentalness, $\alpha = .88$; Conscientiousness and Competence, $\alpha = .85$; Affection, $\alpha = .94$; Honesty, $\alpha = .80$; Inhibition, $\alpha = .80$; and Equanimity, $\alpha = .77$.

Insert Table 7 about here

Instrumentality and Expressivity Scales

Instrumentality and Expressivity Scale. Reyes-Lagunes (1999) reported a four-dimensional structure, which they interpreted in terms of Spence and Helmreich's (1978) concepts of expressive and instrumental traits. I obtained alpha reliabilities, ranging from .85 to .94, that were comparable to those reported by the test author (Table 3). In a principal components analysis with varimax rotations, the pattern of eigenvalues in the two subsamples suggested the need for four or five factors (the first ten eigenvalues were 20.01, 10.86, 5.38, 2.38, 2.13, 2.03, 1.64, 1.54, 1.48, and 1.38 in the UNAM-HIHLS subsample, and 16.23, 6.32, 4.23, 2.01, 1.64, 1.37, 1.25, 1.13, 1.10, and .99 in the AUY

subsample). The replication criterion suggested four replicable factors across the two subsamples and total sample (mean congruence = .93; see Table 4). Table 8 shows the rotated factor matrix for the four-factor solution in the total sample and the congruence coefficients between best-matched factors in the two subsamples.

I labeled the first broad factor Positive Valence (*Cualidad Positiva*), because all positively valenced traits had a moderate to high loading on this factor. It was a blend of the author's Androgyny and Positive Normative Expressivity dimensions. I labeled the second factor Hostility (or *Antipatía*). It replicated the author's Negative Instrumentality dimension. I labeled the third factor Neuroticism (or *Nerviosismo*). It was defined primarily by items from the author's Negative Expressivity dimension. I labeled the fourth factor Warmth (or *Afabilidad*). It is defined primarily by items from the author's Positive Normative Expressivity dimension. By scoring each item for the factor on which it loaded highest in absolute value, I obtained four scales with the following alpha reliability values: Positive Valence, $\alpha = .92$, Hostility $\alpha = .93$, Neuroticism $\alpha = .86$, and Warmth $\alpha = .91$.

Insert Table 8 about here

Scale of Expressive and Instrumental Traits. The test authors reported an 11-dimensional structure for this instrument (Díaz-Loving et al. 2004). I obtained alpha reliabilities for the test authors' scales that were comparable to those reported by the test authors, with two exceptions (i.e., Instrumental Focused on Achievement, Affiliative Affective). These alpha values, which ranged from .69 to .84, were generally acceptable.

However, the replication criterion failed to support the retention of 11 factors. In principal components analyses with varimax rotations, the mean congruence across the two subsamples for the 11-factor solutions was only .75 (see Table 4). The pattern of eigenvalues in the two subsamples suggested that 5 to 7 factors were meaningful (the first twelve eigenvalues were 10.35, 6.65, 6.03, 2.60, 2.11, 1.82, 1.66, 1.38, 1.35, 1.20, 1.19, and 1.16 eigenvalues in the UNAM-HIHLS subsample, and 9.01, 7.41, 6.49, 3.20, 2.11, 1.99, 1.55, 1.44, 1.41, .1.35, 1.25, 1.11 in the AUY subsample). However, the four-factor structure proved more replicable across the subsamples and total sample (mean congruence = .94; see Table 4). Table 9 shows the rotated factor matrix for the four-factor solution in the total sample and the congruence coefficients between best-matched factors in the two subsamples.

I labeled the four factors Conscientiousness (or *Laboriosidad*), a blend of the test authors' Instrumental Cooperative and Instrumental Achievement dimensions; Neuroticism (or *Nerviosismo*), a blend of the authors' Emotional Vulnerable and Passive Negative External Control dimensions; Warmth (or *Afabilidad*), a blend of the authors' Expressive Affiliative and Romantic Dreamer dimensions; and Hostility (or *Antipatía*), a blend of the authors' Instrumental Egocentric, Instrumental Machismo, Instrumental Authoritarian, Instrumental Social Rebellious, and Egocentric Negative Emotive dimensions). By scoring each item for the factor on which it loaded highest in absolute value, I obtained four scales with the following alpha reliability values: Conscientiousness, $\alpha = .84$; Neuroticism, $\alpha = .83$; Warmth, $\alpha = .88$; and Hostility, $\alpha = .88$.

Insert Table 9 about here

Other Trait Measures

Flexibility Scale. As seen in Table 3, Melgoza-Enríquez and Díaz-Guerrero (1990) favored a three-dimensional structure for this instrument. However, inspection of the authors' factor matrix revealed multiple dual loadings, suggesting weak simple structure. The authors' small sample size (n = 80) might have contributed to an unstable factor structure. Furthermore, in the current sample, alpha reliabilities for these three scales were substantially lower than the original alphas reported by the authors (Table 3).

In my principal axis analysis with oblimin rotations, I failed to replicate the authors' three dimensions. The pattern of eigenvalues in the two subsamples and the mean congruence coefficients in Table 4 suggested the presence of a single replicable factor (mean congruence = .98; the first five eigenvalues were 4.21, 1.49, 1.09, 1.03, and .99 in the UNAM-HIHLS subsample, and 3.44, 1.42, 1.28, 1.13, and 1.09 in the AUY subsample). Although the mean congruence of the three-factor solution was also fairly high (.90), the three factors obtained in our subsamples did not correspond to those identified by the original test authors. Therefore, I deemed the one-factor solution to be most replicable and labeled this dimension Flexibility (or *Flexibilidad* in Spanish). Table 10 shows the factor loading matrix. Alpha reliability for this dimension in the total sample was .74.

Insert Table 10 about here

Multidimensional Scale of Assertiveness. The test author (Flores-Galaz, 1989) reported a three-dimensional structure for this instrument (see Table 3). I obtained alpha values for these three scales that were comparable to those of the test authors, ranging from .82 to .88. In my principal components analysis with varimax rotations I was able to replicate the author's three dimensions in both subsamples and the total sample (mean congruence = .96; the first six eigenvalues were 10.10, 3.60, 2.59, 2.18, and 2.05 in the UNAM-HIHLS subsample, and 11.48, 3.6, 2.37, 1.76, 1.72, and 1.60 in the AUY subsample). The factor loading matrix is shown in Table 11. A potential concern with this instrument is the highly redundant wording of the items that define the Indirect Assertiveness and Non-Assertiveness factors. This could result in separate "artifactors" even if only one underlying construct is actually being measured. Because the three factors were replicable, I chose to retain the author's three-dimensional structure in subsequent analyses. I also retained the test author's factor labels: Indirect Assertiveness (or *Asertividad Indirecta*), Non-Assertiveness (or *No Asertividad*), and Assertiveness (or *Asertividad*). However, it is noteworthy that all items also had acceptable loadings on a replicable one-factor solution (mean congruence = .99), so that a one-dimensional representation would also be acceptable.

Insert Table 11 about here

Abnegation Scale. As seen in Table 3, the test authors reported a three-dimensional structure for this instrument (Avendaño-Sandoval, Díaz-Guerrero, & Reyes-Lagunes, 1997). Alpha reliabilities in our total sample were a bit lower than those reported by the test authors, particularly for the Abnegation Centered on the Family Scale. My principal components factor analysis with varimax rotations replicated fairly well the test authors' three-factor solution (mean congruence = 92; the first six eigenvalues were 3.03, 2.71, 1.69, 1.11, 1.07, and 1.03 in the UNAM-HIHLS subsample, and 2.80, 2.31, 1.75, 1.25, 1.18, and 1.08 in the AUY subsample). Table 12 shows the factor loading matrix in the total sample. I retained the test authors' labels for the three dimensions: Family Centered Abnegation (or *Abnegación Centrada en la Familia*), Abnegation Centered on Social Conduct (or *Abnegación Centrada en la Conducta Social*), and Sensitive Abnegation (or *Abnegación Cautelosa*). However, it is noteworthy that the second factor (Abnegation Centered on Social Conduct) is defined by Big Five Agreeableness traits, while the third factor (Sensitive Abnegation) might also be labeled non-assertiveness.

Insert Table 12 about here

Personal Strength Scale. Díaz-Guerrero and Melgoza-Enriquez (1994) reported a one-dimensional structure for this short measure, which they labeled Personal Strength. The alpha reliability in our total sample (.64) was somewhat lower than the value reported by the test authors (.74). The pattern of eigenvalues and the mean congruence coefficients in Table 4 suggested that either one or two-dimensional solutions were

meaningful and replicable (the first four eigenvalues were 1.94, 1.27, .46, and .34. 4 in the UNAM-HIHLS subsample, and 1.91, 1.36, .38, and .35 in the AUY subsample). However, there are only four items in this scale so I adopted the test authors' one-dimensional solution, which replicated well across both subsamples and the total sample (mean congruence = .99). Table 13 shows the factor loading matrix in the total sample. I retained the test author's Personal Strength (or *Fuerza Personal*) label.

Insert Table 13 about here

Summary. For most of the indigenous instruments, my scoring of the test authors' preferred dimensions or scales resulted in internal consistency reliability estimates that were acceptable and comparable to those reported by the test authors. However, the replication criterion suggested that many of the indigenous instruments have been over-factored. Although additional factors can split off from larger dimensions in some samples, these additional dimensions apparently do not emerge in a reliable manner across samples. A strong case can therefore be made for scoring a fewer number of more replicable and reliable dimensions. Indeed, given there greater length, it is not surprising that the alpha reliabilities of the replicable dimensions were generally substantially higher than those reported for the test authors' preferred dimensions.

Relating Indigenous Mexican Dimensions to the Big Five

To address the culture-specificity of the indigenous dimensions in relation to the FFM, I related the indigenous dimensions to the Big Five dimensions (i.e., NEO-PI-R domain scores) using both regression and joint factor analyses. For ease of interpretation,

I reversed the test authors' scoring keys in some cases, so that high scores always corresponded to more, not less, of the trait described by the scale label.

Regression analyses. Table 14 shows the Pearson correlations relating each indigenous Mexican dimension to the Big Five dimensions. For those instruments for which I derived a different set of replicable dimensions, I also report correlations between the factor scores for those dimensions and the Big Five domain scores. In addition, I show the multiple correlations obtained when I regressed each Mexican dimension onto all Big Five dimensions simultaneously in multiple regression analyses.

Insert Table 14 about here

If one treats a squared multiple correlation of .15 or less (i.e., less than 15% of the variance accounted for) as a basis for identifying indigenous scales that are relatively distinct from the Big Five, then only two original author scales, Family Centered Abnegation and Socially Centered Abnegation, qualify as relatively distinct or unique from the Big Five, as measured by the NEO-PI-R. In addition, the replicable dimensions of Affection (in two different self-concept measures), Honesty, and Equanimity would be considered rather distinct or unique. If one considers a Pearson correlation of at least .40 to represent a marker of a given Big Five dimension, then four of the five Big Five dimensions (all but Openness to Experience) are represented by multiple indigenous scales. Good indigenous markers of Big Five Neuroticism include the test authors' Emotional Health (inversely), External Negative Passive Control (in two instruments), Emotional Vulnerability, Depressive, Negative Expressivity, Non-assertiveness,

Assertiveness (inversely), and Personal Strength (inversely) scales. Two additional author scales approached the .40 criterion as markers of Neuroticism, Emotional Vulnerability in the Scale of Expressive and Instrumental traits (r = .39) and Indirect Assertiveness (r = .38). Good markers of Neuroticism among the replicable factors include two Inhibition and two Neuroticism dimensions. Good indigeneous markers of Big Five Extraversion include the test authors' Emotional States, Expressive Sociability, Initiative, Social Expressive, Androgyny, and Non-Assertiveness (inversely) scales. Extraversion markers among the replicable factors include Inhibition (inversely), Playfulness, and Social Expressivity.

Good indigenous markers of Big Five Agreeableness include the test authors' Rebelliousness, Emotive Negative Self-Affirming, Negative Instrumentality, Instrumental Machismo, and Instrumental Authoriarian (all inversely). Good markers among the replicable dimensions include Warmth, Rebelliousness (inversely), Temperamentalness, and two Hostility factors. It is of interest that the purest markers of Agreeableness are negative indicators. This appears to be due to the following: The many scales that might be expected to identify the positive pole of Big Five Agreeableness are moderately related to both Big Five Agreeableness and Extraversion (i.e., they are interstitial traits between these two dimensions). These include the test authors' Affiliative Sociability, Interindividual Feelings, Social Affiliative, Expressive Affiliative, and Flexibility dimensions, and the three replicable Warmth dimensions.

Good markers of Big Five Conscientiousness among the test authors' original scales include Occupational, Social Normative, Ethical Moral, Ethical Normative, Intellectual Work, Instrumental Constructive, Normative Passive Expressivity,

Instrumental Cooperative, and Instrumental Focused on Achievement. Good markers among the replicable dimensions include three Conscientiousness and/or Competence factors and Positive Valence, although the latter factor also correlates moderately with Neuroticism (inversely) and Extraversion. The only Big Five dimension that is not assessed well by any indigenous scales or replicable dimensions is Openness to Experience. Only the Romantic Dreamer scale, and none of the replicable factors, shows some tendency to define this Big Five dimension.

Only a few indigenous dimensions have gone unmentioned above, including the test authors' Accessibility, Expressive Affective, Instrumental Egocentric, and Egocentric Negative Emotive scales, and a replicable Temperamentalness dimension and Agreeableness dimension. These scales tended to have modest correlations with multiple Big Five dimensions, rather than exhibiting good simple structure with particular Big Five dimensions. It is noteworthy that the test author dimensions in this list tended not to replicate well as independent factors in the factor analyses of each instrument reported earlier.

In summary, the regression analyses indicate that there are only a few dimensions that are not well-subsumed by the Big Five dimensions and that all of the Big Five dimensions except Openness to Experience are well defined by a number of indigenous Mexican scales and replicable factors. These results do not provide strong evidence of culture-specificity in Mexican personality structure.

Joint factor analysis. Joint factor analysis can also be used to explore the overlap between indigenous and Big Five dimensions (Cheung, Leung, Sun, Song, & Xie, 200; Katigbak, Church, Guanzon-Lapena, del Pilar, 2002). I conducted a joint principal

components analysis with varimax rotations on the replicable indigenous dimensions and the NEO-PI-R facet scales on the subsamples and the total sample. My primary goal was to determine whether any dimensions beyond the five-factor model would emerge, particularly dimensions defined largely by indigenous scales. I first examined the factor structures of the subsamples. The pattern of eigenvalues in the two subsamples suggested that six to eight factors might be meaningful (first ten eigenvalues for the AUY were: 10.60, 6.81, 5.05, 4.31, 2.50, 2.25, 1.81, 1.58, 1.34, and 1.16; for the NAUM-HIHLS were: 11.89, 5.67, 4.83, 3.44, 2.75, 1.89, 1.84, 1.74, 1.38, and 1.27).

Nonetheless, I also examined the five-factor solution to see if the NEO-PI-R five-factor structure would emerge.The five-factor solution had the following congruence coefficients between best-matched factors: .84 for a blended factor of Neuroticism and Extraversion, .60 for Openness to Experience, .92 for Agreeableness, and .97 for Conscientiousness. A fifth factor comprised of Warmth/Affection dimensions had a coefficient of .92. The six-factor solution yielded the following coefficients: .88 for Neuroticism, .95 for Extraversion, .36 for Openness to Experience, .94 for Agreeableness, .97 for Conscientiousness, and .88 for a sixth factor defined by Warmth/Affection indigenous dimensions. The following coefficients were obtained for the seven-factor solution: .85 for Neuroticism, .93 for Extraversion, .68 for Openness to Experience, .94 for Agreeableness, .97 for Conscientiousness, .91 for Warmth/Affection, and .71 for a factor labeled as Honesty. The eight-factor solution yielded the following coefficients: .81 for Neuroticism, .92 for Extraversion, .73 for Openness to Experience, .94 for Agreeableness, .97 for Conscientiousness, .79 for Warmth/Affection, .66 for the Honesty factor, and a very marginal coefficient of .03 for Equanimity. On the basis of the

coefficients of congruence I decided that the seven-factor solution was the most optimal with coefficients of congruence. It indicated good replicability for four Big Five factors and the Warmth/Affection factor, and more marginal congruence for the smaller Openness to Experience and Honesty factors. Moreover, I found that the pattern of loadings was generally interpretable.

I then examined the factor structures of the total sample. The pattern of eigenvalues again suggested breaks after six and eight factors (the first ten eigenvalues were 11.17, 6.03, 5.42, 3.87, 2.49, 2.17, 1.70, 1.65, 1.29, and 1.24.) Nonetheless, I again examined the five-factor solution to see whether the NEO-PI-R five-factor structure would emerge and encompass all of the indigenous dimensions. In the five-factor solution, the factors did not correspond to all of the Big Five dimensions. Although the Agreeableness and Conscientiousness facets tended to define distinct factors, the Neuroticism and Extraversion facets loaded at opposite poles of the same factor and the Openness to Experience facets divided three factors.

I again selected the seven-factor solution as optimal because I had obtained the best coefficients of congruence across the two subsamples for the seven-factor solution and it was interpretable in the total sample as well. Table 15 shows the varimax-rotated factor loading matrix in the total sample. The first factor corresponds well with Big Five Conscientiousness. All six NEO-PI-R Conscientiousness facets load highly on this factor, as do indigenous Consientiousness/Competence dimensions. The finding that the indigenous Positive Valence dimension loads highly only on this factor might seem surprising. However, inspection of Table 8 indicates that the highest loading items for this dimension assess aspects of conscientiousness and competence (i.e., able, capable,

competent, reliable, firm, tenacious, and hardworking). The second factor corresponds to Big Five Neuroticism. All six NEO-PI-R Neuroticism facets load .36 or higher on this factor, although N2: Angry Hostility and N5: Impulsiveness load higher on the fourth factor, which we labeled Hostility. The loadings of the E3: Assertiveness facet (inversely), the A5: Modesty facet, and the indigenous Indirect Assertiveness, Non-assertiveness, and Sensitive or Cautious Abnegation scales on this factor indicate that self-sacrifice, modesty, and lack of assertiveness is associated with Neuroticism in our Mexican samples.

The third factor is a clear Extraversion dimension, although the loadings of two NEO-PI-R Agreeableness facets on this factor (A1: Trust and A3: Altruism) suggests that the dimension is slightly rotated toward Big Five Agreeableness in the circumplex plane defined by these two Big Five dimensions. Note that these two Agreeableness facets and the Feelings facet of Openness to Experience also had moderate loadings on the Extraversion factor when the NEO-PI-R facets scales were factored alone (see Table 2). Indigenous dimensions that assess social expressiveness, playfulness, flexibility, social-centered abnegation, and (inversely) inhibition/introversion also sensibly define this factor.

The fourth factor, which I labeled Hostility, is best defined by characteristics typically associated with the negative pole of Big Five Agreeableness, including hostility, temperamentalness, and rebelliousness. Nonetheless, five of the six NEO-PI-R Agreeableness facets had a primary or secondary loading on this factor. The exception is A6: Tendermindedness, which had poor internal consistency reliability in our Mexican samples (see Table 1).

The fifth factor, which I labeled Warmth/Affection, is defined solely by five indigenous scales. To some extent, the emergence of this factor may reflect the stronger emphasis on romantic, affectionate, and sentimental traits in these indigenous scales than is reflected in the NEO-PI-R Agreeableness facet scales. On the other hand, the separation of this factor from Big Five Agreeableness might also be an artifact of the high redundancy of these four scales. Indeed, there is substantial overlap in the trait adjectives covered.

I labeled the small sixth factor Honesty, because it is primarily defined by an indigenous Honesty dimension and an Agreeableness dimension (Valdez-Medina, 1994) that was best defined by trait terms that referred to honesty, sincerity, respectfulness, and being good (see Table 6). Finally, the seventh factor can be labeled Openness to Experience. Four of six NEO-PI-R facet scales loaded highly on this factor. The two exceptions were O3: Feelings, which loaded better on the Extraversion factor, and O4: Actions, which had poor reliability in our Mexican samples. The reason for the loading of the indigenous Equanimity dimension on this factor is less clear because the scale did not correlate well with the Openness to Experience domain in the regression analysis (see Table 14).

Only four indigenous dimensions failed to align well with a factor in the joint principal components analysis. As noted above, two were NEO-PI-R facets with poor reliabilities (A6: Tendermindedness and O4: Actions). As in our regression analysis, the indigenous Family Centered Abnegation scale was again independent of the Big Five. Based on the regression and joint factor analysis, the indigenous Personal Strength scale appears to be modestly related to Big Five Neuroticism (inversely) and Extraversion, but

is not central to either domain. Both the regression and joint factor analysis indicate that (a) the indigenous measures of Honesty are relatively independent of the Big Five and can define a distinct dimension, and (b) indigenous measures of Affection or Warmth that emphasize romantic, affectionate, and sentimental traits are only modestly associated with the Big Five as assessed by the NEO-PI-R. Although probably not as central in the NEO-PI-R, traits of Honesty and Affection are not culture-specific. Overall, both our regression and joint factor analyses suggest that few, if any, of the indigenous dimensions are clearly specific to Mexican culture.

Insert Table 15 about here

Discussion

I organize the discussion of results around the three research questions noted in the introduction.

Replicability of the NEO-PI-R Five-Factor Model.

Overall, the pattern of results clearly supported the reliability and replicability of the Spanish version of the NEO-PI-R in Mexico. Internal consistency values of both domain and facet scales were comparable to those obtained in the U.S. normative sample. Structurally, the Mexican Spanish version can be considered closely equivalent to its English counterpart. However, more attention needs to be given to selected Openness to Experience facets (i.e., O2: Aesthetics, O4: Actions, O6: Values) because their reliability estimates were relatively low. This may suggest that the translation needs further refinement or that the constructs operate differently in the Mexican culture. One possible

explanation is that certain items or behavioral exemplars regarding aesthetics (e.g., "watching ballet," "reading poetry"), actions ("trying new and foreign foods," "going on vacation"), or values ("looking to religious authorities for decisions on moral issues," "believing in the new morality of permissiveness") may not be equally good indicators of openness to experience in the Mexican cultural setting. At this point there is no way to determine whether such differences are due to cultural factors or are a product of the scale itself. This finding of low reliability indexes in the Openness to Experience domain is not unique to this study, but has also been found in other cross-cultural studies using various translations of the NEO-PI-R (Kallasmaa, Allik, Realo, & McCrae, 2000; Mastor, Jin, and Cooper, 2000; Piedmont & Chae, 1997).

Cross-cultural congruence was lowest for the Extraversion and Agreeableness factors when varimax rotations were applied. However, after Procrustes rotation an excellent fit to the American target was obtained for all of the factors, including Extraversion and Agreeableness. Differences in congruence for these factors between varimax and Procrustes rotations have been attributed to possibly arbitrary differences in factor orientations or axes within the interpersonal circumplex (McCrae et al., 1998). It remains to be determined whether these rotational variations in some of the Extraversion and Agreeableness facets in varimax solutions in this Mexican sample are related to meaningful cultural factors. Kallasmaa et al. (2000) found similar findings in an Estonian sample and hypothesized that such variations in the position of the varimax axes might be psychologically meaningful and associated with the bipolar dimension of individualism-collectivism. However, when they correlated the angular degree of difference between

Extraversion and Agreeableness factors in 21 cultural samples they found mixed support for this hypothesis.

Facet congruence coefficients for most of the Big Five facets ranged between .90 and .99. The lowest congruence coefficient was for the E5: Excitement Seeking facet. As the low reliability of this facet suggests (α=.50), the items of this facet need further improvement for Mexican samples. During the inspection of the Spanish version by my two bilingual collaborators, both of them recommended adapting the item about "vacationing in Las Vegas" to say "vacationing in Acapulco," a widely popular and exciting tourist area for Mexicans. Also, access and exposure to some of the excitement seeking situations referred to in this facet scale may be limited for the students of the present sample (e.g., "excitement of roller coasters" and "being part of the crowd at sporting events"). This may explain the marginal reliability and replicability of this facet. Two other facet scales that merit further research are E3: Assertiveness and O3: Feelings. The former facet, E3: Assertiveness, had its highest (negative) factor loading on the Neuroticism factor, and O3: Feelings loaded on Extraversion even after Procrustes rotation. This may indicate that being assertive is viewed as more unhealthy in Mexican students than in the United States, where assertiveness is an indicator of extraversion or social confidence. This is noteworthy given Mexican psychologists' clear interest in the assertiveness trait. For example, Mexican psychologists have treated indirect assertiveness as a purported indigenous dimension of assertiveness in Mexico. They have also conducted multiple studies relating assertiveness to other personality dimensions such as abnegation, aggressivity, and authoritarianism (Flores-Galaz & Aguilar-Ortega,

1998; Flores-Galaz & Díaz-Loving, 2000; Flores-Galaz, Díaz-Loving, Guzmán, Bárcenas, & Godoy, 1992).

From an *etic* perspective, this study provides further evidence that the underlying five-factor structure of the NEO-PI-R is replicable in languages and cultures which differ substantially from those in which it was originally identified. In addition, most of the imported behavioral exemplars of the Big Five dimensions generalize to the Mexican culture.

Replicability of Mexican Indigenous Dimensions.

In general, my replication analyses suggested more parsimonious factor structures with fewer, but more replicable dimensions, for most of the indigenous instruments. It appears that most of the Mexican indigenous measures have been overfactored by the test authors. Close inspection of the construction and validation procedures for the various instruments reveals that the test developers generally did not report clear criteria for selecting the number of factors. Conceptually, I suspect that these Mexican indigenous psychologists sought to identify as many personality or self-concept distinctions as possible. Too many factors can reduce the parsimony and "explanatory" power of the dimensional structure. For example, the Multidimensional Self-Concept Scale (La Rosa & Díaz-Loving, 1991) is comprised of nine dimensions. However, one factor (i.e., Accessibility) is defined by only four markers. Apparently, the authors identified five general domains labeled Social, Emotional, Ethical, Initiative, and Occupational, but then split them into less replicable subdomains, for example, Social I (i.e., Affiliative Sociability), Social II (Expressive Sociability), and Social III (Accessibility) factors; and Emotional I (Emotional States), Emotional II (Interindividual Feelings), and Emotional

III (Emotional Health). Other examples of apparently overfactored instruments are the Multidimensional Self-Concept Inventory (Díaz-Loving et al., 2002) and the Scale of Expressive and Instrumental Traits (Díaz-Loving et al., 2004). These self-concept or personality dimensions may comprise multiple aspects. However, if researchers want to measure these multiple aspects in a reliable and replicable manner, they may need to expand the number of items assessing each component or better differentiate them conceptually.

Future researchers may also wish to evaluate whether weak replicability of some Mexican indigenous dimensions is due to other methodological issues. The Multidimensional Self-Concept Scale (La Rosa & Díaz-Loving, 1991) provides a good example of this, since it is formatted with bipolar, semantic differential items. In one of my factor solutions, all of the items had high loadings in the one-factor solution (see congruence coefficient .99; Table 4). This suggested the presence of substantial response style variance in students' responses.

Relating Mexican Indigenous Dimensions to the Big Five

The *emic* structure of the Mexican indigenous measures does not appear to be much different from that found in the Big Five model. Based solely on conceptual considerations, Ortiz and Church (2005) hypothesized that most of the Mexican indigenous dimensions would converge with the Big Five dimensions, plus Ashton and Lee's (2001) Honesty dimension, but with few indigenous markers of Big Five Openness to Experience. The empirical results of this study largely confirm Ortiz and Church's (2005) expectations.

The results are in line with previous studies that have examined the culture-specificity of purported indigenous dimensions in relation to the Big Five (Katigbak et al., 2002; Lin & Church, 2004). In general, the findings do not support the culture specificity of Mexican indigenous dimensions, but leave open the possibility that certain personality traits are particularly salient in some cultures. For example, certain personality traits such as abnegation and assertiveness, which have been widely studied by Mexican indigenous psychologists, may be particularly important aspects of Mexican personality (Díaz-Guerrero, 1990). The behavioral exemplars of these dimensions may also have a cultural "flavor." However, in a broader hierarchy of personality traits they can be subsumed by hypothesized universal dimensions.

In the joint factor analyses of the Mexican and Big Five dimensions, the only dimension that emerged as independent of the Big Five and Honesty was the Warmth/Affection dimension. This dimension seems to correspond with the dimension labeled Loving (or *Amoroso* in Spanish) by Rodriguez and Church (2003) in their lexical study of Mexican affect terms. Indeed, the items defining their factor (e.g., affectionate, loving) are fairly similar to those defining the Warmth/Affection factor in the present study. Moreover, the pattern of correlations reported by Rodriguez and Church (2003) between the Loving factor and the Big Five dimensions were fairly comparable to the correlations found here between the Warmth and Affection scales and the Big Five domain scales. A similar factor, labeled Affection (e.g., Passion, Devotion, Tenderness, Desire, Fondness, and Pleasure) was also found in a lexical study in Estonia (Allik & Realo, 1997).

The Mexican indigenous dimension Equanimity also bears a striking resemblance to the Mexican affect dimension labeled Serene (or *Sereno*) by Rodriguez and Church (2003). In fact, the first four Spanish items defining Equanimity (i.e., *tranquilo, sereno, calmado, pacifico*) also defined the Rodriguez and Church (2003) Serene factor. In summary, the Mexican Warmth/Affection and Equanimity dimensions apparently are not culture-specific, but may represent affective traits that are highly salient in Mexico but not much represented in the NEO-PI-R. The salience of Warmth/Affection traits in the Mexican culture may have led to their frequent appearance in different Mexican instruments.

As previously noted, the Warmth/Affiliation dimensions defined a separate factor in the joint factor analysis, perhaps in part because of the almost identical items in these scales. In future research, it would be valuable to eliminate all redundancy and reanalyze the data at the item level. It is possible that a distinct Warmth/Affection dimension would not emerge in such an analysis.

In sum, the findings of the present research were encouraging for proponents of etic or universal persepectives. I demonstrated the generalizability and reliability of the NEO-PI-R. In future research it would be informative to relate the indigenous Mexican dimensions to other well-established models of personality. The study has broad application to indigenization movements in other countries given the prevailing tendency to develop *emic* instruments without investigating the relationships with *etic* concepts, theories, or models across cultures.

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Footnotes

1. The English labels presented in this article for Mexican indigenous dimensions are either my direct translation from the Spanish source articles or translations used by the original Mexican authors in English abstracts of their Spanish articles.

Table 1

Alpha Reliabilities for NEO-PI-R Domains and Facets in Mexican Samples

NEO-PI-R Scale	Total Sample	UNAM-HIHLS Subsample	AUY Subsample
Domains			
Neuroticism	.88	.88	.89
Extraversion	.86	.86	.86
Openness	.79	.78	.80
Agreeableness	.80	.77	.83
Conscientiousness	.88	.88	.89
Neuroticism facets			
N1: Anxiety	.57	.47	.64
N2: Angry Hostility	.71	.68	.73
N3: Depression	.69	.69	.70
N4: Self-Conscientiousness	.62	.60	.63
N5: Impulsiveness	.55	.49	.60
N6: Vulnerability	.68	.66	.71
Extraversion facets			
E1: Warmth	.65	.63	.68
E2: Gregariousness	.67	.63	.71
E3: Assertiveness	.68	.67	.70
E4: Activity	.66	.65	.66
E5: Excitement-Seeking	.50	.47	.51
E6: Positive Emotions	.70	.70	.71
Openness facets			
O1: Fantasy	.62	.58	.66
O2: Aesthetics	.56	.50	.62
O3: Feelings	.52	.51	.51
O4: Actions	.24	.21	.27
O5: Ideas	.75	.74	.76
O6: Values	.30	.25	.38
Agreeableness facets			
A1: Trust	.71	.67	.74
A2: Straightforwardness	.61	.58	.65
A3: Altruism	.63	.63	.63
A4: Compliance	.55	.52	.59
A5: Modesty	.65	.63	.66
A6: Tender-Mindedness	.32	.31	.29

Table 1 Continued

NEO-PI-R Scale	Total Sample	UNAM-HIHLS Subsample	AUY Subsample
Conscientiousness facets			
C1: Competence	.62	.63	.61
C2: Order	.46	.36	.53
C3: Dutifulness	.61	.61	.61
C4: Achievement Striving	.62	.59	.65
C5: Self-Discipline	.74	.71	.77
C6: Deliberation	.69	.70	.67

Note. UNAM = National Autonomous University of Mexico at Iztacala; HIHLS = Hidalgan Institute of Higher Learning Studies; AUY = Autonomous University of Yucatan.

Table 2

Five Component Solution for Spanish NEO-PI-R in Mexican Total Sample after Varimax and Procrustes Rotations

	Varimax-rotated components					Procrustes-rotated components					
Facets	N	E	O	A	C	N	E	O	A	C	FC[a]
Neuroticism Facets											
N1 Anxiety	**0.79**	0.01	-0.07	0.09	0.00	**0.79**	-0.01	-0.08	0.10	0.00	.98
N2 Angry Hostility	**0.66**	**-0.34**	0.00	**-0.32**	-0.13	**0.67**	-0.20	-0.01	**-0.41**	-0.12	.97
N3 Depression	**0.74**	-0.21	-0.01	0.08	-0.22	**0.74**	-0.21	-0.03	0.01	-0.22	.99
N4 Self-Consciousness	**0.72**	-0.14	-0.14	0.17	-0.17	**0.72**	-0.17	-0.16	0.12	-0.17	.99
N5 Impulsiveness	**0.58**	0.13	0.09	-0.25	**-0.33**	**0.58**	0.21	0.09	-0.19	**-0.32**	.97
N6 Vulnerability	**0.69**	-0.08	-0.17	0.10	**-0.34**	**0.69**	-0.09	-0.19	0.07	**-0.34**	.99
Extraversion Facets											
E1 Warmth	-0.21	**0.78**	0.13	0.08	0.15	-0.22	**0.70**	0.15	**0.34**	0.14	.99
E2 Gregariousness	-0.11	**0.75**	-0.16	-0.02	-0.02	-0.12	**0.72**	-0.14	0.23	-0.02	.95
E3 Assertiveness	**-0.37**	0.25	0.18	**-0.40**	**0.35**	**-0.37**	**0.35**	0.21	-0.29	**0.35**	.99
E4 Activity	-0.09	**0.37**	0.05	**-0.44**	**0.39**	-0.09	**0.49**	0.08	-0.28	**0.40**	.98
E5 Excitement Seeking	-0.05	**0.54**	0.26	-0.29	-0.03	-0.05	**0.60**	0.28	-0.09	-0.03	.88
E6 Positive Emotions	-0.22	**0.69**	0.24	-0.11	0.15	-0.23	**0.68**	0.27	0.13	0.14	.96
Openness Facets											
O1 Fantasy	0.06	0.20	**0.65**	-0.08	-0.12	0.06	0.20	**0.65**	0.00	-0.13	.93
O2 Aesthetics	0.09	0.09	**0.74**	0.07	0.18	0.10	0.04	**0.74**	0.11	0.16	.99
O3 Feelings	0.19	**0.46**	**0.36**	-0.16	-0.01	0.19	**0.48**	**0.37**	0.01	-0.02	.94
O4 Actions	-0.12	0.13	**0.32**	-0.19	-0.04	-0.12	0.17	**0.33**	-0.13	-0.04	.92
O5 Ideas	-0.17	-0.02	**0.69**	-0.03	**0.35**	-0.16	-0.04	**0.70**	-0.02	0.34	.97
O6 Values	-0.28	0.04	**0.55**	0.00	-0.02	-0.27	0.02	**0.55**	0.02	-0.03	.93
Agreeableness Facets											
A1 Trust	-0.17	**0.53**	0.19	**0.34**	0.08	-0.18	**0.38**	0.20	**0.50**	0.06	.94
A2 Straightforwardness	0.00	0.08	-0.04	**0.74**	0.10	-0.01	-0.17	-0.05	**0.73**	0.08	.97
A3 Altruism	-0.12	**0.63**	0.12	**0.38**	0.25	-0.13	**0.46**	0.14	**0.57**	0.23	.97
A4 Compliance	-0.09	0.15	-0.09	**0.70**	-0.04	-0.10	0.09	-0.10	**0.71**	-0.06	.98
A5 Modesty	0.24	-0.09	-0.06	**0.53**	-0.26	0.24	-0.25	-0.08	**0.47**	-0.27	.90
A6 Tender-Mindedness	0.19	**0.44**	0.03	**0.31**	0.19	0.18	**0.31**	0.04	**0.45**	018	.90

Table 2 Continued

	Varimax-rotated components					Procrustes-rotated components					
	N	E	O	A	C	N	E	O	A	C	
Conscientiousness Facets											
C1 Competence	**-0.37**	0.23	0.16	-0.03	**0.67**	**-0.37**	0.21	0.19	0.06	**0.66**	.99
C2 Order	0.00	-0.03	-0.12	-0.17	**0.59**	0.00	0.03	-0.10	-0.16	**0.60**	.96
C3 Dutifulness	-0.12	0.15	0.14	0.23	**0.71**	-0.12	0.06	0.16	0.29	**0.70**	.97
C4 Achievement Seeking	-0.07	0.20	0.07	-0.18	**0.76**	-0.07	0.24	0.10	-0.08	**0.76**	1.00
C5 Self-Discipline	**-0.32**	0.12	0.04	-0.06	**0.77**	-0.32	0.12	0.06	0.00	**0.77**	.98
C6 Deliberation	-0.28	-0.07	0.08	0.26	**0.61**	-0.28	-0.16	0.09	0.24	**0.60**	.97
Factor Congruence[b]	0.97	0.91	0 .94	0.91	0.97	0.97	0.97	0.94	0.96	0.97	.96

Note: Factor loadings ≥ .30 and ≤ -.30 are shown in bold. N = Neuroticism, C = Conscientiousness, E = Extraversion, A = Agreeableness, O = Openness to Experience. [a]Facet Congruence. [b]Factor congruence coefficients were computed with corresponding factors in U.S. normative sample (Costa & McCrae, 1992).

Table 3

Alpha Reliabilities of Mexican Indigenous Measures as Scored by Original Test Authors

Instrument (Authors)	Test Authors' Sample Size	Scales	α	
			Test Authors' Sample	Current Study
Multidimensional Self-Concept Scale (La Rosa & Díaz-Loving, 1991)	$n = 2626$	Affiliative Sociability	.85	.84
		Emotional States	.85	.84
		Expressive Sociability	.85	.89
		Interindividual Feelings	.81	.89
		Occupational	.80	.80
		Emotional Health	.76	.76
		Ethical	.77	.75
		Initiative	.71	.70
		Accessibility	.65	.72
Multidimensional Self-Concept Scale (Valdez-Medina, 1994)	$n = 368$	Social Expressive	.78	.80
		Social Normative	.78	.80
		Expressive Affective	.77	.85
		Ethical Moral	.77	.74
		Intellectual Work	.71	.69
		Rebelliousness	.68	.79
Multidimensional Self-Concept Inventory (Díaz-Loving et al. 2002)	$n = 2270$	Social Expressive	.90	.93
		Ethical Normative	.86	.78
		Socio-Emotional Intelligence	.82	.78
		External Negative Passive-Control	.82	.85

Table 3 Continued

Instrument (Authors)	Test Authors' Sample Size	Scales	α	
			Test Authors' Sample	Current Study
		Emotive Negative-Self-Affirming	.77	.85
		Instrumental Constructive	.82	.88
		Emotional Variability	.58	.68
		Depressive	.59	.67
Instrumentality and Expressivity Scale (Reyes-Lagunes, 1999)	$n = 576$	Androgyny	.99	.94
		Negative Expressivity	.76	.89
		Negative Instrumentality	.89	.90
		Normative Positive Expressivity	.88	.85
Scale of Expressive and Instrumental Traits (Díaz-Loving et al, 2004)	$n = 639$	Instrumental Cooperative	.90	.84
		Instrumental Focused on Achievement	.84	.71
		Instrumental Egocentric	.67	.69
		Instrumental Machismo	.85	.81
		Instrumental Authoritarian	.77	.79
		Instrumental Social-Rebellious	.63	.69
		Affiliative Affective	.67	.84
		Romantic Dreamer	.67	.76
		Egocentric Negative Emotive	.83	.75
		Emotional Vulnerable	.76	.75
		Passive Negative External Control	.71	.75

Table 3 Continued

Instrument (Authors)	Test Authors' Sample Size	Scales	α	
			Test Authors' Sample	Current Study
Flexibility Scale (Melgoza-Enríquez & Díaz-Guerrero, 1990)	$n = 80$	Agreeableness	.75	.57
		Obligingness	.56	.43
		Flexibility	.74	.61
Multidimensional Scale of Assertiveness (Flores-Galaz, 1989)	$n = 2231$	Indirect Assertiveness	.86	.89
		Non-Assertiveness	.85	.88
		Assertiveness	.80	.82
Abnegation Scale (Avendano-Sandoval et al., 1997)	$n = 850$	Abnegation Centered on the Family	.77	.65
		Abnegation Centered on Social Conduct	.72	.69
		Sensitive or Cautious Abnegation	.69	.68
Scale of Personal Strength (Díaz-Guerrero & Melgoza-Enriquez, 1994)	$n = 236$	Personal Strength	.74	.64

Table 4

Mean Tucker's (1951) Coefficients of Congruence for Successive Factor Solutions

Scale	*Number of Factors*											
	1	2	3	4	5	6	7	8	9	10	11	12
Multidimensional Self-Concept Scale (La Rosa & Díaz-Loving, 1991)	.99	.98	.87	.96[a]	.84	.82	.73	.82	.67	.53		
Multidimensional Self-Concept (Valdez-Medina, 1994)	.99	.99	.95	.69	.94[a]	.76	.77					
Multidimensional Self-Concept Inventory (Díaz-Loving et al., 2002)	.99	.97	.86	.85	.84	.79	.92[a]	.89	.75	.72		
Expressivity and Instrumentality Scale (Reyes-Lagunes, 1999)	.98	.96	.95	.93[a]	.84							
Scale of Expressive and Instrumental Traits (Díaz-Loving et al., 2004)	.96	.97	.85	.94[a]	.77	.84	.82	.73	.82	.75	.75	.69
Flexibility Scale (Melgoza-Enríquez & Díaz-Guerrero, 1990)	.98[a]	.89	.90	.73								
Multidimensional Scale of Assertiveness (Flores-Galaz, 1989)	.99	.96	.96[a]	.89								
Abnegation Scale (Avendaño-Sandoval et al., 1997)	.85	.81	.92[a]	.74								
Scale of Personal Strength (Díaz-Guerrero & Melgoza-Enríquez, 1994)	.99[a]	.99										

[a] Optimal factor solution based on replicability criteria.

Table 5

Four-Factor Solution for Multidimensional Self-Concept Inventory

Item	Conscientiousness/ Competence	Inhibition	Warmth	Temperamentalness
33 Responsible-Irresponsible *(Responsible – Irresponsable)*	**0.65**	-0.06	0.13	-0.10
26 Capable-Incapable *(Capaz – Incapaz)*	**0.63**	-0.22	0.14	-0.09
39 Efficient-Inefficient *(Eficiente – Ineficiente)*	**0.60**	-0.21	0.25	-0.11
57 Hardworking-Lazy *(Trabajador-a – Flojo-a)*	**0.57**	-0.12	0.13	-0.05
11 Honest-Dishonest *(Honesto-a – Deshonesto-a)*	**0.56**	0.02	0.20	-0.08
29 Intelligent-Inept *(Inteligente – Inepto-a)*	**0.55**	-0.26	0.11	0.00
31 True-False *(Verdadero-a – Falso-a)*	**0.55**	-0.21	0.24	-0.04
54 Honorable-Dishonorable *(Honrado-a – Deshonrado-a)*	**0.53**	-0.02	0.28	-0.17
8 Unreliable-Reliable *(Incumplido-a – Cumplido-a)*	**-0.51**	0.07	-0.06	0.20
58 Failed-Successful *(Fracasado-a – Triunfador-a)*	**-0.51**	**0.37**	-0.08	0.16
62 Well-mannered-Ill-mannered *(Educado-a – Malcriado-a)*	**0.49**	-0.04	**0.35**	-0.13
19 Studious-Slothful *(Estudioso-a – Perezoso-a)*	**0.48**	-0.10	0.12	-0.09
64 Courteous-Discourteous *(Cortés – Descortés)*	**0.48**	-0.10	**0.44**	-0.12
42 Decent-Indecent *(Decente – Indecente)*	**0.45**	0.03	**0.32**	-0.15
18 Disrespectful-Respectful *(Irrespetuoso-a – Respetuoso-a)*	**-0.42**	0.07	-0.29	**0.30**
13 Liar-Sincere *(Mentiroso-a – Deshonesto-a)*	**-0.41**	0.08	-0.25	0.25
20 Corrupt-Upright *(Corrupto-a – Recto-a)*	**-0.41**	-0.01	-0.26	0.24
15 Unsuccessful-Fulfilled *(Frustrado-a – Realizado-a)*	**-0.40**	**0.35**	-0.13	0.25
55 Desirable-Undesirable *(Deseable – Indeseable)*	**0.39**	-0.26	**0.30**	-0.10
44 Punctual-Unpunctual *(Puntual – Impuntual)*	**0.37**	-0.04	0.04	-0.15
7 Understanding-Insensitive *(Comprensivo-a – Incomprensivo-a)*	**0.37**	-0.06	0.29	-0.24
9 Loyal-Disloyal *(Leal – Desleal)*	**0.35**	-0.03	0.27	-0.11
23 Happy-Sad *(Feliz – Triste)*	**0.34**	**-0.34**	**0.34**	-0.22

Table 5 Continued

Item	Conscientiousness/ Competence	Inhibition	Warmth	Temperamentalness
45 Timid-Outgoing *(Tímido – Desenvuelto)*	0.01	**0.75**	-0.07	-0.02
4 Quiet-Communicative *(Callado-a – Comunicativo-a)*	0.06	**0.71**	-0.14	-0.04
50 Reserved-Expressive *(Reservado-a – Expresivo-a)*	0.06	**0.67**	-0.14	-0.07
1 Introverted-Extroverted *(Introvertido-a – Extrovertido-a)*	0.00	**0.67**	-0.09	-0.03
56 Solitary-Gregarious *(Solitario-a – Amiguero-a)*	-0.07	**0.57**	**-0.32**	0.21
48 Uninhibited-Inhibited *(Desinhibido-a – Inhibido-a)*	0.07	**-0.52**	0.05	0.11
32 Bored-Funloving *(Aburrido-a – Divertido-a)*	-0.17	**0.51**	**-0.33**	0.22
59 Fearful-Audacious *(Miedoso-a – Audaz)*	-0.24	**0.50**	0.07	0.29
66 Passive-Active *(Pasivo-a – Activo-a)*	-0.19	**0.50**	0.07	0.02
51 Depressed-Content *(Deprimido-a – Contento-a)*	-0.24	**0.50**	-0.16	**0.36**
63 Melancholic-Cheerful *(Melancólico-a – Alegre)*	-0.18	**0.48**	-0.03	**0.38**
72 Pessimistic-Optimistic *(Pesimista – Optimista)*	-0.27	**0.46**	-0.20	**0.32**
71 Sociable-Unsociable *(Sociable – Insociable)*	0.25	**-0.46**	**0.36**	-0.10
30 Apathic-Dynamic *(Apático-a – Dinámico-a)*	-0.24	**0.46**	**-0.32**	**0.30**
34 Bitter-Jovial *(Amargado-a – Jovial)*	-0.19	**0.45**	**-0.40**	**0.39**
47 Slow-Quick *(Lento-a – Rápido-a)*	-0.24	**0.44**	0.05	0.12
53 Submissive-Dominant *(Sumiso-a – Dominante)*	-0.10	**0.44**	0.13	-0.18
17 Lively-Dejected *(Animado-a – Desanimado-a)*	**0.33**	**-0.40**	**0.34**	-0.14
67 Sentimental-Insensible *(Sentimental – Insensible)*	0.15	-0.03	**0.73**	0.02
41 Affectionate-Cold *(Cariñoso-a – Frío-a)*	0.17	-0.14	**0.71**	-0.03
65 Romantic-Indifferent *(Romántico-a – Indiferente)*	0.13	-0.01	**0.64**	-0.04
12 Warm-Unfeeling *(Afectuoso-a – Seco-a)*	0.24	-0.21	**0.62**	-0.13
60 Tender-Rude *(Tierno-a – Rudo-a)*	0.15	0.05	**0.61**	-0.11

Table 5 Continued

Item	Conscientiousness/ Competence	Inhibition	Warmth	Temperamentalness
3 Loving-Odious *(Amoroso-a – Extrovertido-a)*	0.24	-0.03	**0.52**	-0.03
49 Friendly-Hostile *(Amigable – Hostil)*	**0.33**	**-0.30**	**0.54**	-0.11
69 Attentive-Inattentive *(Atento-a – Desatento-a)*	**0.35**	-0.14	**0.47**	-0.16
37 Amiable-Coarse *(Amable – Grosero-a)*	**0.41**	-0.07	**0.45**	-0.21
5 Accessible-Inaccessible *(Accesible – Inaccesible)*	0.28	-0.13	**0.35**	-0.15
14 Approachable-Unapproachable *(Tratable – Intratable)*	**0.33**	-0.25	**0.42**	-0.12
10 Disagreeable-Agreeable *(Desagradable – Agradable)*	**-0.32**	0.22	**-0.39**	0.23
22 Aggressive-Peaceful *(Agresivo-a – Pacifico-a)*	-0.13	-0.15	-0.24	**0.55**
16 Temperamental-Calm *(Temperamental – Calmado-a)*	-0.08	-0.17	0.05	**0.52**
43 Anxious-Serene *(Ansioso-a – Sereno-a)*	-0.08	0.17	0.03	**0.49**
28 Impulsive-Reflexive *(Impulsivo-a – Reflexivo-a)*	-0.13	-0.06	0.00	**0.49**
38 Conflictive-Conciliatory *(Conflictivo – Conciliador-a)*	-0.18	0.08	**-0.31**	**0.44**
6 Resentful-Noble *(Rencoroso-a – Noble)*	-0.06	0.07	-0.22	**0.42**
40 Selfish-Generous *(Egoísta – Generoso-a)*	-0.18	0.17	**-0.36**	**0.40**
35 Stable-Volatile *(Estable – Voluble)*	0.19	-0.15	0.13	**-0.40**
61 Pedantic-Simple *(Pedante – Sencillo-a)*	-0.22	0.06	**-0.33**	**0.38**
25 Tranquil-Nervous *(Tranquilo-a – Nervioso-a)*	0.18	-0.18	0.01	**-0.30**
Coefficient of Congruence [a]	.96	.98	.96	.93

Note. The items are from "Evaluación del autoconcepto: Una escala multidimensional," by J. La Rosa and R. Díaz-Loving, 1991, *Revista Iberoamericana de Diagnóstico y Evaluación Psicológica, 23*, p. 24. Items reprinted with permission. Factor loadings ≥ .30 and ≤ -.30 are shown in bold. [a] Coefficient of Congruence between two sub-samples.

Table 6

Five-Component Solution for Multidimensional Self-Concept

Items	Conscientiousness	Agreeableness	Rebelliousness	Playfulness	Affection
18 Applied *(Aplicado-a)*	**0.72**	0.10	-0.01	0.10	0.12
37 Responsible *(Responsible)*	**0.66**	**0.33**	-0.04	0.11	0.07
11 Studious *(Estudioso-a)*	**0.66**	0.14	-0.03	0.10	0.11
33 Hardworking *(Trabajador-a)*	**0.66**	0.19	0.00	0.16	0.20
25 Orderly *(Ordenado-a)*	**0.63**	0.16	-0.02	0.03	0.09
32 Strict *(Estricto-a)*	**0.58**	0.04	0.28	-0.08	0.09
12 Obedient *(Obediente)*	**0.56**	0.23	-0.12	-0.06	0.10
7 Tidy *(Limpio-a)*	**0.54**	**0.30**	0.08	0.01	0.00
6 Active *(Activo-a)*	**0.51**	0.13	0.01	**0.36**	0.03
36 Intelligent *(Inteligente)*	**0.38**	**0.34**	0.09	**0.35**	0.03
2 Honest *(Honesto-a)*	0.24	**0.71**	-0.03	0.04	-0.05
14 Respectful *(Respetuoso-a)*	0.26	**0.66**	-0.06	0.11	0.10
1 Amiable *(Amable)*	0.15	**0.64**	-0.09	0.20	0.20
13 Loyal *(Leal)*	0.20	**0.64**	0.01	0.09	0.13
8 Sincere *(Sincero-a)*	0.22	**0.60**	-0.01	0.07	0.14
24 Good *(Bueno-a)*	0.17	**0.56**	-0.04	0.17	0.21
23 Self-Giving *(Compartido-a)*	0.01	**0.50**	0.06	0.09	**0.32**
28 Attentive *(Atento-a)*	**0.31**	**0.44**	0.01	0.15	0.30
29 Accommodating *(Acomedido-a)*	0.17	**0.41**	0.10	0.08	0.22
26 Aggressive *(Agresivo-a)*	0.10	-0.10	**0.75**	-0.03	-0.07
27 Rebellious *(Rebelde)*	-0.04	-0.01	**0.69**	0.14	-0.10
10 Liar *(Mentiroso-a)*	0.02	-0.26	**0.53**	0.08	0.08
17 Stubborn *(Necio-a)*	-0.03	0.06	**0.66**	0.14	0.01
5 Angry *(Enojon-a)*	0.11	0.03	**0.64**	-0.04	0.03

Table 6 Continued

Items	Conscientiousness	Agreeableness	Rebelliousness	Playfulness	Affection
22 Disobedient *(Desobediente)*	-0.16	0.03	**0.60**	0.09	0.00
16 Volatile *(Voluble)*	-0.02	0.14	**0.59**	-0.06	0.09
34 Faultfinding *(Criticón-a)*	0.10	-0.06	**0.51**	0.23	0.01
4 Mischievous *(Relajiento-a)*	0.00	0.07	0.20	**0.79**	0.05
3 Talkative *(Platicador-a)*	0.12	0.03	-0.02	**0.72**	0.10
35 Jokester *(Bromista)*	0.04	0.13	0.20	**0.67**	0.01
9 Prankish *(Travieso-a)*	-0.01	0.12	**0.30**	**0.60**	0.17
19 Friendly *(Amigable)*	0.22	0.24	-0.10	**0.59**	**0.31**
15 Nice *(Simpático-a)*	0.15	**0.33**	-0.04	**0.58**	0.17
20 Romantic *(Romántico-a)*	0.14	0.17	0.02	0.12	**0.79**
31 Sentimental *(Sentimental)*	0.15	0.20	0.02	0.06	**0.79**
30 Affectionate *(Cariñoso-a)*	0.18	0.28	-0.04	0.20	**0.73**
21 Sensitive *(Detallista)*	0.15	0.24	0.03	0.15	**0.71**
Coefficient of Congruence[a]	.94	.91	.98	.95	.92

Note. Items are from "El autoconcepto del mexicano: Estudios de validación," by L. Valdez-Medina, 1994, p. 123, unpublished doctoral dissertation. Copyright by the author. Items reprinted with permission. Factor loadings ≥ .30 and ≤ -.30 are shown in bold.
[a] Coefficient of Congruence between two subsamples.

Table 7

Seven-Factor Solution forMultidimensional Self-Concept Inventory

Item	SE	T	C/C	A	H	I	E
5 Cheerful *(Alegre)*	**0.74**	-0.07	0.17	0.14	0.10	-0.05	0.02
28 Fun loving *(Divertido-a)*	**0.71**	0.04	0.13	0.23	0.11	-0.14	0.03
10 Lively *(Animado-a)*	**0.74**	-0.05	0.22	0.19	0.10	-0.09	0.02
8 Friendly *(Amigable)*	**0.69**	-0.09	0.22	0.21	0.15	0.03	0.01
78 Sociable *(Sociable)*	**0.72**	-0.03	0.21	0.16	0.08	-0.05	-0.05
76 Nice *(Simpático-a)*	**0.67**	0.01	0.12	**0.34**	0.10	-0.13	0.12
22 Content *(Contento-a)*	**0.71**	-0.07	0.15	0.19	0.16	-0.12	0.11
16 Jokester *(Bromista)*	**0.54**	**0.32**	-0.11	0.02	-0.01	-0.15	0.06
3 Agreeable *(Agradable)*	**0.65**	-0.06	0.21	**0.31**	0.15	-0.02	0.11
62 Talkative *(Platicador-a)*	**0.66**	0.13	0.08	0.13	0.03	-0.07	-0.11
37 Happy *(Feliz)*	**0.59**	-0.10	0.19	0.19	0.08	-0.16	0.11
58 Optimistic *(Optimista)*	**0.58**	-0.09	**0.31**	0.14	0.12	-0.06	0.20
87 Approachable *(Tratable)*	**0.51**	-0.13	0.29	0.13	0.29	-0.01	0.27
6 Amiable *(Amable)*	**0.51**	-0.07	**0.33**	0.20	0.27	0.06	0.20
49 Jovial *(Jovial)*	**0.49**	0.15	0.12	0.10	0.09	-0.15	0.13
67 Mischievous *(Relajiento-a)*	**0.64**	0.25	-0.08	0.03	-0.05	-0.05	-0.03
1 Active *(Activo-a)*	**0.48**	-0.02	**0.42**	0.08	0.15	-0.13	0.01
40 Generous *(Generoso-a)*	**0.41**	-0.08	0.16	0.26	**0.33**	0.19	0.16
79 Solitary *(Solitario-a)*	**-0.39**	**0.31**	-0.03	-0.06	0.00	0.27	**0.31**
29 Dominant *(Dominante)*	0.05	**0.63**	0.12	0.01	-0.07	-0.20	-0.08
81 Temperamental *(Temperamental)*	0.02	**0.62**	0.03	0.11	0.09	0.22	-0.10
33 Angry *(Enojón)*	-0.19	**0.71**	0.03	0.04	0.06	0.11	-0.02
24 Faultfinding *(Criticón-a)*	0.13	**0.53**	-0.18	-0.11	-0.17	-0.01	0.02
14 Authoritarian *(Autoritario-a)*	0.10	**0.62**	0.15	0.00	0.04	-0.14	-0.07
54 Stubborn *(Necio-a)*	0.13	**0.60**	-0.16	-0.03	0.08	0.08	-0.03

Table 7 Continued

Item	SE	T	C/C	A	H	I	E
64 Rebellious *(Rebelde)*	0.25	**0.49**	-0.17	-0.08	-0.03	0.01	-0.06
43 Impulsive *(Impulsivo)*	0.22	**0.54**	-0.10	0.07	0.09	0.02	-0.14
68 Resentful *(Rencoroso-a)*	-0.14	**0.60**	-0.02	-0.07	-0.08	0.17	-0.04
4 Aggressive *(Agresivo-a)*	-0.04	**0.65**	-0.05	-0.10	-0.11	0.03	-0.11
7 Bitter *(Amargado-a)*	**-0.31**	**0.56**	-0.06	-0.06	-0.25	0.20	0.03
11 Anxious *(Ansioso-a)*	0.09	**0.40**	0.06	0.07	0.03	**0.36**	-0.07
12 Apathic *(Apático-a)*	**-0.37**	**0.43**	-0.10	-0.07	-0.28	0.18	0.13
32 Selfish *(Egoísta)*	-0.13	**0.66**	-0.03	-0.07	**-0.30**	-0.02	0.05
21 Conflictive *(Conflictivo-a)*	0.03	**0.56**	-0.06	-0.10	-0.29	0.10	-0.15
90 Volatile *(Voluble)*	-0.01	**0.48**	-0.05	0.00	0.01	0.24	-0.08
44 Unreliable *(Incumplido-a)*	0.03	**0.32**	**-0.49**	-0.02	**-0.38**	0.27	0.10
59 Orderly *(Ordenado-a)*	0.16	-0.14	**0.60**	0.09	0.03	0.11	0.14
35 Studious *(Estudioso-a)*	0.11	0.00	**0.71**	0.12	0.10	-0.16	0.07
25 Reliable *(Cumplido-a)*	0.20	-0.01	**0.69**	0.10	0.18	-0.15	0.12
13 Applied *(Aplicado-a)*	0.11	0.05	**0.68**	0.14	0.02	-0.15	0.12
85 Hardworking *(Trabajador-a)*	0.26	-0.05	**0.67**	0.11	0.19	-0.08	0.14
63 Punctual *(Puntual)*	0.17	-0.11	**0.53**	0.00	0.00	0.00	0.08
31 Efficient *(Eficiente)*	**0.30**	0.08	**0.49**	0.14	**0.36**	-0.28	0.27
52 Tidy *(Limpio-a)*	0.19	-0.04	**0.47**	0.10	0.26	-0.01	0.08
89 Successful *(Triunfador-a)*	**0.39**	0.10	**0.48**	0.09	0.15	**-0.36**	0.19
38 Lazy *(Flojo-a)*	0.08	**0.36**	**-0.47**	0.00	-0.25	0.17	0.25
57 Obedient *(Obediente)*	0.16	-0.18	**0.47**	0.16	0.10	0.25	0.16
26 Decent *(Decente)*	0.13	-0.04	**0.41**	0.08	**0.39**	0.02	0.25
18 Capable *(Capaz)*	0.24	0.14	**0.36**	0.12	**0.34**	**-0.39**	0.29
65 Upright *(Recto-a)*	0.13	-0.02	**0.32**	0.10	0.26	-0.03	0.28
71 Romantic *(Romántico-a)*	0.18	-0.04	0.06	**0.86**	0.06	0.01	0.10

Table 7 Continued

Item	SE	T	C/C	A	H	I	E
74 Sentimental *(Sentimental)*	0.22	-0.05	0.04	**0.84**	0.08	0.10	0.08
82 Tender *(Tierno-a)*	0.26	-0.05	0.13	**0.82**	0.07	0.10	0.11
9 Loving *(Amoroso-a)*	**0.31**	-0.04	0.17	**0.81**	0.08	-0.03	0.05
19 Affectionate *(Cariñoso-a)*	0.30	-0.06	0.12	**0.81**	0.10	-0.03	0.05
2 Warm *(Afectuoso-a)*	**0.36**	-0.05	0.17	**0.74**	0.12	0.00	0.03
27 Sensitive *(Detallista)*	0.20	-0.10	0.17	**0.68**	0.09	-0.03	0.04
53 Melancholic *(Melancólico-a)*	-0.10	0.25	-0.12	**0.40**	0.09	**0.39**	0.11
20 Conciliatory *(Conciliador-a)*	**0.33**	0.03	0.11	**0.38**	0.15	-0.05	0.25
15 Kind *(Bondadoso-a)*	**0.33**	-0.05	0.19	**0.35**	**0.33**	0.15	0.26
42 Honorable *(Honrado-a)*	0.25	-0.03	0.26	0.05	**0.66**	0.01	0.21
36 False *(Falso-a)*	-0.04	**0.34**	-0.02	-0.07	**-0.61**	0.24	0.07
41 Honest *(Honesto-a)*	0.17	-0.01	0.28	0.09	**0.60**	-0.02	0.27
50 Loyal *(Leal)*	0.21	0.05	0.04	0.18	**0.56**	-0.14	0.22
23 Corrupt *(Corrupto-a)*	0.05	**0.38**	-0.16	-0.09	**-0.56**	0.02	0.06
77 Sincere *(Sincero-a)*	0.25	0.00	0.28	0.17	**0.46**	-0.08	0.26
30 Well-mannered *(Educado-a)*	**0.33**	-0.04	**0.40**	0.09	**0.44**	-0.05	0.18
70 Respectful *(Respetuoso-a)*	0.14	-0.03	**0.36**	0.11	**0.42**	-0.02	**0.35**
45 Undesirable *(Indeseable)*	-0.11	0.27	-0.14	-0.05	**-0.41**	**0.39**	0.06
47 Inflexible *(Inflexible)*	-0.12	**0.40**	-0.08	-0.09	**-0.40**	0.30	0.06
56 Noble *(Noble)*	0.21	0.06	0.15	**0.35**	**0.39**	0.12	0.25
55 Nervous *(Nervioso-a)*	-0.09	**0.31**	-0.03	0.08	0.15	**0.58**	-0.09
80 Submissive *(Sumiso-a)*	-0.10	0.06	0.07	0.10	-0.25	**0.56**	0.10
83 Timid *(Tímido-a)*	**-0.34**	0.08	-0.02	0.07	0.02	**0.51**	**0.35**
51 Slow *(Lento-a)*	-0.04	0.09	-0.29	-0.03	-0.13	**0.50**	0.17
88 Sad *(Triste)*	-0.27	**0.35**	-0.11	0.12	-0.04	**0.49**	0.10
46 Inept *(Inepto-a)*	-0.01	0.29	-0.14	-0.07	**-0.46**	**0.46**	0.04

Table 7 Continued

Item	SE	T	C/C	A	H	I	E
72 Self-confident *(Seguro-a)*	**0.40**	0.07	**0.30**	0.10	0.02	**-0.45**	0.23
48 Intelligent *(Inteligente)*	0.23	0.17	**0.33**	0.11	**0.31**	**-0.44**	0.18
39 Unsuccessful *(Frustrado-a)*	-0.15	**0.38**	-0.11	0.03	**-0.32**	**0.42**	0.09
61 Pessimistic *(Pesimista)*	**-0.33**	**0.39**	-0.11	0.03	-0.23	**0.41**	0.04
86 Tranquil *(Tranquilo-a)*	-0.01	-0.22	0.26	0.11	0.17	0.16	**0.63**
75 Serene *(Sereno-a)*	0.19	-0.11	0.19	0.18	0.07	-0.08	**0.61**
17 Calm *(Calmado-a)*	-0.17	-0.07	0.12	0.05	0.06	0.12	**0.60**
60 Peaceful *(Pacifico-a)*	0.10	-0.20	0.15	0.12	0.15	0.07	**0.60**
66 Relaxed *(Relajado-a)*	**0.32**	-0.02	-0.01	-0.02	-0.03	-0.21	**0.51**
69 Reserved *(Reservado-a)*	-0.28	0.15	0.08	-0.02	-0.01	**0.31**	**0.44**
84 Tolerant *(Tolerante)*	0.20	-0.21	0.14	0.09	0.18	0.08	**0.43**
73 Simple *(Sencillo-a)*	**0.32**	-0.16	0.14	0.18	0.22	0.05	**0.40**
34 Stable *(Estable)*	**0.32**	-0.09	**0.30**	0.05	0.02	-0.28	**0.35**
Coefficient of Congruence [a]	0.97	0.94	0.94	0.96	0.85	0.85	0.90

Note. The items are from "Autoconcepto: Desarrollo y validación de un inventario etnopsicólogico," by R. Díaz-Loving, I. Reyes-Lagunes, and S. Rivera-Aragón, 2002, *Revista Iberoamericana de Diagnóstico y Evaluación Psicológica, 13,* p. 35. Items reprinted with permission. SE = Social Expressive, T = Temperamentalness, C/C = Conscientiousness, A = Affection, H = Honesty, I = Inhibtion, E = Equanimity. Factor loadings ≥ .30 and ≤ -.30 are shown in bold. [a] Coefficient of Congruence between two sub-samples.

Table 8

Four-Component Solution for Expressivity and Instrumentality Scale

Items	Positive Valence	Hostility	Neuroticism	Warmth
52 Able *(Hábil)*	**0.68**	0.08	-0.18	0.07
20 Capable *(Capaz)*	**0.66**	-0.05	-0.22	0.17
24 Competent *(Competente)*	**0.66**	0.04	-0.13	0.10
35 Reliable *(Cumplido-a)*	**0.65**	-0.20	-0.10	0.10
47 Firm *(Firme)*	**0.64**	0.00	-0.28	0.11
80 Tenacious *(Tenaz)*	**0.64**	0.14	-0.25	0.20
83 Hardworking *(Trabjador-a)*	**0.62**	-0.18	-0.16	0.18
26 Understanding *(Comprensivo-a)*	**0.62**	-0.26	0.01	0.24
44 Entrepreneurial *(Emprendedor-a)*	**0.60**	0.11	-0.24	0.27
68 Persistent *(Persistente)*	**0.60**	0.06	-0.17	0.10
41 Well-mannered *(Educado-a)*	**0.59**	-0.26	0.02	0.21
48 Frank *(Franco-a)*	**0.59**	-0.11	-0.09	0.11
14 Attentive *(Atento-a)*	**0.59**	-0.14	-0.08	0.30
59 Intelligent *(Inteligente)*	**0.59**	0.04	-0.17	0.14
25 Competitive *(Competitivo-a)*	**0.58**	0.19	-0.20	0.09
32 Cooperative *(Cooperador-a)*	**0.57**	-0.25	0.03	0.27
50 Gentle *(Gentil)*	**0.57**	-0.23	0.04	**0.35**
82 Tolerant *(Tolerante)*	**0.56**	-0.21	0.06	0.07
13 Astute *(Astuto-a)*	**0.55**	**0.34**	-0.25	0.00
31 Considerate *(Considerado-a)*	**0.55**	-0.09	0.10	0.26
77 Respectful *(Respetuoso-a)*	**0.55**	**-0.32**	0.07	0.23
37 Determined *(Decidido-a)*	**0.54**	0.08	**-0.35**	0.15
49 Generous *(Generoso-a)*	**0.54**	-0.18	0.00	**0.42**
74 Reflexive *(Reflexivo-a)*	**0.54**	-0.06	0.02	0.01
17 Self-sufficient *(Autosuficiente)*	**0.53**	0.14	-0.22	0.10
15 Audacious *(Audaz)*	**0.52**	**0.33**	-0.28	0.16
85 Brave *(Valiente)*	**0.52**	0.13	-0.29	0.12
60 Loyal *(Leal)*	**0.51**	-0.23	-0.02	0.19
16 Autonomous *(Autónomo-a)*	**0.51**	0.21	**-0.30**	0.03
71 Provider *(Proveedor-a)*	**0.50**	0.16	0.13	0.16
84 Tranquil *(Tranquilo-a)*	**0.50**	**-0.35**	0.19	0.05
66 Organized *(Organizado-a)*	**0.48**	-0.08	-0.04	0.02
70 Protector *(Protector)*	**0.49**	0.04	0.20	0.30
7 Amiable *(Amable)*	**0.48**	-0.26	0.00	**0.35**
2 Active *(Activo-a)*	**0.47**	0.16	**-0.30**	**0.31**

Table 8 Continued

Items	Positive Valence	Hostility	Neuroticism	Warmth
67 Patient *(Paciente)*	**0.46**	-0.30	0.09	0.06
46 Faithful *(Fiel)*	**0.46**	-0.27	0.03	0.22
65 Noble *(Noble)*	**0.45**	-0.22	0.12	**0.37**
72 Punctual *(Puntual)*	**0.44**	-0.16	-0.02	0.03
27 Conciliatory *(Conciliador-a)*	**0.44**	-0.06	0.04	**0.31**
5 Enduring *(Aguantador-a)*	**0.42**	0.12	-0.01	0.06
11 Risk taker *(Arriesgado-a)*	**0.36**	**0.34**	-0.28	0.14
87 Violent *(Violento-a)*	-0.05	**0.71**	0.09	-0.06
1 Abusive *(Abusivo-a)*	-0.15	**0.70**	0.12	-0.08
10 Driving *(Aprovechado-a)*	-0.06	**0.70**	0.07	-0.04
28 Conflictive *(Conflictivo-a)*	-0.05	**0.69**	0.20	-0.03
51 Coarse *(Grosero-a)*	-0.09	**0.67**	0.14	-0.08
18 Go-getting *(Avorazado-a)*	0.01	**0.66**	0.16	-0.04
4 Aggressive *(Agresivo-a)*	-0.04	**0.66**	0.04	0.01
6 Conceited *(Altanero-a)*	0.01	**0.65**	0.09	-0.04
12 Arrogant *(Arrogante)*	0.01	**0.65**	0.10	-0.15
45 Envious *(Envidioso-a)*	-0.11	**0.64**	**0.35**	-0.06
42 Selfish *(Egoísta)*	-0.10	**0.63**	0.24	-0.17
62 Manipulative *(Manipulador-a)*	0.07	**0.62**	0.07	-0.08
86 Vengeful *(Vengativo-a)*	0.01	**0.61**	0.11	-0.13
33 Corrupt *(Corrupto-a)*	-0.16	**0.61**	0.17	-0.06
63 Liar *(Mentiroso-a)*	-0.14	**0.61**	0.28	-0.03
8 Ambitious *(Ambicioso-a)*	0.22	**0.53**	-0.11	0.04
39 Discourteous *(Descortés)*	-0.14	**0.51**	0.24	-0.14
22 Gossipy *(Chismoso-a)*	-0.13	**0.47**	0.28	0.07
53 Hostile *(Hostil)*	0.03	**0.46**	0.19	0.01
75 Scolding *(Regañon)*	0.11	**0.40**	**0.34**	-0.01
88 Volatile *(Voluble)*	-0.09	**0.42**	**0.37**	0.04
58 Insecure *(Inseguro-a)*	-0.18	0.21	**0.73**	0.00
54 Hesitant *(Indeciso-a)*	-0.09	0.15	**0.65**	0.01
36 Weak *(Débil)*	-0.15	0.08	**0.64**	0.03
64 Fearful *(Miedoso-a)*	-0.14	0.17	**0.64**	0.11
76 Resigned *(Resignado-a)*	-0.07	0.25	**0.58**	-0.03
69 Worrisome *(Preocupón-a)*	0.10	0.12	**0.57**	0.12
56 Unstable *(Inestable)*	-0.17	**0.38**	**0.55**	-0.04

Table 8 Continued

Items	Positive Valence	Hostility	Neuroticism	Warmth
38 Negligent *(Dejado-a)*	-0.09	0.23	**0.52**	-0.02
29 Conformist *(Comformista)*	-0.21	0.24	**0.50**	-0.06
61 Crier *(Llorón-a)*	-0.09	0.07	**0.50**	**0.32**
57 Immature *(Inmaduro-a)*	-0.21	**0.35**	**0.49**	-0.01
73 Whiny *(Quejumbroso-a)*	-0.02	**0.38**	**0.48**	0.07
23 Coward *(Cobarde)*	-0.17	0.25	**0.48**	-0.01
55 Indifferent *(Indiferente)*	-0.03	**0.40**	**0.41**	-0.23
34 Gullible *(Crédulo-a)*	0.18	0.15	**0.33**	0.11
21 Affectionate *(Cariñoso)*	0.25	-0.12	-0.01	**0.81**
9 Loving *(Amoroso-a)*	0.26	-0.14	-0.03	**0.81**
40 Sweet *(Dulce)*	**0.31**	-0.18	0.03	**0.70**
78 Sensible *(Sensible)*	0.29	-0.19	0.14	**0.70**
81 Tender *(Tierno-a)*	**0.30**	-0.16	0.07	**0.76**
3 Warm *(Afectuoso-a)*	**0.32**	-0.02	-0.06	**0.69**
43 Emotional *(Emocional)*	0.20	-0.03	0.13	**0.68**
19 Warmhearted *(Cálido-a)*	**0.35**	0.00	-0.04	**0.63**
79 Sociable *(Sociable)*	**0.42**	0.04	-0.22	**0.43**
30 Pleasing *(Consentidor-a)*	0.28	0.01	0.16	**0.44**
Coefficients of Congruence [a]	0.96	0.95	0.89	0.92

Note. Items are taken from "La medición de la personalidad en México," by I. Reyes- Lagunes, *Revista de Psicología Social y Personalidad*, 12, p. 37. Items reprinted with permission. Factor loadings ≥ .30 and ≤ -.30 are shown in bold. [a] Coefficient of Congruence between two sub-samples.

Table 9

Four-Component Solution for Scale of Expressive and Instrumental Traits

	Dimensions			
Item	Conscientiousness	Neuroticism	Warmth	Hostility
44 Dependable *(Cumplidor-a)*	**0.76**	-0.10	0.13	-0.13
14 Responsible *(Responsible)*	**0.75**	0.01	0.03	-0.15
1 Reliable *(Cumplido-a)*	**0.69**	0.02	-0.04	-0.16
35 Organized *(Organizado-a)*	**0.64**	-0.05	0.07	-0.20
16 Competent *(Competente)*	**0.62**	-0.28	0.13	0.12
23 Hardworking *(Trabajador-a)*	**0.61**	-0.15	0.24	-0.20
36 Determined *(Determinado-a)*	**0.58**	-0.22	0.06	0.13
15 Orderly *(Ordenado-a)*	**0.58**	-0.02	0.06	-0.15
17 Tenacious *(Tenaz)*	**0.56**	**-0.33**	0.19	0.18
45 Self-Confident *(Seguro-a)*	**0.43**	**-0.53**	0.14	0.05
28 Straight *(Cabal)*	**0.42**	-0.09	0.15	0.17
43 Cautious *(Cauto-a)*	**0.32**	0.07	0.09	0.16
57 Fearful *(Miedoso-a)*	-0.04	**0.68**	0.18	0.10
59 Weak *(Débil)*	-0.17	**0.63**	0.11	-0.03
63 Bashful *(Penoso-a)*	-0.08	**0.62**	-0.08	0.00
56 Teary *(Chillón-a)*	0.01	**0.59**	**0.41**	0.10
65 Hesitant *(Indeciso-a)*	-0.23	**0.56**	0.02	0.16
64 Submissive *(Sumiso-a)*	-0.10	**0.56**	-0.01	-0.03
24 Bold *(Atrevido-a)*	0.06	**-0.54**	**0.31**	0.29
25 Brave *(Valiente)*	0.27	**-0.54**	0.22	0.13
9 Crier *(Llorón-a)*	-0.02	**0.54**	**0.47**	0.00
61 Worrisome *(Preocupón-a)*	0.22	**0.54**	0.16	0.10

Table 9 Continued

	Dimensions			
Item	Conscientiousness	Neuroticism	Warmth	Hostility
60 Naïve *(Ingenuo-a)*	-0.04	**0.49**	0.20	0.07
2 Risk-taker *(Arriesgado-a)*	0.00	**-0.49**	0.22	0.27
10 Conformist *(Comformista)*	**-0.33**	**0.38**	-0.09	0.12
62 Infantile *(Infantil)*	-0.12	**0.34**	0.22	0.27
21 Sentimental *(Sentimental)*	0.07	0.13	**0.80**	-0.13
12 Affectionate *(Cariñoso-a)*	0.08	-0.05	**0.77**	-0.19
38 Tender *(Tierno-a)*	0.12	0.02	**0.77**	-0.19
7 Sensible *(Sensible)*	0.06	0.14	**0.76**	-0.16
6 Loving *(Amoroso-a)*	0.10	-0.10	**0.74**	-0.17
40 Sweet *(Dulce)*	0.11	0.02	**0.73**	-0.22
53 Emotional *(Emocional)*	0.11	0.11	**0.73**	-0.01
51 Visionary *(Soñador-a)*	0.05	0.04	**0.50**	0.18
22 Curious *(Curioso-a)*	0.16	-0.18	**0.44**	0.18
49 Understanding *(Comprensivo-a)*	**0.35**	-0.15	**0.40**	-0.15
41 Faithful *(Fiel)*	0.28	-0.01	**0.31**	-0.23
11 Idealist *(Idealista)*	0.19	-0.08	0.27	0.18
20 Manipulative *(Manipulador-a)*	0.08	-0.10	-0.09	**0.68**
39 Aggressive *(Tierno-a)*	0.01	0.05	-0.06	**0.67**
26 Troublemaker *(Problemático-a)*	-0.10	0.02	-0.08	**0.60**
19 Dominant *(Dominante)*	0.22	-0.16	0.03	**0.63**
4 Bossy *(Mandón-a)*	0.15	0.01	0.03	**0.60**
3 Violent *(Violento-a)*	-0.05	0.04	-0.09	**0.59**

Table 9 Continued

	Dimensions			
8 Bully *(Burlón-a)*	-0.13	-0.01	-0.05	**0.59**
37 Rude *(Rudo-a)*	0.04	-0.15	-0.10	**0.58**
27 Stubborn *(Terco-a)*	0.01	0.09	0.06	**0.57**
42 Rough *(Tosco-a)*	-0.17	0.09	-0.12	**0.57**
46 Vengeful *(Vengativo-a)*	0.03	0.03	-0.13	**0.56**
52 Nagging *(Latoso-a)*	-0.14	0.09	0.12	**0.54**
18 Opportunist *(Oportunista)*	-0.04	-0.09	0.01	**0.50**
30 Vile *(Patán)*	-0.18	0.09	-0.16	**0.49**
34 Ambitious *(Ambicioso-a)*	0.21	-0.17	0.02	**0.48**
31 Meddler *(Metiche)*	-0.07	**0.32**	0.01	**0.48**
32 Liar *(Mentiroso)*	-0.17	0.22	-0.09	**0.47**
33 Daring *(Arrojado-a)*	0.02	-0.22	0.13	**0.47**
54 Gossipy *(Chismoso-a)*	-0.03	**0.39**	-0.04	**0.45**
55 Whiny *(Quejumbroso-a)*	-0.08	**0.39**	0.09	**0.43**
47 Ungrateful *(Desagradecido-a)*	-0.20	0.24	-0.21	**0.42**
5 Discourteous *(Descortés)*	-0.23	0.17	-0.18	**0.38**
48 Distracted *(Desatento-a)*	-0.19	0.21	-0.21	**0.38**
13 Proud *(Orgulloso-a)*	0.26	-0.04	-0.04	**0.38**
29 Insistent *(Insistente)*	0.26	-0.17	0.22	**0.34**
50 Irreflexive *(Irreflexivo)*	-0.21	0.24	-0.12	0.27
Coefficient of Congruence[a]	.93	.91	.94	.97

Note. Items taken from "Elaboración, validación y estandarización de un inventario para evaluar las dimensiones atributivas de instrumentalidad y expresividad" by R. Díaz-Loving and T. Rocha-Sánchez and R. Sánchez-Aragón, 2004, *Revista Interamericana de Psicología, pp.* 269 – 270. Ítems reprinted with permission. Factor loadings ≥ .30 and ≤ -.30 are shown in bold. [a] Coefficient of Congruence between two sub-samples.

Table 10

One-Factor Solution for Flexibility Scale

	Items	Flexibility
4	Very malleable - Not malleable	
	Muy moldeable-Nada moldeable	0.26
5	I do not like pleasing - I like pleasing	
	Nada me gusta complacer – Mucho me gusta complacer	**-0.48**
7	Very tolerant - Not tolerant	
	Muy tolerante – Nada tolerante	**0.44**
8	Very friendly - Not friendly	
	Muy amable – Nada amable	**0.57**
16	I like cooperating with others - I do not like cooperating with others	
	Mucho me gusta cooperar – Nada me gusta cooperar	**0.52**
6	Not accommodating - Very accommodating	
	Nada acomodaticio – Muy acomodaticio	-0.27
9	Not condescending - Very condescending	
	Nada condescendiente – Muy condescendiente	-0.26
12	Not generous - Very generous	
	Nada generoso – Muy generoso	**-0.43**
14	I do not like pleasing others - I like pleasing others	
	Nada me gusta agradar – Mucho me gusta agradar	**-0.50**
1	Not adaptable - Very adaptable	
	Nada adaptable – Muy adaptable	**-0.34**
2	Very soft - Not soft	
	Muy blando-Nada blando	0.23
10	Very helpful - Not helpful	
	Muy servicial – Nada servicial	**0.57**
11	Very lenient - Not lenient	
	Muy indulgente – Nada indulgente	**0.39**
13	I like conceding - I do not like conceding	
	Mucho me gusta conceder – Nada me gusta conceder	**0.51**
15	I like agreeing with others - I do not like agreeing with others *Mucho me gusta consentir a los demás*	
	Nada me gusta consentir a los demás	**0.53**
3	Not flexible - Very flexible	
	Nada flexible – Muy flexible	**-0.46**
	Coefficient of Congruence [a]	.98

Note. Items taken from "El desarrollo de una escala de flexibilidad en sujetos mexicanos," by E. Melgoza-Enriquez and R. Díaz-Guerrero, *La Psicología Social en México, 3*, p. 28. Items reprinted with permission. Factor loadings ≥ .30 and ≤ -.30 are shown in bold. [a] Coefficient of Congruence between two subsamples.

Table 11

Three-Factor Solution for Multidimensional Scale of Assertiveness

Item		IA	NA	A
37	I can accept that I made a mistake more easily on the phone rather than personally *Puedo admitir que cometí un error, con mayor facilidad por teléfono que personalmente*	**0.71**	0.10	-0.25
24	I can easily confront people, who acted unfairly, on the phone rather than personally *Puedo decirle a las personas que actuaron injustamente, mas fácilmente por teléfono que personalmente*	**0.69**	0.07	-0.17
36	I can personally express my feelings more openly on the phone rather than personally *Puedo expresar mis sentimientos mas fácilmente por teléfono que personalmente*	**0.69**	0.22	-0.12
44	It is easy for me to express my opinion through letters rather than personally *Me es mas fácil expresar mi opinión, por medio de una carta que personalmente*	**0.66**	0.26	-0.14
25	I prefer to tell someone that I'd rather be alone by phone rather than personally *Prefiero decirle a alguien que deseo estar solo, por teléfono que personalmente*	**0.65**	0.06	-0.22
40	I prefer to tell someone about what I want in life through writing rather than saying it personally *Prefiero decirle a alguien, sobre lo que deseo en la vida, por escrito que personalmente*	**0.63**	0.20	-0.12
35	I find it easy to tell someone that I do not want to go to a party on the phone rather than personally *Me es mas fácil decir que no deseo ir a una fiesta, por teléfono que personalmente*	**0.62**	0.14	-0.14
4	It is easier for me to tell someone that I accept his or her feedback on the phone rather than personally *Me es mas fácil decirle a alguien que acepto su critica a mi persona, por teléfono que personalmente*	**0.46**	0.09	-0.16
16	It is easy for me to ask on the phone rather than personally for things I have lent *Me es mas fácil pedir las cosas que he prestado, por teléfono que personalmente*	**0.54**	0.07	-0.15

Table 11 Continued

Item		IA	NA	A
18	It is easy for me to borrow someone on the phone rather than personally *Me es mas fácil pedir prestado algo, por teléfono que personalmente*	**0.63**	0.06	-0.18
20	I express with greater happiness my disagreement on the phone rather than personally *Expreso con mayor felicidad mi desagrado por teléfono que personalmente*	**0.64**	0.07	-0.24
32	It is easy for me to refuse to go to a place that I do not want by phone rather than personally *Es mas fácil rehusarme a ir a un lugar que no deseo ir, por teléfono que personalmente*	**0.59**	0.14	-0.08
29	It is easier for me to fulfill a commitment through cards or letters rather than personally *Me es mas fácil hacer un cumplido, por medio de una tarjeta y/o carta que personalmente*	**0.57**	0.25	0.03
28	I can express my affection with greater ease through cards or letters rather than personally *Puedo expresar mi cariño con mayor facilidad por medio de tarjetas y/o cartas que personalmente*	**0.56**	0.24	0.09
23	I can express my love with more ease through a letter than personally *Puedo expresar mi amor mas fácilmente por medio de una carta que personalmente*	**0.54**	0.20	0.04
10	I am not able to openly express what I wish *No soy capaz de expresar abiertamente lo que deseo*	0.22	**0.71**	-0.16
3	It is difficult for me to express what I think around others *Me cuesta trabajo expresar lo que pienso, en presencia de otros*	0.13	**0.67**	-0.12
2	I am not capable of openly expressing what I really think *No soy capaz de expresar abiertamente lo que realmente pienso*	0.19	**0.61**	-0.08
5	It is difficult for me to express my wishes *Me es dificil expresar mis deseos*	0.18	**0.63**	-0.13

Table 11 Continued

Item		IA	NA	A
6	It is difficult for me to openly express my feelings			
	Me es difícil expresar abiertamente mis sentimientos	0.09	**0.64**	-0.09
39	I dread talking in front of a group for fear of social judgment			
	Me da pena hablar frente a un grupo por temor a la critica	0.27	**0.60**	-0.11
45	It is difficult for me to start a relationship with people that I just met			
	Me es difícil empezar una relación con personas que acabo de conocer	0.12	**0.59**	-0.15
31	It is difficult for me to initiate a conversation			
	Me es difícil iniciar una conversación	0.14	**0.58**	-0.21
	I feel embarrassed in conversations for fear of the judgment of others.			
34	*Me da pena participar en las platicas por temor a la opinión de los demás*	0.26	**0.56**	-0.25
13	When I know a person, I usually do not a lot to talk about			
	Cuando conozco a una persona, usualmente tengo poco que decirle	0.08	**0.55**	-0.12
9	It is difficult for me to make new friends			
	Me cuesta trabajo hacer nuevos amigos	0.07	**0.52**	-0.24
42	It is hard for me to tell others what bothers me			
	Me cuesta trabajo decirle a otros lo que me molesta	0.28	**0.42**	-0.27
43	It embarrasses me when I have doubts			
	Me da pena preguntar cuando tengo dudas	0.13	**0.53**	**-0.35**
30	It is difficult to praise others			
	Es difícil para mi alabar a otros	0.11	0.20	-0.20
27	I can ask someone to teach me something I cannot do			
	Puedo pedir que me enseñen como hacer algo que no se como realizar	-0.10	-0.08	**0.65**
14	I ask for help when I needed			
	Solicito ayuda cuando la necesito	0.00	-0.22	**0.61**
38	I accept criticism without any fear			
	Acepto sin temor una critica	-0.12	-0.08	**0.59**
22	It bothers me when someone tells me the mistakes I've made			
	Me molesta que me digan los errores que he cometido	-0.20	-0.01	**0.55**

Table 11 Continued

Item		IA	NA	A
1	I can publicly acknowledge that I made a mistake.			
	Puedo reconocer públicamente que cometí un error.	-0.10	-0.03	**0.56**
19	I ask for favors			
	Puedo pedir favores	-0.02	-0.14	**0.53**
12	If I have a doubt, I ask for clarification			
	Si tengo alguna duda, pido que se me aclare	-0.08	**-0.31**	**0.53**
26	I can openly talk with a person about the criticism made about my behavior.			
	Platico abiertamente con una persona las criticas hechas a mi conducta	-0.11	-0.11	**0.51**
17	It is easy for me to accept criticism			
	Me es fácil aceptar una critica	-0.13	-0.02	**0.51**
11	I can appreciate a compliment that has been made about my personal appearance.			
	Puedo agradecer un halago hecho acerca de mi apariencia personal	-0.02	-0.20	**0.48**
33	I find it difficult to accept that I am wrong			
	Encuentro dificil admitir que estoy equivocado	-0.21	-0.09	**0.47**
7	I can directly tell someone that I act unfairly			
	Puedo decirle a alguien directamente, que actúo de manera injusta	-0.08	-0.11	**0.38**
8	When I argue with a person about the place we are going to eat, I can openly express my preference			
	Cuando discuto con una persona acerca del lugar donde vamos a comer, yo expreso mi preferencia	-0.04	-0.19	**0.39**
21	I express my love and affection to people that I like			
	Expreso amor y afecto a la gente que quiero	-0.07	-0.29	**0.39**
41	It is difficult for me to apologize			
	Me es dificil disculparme cuando tengo la culpa	0.21	0.17	**-0.32**
15	When I realize that someone is overcharging me, I do not say anything			
	Cuando me doy cuenta que me están cobrando de mas no digo nada	-0.15	-0.17	**0.37**
	Coefficients of Congruence[a]	.97	.97	.94

Note. Items are from "MERA: Una medida de rasgos asertivos para la cultura mexicana," by M. Flores-Galaz, R. Díaz-Loving, and A. Rivera-Aragón, 1987, *Revista Mexicana de Psicología, 4,* p. 31. IA = Indirect Assertiveness, NA = Non-Assertiveness, A = Assertiveness. Items reprinted with permission. Factor loadings ≥ .30 and ≤ -.30 are shown in bold. [a]Coefficient of congruence between two subsamples.

Table 12

Three-Component Solution for Abnegation Scale

	Items	FCA	ACSC	SA
17	I like helping my spouse so that he/she does not get tired			
	Me gusta ayudarle a mi pareja para que no se canse	**0.41**	0.18	-0.13
18	I like overworking if it is for my family			
	Me gusta trabajar de más si es por mi familia	**0.68**	-0.02	-0.03
11	Even if I am tired, I attend to my family			
	Aunque esté cansado(a) atiendo a mi familia	**0.59**	0.03	-0.11
6	The best meal is for my family			
	La mejor comida es para mi familia	**0.52**	0.06	0.02
3	I like taking care of my family's dream			
	Me gusta cuidar el sueño de mi familia	**0.54**	0.05	0.12
5	I await awake until my spouse arrives			
	Me espero despierto(a) hasta que llegue mi pareja	**0.35**	0.01	0.09
19	I like for my family to be first			
	Me gusta que mi familia sea primero	**0.61**	0.15	0.04
10	I prefer eating after my children or my spouse			
	Prefiero comer después que mis hijos a mi pareja	**0.38**	-0.13	0.14
2	I try to please my family in every way			
	Trato de darle el gusto a mi familia en todo	**0.42**	0.09	0.26
13	I am typically very friendly			
	Por lo general soy muy amable	0.08	**0.74**	-0.06
4	Generally I am attentive			
	Generalmente soy muy atento (a)	0.12	**0.65**	0.06
16	I am a well-mannered person			
	Soy una persona educada	-0.01	**0.62**	-0.06
14	I am usually courteous			
	Casi siempre soy cortés	0.11	**0.61**	-0.04
9	I am sympathetic			
	Soy comprensivo (a)	0.08	**0.63**	-0.08
1	I accept apologies			
	Acepto disculpas	-0.05	**0.44**	0.08
8	It embarrasses me to say no			
	Me apena decir que no	-0.01	-0.07	**0.74**
7	I have a hard time saying no			
	Me cuesta trabajo decir que no	0.06	0.06	**0.76**
12	I prefer to remain quiet when there verbal provocations			
	Ante las provocaciones verbales prefiero callar	0.16	-0.01	**0.37**
15	I have a hard time setting limits on things and situations			
	Me cuesta trabajo poner límites a las cosas y situaciones	-0.01	-0.01	**0.62**
20	It is difficult for me to complain to someone			
	Me es dificil reclamarle a alguien	0.02	-0.04	**0.72**
	Coefficient of Congruence [a]	.97	.81	.97

Note. FCA = Family Centered Abnegation, ACSC = Abnegation Centered on Social Conduct, SA = Social Abnegation. Items are from "Validación psicométrica de la segunda escala de abnegación para jovenes y adultos," by R. Avendaño-Sandoval, R. Díaz-Guerrero, R., and Reyes-Lagunes, 1997, *Revista Interamericana de Psicología, 31*, p. 50. Items reprinted with permission. Factor loadings ≥ .30 and ≤ -.30 are shown in bold. [a] Coefficient of Congruence between two subsamples.

Table 13

One-Factor Solution for Personal Strength Scale

Items	Personal Strength
3. How do you feel about your patience in helping your loved ones with their emotional problems?	
¿Cómo se siente acerca de su paciencia para ayudar a los seres queridos con sus problemas emocionales?	**0.74**
4. How do you feel about your patience to help friends with their emotional problems?	
¿Cómo se siente acerca de su paciencia para ayudar a los amigos con sus problemas emocionales?	**0.73**
2. How do you feel about your ability to carry your own cross?	
¿Cómo se siente acerca de su capacidad para cargar con su propia cruz?	**0.37**
1. How do you feel about your endurance to confront emotional crises and problems?	
¿Cómo se siente acerca de su aguante para soportar sus propias crisis y problemas emocionales?	**0.34**
[a]Coefficient of Congruence	0.99

Note. Items are from "Fuerza personal. Medida de fibra emocional," by R. Díaz-Guerrero and E. Melgoza-Enriquez, *Aletheia, 13*, p. 22. Items reprinted with persmission. Factor loadings ≥ .30 and ≤ -.30 are shown in bold. [a] Coefficient of Congruence between two sub-samples.

Table 14

Pearson and Multiple Correlations Relating Mexican Indigenous Dimensions to the Five-Factor Model

Mexican Dimensions	*N*	*E*	*O*	*A*	*C*	*R*	R^2
Multidimensional Self-Concept Scale (La Rosa & Díaz-Loving, 1991)							
Affiliative Sociability	-.27	.34	.13	.34	.38	.50	.25
Emotional States	-.52	.57	.18	.17	.42	.65	.42
Expressive Sociability	-.36	.57	.26	-.05	.15	.61	.38
Interindividual Feelings	-.10	.32	.18	.35	.21	.45	.21
Occupational	-.36	.30	.15	.11	.60	.60	.36
Emotional Health	-.44	.19	.07	.34	.33	.54	.29
Ethical	-.28	.25	.19	.26	.43	.49	.24
Initiative	-.47	.52	.24	-.07	.34	.60	.36
Accessibility	-.26	.37	.19	.25	.30	.44	.20
Conscientiousness/Competence[a]	-.31	.16	.14	.06	.56	.56	.31
Inhibition/Introversion[a]	.41	-.62	-.22	.12	-.17	.71	-.50
Warmth[a]	.04	.28	.13	.40	.04	.50	.25
Temperamentalness[a]	.37	-.09	.05	-.31	-.24	.64	.24
Multidimensional Self-Concept (Valdez-Medina, 1994)							
Social Expressive	-.29	.63	.29	.06	.24	.63	.39
Social Normative	-.27	.31	.11	.13	.63	.64	.41
Expressive Affective	-.10	.36	.29	.23	.26	.45	.21
Ethical Moral	-.22	.29	.2	.30	.42	.51	.26
Intellectual Work	-.28	.30	.25	.05	.56	.58	.33
Rebelliousness	.29	.00	.08	-.40	-.15	.51	.26
Conscientiousness[a]	-.21	.16	.00	-.03	.62	.66	.44
Agreeableness[a]	-.14	.15	.17	.30	.25	.38	.15
Rebelliousness[a]	.31	-.06	.07	-.40	-.15	.51	.26
Playfulness[a]	-.32	.61	.23	-.05	.10	.66	.44
Affection[a]	.03	.21	.21	.21	.06	.33	.11

Table 14 Continued

Mexican Dimensions	*N*	*E*	*O*	*A*	*C*	*R*	R^2
Multidimensional Self-Concept Inventory (Díaz-Loving et al., 2002)							
Social Expressive	-.38	.62	.22	.15	.30	.63	.40
Ethical Normative	-.27	.32	.15	.27	.40	.48	.23
Socio-Emotional Intelligence	-.31	.16	.10	.20	.38	.43	.19
External Negative Passive Control	.45	-.28	-.09	-.29	-.41	.54	.29
Social Affiliative	-.09	.34	.18	.26	.16	.40	.16
Emotive Negative Self-Affirming	.27	.03	.08	-.47	-.22	.57	.33
Instrumental Constructive	-.41	.39	.19	.07	.61	.64	.40
Emotional Vulnerability	.51	-.42	-.06	-.20	-.29	.58	.34
Depressive	.51	-.20	.03	-.04	-.24	.51	.27
Social Expressive[a]	-.34	.59	.11	.10	.10	.64	.41
Temperamentalness[a]	.28	.00	.17	-.48	-.13	.60	.36
Conscientiousness/Competence[a]	-.21	.13	-.03	.02	.56	.60	.36
Affection[a]	.00	.19	.17	.21	.03	.34	.12
Honesty[a]	-.00	.06	.14	.24	.13	.31	.09
Inhibition[a]	.46	-.25	-.25	.20	-.26	.56	.31
Equanimity[a]	-.16	-.10	.11	.06	.11	.31	.09
Expressivity and Instrumentality Scale (Reyes-Lagunes, 1999)							
Androgyny	-.30	.47	.25	.14	.39	.52	.27
Negative Expressivity	.50	-.22	-.06	-.29	-.39	.59	.35
Normative Passive Expressivity	-.34	.35	.13	.15	.50	.53	.28
Negative Instrumentality	.28	-.05	-.01	-.50	-.25	.57	.33
Positive Valence[a]	-.32	.30	.19	.02	.47	.49	.24
Hostility[a]	.15	-.10	-.09	-.53	-.17	.61	.37
Neuroticism[a]	.54	-.34	.13	.09	-.24	.58	.34
Warmth[a]	.01	.35	.13	.24	-.02	.31	.21

Table 14 Continued

Mexican Dimensions	*N*	*E*	*O*	*A*	*C*	*R*	R^2
Scale of Expressive and Instrumental Traits (Díaz-Loving et al., 2004)							
Instrumental Cooperative	-.34	.32	.06	.06	.65	.66	.44
Instrumental Focused on Achievement	-.31	.38	.33	-.03	.44	.53	.28
Instrumental Egocentric	-.23	.37	.26	-.28	.07	.54	.28
Instrumental Machismo	.21	-.08	.01	-.42	-.23	.48	.23
Instrumental Authoritarian	.13	.06	.13	-.52	-.04	.57	.32
Instrumental Social Rebellious	.30	-.28	-.19	-.38	-.33	.50	.25
Expressive Affiliative	-.15	.36	.20	.32	.25	.46	.21
Romantic Dreamer	.03	.31	.39	.20	.13	.48	.23
Egocentric Negative Emotive	.24	-.01	.05	-.32	-.30	.46	.21
Emotional Vulnerability	.39	-.02	.04	.14	-.13	.44	.20
Passive Negative External Control	.54	-.36	-.17	.14	-.37	.60	.37
Hostility[a]	.16	.07	.16	-.51	-.19	.60	.36
Warmth[a]	-.02	.37	.31	.24	.05	.48	.23
Neuroticism[a]	.55	-.35	-.19	.12	-.21	.62	.38
Conscientiousness[a]	-.24	.25	.12	.01	.63	.64	.41
Flexibility Scale (Melgoza-Enríquez & Díaz-Guerrero, 1990)							
Flexibility	-.20	.43	.21	.41	.23	.55	.30
Multidimensional Scale of Assertiveness (Flores-Galaz, 1989)							
Indirect Assertiveness	.37	-.20	-.13	.01	-.27	.51	.38
Non-assertiveness	.54	-.51	-.28	-.04	-.37	.62	.39
Assertiveness	-.43	.38	.25	.13	.40	.51	.26

Table 14 Continued

Mexican Dimensions	*N*	*E*	*O*	*A*	*C*	*R*	R^2
Abnegation Scale (Avendaño et al., 1997)							
Family Centered Abnegation	.02	-.13	.03	.14	.10	.23	.05
Socially Centered Abnegation	.21	-.26	-.18	.23	.25	.36	.13
Sensitive or Cautious Abnegation	.38	-.14	-.09	.23	.24	.47	.22
Scale of Personal Strength (Díaz-Guerrero & Melgoza-Enríquez, 1994)							
Personal Strength	-.44	.34	.21	.05	.33	.48	.23

Note: [a] Replicable dimensions. N = Neuroticism, E = Extraversion, O = Openness to Experience, A = Agreeableness, C = Conscientiousness, as measured by the Revised NEO-PI-R domain scales. Values equal or higher than – or + .08 are significant at .05, and values equal or higher than – or + .10 are significant at .01.

Table 15

Joint Principal Components Analysis of Replicable Mexican Dimensions and NEO-PI-R: Seven-Component Solution

Replicable Mexican Dimensions	C	N	E	Hs	W/A	Hn	O
Conscientiousness/Competence (Diaz-Loving et al. 2004)	**0.80**	-0.02	0.11	0.08	0.08	0.14	0.07
Conscientiousness/Competence (Diaz-Loving et al. 2002)	**0.80**	-0.02	-0.04	-0.04	-0.03	-0.03	-0.15
Conscientiousness (Valdez-Medina, 1994)	**0.79**	-0.06	-0.04	-0.03	-0.03	-0.06	-0.08
C5 Self-Discipline	**0.74**	**-0.34**	0.09	-0.16	0.06	0.00	0.08
C4 Achievement-Striving	**0.71**	-0.21	0.15	0.07	0.10	0.10	0.04
Conscientiousness (La Rosa & Diaz-Loving, 1991)	**0.66**	-0.14	0.00	-0.04	-0.03	**0.33**	0.10
C1 Competence	**0.61**	**-0.33**	0.23	-0.14	0.00	0.06	0.28
C2 Order	**0.59**	-0.04	-0.06	0.01	0.01	-0.09	-0.04
Positive Valence (Reyes-Lagunes, 1999)	**0.58**	-0.05	0.28	0.02	-0.10	0.11	0.29
C3 Dutifulness	**0.58**	-0.14	0.08	-0.19	0.00	**0.39**	0.16
C6 Deliberation	**0.47**	-0.19	-0.08	**-0.34**	0.03	0.03	0.25
Family Centered Abnegation (Avendano-Sandoval et al. 1997)	0.21	0.06	0.12	-0.10	0.10	0.00	-0.09
Neuroticism (Reyes-Lagunes, 1999)	-0.08	**0.77**	-0.14	0.06	0.06	-0.06	0.15
Neuroticism (Diaz-Loving et al. 2004)	0.00	**0.73**	-0.24	0.02	0.10	-0.05	-0.02
Inhibition (Diaz-Loving et al. 2002)	-0.08	**0.68**	0.01	-0.08	-0.01	0.01	-0.17
N4 Self-Consciousness	-0.18	**0.68**	-0.20	0.09	0.02	0.00	-0.12
Sensitive or Cautious Abnegation (Avendano-Sandoval et al. 1997)	-0.15	**0.60**	0.10	-0.07	0.06	-0.07	0.01
N3 Depression	-0.23	**0.65**	-0.23	0.23	0.03	0.07	-0.08
N1 Anxiety	-0.02	**0.62**	-0.15	0.22	0.16	0.16	-0.20
N6 Vulnerability	-0.30	**0.59**	-0.20	0.19	0.15	0.08	**-0.31**
E3 Assertiveness	**0.34**	**-0.53**	0.30	0.21	0.05	-0.12	0.06
Non-Assertiveness (Flores-Galaz, 1989)	-0.15	**0.49**	**-0.34**	-0.09	-0.22	0.19	0.01
Indirect Assertiveness (Flores-Galaz, 1989)	-0.01	**0.38**	0.19	0.06	0.00	-0.21	0.00
A5 Modesty	-0.28	**0.32**	-0.16	-0.25	-0.01	0.28	-0.12

Table 15 Continued

Replicable Mexican Dimensions	C	N	E	Hs	W/A	Hn	O
O4 Actions	-0.04	-0.22	0.14	0.13	0.10	0.10	0.09
Social Expressive (Diaz-Loving et al. 2002)	0.01	-0.20	**0.79**	-0.01	0.01	-0.06	-0.08
Playfulness (Valdez-Medina, 1994)	-0.03	-0.28	**0.72**	0.14	-0.02	-0.15	0.00
E1 Warmth	0.12	-0.14	**0.71**	-0.15	0.27	0.13	0.09
E2 Gregariousness	0.04	-0.02	**0.65**	-0.15	0.17	0.00	-0.16
E6 Positive Emotions	0.13	-0.23	**0.63**	-0.02	0.27	0.07	0.18
Inhibition (La Rosa & Diaz-Loving, 1991)	-0.03	**0.55**	**-0.61**	-0.21	0.00	0.09	0.13
E5 Excitement-Seeking	-0.01	-0.10	**0.54**	0.21	0.03	0.10	0.23
Flexibility (Melgoza-Enriquez & Diaz-Guerrero, 1990)	0.18	0.06	**0.52**	-0.24	-0.26	-0.28	0.11
A3 Altruism	0.16	0.01	**0.51**	**-0.35**	0.28	**0.31**	0.15
A1 Trust	0.05	0.00	**0.44**	**-0.31**	0.17	0.10	0.20
E4 Activity	**0.37**	-0.28	**0.38**	0.26	0.12	0.02	-0.09
O3 Feelings	-0.02	-0.02	**0.32**	0.27	0.27	0.16	0.18
Social-Centered Abnegation (Avendano-Sandoval et al. 1997)	0.17	-0.01	**0.31**	-0.16	0.10	**0.33**	0.19
A6 Tendermindedness	0.11	0.21	0.28	-0.17	0.16	0.21	0.09
Personal Strength (Diaz-Guerrero & Melgoza-Enriquez, 1994)	0.19	-0.22	0.27	-0.06	0.05	0.15	0.20
Temperamentalness (Diaz-Loving et al. 2002)	0.03	0.10	-0.01	**0.83**	-0.04	-0.07	0.18
Hostility (Diaz-Loving et al. 2004)	-0.09	0.00	-0.11	**0.76**	-0.16	-0.28	0.19
Rebelliousness (Valdez-Medina, 1994)	-0.05	0.09	-0.10	**0.70**	-0.02	0.08	0.03
Hostility (Reyes-Lagunes, 1999)	-0.03	-0.04	0.09	**0.71**	-0.07	**-0.46**	0.05
Temperamentalness (La Rosa & Diaz-Loving, 1991)	-0.07	0.11	-0.16	**0.68**	0.20	-0.04	-0.14
A4 Compliance	-0.05	0.25	0.08	**-0.67**	0.13	-0.09	0.07
N2 Angry Hostility	-0.13	**0.36**	**-0.35**	**0.60**	0.01	0.06	-0.18
A2 Straightforwardness	-0.01	0.12	-0.10	**-0.55**	0.15	**0.39**	-0.09

Table 15 Continued

Replicable Mexican Dimensions	C	N	E	Hs	W/A	Hn	O
N5 Impulsiveness	-0.29	**0.39**	0.09	**0.44**	0.05	0.01	-0.03
Affection (Diaz-Loving et al. 2002)	0.03	0.08	0.02	-0.03	**0.91**	-0.03	0.06
Warmth (Diaz-Loving et al. 2004)	-0.02	0.01	0.29	0.05	**0.82**	0.08	0.12
Warmth (Reyes-Lagunes, 1999)	-0.06	0.02	0.29	-0.02	**0.82**	-0.04	-0.09
Warmth (La Rosa & Diaz-Loving, 1991)	-0.02	0.01	0.29	0.05	**0.82**	0.08	0.12
Affection (Valdez-Medina, 1994)	0.04	0.05	0.04	-0.07	**0.76**	-0.03	0.11
Honesty (Diaz-Loving et al. 2002)	0.07	0.00	0.03	0.02	0.01	**0.81**	0.03
Agreeableness (Valdez-Medina, 1994)	0.12	0.01	0.18	-0.12	-0.02	**0.67**	0.20
Assertiveness (Flores-Galaz, 1989)	0.21	-0.16	0.23	-0.16	0.07	**0.30**	0.21
Equanimity (Diaz-Loving et al. 2002)	0.09	0.15	-0.04	-0.23	-0.16	-0.10	**0.62**
O5 Ideas	0.24	-0.26	0.03	0.08	0.05	0.07	**0.61**
O2 Aesthetics	0.05	-0.08	0.04	0.13	0.27	0.18	**0.56**
O1 Fantasy	-0.13	-0.05	0.16	0.23	0.23	0.08	**0.51**
O6 Values	-0.05	-0.27	0.07	0.03	0.01	0.19	**0.45**
Coefficients of Congruence	.97	.85	.93	.94	.91	.71	.68

Note. C = Conscientiousness, N = Neuroticism, E = Extraversion, Hs = Hostility, W/A = Warmth/Affection, Hn = Honesty, O = Openness. Factor loadings ≥ .30 and ≤ -.30 are shown in bold.