The HEXACO Personality Factors in the Indigenous Personality Lexicons of English and 11 Other Languages

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ABSTRACT Two studies tested the correspondence between six dimensions obtained in lexical studies of personality structure and the proposed HEXACO personality framework. Study 1 examined the English personality lexicon using 449 adjectives selected according to rated frequency of use in personality description. Six validimax-rotated factors derived from adjective self-ratings showed strong convergent and weak discriminant correlations with questionnaire markers of the HEXACO factors; the six adjective dimensions were also recovered from peer ratings. In Study 2, lay judges rated the conceptual similarity between HEXACO factor descriptions and adjective lists summarizing the six indigenous lexical personality factors of each of 12 languages. Across languages, a pattern of strong convergent and weak discriminant similarity ratings was observed; similarity ratings for the English factors of Study 1 were comparable to those for other languages' factors. Results indicate that the six dimensions of the HEXACO framework are recovered from the personality lexicons of various languages.

What is the structure of human personality variation? One of the chief goals of personality research has been to find a few major dimensions that can summarize the vast array of personality characteristics that differentiate each person from the next.

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In some sense, one can view the issue of personality structure as a series of questions: For any value of k, what is the nature of the k dimensions that can account for the largest segment of the personality domain? For example, one can try to find the single dimension that best summarizes individual differences in personality characteristics, the set of two dimensions that can provide the best summary, the set of three dimensions, and so on. But if we assume that personality variation largely reflects the combined expression of a few distinct dispositions or behavioral strategies, then there should be some identifiable upper bound on the number of dimensions that can be recovered across variable sets that represent the personality domain. In other words, if the many correlated personality characteristics are manifestations of some small set of fundamental dispositions or tendencies, then one can seek the exact number and identity of those basic dimensions.

The Big Five Personality Factors

In recent decades, the most widely accepted hypothesis regarding the number and nature of the basic personality factors has been that associated with the Big Five or Five-Factor Model. According to this framework, the personality domain is best summarized in terms of five dimensions that are generally known as Extraversion, Agreeableness, Conscientiousness, Neuroticism (vs. Emotional Stability), and Openness to Experience (or Intellect/Imagination). During the 1990s, some researchers suggested that this five-factor space represents the largest set of dimensions that can be consistently recovered from the personality domain (e.g., Goldberg, 1990; McCrae & John, 1992).

The notion of a five-factor structure of personality variation became widely known through analyses of the scales of personality inventories (e.g., Costa & McCrae, 1988). As noted by McCrae (1989), however, this research ultimately owes its origins to investigations of personality structure as based on the lexical strategy, whereby researchers examine the variable sets derived from the indigenous personality-descriptive words (generally adjectives) of a language. According to the lexical approach, the personality-descriptive adjectives of a given language can collectively represent the domain of human personality variation, insofar as such a vari-

able set constitutes the full array of personality characteristics that have been of subjective importance to the people of a given culture. That is, the personality lexicon captures those aspects of personality that are sufficiently useful in person description to have been encoded as adjectives by generations of speakers within a given language community. Thus, to the extent that there exists some small set of fundamental personality dimensions, each of those dimensions should be expressed within the personality lexicon by some large set of related adjectives that convey nuances and subtle variations in the expression of those dimensions.

The earliest empirical studies based on the lexical strategy were those conducted in the English language by Cattell (e.g., 1947), using a small set of 35 variables selected from the exhaustive list of personality-descriptive adjectives that had been compiled by Allport and Odbert (1936). When ratings on Cattell's variable set were obtained from various participant samples, factor-analytic results suggested no more than five replicable factors (Norman, 1963; Tupes & Christal, 1961/1992). More extensive examinations of the English personality lexicon later confirmed the replicability of a set of five factors that came to be known as the Big Five (Digman & Takemoto-Chock, 1981; Goldberg, 1990).

Thus, the Big Five framework was well established by the 1980s and 1990s as the best available model of the structure of the personality domain, as represented by the personality lexicon of the English language. By this time, however, lexical studies of personality structure were being conducted in various languages other than English. These investigations generally involved self- or peer ratings on sets of several hundred adjectives selected on the basis of their prototypicality and/or frequency of use in personality description. The five-factor solutions derived from these variable sets usually corresponded rather closely to the space of the Big Five factors, despite some differences in factor axis locations (e.g., within the Agreeableness/Emotional Stability plane in the Italian study by Caprara & Perugini, 1994). In some cases, however, the observed five-dimensional spaces did not include any axis corresponding to the Big Five Intellect or Imagination factor (e.g., the Hungarian investigation of Szirmak & De Raad, 1994, and the Italian investigation of Di Blas & Forzi, 1998, 1999). But perhaps the most surprising finding of these investigations—given that only five dimensions had been consistently observed in the English-language research—was

that a common space involving six dimensions was shared among the various languages (Ashton, Lee, Perugini, et al., 2004). That is, the dimensionality of the personality domain was apparently larger than that observed in the English lexical studies.

The HEXACO Personality Factors

The recovery of this six-dimensional space had been noted as early as the late 1990s (e.g., Ashton & Lee, 2001; Ashton, Lee, & Son, 2000; Boies, Lee, Ashton, Pascal, & Nicol, 2001; Hahn, Lee, & Ashton, 1999), but the content of all six dimensions as observed across lexical studies was reviewed in detail by Ashton, Lee, Perugini et al. (2004). Their report listed the defining adjectives of the six factors as recovered in seven languages, including Dutch, French, German, Hungarian, Italian, Korean, and Polish. Subsequently, reanalyses of lexical studies conducted in Croatian, Filipino, and Greek have also recovered an apparently similar set of six dimensions (Ashton & Lee, 2008), as have reanalyses of the Turkish personality lexicon (Wasti, Lee, Ashton, & Somer, in press) and the English personality lexicon (Ashton, Lee, & Goldberg, 2004; see detailed discussion below). Across these diverse languages, the six-factor space is apparently the largest set of dimensions that can be recovered; in contrast, there is no seven-factor space that has been replicated across more than two or three languages.[1]

The content of the six cross-language replicated factors can be considered in comparison with that of the Big Five. To begin, three of the six cross-language dimensions correspond rather closely to three of the classic Big Five factors (Ashton, Lee, Perugini, et al., 2004). One of these dimensions is defined by the liveliness and outgoingness that characterize Big Five Extraversion. Another cross-language dimension is defined by the organization and discipline that characterize Big Five Conscientiousness. Another of these factors is defined by intelligence and/or creativity, and thus corresponds to Big Five Intellect/Imagination. Ashton, Lee, Perugini, et al. (2004) suggested that Unconventionality should be appended to the name

1. For discussion of seven-factor solutions as derived from analyses of personality-descriptive adjectives, see Ashton, Lee, Perugini, et al. (2004). For discussion of seven-factor solutions as derived from analyses of lexical variable sets that include primarily evaluative adjectives, see Ashton and Lee (2002, 2008).

of the latter dimension, given the prominent element of nonconformity on several languages' variants of this factor.

The remaining three cross-language dimensions bear a somewhat more complex pattern of relations with the remaining two of the classic Big Five factors (Ashton, Lee, Perugini, et al., 2004). One of the cross-language factors shares some content with Big Five Agreeableness (e.g., gentleness vs. harshness) but is also defined by patience versus ill-temper, which is usually associated with Big Five Emotional Stability (vs. Neuroticism). We believe that this cross-language factor is ideally interpreted as Agreeableness, as its content is probably even closer to the everyday meaning of the term *agreeable* than is the content of the Big Five Agreeableness factor. (To differentiate this cross-language dimension from the Big Five Agreeableness factor, however, we sometimes refer to the cross-language variant as Agreeableness vs. Anger.) Another cross-language factor shares some content with Big Five Neuroticism (e.g., anxiety) but lacks the "angry" aspects of that Big Five factor and instead emphasizes such characteristics as sentimentality, fearfulness, and emotionality. Because this cross-language factor is less pathological in its content than is Big Five Neuroticism, we have used the label Emotionality to refer to that cross-language variant. Finally, the other cross-language factor is frequently defined by terms such as *sincere, honest*, and *modest* versus *deceitful, greedy*, and *conceited*, and we have interpreted this factor as Honesty-Humility (Ashton, Lee, Perugini, et al., 2004).[2]

Some important points should also be understood regarding the content of the cross-language Honesty-Humility and Agreeableness

2. Note that the six factors as described above represent the axes that most frequently emerge in varimax rotations (or other simple-structure-seeking rotations) of the first six factors obtained from ratings on the adjective variable sets. However, the variables of the personality domain tend not to be highly simple structured; instead, many of those variables are located in the interstitial regions of the factor space, showing appreciable loadings on two or more factors. Consequently, the exact locations of the varimax factor axes will shift slightly from one variable set to another (or from one participant sample to another), even when the obtained factor space is nearly identical. In some cases, therefore, the similarity between any two factor solutions may be observed more clearly by applying a minor orthogonal rerotation of one or both solutions. Note that this departure from simple structure applies not only to six-factor solutions obtained from these lexical variable sets, but also to solutions involving five or fewer factors from the same variable sets.

versus Anger dimensions, particularly in relation to the classic Big Five Agreeableness factor as observed in earlier English-language lexical studies of personality structure (e.g., Goldberg, 1990; Hofstee, De Raad, & Goldberg, 1992; Saucier & Goldberg, 1996). First, much of the content of Honesty-Humility (e.g., at the low pole, *deceitful, greedy*, and *conceited*) is only modestly loaded on the classic English Big Five Agreeableness factor. Also, as noted above, some central aspects of the cross-language Agreeableness versus Anger dimension (e.g., gentleness vs. harshness) are also core elements of classic English Big Five Agreeableness. However, there are some other important elements of classic English Big Five Agreeableness—particularly such "altruistic" traits as *sympathetic*, *soft-hearted*, and *generous*—that tend to represent blends of the cross-language Honesty-Humility and Agreeableness (vs. Anger) dimensions: These traits sometimes load mainly on Honesty-Humility, but sometimes load mainly on Agreeableness (vs. Anger); in both cases, the same traits usually show noteworthy secondary loadings on the other factor (and also on Emotionality). Nevertheless, the six-factor solutions share a crucial common feature, insofar as the core elements of Honesty-Humility and of Agreeableness (vs. Anger) consistently define two separate factors, with altruism-related terms representing a "wild card" that may load on either factor (and to some extent also on Emotionality). In this way, whichever factor is defined by the altruism-related terms will be somewhat broader in content than is suggested by its name.[3]

We have called the six cross-language factors the HEXACO dimensions, an acronym of the factor labels Honesty-Humility (H), Emotionality (E), eXtraversion (X), Agreeableness versus Anger (A), Conscientiousness (C), and Openness to Experience (O). Note that although we use the name Openness to Experience instead of Intellect/Imagination/Unconventionality, the conceptualization of this factor is nevertheless based on the content of the lexical dimension as

3. It would be of some interest to learn whether or not the loading pattern of altruism-related terms tends (a) to be stable within the same language (i.e., across participant samples and variable sets) and (b) tends to differ consistently across languages (or language families). There are not yet enough studies to permit a clear answer to this question, but there is already some evidence that the locations of altruism-related terms have differed across rating sources even within the same language and the same variable set (see Ashton & Lee, 2008).

observed in various languages.[4] The six HEXACO factors are operationalized in a self- (and peer) report instrument called the HEXACO Personality Inventory (HEXACO-PI; Lee & Ashton, 2004, 2006).

English Versus Other Languages

The widespread cross-cultural emergence of the six-dimensional HEXACO factor space from lexical studies of personality structure was perhaps rather surprising, given that the many previous lexically based investigations of the English language had revealed only five consistently recovered dimensions. However, one possible reason for the discrepancy involves the variable sets that were examined in the English lexical studies, in both the earlier explorations (e.g., Cattell, 1947; Norman, 1963; Tupes & Christal, 1961) and the later confirmations of the Big Five structure (Goldberg, 1990; Saucier & Goldberg, 1996). In the first English lexical investigations, computing power limitations necessitated the use of much smaller variable sets (e.g., 35 adjectives in the studies reviewed by Tupes and Christal) than were used in the much more recent studies conducted in various other languages (generally 250 to 700 adjectives). In later English-language investigations (e.g., Hofstee et al. 1992; Saucier & Goldberg, 1996), researchers employed larger variable sets that were obtained mainly by reducing a larger set of 1,710 adjectives that had been compiled previously (see Goldberg, 1982). Still other English lexical investigations examined variable sets that included not only descriptors of personality dispositions but also terms indicating social effects, temporary states, physical appearance, or social evaluations (e.g., Saucier, 1997). In these various English psycholexical studies, the cross-language HEXACO structure was not recovered

4. However, we have excluded rated intelligence from the Openness to Experience factor on a priori grounds, because we consider intellectual *ability*—as distinct from an intellectual *orientation*—to be outside the domain of personality proper (Lee & Ashton, 2004; see also Costa & McCrae, 1992, p. 15). In our view, this domain includes typical styles of behaving, feeling, and thinking, but does not include cognitive abilities or beliefs and attitudes, even though these may well be associated with some personality characteristics. In some lexical studies of personality structure, terms describing abilities have been included within the variable sets, and these studies have generally produced a factor dominated by intelligence-related terms. In other lexical studies, ability terms have been excluded, and the obtained factor has instead emphasized imagination, unconventionality, and intellectual orientation (e.g., *deep, complex, philosophical*).

nor was any other six-factor solution consistently obtained. Given the clearly competent design and execution of these investigations, the discrepancy between the English results and those of other languages is somewhat puzzling.

To date, the only English lexical study to have produced a six-factor solution resembling the cross-language HEXACO structure was that of Ashton, Lee, and Goldberg (2004). In that study, participants' ratings ($N = 310$) on Goldberg's entire set of 1,710 English adjectives were factor analyzed, and the content of the resulting six factors was similar to that of the corresponding cross-language HEXACO factors. The correspondence of the lexical factors to the HEXACO factors was evaluated empirically in a subsequent study (Ashton et al., 2006), in which adjective markers of the English lexical factors were correlated with the six HEXACO-PI scales. A clear pattern of strong convergent and weak discriminant correlations was observed for all six factors, thus supporting the interpretation of the English lexical dimensions. Together, these findings suggest that the English personality lexicon is defined by the same set of six dimensions that have been obtained in other languages.

Nevertheless, the discrepancy between the results of Ashton, Lee, and Goldberg (2004) and those of previous English lexical studies may leave some question as to whether or not the English personality lexicon is in fact defined by the six cross-language factors. On the one hand, one could argue that the failure of previous English lexical investigations to replicate the cross-language six factors was due to the use of variable sets that were not entirely representative of the English personality lexicon. That is, the process of reducing the adjective lists to manageable sizes could have led to the under- (or over-) representation of some aspects of the personality domain. This in turn could have caused some distortion of the obtained structure of personality characteristics, and this distortion could be responsible for the differences between the English-language results and those of other languages. According to this view, the six-factor solution obtained by Ashton, Lee, and Goldberg (2004) from the large set of 1,710 adjectives is likely to represent accurately the structure of the English personality lexicon.

On the other hand, one could argue that the English lexical investigation of Ashton, Lee, and Goldberg (2004) was anomalous by virtue of its very large variable set, which was about four times larger than those of studies in which a few hundred familiar personality-

descriptive adjectives have been examined. In fact, the particularly large variable set used in Ashton, Lee, and Goldberg included many rather unusual terms, particularly amplifications and negations (e.g., *nonexplosive, overquiet, unthorough, supersensitive, unvisioned, unfeigning*), and many of these terms loaded strongly on the various factors. One could therefore suggest that the massive inclusion of such terms may have distorted the factor structure in some unknown way. According to this view, the six-factor solution observed from the 1,710 set would not represent an accurate summary of the English personality lexicon.

To test these two competing interpretations of the results of Ashton, Lee, and Goldberg (2004), a straightforward approach can be used. If the larger pool of 1,710 English adjectives can be reduced to a set of 400 or 500 by relying chiefly on an algorithmic criterion, such as aggregated ratings of adjective familiarity or prototypicality in personality description, then the resulting variable set will be comparable to those examined in lexical studies of various other languages. (Note that such a variable set would differ from those of English lexical studies by Saucier and Goldberg, 1996, and Hofstee et al., 1992, in which the reduction of the 1,710-adjective pool was not based chiefly on aggregated judges' ratings of familiarity or prototypicality.) If the six-factor solution derived from ratings on this new English variable set were found to be similar to the cross-language HEXACO factor structure, then this would suggest that the failure to replicate the cross-language six factors in earlier English lexical studies is attributable to a lack of representativeness of the variable sets. Such a finding would thus support the claim that the English personality lexicon is defined by the same six factors as those observed in diverse other languages. If, however, the six cross-language factors were not recovered from the set of familiar English personality-descriptive adjectives, then this would support the view that the results of Ashton, Lee, and Goldberg were anomalous and that the structure of the English personality lexicon is different from that of the various other languages studied to date.

Purpose of the Present Research

In the present research, we planned to investigate the factor structure of a set of English personality descriptors as selected according to criteria similar to those used in investigations conducted in other

languages. In particular, our aim was to examine the six-factor solution derived from ratings on a set of 400 to 500 of the most familiar personality-descriptive adjectives of the English language. We intended to evaluate the similarity of the obtained factors to the six hypothesized HEXACO dimensions in part by simply considering the content of the defining terms. However, we also wished to test those interpretations more objectively, and to achieve this we intended to use two additional sources of data.

First, we planned to correlate respondents' scores on the obtained factors with scores on the HEXACO-PI scales, which would serve as questionnaire markers of the cross-language factors. This technique would allow comparisons with the results of previous studies in which the indigenous lexical personality-descriptive factors of a given language were examined in relation to the hypothesized HEXACO constructs. Such an investigation has already been reported for the English lexical personality factors as derived from the 1,710-adjective set, as part of a series of studies that showed similar results for Dutch and Italian lexical factors (Ashton et al., 2006). Other investigations have used the same method in evaluating the correspondence of lexical personality factors to the proposed HEXACO factors, examining markers of the indigenous lexical dimensions from German (Ashton, Lee, Marcus, & de Vries, 2007), Polish (Szarota, Ashton, & Lee, 2007), and Turkish (Wasti et al., in press). These latter investigations generally showed results similar to those observed in English, Italian, and Dutch, except that in the German and Polish cases the HEXACO Openness to Experience factor was only weakly related to a lexical Intellect dimension dominated by terms describing intellectual ability.

As a second method of testing the interpretation of the English lexical factors, we also planned to obtain ratings from several lay judges of the extent to which those dimensions correspond conceptually to the definitions of the HEXACO constructs, which represent the hypothesized cross-language factors. This method is thus based on judgments of the similarity of meaning between the lexical factors and the hypothesized constructs, but it avoids the problem of researcher bias in evaluating similarity, by virtue of using neutral judges as raters of that conceptual correspondence. In obtaining these lay judges' ratings, we intended to assess the extent to which the six HEXACO constructs match the six indigenous lexical factors not only of the English language but also of the many other lan-

guages in which lexical studies of personality structure have been conducted. In this way, we planned to answer the broader questions of how closely the various languages' variants of a given factor resemble the HEXACO construct that they are hypothesized to represent and of how closely the lexical six-factor solution of any given language corresponds to the entire HEXACO space. By assessing the conceptual similarities between the observed and hypothesized personality dimensions, we hoped to obtain an independent source of information regarding the correspondence between the lexical and HEXACO factors, complementary to that obtained in several previous studies by correlating indigenous adjective scales with imported HEXACO-PI scales.

STUDY 1

Method

Selection of Adjectives

Our aim in Study 1 was to investigate the structure of the most familiar personality-descriptive adjectives of the English language. We began with a very large variable set from which the frequently used terms would be selected, using Goldberg's (1982) list (see Ashton, Lee, & Goldberg, 2004, for a summary of the process by which this list was obtained). One advantage associated with the use of this list is that it was developed with the express aim of including essentially all of the reasonably familiar English-language personality-descriptive adjectives. Another advantage is that the use of this previously existing list reduces the potential for any bias on the part of the present researchers in the selection of initial variable set.

We obtained ratings of the frequency of use of all 1,710 adjectives of Goldberg's (1982) list from a sample of 10 graduate students. Each graduate student was asked to rate independently how often each adjective is used to describe personality, using a 7-point scale (1 = *extremely rarely*, 7 = *extremely often*). These student raters were not aware of the specific purpose of this research, nor were they familiar with the hypothesized six-dimensional structure of personality variation.

The average inter-rater correlation for these ratings was .64, and the reliability of the aggregated ratings was .95. On the basis of the aggregated judges' ratings, we selected the 449 most familiar English personality-descriptive adjectives by taking those terms that had mean frequency ratings of 4.2 or higher on the 1–7 scale. Prior to making the final selection, we excluded some adjectives that were primarily evaluative

(e.g., *foolish*), slangy (e.g., *gutsy*), ambiguous in representing personality (e.g., *unforgetful*), applicable only to one gender (e.g., *ladylike*), descriptive of physical characteristics (e.g., *clumsy*), or descriptive primarily of states rather than of traits (e.g., *dissatisfied*). None of the excluded terms was among the 435 adjectives analyzed by Saucier and Goldberg (1996).

Participants and Procedure

A total of 559 participants completed a questionnaire that included the set of 449 adjectives.[5] The adjectives were alphabetically ordered in one form of the questionnaire, and reverse-alphabetically ordered in the other form; approximately equal numbers of respondents completed each form. Of the 559 participants, 303 rated their own personality on all 449 terms and then used the same 449 terms in rating the personality of a well-acquainted peer of the opposite sex. The remaining 256 participants provided only self-ratings of personality on the adjective set. All ratings were made on a 7-point scale (1 = *very inaccurate*; 7 = *very accurate*).

Of the 559 respondents, 60% were female, with a mean age of 23.1 years. Of the 303 peers whose personalities were rated, 38% were female, with a mean age of 26.5. Scores were ipsatized (i.e., standardized within each participant across all items) to remove variance due to elevation and extremity of response, and the following results are based on these standardized scores. (Note that the use of this procedure allows meaningful comparisons with the results of previous lexical studies, all of which have been based on the same method of ipsatization.) Missing values for any variable were replaced with the mean for that variable.

A subsample of 203 participants (52% women, mean age 18.7 years) also provided self-reports on a 108-item version of the HEXACO Personality Inventory (HEXACO-PI; see Lee & Ashton, 2004). Responses to the HEXACO-PI items were made using a 5-point scale (1 = *strongly disagree*; 5 = *strongly agree*). In this sample, the internal-consistency reliabilities (coefficient alpha) for the HEXACO-PI scales were all similar, ranging from .82 (Openness to Experience) to .87 (Honesty-Humility). Scale mean scores were all reasonably close to the scale midpoint, ranging from 2.95 (Agreeableness) to 3.51 (Extraversion), and standard deviations all fell between 0.58 and 0.63.

5. Note that conventional guidelines recommending a minimum ratio of subjects to variables have been found to be misguided. The important determinants of the stability of factor loadings include the absolute sample size, the magnitude of variables' loadings on factors, and the variable-to-factor ratio (Guadagnoli & Velicer, 1988). In the present study, all of these are sufficiently high to produce reasonably stable factor loadings.

Results and Discussion

Self-Rating Six-Factor Solution

We conducted a principal components (i.e., factor) analysis on the full set of 449 adjectives using the self-rating data ($N = 559$). Eigenvalues for the first 12 factors were 39.3, 26.0, 17.4, 13.8, 10.1, 8.4, 7.5, 5.7, 4.9, 4.6, 4.2, and 4.1. The scree test thus suggested as many as seven or eight factors. However, we focus our descriptions below on the six-factor solution, which represents the largest space to have been replicated across languages.

To examine the replicability of the cross-language six-factor solution, we rotated the six English lexical factors to an orthogonal validimax rotation (McCrae & Costa, 1989), using the set of six HEXACO-PI scales as the target. The validimax rotation is equivalent to an orthogonal Procrustes rotation (Paunonen, 1997; Schönemann, 1966), except that the validimax target matrix consists of hypothesized correlations with external criteria, whereas the Procrustes target matrix consists of hypothesized loadings of the variables being factor-analyzed. That is, the validimax solution optimizes the construct validity of the factors with respect to the external variables, by maximizing the convergent correlations and minimizing the discriminant correlations between the two sets of scores.

In the present case, the use of the HEXACO-PI scales as the targets allowed us to obtain a set of orthogonal factors that would be rotated as closely as possible to the typical cross-language orientation of vectors within the six-dimensional space. As discussed in the Introduction, the factor axis locations obtained in lexical studies of personality structure tend to shift slightly across participant samples and across variable sets, because of the lack of simple structure in the personality domain. By applying the validimax rotation, we aimed to simplify the interpretation of factors by controlling for any idiosyncrasies in factor axis locations, but—crucially—without distorting the orthogonal factor space or changing the communalities of the variables within that space. Our six-by-six target matrix consisted of 1s (in the diagonals) and 0s (in the off-diagonals). The factor loadings were those obtained from all 559 participants who provided self-ratings on the adjectives, and the correlations were those obtained from the subsample of 203 participants who provided self-reports on the HEXACO-PI scales.

The percentages of total variance accounted for by the six validimax-rotated factors were 5.93, 5.11, 4.38, 4.11, 3.56, and

2.40. Table 1 lists the adjectives having the highest loadings on each pole of each of the six factors of the orthogonal validimax-rotated solution, with the factors listed in order of their size. (As listed in Table 1, these validimax factors were those targeted on the HEXACO-PI scales of Extraversion, Conscientiousness, Honesty-Humility, Agreeableness, Emotionality, and Openness to Experience, respectively.) Below, we first discuss the adjective content of the factors in turn and then report the pattern of convergent and discriminant correlations between those factors and the HEXACO-PI scales onto which the factors were targeted.

To begin, the content of Factors 1 and 2 corresponded rather closely to that of the Extraversion and Conscientiousness factors observed in the six-factor solutions of various other languages. Specifically, Factor 1 was defined by such content as sociability and liveliness versus shyness and quietness, and Factor 2 was defined by terms describing organization, industriousness, and efficiency versus irresponsibility and carelessness.

Factor 3 was defined strongly by a variety of terms suggesting Honesty-Humility, such as sincerity, trustworthiness, and modesty versus conceit, greed, and deceit. This variant of Honesty-Humility was rather broad, being defined by several terms involving overall altruism or sympathy, such as *giving*, *kind*, and *warm-hearted*. Thus, this factor most closely resembles the versions of Honesty-Humility observed in self-rating data from such languages as Croatian, German, and Polish (see Ashton & Lee, 2008, for a review). The variant of Honesty-Humility seen in Table 1 is also defined by terms that are more commonly used than are those of the Honesty-Humility factor obtained by Ashton, Lee, and Goldberg (2004), which was defined by many unusual negation terms such as *undeceptive* and *unmercenary*.

Factor 4 resembled the cross-language variant of Agreeableness (i.e., Agreeableness vs. Anger), being defined by content suggesting even temper, patience, and forgivingness versus irritability, stubbornness, and aggressiveness. (Recall that the cross-language variant of Agreeableness differs somewhat from the Big Five variant of Agreeableness, which tends not to be defined by even temper vs. irrirability and is instead often dominated by terms describing generosity and sympathy.)

Factor 5 closely resembled the cross-language Emotionality factor, being defined by terms indicating sentimentality and fearfulness

Table 1
Highest-Loading Adjectives on Six Validimax-Rotated Factors From Ipsatized Self-Ratings on 449 Familiar English Personality-Descriptive Adjectives

Factor 1 (Extraversion)		Factor 2 (Conscientiousness)		Factor 3 (Honesty-Humility)	
Outgoing	.73	Organized	.63	Sincere	.52
Social	.64	Thorough	.58	Honest	.49
Lively	.63	Hard-working	.57	Trustworthy	.49
Vibrant	.63	Efficient	.56	Giving	.47
Extroverted	.63	Self-disciplined	.52	Kind	.47
Talkative	.61	Careful	.51	Warm-hearted	.46, .32[X]
Sociable	.61	Tidy	.51	Humble	.44
Chatty	.58	Proper	.51	Helpful	.44
Cheerful	.58, .34[A]	Diligent	.50	Loyal	.43
Bubbly	.57	Studious	.50	Compassionate	.43, .36[E]
Vocal	.57	Meticulous	.48	Good-hearted	.43, .32[A]
Confident	.53, –.34[E]	Responsible	.48	Modest	.43
Happy-go-lucky	.51	Mature	.48	Kind-hearted	.43
Energetic	.50	Perfectionistic	.47	Big-hearted	.43
Dull	–.62	Irresponsible	–.60	Conceited	–.51
Withdrawn	–.62	Careless	–.59	Self-centered	–.48
Quiet	–.60, .32[A]	Disorganized	–.57	Snobbish	–.46
Antisocial	–.59	Reckless	–.55	Egotistical	–.46
Shy	–.59	Sloppy	–.54	Superficial	–.45
Gloomy	–.55	Messy	–.52	Greedy	–.44
Introverted	–.55	Untidy	–.51	Dishonest	–.43
Reserved	–.52	Inefficient	–.50	Condescending	–.43
Negative	–.52	Lazy	–.49	Arrogant	–.42
Timid	–.51	Absent-minded	–.48	Deceitful	–.42
Pessimistic	–.50	Immature	–.48	Selfish	–.41
Distant	–.47	Irrational	–.45	Vain	–.41
Inhibited	–.46	Undisciplined	–.44	Untrustworthy	–.39
Unfriendly	–.46	Rebellious	–.44	Egocentric	–.39

Table 1. (Contd.)

Factor 4 (Agreeableness)		Factor 5 (Emotionality)		Factor 6 (Openness to Experience)	
Agreeable	.53	Emotional	.58	Philosophical	.57
Calm	.48, −.33^{E}	Feminine	.52	Insightful	.50
Peaceful	.47	Sensitive	.48	Complex	.49
Patient	.45, .35^{H}	Sentimental	.47	Deep	.48
Cooperative	.44	Oversensitive	.47	Introspective	.46
Mild	.43, .31^{H}	Nervous	.45, −.38^{X}	Articulate	.39, .37^{C}
Relaxed	.43, −.30^{E}	Whiny	.43	Inquisitive	.39
Tolerant	.42, .35^{H}	Fearful	.42, −.35^{X}	Unconventional	.38
Forgiving	.41	Melodramatic	.41	Perceptive	.37
Lenient	.41	Anxious	.41 −.36^{X}	Analytical	.35
Easygoing	.41	Gullible	.40	Individualistic	.35
Pleasant	.40	Moody	.40, −.33^{X}, −.32^{A}	Intuitive	.35
Gentle	.39, .38^{H}	Nagging	.37	Intellectual	.34
Passive	.38, −.37^{X}	Clingy	.36	Imaginative	.34
Quick-tempered	−.56	Masculine	−.55	Simple	−.34
Hot-tempered	−.52	Fearless	−.50	Conservative	−.34
Short-tempered	−.51	Unemotional	−.47	Conventional	−.34
Aggressive	−.49	Rugged	−.43	Narrow-minded	−.34
Blunt	−.45	Tough	−.42	Bigoted	−.32
Argumentative	−.44	Heartless	−.37, −.32^{H}	Closed-minded	−.30
Bull-headed	−.43	Rough	−.37, −.33^{A}, −.32^{C}		
Stubborn	−.43	Self-assured	−.36, .31^{X}		
Forceful	−.42	Cold-hearted	−.36, −.33^{X}		
Demanding	−.41	Unfeeling	−.35		
Temperamental	−.41	Insensitive	−.34, −.32^{H}		
Bossy	−.38	Decisive	−.34, .33^{C}		
Headstrong	−.38	Ruthless	−.33		
Dominant	−.37	Unsympathetic	−.32, −.30^{H}		

Note. $N = 559$. Secondary loadings with absolute values of .30 or above are indicated after the primary loading, with the identity of the factor indicated with superscripts as follows: H = Honesty-Humility, E = Emotionality, X = Extraversion, A = Agreeableness, C = Conscientiousness, O = Openness to Experience.

versus toughness and unemotionality. This English variant of Emotionality appeared to be a rather prototypical version of the factor, given that its content spanned most of the traits that have defined the Emotionality dimension of other languages. Finally, Factor 6 can be interpreted as an Openness to Experience dimension, being most strongly defined by several terms describing intellectual orientation

Table 2
Correlations of the Self-Rating Validimax and Varimax-Rotated Factor Scores With HEXACO-PI Scale Scores

	HEXACO-PI Scales					
	X	C	H	A	E	O
Validimax Factors						
1 (X)	**.80**	.06	−.04	−.11	−.01	.07
2 (C)	.06	**.73**	.09	−.05	.04	−.10
3 (H)	−.04	.10	**.54**	.29	.11	.05
4 (A)	−.11	−.06	.28	**.73**	−.09	.05
5 (E)	−.01	.04	.11	−.09	**.73**	−.07
6 (O)	.08	−.10	.05	.05	−.09	**.55**
Varimax Factors						
1 (X)	**.77**	.08	−.22	−.31	.05	.00
2 (C)	−.02	**.72**	.07	−.02	−.02	−.25
3 (H)	.12	.16	**.52**	.21	.38	.04
4 (A)	.02	−.11	.25	**.73**	−.25	.01
5 (E)	−.16	.01	−.06	−.02	**.58**	−.15
6 (O)	.11	.09	.06	.11	−.08	**.48**

Note. $N = 203$. X = Extraversion; C = Conscientiousness; H = Honesty-Humility; A = Agreeableness; E = Emotionality; O = Openness to Experience. Convergent correlations are given in bold type.

(e.g., *philosophical, deep, complex, inquisitive, intellectual*) and also by terms indicating imagination and unconventionality. This English lexical variant of Openness to Experience was defined by terms that are less obscure than many of those that loaded on the corresponding factor of the study of 1,710 English personality-descriptive adjectives (e.g., *penetrative* vs. *unsearching, uningenious*; Ashton, Lee, & Goldberg, 2004).

The above interpretations are consistent with the pattern of convergent and discriminant correlations between the six validimax-rotated lexical factors and the HEXACO-PI scales onto which they were targeted. As seen in Table 2, each of the six validimax-rotated factors showed a convergent correlation that was much stronger than any of its discriminant correlations. Four of the convergent correlations exceeded .70, but even the lowest convergent correlations (i.e., those for Honesty-Humility and for Openness to Experience) exceeded .50, and none of the discriminant correlations reached an absolute value

of .30. This pattern of correlations thus suggests that this English lexical six-factor solution summarized in Table 1 does reproduce rather closely the structures observed across diverse other languages.

Before leaving this section, we should mention that the six varimax-rotated factor axes from this data set were generally located fairly close to the six validimax-rotated factor axes described above. Specifically, four of the varimax-rotated factors were highly correlated with the validimax-rotated factors of Conscientiousness, Honesty-Humility, Agreeableness, and Openness to Experience, with factor-score convergent correlations of .93 or higher. The remaining two varimax-rotated factors correlated .87 and .86 with validimax-rotated factors of Extraversion and Emotionality, respectively, thus indicating that these varimax factors were not quite optimally aligned with the lexical HEXACO constructs. Consistent with this observation, the varimax-rotated factors were aligned fairly closely with the HEXACO-PI scales, but the convergent correlations were slightly lower and the discriminant correlations were slightly higher than those observed for the validimax-rotated factors (see Table 2).

Peer Rating Six-Factor Solution

We also examined the factor structure of the peer ratings on the 449 adjectives, conducting a principal components analysis of the responses obtained from the 303 participants who provided peer ratings. To compare the solutions across the two rating sources, we rotated the six peer rating factors toward the six self-rating factors (i.e., the validimax-rotated factors of Table 1) using an orthogonal Procrustes rotation (Paunonen, 1997). Overall, the Procrustes-rotated peer rating six-factor solution was very similar to the self-rating, six-factor solution onto which the peer solution was targeted. Congruence coefficients between the corresponding factors were all reasonably strong: .90 for Honesty-Humility, .93 for Extraversion, .95 for Conscientiousness, .87 for Agreeableness, .87 for Emotionality, and .80 for Openness to Experience. With regard to the somewhat lower congruence observed for Openness to Experience, this was largely due to creativity-related terms (e.g., *imaginative, ingenious, creative, original, artistic, innovative* vs. *unimaginative*), which loaded more highly on the peer rating factor than on the self-rating factor; otherwise, the content of the self- and peer rating variants

of the factor was very similar. (Similar levels of congruence were observed between varimax-rotated self- and peer rating factors, with values ranging from .79 to .94. The varimax-rotated solutions for self- and peer rating data are available from the authors upon request.)

Gender Differences

As seen in Table 1, the Emotionality factor was defined strongly by two overtly gender-linked terms, *feminine* versus *masculine*; moreover, this factor correlated .49 with participant gender. These facts raise the question of whether or not gender differences could have influenced the obtained factor structures, and especially the Emotionality axis. To evaluate this possibility, we repeated the above analyses after first standardizing participants' ratings within each gender. The resulting factor structure largely remained intact except for some predictable changes due to the removal of variance associated with participant gender. Specifically, the Emotionality factor became somewhat smaller (but remained fifth in size among the six factors), and the terms *feminine* and *masculine* now showed absolute loadings of less than .30 on Emotionality. However, terms describing sentimentality, anxiety, and fearfulness continued to define the gender-controlled Emotionality factor quite strongly, and this factor was nearly identical to the gender-related Emotionality factor described above. (The congruence coefficient between the Emotionality factors of these two analyses was .95; for the other five factors, the congruence coefficients were .98 or above.) Thus, the factor structure reported in Table 1 emerged in very similar form even when gender differences were removed from participants' ratings.

Summary

The results of Study 1 showed that the set of familiar English personality-descriptive adjectives did produce a set of six factors whose content corresponds closely to that of the six lexical factors observed across diverse other languages (e.g., Ashton, Lee, Perugini, et al., 2004). These apparent similarities of content were supported by the strong correlations of the lexical factors with the corresponding scales of the HEXACO-PI, which were developed to represent the cross-language prototypes of the personality dimensions.

STUDY 2

As noted above, the results of Study 1 indicated that the familiar personality-descriptive adjectives of the English personality lexicon can produce a set of six factors that closely resemble those of other languages. Moreover, this apparent conceptual similarity was supported by the empirical associations of the English lexical factors with questionnaire scale markers of the hypothesized cross-language factors. These correlational results involving the indigenous English lexical factors are similar to those observed in analogous investigations of the indigenous lexical dimensions of several other languages, including German (Ashton et al., 2007), Polish (Szarota et al., 2007), Turkish (Wasti et al., in press), and Dutch and Italian (Ashton et al., 2006). Moreover, the correlations observed in Study 1 for factors derived from familiar English personality-descriptive adjectives are also similar to those observed by Ashton et al. (2006) for factors derived from the larger set of 1,710 English personality-descriptive adjectives. In each of the above cases, translated HEXACO-PI scales showed generally strong convergent correlations and small discriminant correlations with indigenous lexical factor scales of the language in question.[6] These patterns of results thus suggest that the proposed HEXACO structure has been recovered rather closely from the languages listed above.

The method of correlating indigenous lexical factor markers with HEXACO-PI scales is a useful means of testing the replication of the proposed cross-language structure within the personality lexicon of a given language. However, it is not always feasible to obtain a large sample of reports on the hypothesized marker scales (i.e., HEXACO-PI scales as translated into the language in question) and of ratings on marker scales based on the indigenous lexical factors. As a consequence, it has not yet been possible to quantify the degree to which the indigenous lexical factors of certain languages do in fact correspond to the proposed cross-language dimensions as operationalized by the HEXACO-PI.

In the present study, therefore, we intended to assess the similarity of the lexical factors observed in each of 12 languages to the hy-

6. Some weaker convergent correlations have been observed for the HEXACO-PI Openness to Experience scale in cases in which the lexical factor is dominated by intelligence-related terms; as noted in Footnote 4, such content is excluded on a priori grounds from the HEXACO Openness to Experience construct.

pothesized HEXACO factors via a different approach. Specifically, we report indices of conceptual similarity between (a) the (translated) adjective content of the observed indigenous lexical factors and (b) the descriptions of the hypothesized HEXACO constructs, using aggregated ratings of such similarity as provided by lay judges. This strategy has an important advantage in terms of its convenience, but it also provides an alternative method of quantifying the correspondence between the observed and hypothesized constructs, one that is based on the conceptual or semantic overlap between factors. In the present case, this approach would allow us to examine the extent to which the English lexical factors of Study 1—and the English lexical factors of the earlier investigation by Ashton, Lee, and Goldberg (2004)—are consistent in meaning with the proposed HEXACO constructs. More generally, this method will allow us to compare the lexical solutions of various languages in terms of the extent to which they have recovered the HEXACO structure, and to examine instances in which a given lexical factor may deviate from its presumed HEXACO counterpart.

Method

Participants

Two hundred eighty-six undergraduate students performed the similarity rating task described below in exchange for credit in an introductory psychology course. Eighty-two percent of participants were women. Participants' ages ranged from 17 to 53 years with a mean of 20.7 and a median of 19.

Materials

Recall that our aim was to obtain ratings of the conceptual similarity between the hypothesized cross-language (i.e., HEXACO) personality factors and the indigenous lexical personality factors obtained in each of the various languages in which six-factor solutions based on personality-descriptive terms have been reported. To obtain the ratings of conceptual similarity, we prepared (a) descriptions of the characteristics assessed by each of the six HEXACO-PI scales and (b) English-translated lists of the adjectives that most strongly defined each of the six indigenous lexical personality factors of a given language. (The six adjective lists were therefore different for each language, whereas the HEXACO factor descriptions were identical for each language.)

To describe the content of the six HEXACO personality dimensions, we abbreviated the summaries given in Lee and Ashton (2004) to produce four pairs of opposing statements. These factor descriptions are given in the top sections of each of Appendices A-1 through A-6.

To show the adjective content of the six indigenous lexical personality factors obtained in each language, we created English-translated lists of the adjectives that had most strongly defined each of the six factors in the original lexical study of personality structure in that language. The sources of these lists of high-loading adjectives were as follows. For the Dutch, French, Korean, and Polish languages, and also for the two independent studies of the Italian language (i.e., Italian-Rome and Italian-Trieste), we used the results reviewed in Ashton, Lee, Perugini, et al. (2004). For the German language, we used updated results from the original German studies, as now summarized in Ashton, Lee, Marcus, et al. (2007). For the Hungarian language, we used the more detailed results recently made available for the Hungarian six-factor solution (Zsofia Szirmak, personal communication, September 25, 2006, based on results of Szirmak & De Raad, 1994). For the Turkish language, we used the results of analyses based on personality-descriptive adjectives only, as reported in Wasti et al. (in press). For the Croatian, Filipino, and Greek languages, we used the results of analyses summarized by Ashton and Lee (2008), who revisited the six-factor solutions of these languages using the original data previously examined by Church, Reyes, Katigbak, and Grimm (1997), Mlacic and Ostendorf (2005), and Saucier, Georgiades, Tsaousis, and Goldberg (2005). Finally, for the English language, we used the results reported in Ashton, Lee, and Goldberg (2004) for the 1,710-adjective set, and we used the results reported in Study 1 of the present article for the 449-adjective set.

For each of the above languages (and for the two investigations of the Italian and English languages), the lists of highest-loading adjectives on each of the six factors are given in Appendices A-1 through A-6. For each factor, up to 12 adjectives were listed for each pole of the factor, but only adjectives having their highest loading on a given factor were included in the lists; adjectives having the same English translation were not repeated. Adjectives were separated by factor pole and were listed in descending order of their absolute loadings on the factor. Note that Appendices A-1 through A-6 thus extend and supersede the tables reported in Ashton, Lee, Perugini, et al. (2004).

We remind readers that these adjective lists were based on factor analyses of indigenous adjective sets that were intended to be representative of the personality lexicons of the various languages, and not to be markers of any hypothesized factor structure. The analyses were based on ipsatized (i.e., within-subject standardized) self-ratings on the full variable sets as reported in the original investigations, except in the cases of a few investigations in

which some mainly non-personality-descriptive terms had been included (e.g., terms representing constructs of physical attractiveness, social effects, and extreme positive or negative evaluation). In those cases (Church et al., 1997, for Filipino; Goldberg & Somer, 2000, for Turkish; Saucier et al., 2005, for Greek), we removed those terms prior to reanalyzing the variable sets for the purpose of obtaining the six-factor solution; see details in Ashton and Lee (2008) and in Wasti et al. (in press). We also removed (the very few) extremely sex-linked terms (e.g., feminine, masculine) from the final adjective lists of those factors that included such terms (specifically, the Emotionality factors of English, Korean, and Turkish), because of the possibility that participants would refuse to make similarity ratings that might be seen as endorsing stereotypes of sex differences in personality.[7]

To elicit ratings of similarity between the HEXACO personality dimensions and the indigenous lexical personality factors of each language, we constructed for each language a booklet that contained an instruction page and six rating pages. (See Appendix B for the instruction page and for an example rating page of one lexical factor of one language.) At the top of each rating page, we provided the description of a different HEXACO factor (see Appendices A-1 through A-6 for all six descriptions). The name of the factor was not identified on these pages; instead, the HEXACO factor descriptions were given under the heading "Target Personality 1," "Target Personality 2," and so on for the six factors. (For half of the booklets for a given language, the order of the descriptions matched that of the factor names as given in the HEXACO acronym; for the other half, the order was reversed.)

Also given on each rating page, immediately below the Target Personality description, were the six English-translated lists of adjectives that were the highest-loading terms on the six indigenous factors observed in the lexical study of personality structure in the language in question. (The six lists were given in the same random order on all rating pages of a given language, but these random orders were unique for each lan-

7. Note that the factors derived from the above variable sets are in most cases the varimax-rotated factors of the six-factor solutions. In a few languages, however, we had applied orthogonal rerotations to a pair of factors so that factor axis locations would correspond more closely to those observed in other languages. These rerotations were applied in the following languages to the following factor pairs: English-1710 (Agreeableness and Honesty-Humility); Greek (Emotionality and Extraversion); Italian-Trieste (Emotionality and Openness to Experience/Intellect); Korean (Conscientiousness and Openness to Experience/Intellect). Finally, for the English-449 factor axes, we applied the validimax rotation described in Study 1 to the six factor axes. The rotational positions of the six factors reported here for the various languages approximate the most commonly obtained set of simple-structure axes as produced by varimax rotations.

guage. See Appendices A-1 through A-6 for the adjective lists; note that in these tables the adjective lists are sorted by *factor*, not by *language*, as in the case of the actual rating pages, as shown in Appendix B.) In this way, we would obtain from each rating page the similarity judgments for all six lexical factors of a given language with respect to a different HEXACO dimension. Hence, the six rating pages together would elicit ratings of the similarity of all six lexical factors of that language to all six HEXACO dimensions (i.e., a full six-by-six matrix).

Procedure. At the beginning of the experimental session, each participant was given one booklet as described above; that is, each participant was to make similarity ratings for the six adjective lists of one language. The assignment of booklets (i.e., languages) to participants was random; the name of the language was not indicated on the booklet. Each of the 14 booklets was given to a different subset of 20 to 22 participants from the total sample of 286. Participants attended the experimental session in groups of approximately 20; for each rating page, participants began making ratings simultaneously, waiting when finished for the experimenter's instruction before continuing to the next rating page. Participants made their similarity ratings according to the instructions described below (see also Appendix B) individually and independently of each other.

As indicated above, the first page of each booklet was an instruction page (see Appendix B). The instruction page asked participants to judge the degree of similarity of each of the six adjective lists of each rating page to the target personality description of the same rating page, using a 9-point response scale (i.e., 0 = no similarity; 8 = very strong similarity).

Results

We first computed the inter-rater reliability (coefficient alpha) of each set of 36 (i.e., 6×6) similarity ratings as obtained for the lexical factors of each language. After initial examination of the person-total (i.e., rater-total) correlations within each set, we removed 13 raters (4.5%) whose very low person-total correlations (i.e., below .30) indicated extreme carelessness or noncompliance (e.g., giving the same ratings across all stimuli, or giving quasi-random response patterns). Therefore, the numbers of raters who were included in subsequent computations of the average similarity ratings varied from 17 to 21 across the 14 rating sets. The final inter-rater reliabilities were very high, ranging from .94 (Polish) to .97 (Croatian).

Table 3 shows the average similarity ratings between each of the six target personality descriptions (i.e., of the HEXACO dimensions)

Table 3
Mean Similiarity Ratings Between the HEXACO Factor Definitions and Adjective Lists Defining Indigenous Lexical Factors From Various Languages

	HEXACO definitions							HEXACO definitions					
	H	E	X	A	C	O		H	E	X	A	C	O
Croatian factors							Dutch factors						
H	**7.2**	2.6	1.0	4.2	1.5	2.1	H	**7.0**	2.7	1.8	4.3	1.9	1.6
E	3.2	**4.8**	2.1	3.1	1.4	3.3	E	2.2	**6.0**	2.0	2.3	2.3	2.0
X	1.8	2.7	**7.4**	1.7	1.6	2.5	X	2.5	1.8	**7.1**	3.2	1.7	3.7
A	4.5	1.7	1.2	**6.1**	1.5	2.7	A	4.9	2.9	2.4	**7.0**	2.3	3.4
C	2.2	1.0	1.0	1.3	**7.7**	1.6	C	3.7	2.4	1.7	2.5	**6.9**	2.3
O/I	1.9	1.2	2.2	1.0	2.8	**5.0**	O/I	2.9	1.4	4.0	1.9	2.6	**6.1**
English factors (1,710 adjectives)							English factors (449 adjectives)						
H	**6.3**	3.1	1.1	3.8	1.9	1.6	H	**7.2**	2.7	2.0	4.5	2.3	2.5
E	3.7	**6.7**	2.7	3.0	2.6	3.3	E	3.7	**6.6**	2.7	3.6	2.1	2.8
X	1.7	2.4	**7.3**	2.7	1.9	3.0	X	2.0	2.7	**7.0**	2.5	2.0	2.2
A	4.3	4.3	2.6	**7.1**	3.2	2.8	A	4.1	2.4	2.2	**6.7**	2.3	2.6
C	3.5	2.9	1.5	2.7	**7.5**	2.2	C	2.4	2.5	1.9	2.0	**7.1**	2.2
O/I	2.0	2.3	2.6	1.8	2.6	**5.0**	O/I	2.6	2.1	2.5	3.3	2.0	**6.2**
Filipino factors							French factors						
H	**6.7**	3.3	1.9	5.5	2.5	3.3	H	**7.0**	2.3	1.4	4.5	2.1	2.1
E	1.2	**5.6**	2.2	1.6	0.9	1.2	E	2.2	**6.7**	1.9	2.8	2.3	1.8
X	1.4	1.5	**6.7**	2.5	1.4	3.1	X	1.9	2.0	**7.6**	3.0	1.8	3.6
A	3.8	2.0	1.2	**7.2**	2.4	2.5	A	5.2	3.2	3.0	**6.3**	2.3	3.0
C	3.2	1.5	1.2	2.4	**3.5**	3.0	C	3.0	2.0	1.8	2.5	**7.3**	2.9
O/I	3.3	1.4	2.4	2.7	5.6	**4.7**	O/I	1.6	1.6	4.0	1.6	1.9	**6.8**
German factors							Greek factors						
H	**7.1**	3.4	1.7	4.3	2.2	2.7	H	**6.9**	2.6	1.6	3.7	3.2	2.1
E	3.3	**5.1**	1.7	3.5	1.6	3.2	E	2.1	**6.1**	3.0	2.6	2.2	1.9
X	1.5	1.5	**7.5**	2.8	2.2	3.3	X	2.6	2.9	**6.6**	3.5	1.8	2.9
A	4.1	2.8	1.2	**6.0**	2.2	3.8	A	3.9	2.8	1.6	**6.6**	2.6	2.8
C	3.2	2.1	2.5	1.9	**6.7**	2.8	C	3.2	2.1	1.3	1.7	**7.3**	2.4
O/I	2.2	0.8	2.1	1.6	4.3	**3.7**	O/I	1.9	1.8	2.7	1.9	3.0	**4.9**
Hungarian factors							Korean factors						
H	**7.0**	2.4	1.4	4.0	2.1	2.4	H	**7.5**	2.3	2.1	3.9	2.5	2.6
E	2.5	**5.6**	3.0	3.1	1.9	2.0	E	2.4	**5.9**	1.7	4.3	2.7	3.2
X	2.0	2.4	**7.1**	2.9	2.0	3.4	X	2.3	2.4	**7.6**	3.1	2.0	4.3
A	4.8	2.9	2.2	**6.0**	2.4	3.3	A	4.7	4.3	2.1	**6.5**	2.4	3.8
C	2.8	2.4	2.3	2.6	**7.1**	2.3	C	3.0	2.2	2.1	2.3	**7.1**	2.0
O/I	3.6	2.0	2.6	2.9	3.5	**4.0**	O/I	2.9	1.5	3.5	2.4	3.3	**6.0**

Table 3. (Contd.)

	HEXACO definitions							HEXACO definitions					
	H	E	X	A	C	O		H	E	X	A	C	O
Italian (Rome) factors							Italian (Trieste) factors						
H	**7.0**	3.3	1.3	3.6	1.9	2.3	H	**7.1**	2.5	2.0	3.8	1.8	2.4
E	2.5	**6.4**	2.8	2.5	1.4	2.3	E	2.3	**6.5**	2.1	2.1	2.4	1.4
X	3.6	1.9	**7.2**	3.6	2.0	3.9	X	2.0	2.0	**7.6**	3.5	1.5	3.4
A	3.8	3.3	2.1	**6.8**	2.5	4.9	A	4.0	2.9	1.4	**6.5**	2.5	3.4
C	2.9	2.5	1.9	3.7	**7.1**	2.9	C	2.4	2.1	1.7	3.0	**7.4**	2.2
O/I	1.9	1.2	3.1	1.7	2.9	**4.9**	O/I	2.1	1.4	2.7	1.7	4.3	**5.2**
Polish factors							Turkish factors						
H	**6.9**	2.3	1.4	4.7	1.5	2.1	H	**6.9**	3.1	1.7	3.9	2.6	2.1
E	3.2	**6.6**	2.4	3.1	1.3	2.6	E	2.0	**5.7**	2.8	2.4	2.5	2.0
X	1.3	1.8	**5.7**	1.8	3.3	2.4	X	1.9	1.6	**6.4**	1.6	2.0	3.6
A	4.3	3.1	1.6	**7.0**	2.6	2.8	A	3.3	3.3	2.4	**7.6**	2.8	2.4
C	3.0	2.4	1.9	3.7	**6.7**	2.4	C	2.3	2.2	1.2	1.9	**7.3**	1.6
O/I	1.4	1.1	1.9	1.8	3.1	**4.8**	O/I	2.7	1.8	2.3	2.8	2.4	**6.3**
Average													
H	**7.0**	2.7	1.6	4.2	2.1	2.3							
E	2.6	**6.0**	2.3	2.8	1.9	2.3							
X	2.0	2.1	**7.0**	2.7	1.9	3.2							
A	4.2	3.0	1.9	**6.7**	2.4	3.1							
C	2.9	2.1	1.7	2.4	**6.9**	2.3							
O/I	2.3	1.5	2.7	2.1	3.1	**5.2**							

Note. All ratings were made on a scale from 0 (*no similarity*) to 8 (*very strong similarity*). Convergent similarity ratings are in bold type. H = Honesty-Humility; E = Emotionality; X = Extraversion; A = Agreeableness; C = Conscientiousness; O = Openness to Experience; O/I = Openness to Experience or Intellect/Imagination/Unconventionality.

and each of the six adjective lists (i.e., of the indigenous lexical factors) for each of the 14 rating sets (i.e., languages). Also shown in Table 3 are the average similarity ratings across all 14 rating sets. These similarity ratings indicate that the six indigenous lexical factors showed reasonably clear one-to-one correspondences to the HEXACO dimensions. In the large majority of cases, the hypothesized convergent similarity ratings (i.e., the values in the diagonal cells) exceeded the hypothesized discriminant similarity ratings for either of the factors involved (i.e., the values in the same row or column as a given diagonal value).

Across all 14 rating sets, the average convergent similarity ratings on the 0–8 scale were 7.0 for Honesty-Humility, 6.0 for Emotionality, 7.0 for Extraversion, 6.7 for Agreeableness, 6.9 for Conscientiousness, and 5.2 for Openness to Experience. All of these values substantially exceeded all of the corresponding discriminant similarity ratings, the highest of which averaged 4.2 (specifically, for lexical Agreeableness with HEXACO Honesty-Humility and for lexical Honesty-Humility with HEXACO Agreeableness). Thus, the lay judges' ratings of conceptual similarity were consistent with the interpretations of the lexical factor solutions in terms of a common six-dimensional structure (Ashton, Lee, Perugini, et al., 2004; Ashton & Lee, 2008) and with the observed correlations of the lexical factors with the HEXACO-PI scales (Ashton et al., 2006; Ashton et al., 2007; Szarota et al., 2007; Wasti et al., in press).

For the English lexical factors, all convergent similarity ratings exceeded all discriminant similarity ratings both for the factors derived from the 1710-adjective set (Ashton, Lee, & Goldberg, 2004) and also for the factors derived from the 449-adjective set (Study 1 of the present report). Both sets of English lexical factors showed convergent similarity ratings that were rather high in an absolute sense, with all but one exceeding 6.0 on the 0–8 scale. This result is thus consistent with the subjective interpretation of both sets of English lexical factors as manifestations of the HEXACO dimensions, and also with the HEXACO-PI correlational results of Study 1 and of Ashton et al. (2006).

Several other aspects of the similarity rating results are also noteworthy. First, the Filipino lexical factor that was presumed to represent Conscientiousness was in fact rated to be only moderately similar (mean rating 3.5 on the 0–8 scale) to the target description of HEXACO Conscientiousness. This apparently reflects the anomalous content of this Filipino lexical factor, which included elements of religiosity and thriftiness as well as the more prototypical elements of self-discipline and organization.

A second noteworthy finding involved the lexical factor usually known as Intellect, Imagination, or Unconventionality. Recall that the content of this dimension—excepting its elements of intellectual *ability*—is presumed to correspond to that of the HEXACO Openness to Experience factor. The convergent similarity ratings involving this lexical factor were weaker than those of the other five lexical factors, and in some languages did not indicate a neat one-to-one correspondence to HEXACO Openness to Experience. In par-

ticular, there were four languages—Filipino, German, Hungarian, and Italian-Rome—in which the convergent similarity ratings between HEXACO Openness to Experience and its presumed lexical counterpart were either exceeded slightly by at least one discriminant similarity rating or were closely approached by several discriminant similarity ratings. Recall, however, that the HEXACO Openness to Experience construct was conceptualized purposely to exclude content involving intellectual ability, which we view as being outside the domain of personality proper (see Footnote 4; see also, e.g., Lee & Ashton, 2004). As a result, the conceptual similarities between HEXACO-PI Openness to Experience and a lexical factor dominated by intelligence-related terms are necessarily attenuated. Similarly, empirical correlations between the HEXACO-PI Openness to Experience and some versions of this lexical factor have been found to be modest (Ashton et al., 2007; Szarota et al., 2007).[8]

Finally, as seen in Table 3, the discriminant similarity ratings between Honesty-Humility and Agreeableness were consistently observed to be moderately high, but in every case they were considerably lower than the convergent similarity ratings involving the lexical and HEXACO versions of those dimensions.[9] This result is consistent with findings from previous investigations of the empirical correlations between HEXACO-PI scales and indigenous lexical factor scales. In those studies, the cross-instrument correlations between Honesty-Humility and Agreeableness have consistently been found to fall in the range of .20 or .30 (Ashton et al., 2006, Ashton et al., 2007; see also Table 2 of the present Study 1), whereas the convergent correlations are typically in the .50s. Thus, the Honesty-Humility and Agreeableness factors are differentiated both conceptually (as ob-

8. Note that intellectual ability content is not responsible for the modest level of rated convergent similarity involving the Italian-Rome lexical factor and HEXACO Openness to Experience (see Caprara & Perugini, 1994). Instead, the Italian-Rome version of the lexical factor was defined by some adjectives suggestive of low Agreeableness, such as those translated as *critical* versus *obedient*.

9. The difference between the convergent and discriminant similarity ratings was statistically significant even in the case in which the latter value most closely approached the former. Specifically, the discriminant similarity rating between French lexical Agreeableness and HEXACO Honesty-Humility (mean rating 4.2) was still lower than the convergent similarity rating involving French lexical Honesty-Humility (mean rating 5.0), as calculated by a within-subjects t-test ($t_{19} = 1.88$, one-tailed $p = .038$).

served in the present similarity ratings task) and correlationally (as observed in self-reports on HEXACO-PI and adjective scales). (See Ashton & Lee, 2001, 2007, for discussion of the theoretical basis of the link between these two dimensions as two complementary aspects of a reciprocal altruistic tendency.)

Before summarizing the results of this study, we should address an interesting question that was raised by an anonymous reviewer of this article. This question involves the extent to which the similarity ratings can be attributed to the presence of adjectives that appeared both in indigenous lexical factor descriptions and also in HEXACO factor descriptions (where those adjectives might also appear in their corresponding verb or noun form). To address this question, we first identified all such adjectives (and their noun and verb counterparts) in each HEXACO factor description and then counted the number of these terms that were represented in each of the indigenous lexical factor descriptions for the hypothesized corresponding factor. We then conducted two analyses using these results.

First, for each of the six factors we calculated the correlation across all 14 languages between the number of overlapping terms and the observed convergent similarity rating. These correlations were all positive and moderate in size, with values ranging from .18 (Agreeableness) to .59 (Extraversion). In addition, we also calculated the correlation across all six factors between the mean similarity rating (i.e., averaged across all 14 languages) and the mean number of overlapping terms between lexical and HEXACO descriptions (i.e., averaged across all 14 languages). The obtained correlation was only .06, thus indicating that the factors whose lexical and HEXACO descriptions had greater overlap did not necessarily have higher convergent similarity ratings. (For example, the Honesty-Humility factor had an average of only 1.0 overlapping terms but a mean similarity rating of 7.0, whereas the Emotionality factor had an average of 6.1 overlapping terms but a mean similarity rating of 6.0.) Taken together, the above analyses indicate that the judges' ratings of similarity were not chiefly a function of the common presence of specific adjectives between lexical and HEXACO factor descriptions; instead, those ratings seem to be due in large part to an overall impression of similarity of meaning between the common elements of the two descriptions.

In general, the similarity-rating task adopted in the present research produced findings that support the conclusions that were drawn in earlier investigations on the basis of subjective interpretations (e.g.,

Ashton et al., 2004) or of correlational results (e.g., Ashton et al., 2006, 2007). Specifically, the six indigenous personality factors obtained from previous lexical studies in diverse languages were rated by lay judges as showing rather clear one-to-one correspondences with the hypothesized set of six cross-language-replicated dimensions as represented by the HEXACO personality constructs.

General Discussion

Six Dimensions in the English Personality Lexicon

The results of this investigation indicate that the frequently used personality-descriptive adjectives of the English language do define a six-dimensional space similar to that observed in many other languages. This finding thus clarifies the structure of the English personality lexicon. Previous studies based on analyses of several hundred English adjectives did not recover the cross-language six-factor space; instead, that structure had previously been found only in analyses of a much larger set of 1,710 English personality-descriptive adjectives (Ashton, Lee, & Goldberg, 2004). In the present investigation, however, the set of 449 familiar English personality-descriptive adjectives was selected through a more algorithmic process than that which had been used in earlier English lexical studies. Specifically, the adjectives analyzed in Study 1 were chosen from a very large pool on the basis of rated frequency of use, not on the less algorithmic grounds that had been the primary basis for adjective selection in previous English-language research (see introductory text). In this way, our variable selection procedures were similar to those used in lexical studies of personality structure as conducted in various languages other than English. We therefore recommend that future comparisons of the structure of the English personality lexicon with the structures observed in other languages should be based on data obtained on the variable set of Study 1, rather than on the variable sets examined in any previous English psycholexical investigations.

Two independent sources of evidence support the claim of a close correspondence between the six English lexical factors of Study 1 and the common six-dimensional solution recovered in various other languages. First, the results of Study 1 showed a pattern of strong convergent and weak discriminant correlations between the English lexical factors and the HEXACO-PI scale markers of the hypothe-

sized cross-language factors. Also, the results of Study 2 showed a pattern of strong convergent and weak discriminant ratings of conceptual similarity, as evaluated by lay judges, between the English lexical factors obtained here and the six HEXACO dimensions (see Table 3).

In comparison with the factors derived from the 1,710-adjective set (see Ashton, Lee, & Goldberg, 2004), the factors obtained in Study 1 from the set of 449 familiar adjectives were defined by terms that appear to be less obscure or unusual, especially in the cases of Honesty-Humility and Openness to Experience. But even in the cases of those two factors, the results of Study 2 indicated that both sets of English lexical factors did correspond closely in meaning to the HEXACO factor definitions. These conceptual similarities are consistent with the correlations of the two sets of factors with the HEXACO-PI scales, as seen in Study 1 for the 449-adjective factors and in Ashton et al. (2006) for the 1,710-adjective factors. Thus, both sets of results suggest that the English personality lexicon is defined by the same set of six dimensions that has been repeatedly observed in diverse other languages. This in turn suggests that the discrepant findings of earlier English lexical investigations—going as far back as the investigations by Cattell (e.g., 1947)—were the consequence of variable selections that were somewhat unrepresentative of that lexicon. It can thus be said that the nonrecovery of the six-dimensional structure in earlier English lexical research was essentially a historical accident, one that can be traced to the earlier difficulty of analyzing the very large variable sets that, in more recent times, have been routinely examined in lexical studies of personality structure.

Solutions Involving Five, Six, and Seven Factors

In the present investigation, we did not examine the extent to which the classic Big Five framework could be recovered across the lexical five-factor solutions of the languages considered here. But although we did not obtain judges' ratings of similarity between Big Five factor descriptions and indigenous lexical factors from five-factor solutions, it seems unlikely that such analyses would show a pattern of strong convergent and weak discrminant ratings across each of the languages above: In at least four cases—Filipino, Greek, Hungarian, and Italian-Trieste—the five-factor solutions did not recover an Intellect- or Openness-to-Experience-like factor (see sum-

mary in Ashton & Lee, 2007). Instead, those studies produced five-factor solutions whose dimensions generally resemble variants of the other five dimensions of the HEXACO space.[10]

With regard to the above question, some readers might wonder why the present investigation was designed solely to examine the replicability of the proposed six-factor structure, rather than to compare the replicability of that structure with the replicability of the more widely known Big Five framework. The reason, as stated in the introductory text in this report, is that the critical issue in personality structure is that of the largest space that can be recovered across independently selected variable sets that are representative of the personality domain. If human personality variation can be viewed as the joint manifestation of some well-defined group of basic dimensions—that is, of a few fundamental dispositions or behavioral strategies—then these can be identified by finding the largest group of factors that can be replicated across such variable sets. Therefore, the purpose of this investigation was to test the hypothesis that a space containing more than five dimensions can be recovered. Given that a six-dimensional space can be shown to be replicable across variable sets that represent the personality domain, it may still be of some interest to determine whether a space involving five (or fewer) factors can also be recovered with high fidelity; however, this question is secondary to that of finding the largest replicable space. By examining the traits that define the several dimensions of that space, we can learn about the nature of the basic dispositions that underlie human personality variation, and generate hypotheses about the causes and functions of individual differences in those dispositions (Ashton & Lee, 2007).

In this vein, the results of the present study also provide a test of some proposed interpretations of the adaptive functions of the six dimensions. In previous works (Ashton & Lee, 2001, 2007), we have suggested that the Honesty-Humility, Agreeableness, and Emotion-

10. One reviewer asked whether the six-factor structure might show greater cross-language replicability than would the five-factor structure, but might also show a stronger tendency toward oblique rather than orthogonal factors due to a repartitioning of characteristics that are located in interstitial regions of the Big Five space. Our own analyses suggest that interfactor correlations within lexical six-factor solutions may be slightly (but only slightly) higher than those within five-factor solutions, but that the commonalities of many adjectives are substantially increased when six factors are extracted.

ality dimensions are relevant to individual differences in altruistic versus antagonistic tendencies, and that the Extraversion, Conscientiousness, and Openness to Experience dimensions are relevant to individual differences in engagement within various domains of endeavor. Given that the HEXACO-PI scales were conceptualized and constructed in such a way as to reflect these interpretations, the correlational results of Study 1 and the similarity-rating results of Study 2 provide support for these interpretations of the adaptive functions of the lexically derived personality dimensions.

Because the present investigation was designed to examine the replicability of a set of six personality dimensions, its results do not rule out the possibility that some set of seven (or more) dimensions might also be recovered across the personality lexicons of the various languages considered here. However, the seven-factor solutions of the original lexical studies of those languages have shown little apparent consistency in the content of the defining factors, which suggests that the cross-language recovery of a replicable seven-factor space from the domain of personality-descriptive terms is highly unlikely (see discussions in Ashton & Lee, 2007; Ashton, Lee, Perugini, et al., 2004). In order to obtain a replicable seven-factor space across lexical investigations, it would likely be necessary to expand the variable sets to include some clearly non-personality-descriptive terms, such as those that describe physical attractiveness or physical abilities, or those that serve chiefly as extremely negative evaluations (and thus also show extremely low mean ratings; see Ashton & Lee, 2008, for a discussion). Even to the extent that such an expansion of the variable set might succeed in producing additional replicable factors, however, it would be inconsistent with the aim of identifying the basic dispositions that underlie personality variation.

Assessing the Correspondence Between Observed and Hypothesized Dimensions

The present report described a new method of evaluating the degree of correspondence between the lexically derived factors of a given language and the constructs that are hypothesized to represent a cross-language-replicated set of factors. This approach complements the more traditional means of evaluating the similarity between observed and hypothesized factors, whereby respondents' scores on the indigenous lexical factors of a given language (or on adjective

marker scales representing those indigenous factors) are correlated with their scores on external marker scales assessing the proposed cross-language factors. We have used this correlational approach in several previous examinations of the lexical six-factor solutions obtained in such languages as Dutch, Italian, and English (Ashton et al., 2006), Polish (Szarota et al., 2007), Turkish (Wasti et al., in press), and German (Ashton et al., 2007). In general, the correlational results observed in those investigations were consistent with the correlational and the conceptual similarity results obtained in the present investigation. On the one hand, Study 1 produced a pattern of strong convergent and weak discriminant correlations between the indigenous English lexical factors and the HEXACO-PI scales, as was observed for the languages of the previous investigations cited above. On the other hand, Study 2 showed that our lay judges were able to match the six lexical factors of each language to the six HEXACO constructs, and rated each lexical factor as being very similar to its hypothesized HEXACO counterpart.

Both of the above methods of evaluating the similarity between observed and hypothesized factor spaces may have an important advantage over alternative procedures that depend on adjective-by-adjective comparisons, such as the calculation of congruence coefficients between two sets of lexical factors. Consider, as just one example, the two versions of the English lexical Honesty-Humility factor (i.e., those based on the 1,710- and 449-adjective sets). These variants showed only a few adjectives in common, but they clearly represent variants of the same construct. Both versions have been found to correlate strongly with the HEXACO-PI Honesty-Humility scale (and no other scale); similarly, both versions were rated by our lay judges as being similar in content to the HEXACO definition of that factor (and no other factor). Thus, these two methods of correlating lexical factors with external marker variables and of obtaining ratings of conceptual similarity provide powerful and discriminating tests of which observed factors are manifestations of a given hypothesized factor and which are not. Unlike procedures such as those based on calculation of factor congruence, these two approaches allow conceptually and empirically similar factors to be identified as such even when the factors are not both defined by the same set of specific adjectives.

We should emphasize that the methods used in this investigation to examine the correspondence between hypothesized and observed

dimensions—that is, the conceptual similarity ratings and external marker correlations—are both fully capable of falsifying a hypothesized model of personality structure. With regard to the ratings of conceptual similarity between observed lexical factors and hypothesized dimensions, one could easily obtain a pattern of very weak convergent ratings and/or fairly strong discriminant ratings, if the correspondence between the observed and hypothesized constructs were in fact poor. In fact, the sensitivity of this method can be seen in the results of Study 2, in which HEXACO Conscientiousness showed only a modest convergence with its presumed Filipino lexical counterpart (whose defining content was rather idiosyncratic). Also in Study 2, HEXACO Openness to Experience showed only moderate levels of convergence with its presumed counterparts from several languages in which intellectual ability terms were widely prevalent within the variable sets. Similarly, with regard to the correlations between lexical factors and questionnaire marker scales, there is again no reason to expect a pattern of strong convergent and weak discriminant correlations in the absence of any real correspondence between the two sets of factors. Note that, although the use of the (orthogonal) validimax rotation produces an optimal alignment of axes across the two sets of factors, this does not influence either of the factor spaces, and hence cannot generate an artifactual correspondence between them.[11] Thus, the patterns of strong convergent and weak discriminant values observed in the present investigation for both the correlational data (Study 1) and the conceptual similarity data (Study 2) are very difficult to explain except in terms of a six-dimensional structure of personality characteristics.

11. As an illustration of this point, consider the following results of an analysis of the four-factor solution derived from the English lexical data of Study 1: When we use a validimax rotation to target those four lexical factors onto the HEXACO-PI variables of Emotionality, Extraversion, Conscientiousness, and Agreeableness-plus-Honesty-Humility (i.e., a composite of the latter two scales), the observed convergent correlations are all very high, ranging from .73 to .79. When we instead use the validimax rotation to target those four factors onto a different set of HEXACO-PI scales, by replacing Emotionality with Openness to Experience, three of the convergent correlations are still high, ranging from .73 to .78; however, the convergent correlation for Openness to Experience is only .25, and the lexical factor targeted on Openness to Experience continues to be dominated by Emotionality content. Thus, these results give an example of how a validimax rotation cannot resolve an inherent mismatch between the observed and targeted factor spaces.

Issues for Future Research

Some questions to be addressed in future research involve the rotational positions of the factor axes and the sometimes unstable locations of terms within the factor space. For example, it might be of some interest to determine whether or not there are any particular factor axis locations that differ from those of the modal cross-language HEXACO structure but can be recovered with some frequency across languages. Thus far, there seems to be little evidence of any frequent cross-language recurrence of any single alternative alignment of factor axes, but such recurrence might be observed as further studies are conducted. A related question involves the possibility that certain factor axis locations may be more likely to be observed in some cultures than in others. Thus far, again, there is little evidence of this—and, in fact, there is some evidence of within-language instability of factor axis locations (see Ashton et al., 2007)—but some patterns might be detected as more data become available.

Another issue for future investigation is that of the cross-cultural replicability of the similarity ratings results of Study 2. In that study, our English-speaking lay judges used English-language definitions of the HEXACO factors and English-translated lists of the defining adjectives of various languages. We believe that comparable results would very likely be observed if lay judges who speak a different language were to provide similarity ratings based on the corresponding stimuli as translated into their own language. However, this is an empirical question that could be examined in future investigations.

Finally, beyond the issue of the cross-cultural generalizability of factors obtained in lexical studies of personality structure, there is also the question of the practical and theoretical utility of various structural models. In several earlier studies we have examined the extent to which the HEXACO framework can improve upon the Big Five or Five-Factor Model in the prediction of important personality-related constructs (e.g., Lee, Ashton, & de Vries, 2005; Lee, Ogunfowora, & Ashton, 2005), and further investigations can explore this issue in more detail. Other work has been aimed at understanding the evolutionary function of personality variation by considering the adaptive trade-offs associated with each personality dimension, and here, too, there may be advantages associated with the six-dimensional framework (Ashton & Lee, 2007). Future investigations might also attempt to delineate the biological causes of

personality variation in greater detail, and we suggest that these might profit from the adoption of the larger personality space associated with the HEXACO framework.

Summary

To summarize, the results of this investigation are consistent with the hypothesis that the six largest dimensions underlying the English personality lexicon are closely matched to the proposed HEXACO dimensions, which also map closely onto to the six indigenous lexical factors obtained in 11 other languages. In contrast, the strong empirical and conceptual correspondences between the lexical and HEXACO factor spaces are inconsistent with the null hypothesis that no set of six dimensions can be recovered across variable sets that are representative of the personality domain.

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Appendix A-1
Definition of HEXACO Honesty-Humility Factor and Adjectives Defining Indigenous Factor Interpreted as Honesty-Humility in Various Languages

HEXACO-PI Honesty-Humility Scale Definition
Is genuine in interpersonal relations, is unwilling to manipulate others / Avoids fraud and corruption, is unwilling to exploit or take advantage of others / Has little interest in lavish wealth, luxury goods, or high social status / Is modest and unassuming, makes no claim to special treatment
Versus
Uses flattery and pretends to like others as a way to get ahead / Is willing to gain by cheating or stealing / Wants to enjoy and display great wealth and status / Considers self superior and entitled to privileges that others do not have

Language	*Adjectives Defining Indigenous Lexical Factor*
Croatian	Sympathetic, good-hearted, regardful, humane, well-intentioned, honest, generous, fair, charitable, broad-minded *Versus* Hypocritical, greedy, rapacious, selfish, self-interested, covetous, conceited, self-centered, perfidious, self-important, mean, fame-thirsty
Dutch	Sincere, loyal/faithful, modest, totally honest, honest *Versus* Boasting, swaggering, conceited, snobbish, ostentatious, complacent, haughty, arrogant, greedy, sly, cunning, smug
English (1,710)	Uncunning, uncalculating, unsly, unvindictive, unfeigning, uncrafty, undevious, unpretentious, undeceptive, unwily, unmercenary, unaffected, unpresuming *Versus* Tricky, cunning, sneaky, sly, pretentious, slick, surly, crafty, posed, overcunning, affected, vindictive, vengeful
English (449)	Sincere, honest, trustworthy, giving, kind, warm-hearted, humble, helpful, loyal, compassionate, good-hearted, modest *Versus* Conceited, self-centered, snobbish, egotistical, superficial, greedy, dishonest, condescending, arrogant, deceitful, selfish, vain
Filipino	Obliging, generous, attentive, serving others, thoughtful, kind-hearted, helpful, understanding, humble, nurturant, humane, solicitous, sincere *Versus* Boastful, arrogant, show-off, haughty, pretentious, opportunistic, domineering, slanderous, know-it-all, conceited, selfish, envious
French	True/genuine, sincere, honest, just/fair, loyal/faithful, frank, provident *Versus* Dishonest, false/not genuine, lying/untruthful,

Appendix A-1. (Contd.)

	hypocritical, unjust/unfair, immature, treacherous, impolite, pretentious, easily influenced, thoughtless, mean
German	Human, totally honest, good-hearted, helpful, honest, sincere, considerate, warm-hearted, altruistic, magnanimous *Versus* Covetous, pompous, show-off, bragging, avaricious, ostentatious, grabby, "greedy for profits," boastful, "fame-addicted/lusting for glory"
Greek	Honorable, conscientious, reticent, decent, reliable, trustworthy, ethical, objective, considerate, honest, modest, giving *Versus* Unscrupulous, profiteer, grandiose, exhibitionist, avaricious, arrogant, sly, vengeful, cunning
Hungarian	Truthful, just, fair-minded, honest, altruistic *Versus* Conceited, greedy, pompous, power-mad, swollen-headed, ambitious, power-hungry, hypocritical, overbearing, show-off, haughty
Italian (Rome)	Honest, loyal, generous, altruistic, sensitive *Versus* Dishonest, stingy, deceiving, insincere, miserly, greedy, "couldn't care less", hypocritical, avaricious, calculating, disloyal
Italian (Trieste)	Sincere, trustworthy, loyal, generous, available, natural, altruistic, faithful, discreet, sensitive *Versus* Lying, untruthful, hypocritical, self-conceited, egoist, venal, conceited, calculating, self-important, gossipy, malicious, megalomaniac
Korean	Truthful, frank, morally conscientious, honest, unassuming, "not pretending" *Versus* Cunning, sly, calculating, hypocritical, pompous, pretending/two-faced, conceited, betraying, boasting, flattering, pretentious
Polish	Helpful, unselfish, honest, compassionate, magnanimous, sincere, generous, noble, truthful, trusting, hospitable, self-sacrificing *Versus* Mercenary, greedy, cunning, sly, crafty, vindictive, selfish, stingy, suspicious, dishonest, egoistic, envious
Turkish	Scrupulous, helpful, philanthropic, reliable, devoted, faithful, sensitive, honest, warm, affectionate, unselfish, loyal *Versus* Swindler, merciless, "giving/taking bribes," opportunistic, ungrateful, unscrupulous, disloyal, freeloader, impolite, self-seeking, unmerciful, brazen

Appendix A-2
Definition of HEXACO Emotionality Factor and Adjectives Defining Indigenous Factor Interpreted as Emotionality in Various Languages

HEXACO-PI Emotionality Scale Definition
Is fearful, avoids physical harm and danger / Is anxious, worries even about minor problems / Seeks emotional support, depends on others' encouragement / Feels strong emotional bonds with others, is empathic and sensitive to others' feelings
Versus
Has little fear of injury, is tough, brave, and insensitive to physical pain / Feels little stress in response to difficulties / Feels self-assured, deals with problems without wanting help or advice / Feels little emotion in sentimental situations or in reaction to others' concerns

Language	*Adjectives Defining Indigenous Lexical Factor*
Croatian	Oversensitive, sensitive, romantic, passionate, impassioned, suggestible *Versus* Unemotional, insensitive, uncompassionate, "without compassion," cool-blooded, phlegmatic
Dutch	Oversensitive, vulnerable, unstable, hypersensitive, insecure, emotional, panicky, worrying, nervous, indecisive, jumpy, sentimental *Versus* Stable, self-assured, steady, determined, sober, decisive, hard, resolute, cool-headed, imperturbable, independent, rational
English (1,710)	Emotional, hypersensitive, fearful, supersensitive, weepy, overemotional, oversensitive, sensitive, worrying, self-pitying, overfearful *Versus* Unemotional, unfeeling, unfearing, undisturbable, tough, fearless, unsentimental, unexcitable, undisappointable, fretless
English (449)	Emotional, sensitive, sentimental, oversensitive, nervous, whiny, fearful, melodramatic, anxious, gullible, moody *Versus* Fearless, unemotional, rugged, tough, heartless, rough, self-assured, cold-hearted, unfeeling, insensitive, decisive
Filipino	Cowardly, nervous, fearful, shy, sluggish, weak, skittish, unsteady, sensitive *Versus* Alert, strong-willed, brave, lively
French	Anxious, fearful, fragile, emotional, anxious, depressive, nervous, hung-up, sensitive, negative, indecisive, vulnerable *Versus* Courageous, confident, sturdy, assured, strong, brave, enterprising, well-balanced, adventurous, optimist, positive, stable
German	Sensitive, sentimental, oversensitive, vulnerable, emotional, capricious, moody, self-doubting, needing recognition *Versus* Insensitive, poised, "slippery," emotionally stable, steadfast

Appendix A-2. (Contd.)

Greek	Hypersensitive, insecure, fearful, vulnerable, hesitant, complainer, coward, sensitive, easy-to-convince, emotional, pessimistic, anxious *Versus* Courageous, determined, optimistic, independent, autonomous, dynamic, brave, bold, intrepid, fighter
Hungarian	Oversensitive, easily hurt, anxious, vulnerable, self-condemning, whining, worrying, self-convicting, complaining, easily frightened *Versus* "Nerves of steel," self-assured, crafty, well-balanced, sober-minded, wily, cunning, calm, optimistic, bold
Italian (Rome)	Emotional, "full of complexes," anxious, suggestible, depressive, fragile, hesitating, melancholic, vulnerable, hypersensitive, "victim," nostalgic *Versus* Secure/self-assured, resolute, courageous, strong, imperturbable, determined, independent, combative, concrete, reckless, unbiased, clear
Italian (Trieste)	Insecure, fearful, whining, influencable, fragile, emotional, irresolute, vulnerable, suggestible, weak, doubtful, anxious *Versus* Secure/self-assured, strong, independent, intrepid, resolute, courageous, "winner," optimistic, enterprising, quick, impassive, indomitable
Korean	Sensitive, charming/sweet, possessive, tidy, weak, jealous, romantic, sentimental, considerate/careful, delicate, clean *Versus* Firm, brave/virile, strong, tough, "strong silent type," rugged/violent
Polish	Faint-hearted, cowardly, timorous, timid, sentimental, melancholic, mawkish, sensitive, delicate, submissive, emotional, dreamy *Versus* Courageous, fearless, tough, resistant, intrepid, relentless, firm, stolid, strong-minded, bold, brave, inured
Turkish	Agitated, anxious, emotional, hesitant, obsessive, impatient, fussy, childish, confused, coquettish, fanciful, dreamer *Versus* Unhurried, calm, resistant, "trustworthy/secure," cool, strong, tough, fearless, mature, realistic, consistent

Appendix A-3
Definition of HEXACO Extraversion Factor and Adjectives Defining Indigenous Factor Interpreted as Extraversion in Various Languages

HEXACO-PI Extraversion Scale Definition
Has a dramatic style of speaking, does most of the talking / Is socially confident, is comfortable approaching strangers or speaking up in a group / Enjoys conversation, social interaction, and parties / Feels enthusiasm and optimistic; has high energy and high spirits
Versus
Does not speak in an excited or animated way, is "low-key" / Feels shy or awkward when speaking in public and when leading or meeting others / Prefers solitary activities, does not seek out conversation with others / Does not usually feel especially cheerful or dynamic

Language	*Adjectives Defining Indigenous Lexical Factor*
Croatian	Communicative, extraverted, loquacious, open, sociable, energetic, talkative, dynamic, companionable, active *Versus* Reserved, withdrawn, unsociable, bashful, untalkative, introverted, taciturn, shy, unenergetic
Dutch	Exuberant, cheerful, spontaneous, frank, merry, open, jovial, joyful, enthusiastic, optimistic, lively, sprightly *Versus* Introverted, uncommunicative, silent, somber, restrained, unapproachable, withdrawn, reserved, reclusive, dejected, surly, pessimistic
English (1,710)	Outgoing, talkative, conversational, peppy, bubbly, extraverted, vocal, jolly, merry, effervescent, perky, unshy *Versus* Withdrawn, untalkative, uncheery, overquiet, uncheerful, quiet, withdrawing, uncommunicative, unmerry, silent, introverted, quiet-spoken
English (449)	Outgoing, social, lively, vibrant, extroverted, talkative, sociable, chatty, cheerful, bubbly, vocal, confident *Versus* Dull, withdrawn, quiet, antisocial, shy, gloomy, introverted, reserved, negative, timid, pessimistic, distant
Filipino	Giggly, humorous, "smiles a lot," "always joking," noisy, talkative, cheerful, naughty, mischievous, overtalkative, chatty, rowdy *Versus* Quiet, serious, refined
French	Social, sociable, expressive, talkative, excitable, boisterous, high-strung, dynamic, demonstrative, energetic, comical, hyperactive *Versus* Introverted, silent, quiet, reserved, withdrawn, shy, solitary, closed, distant, calm, cold, serious
German	Outgoing, sociable, lively, spirited, frank, contactual, impulsive, cheerful *Versus* Withdrawn, reclusive, timid, closed, unsociable, unspontaneous, uncommunicative, shy, reserved, reticent, silent

Appendix A-3. (Contd.)

Greek	Amusing, cheerful, sociable, demonstrative, smiling, cute, pleasant, cheerful, open-hearted, comfortable, extraverted, lovable *Versus* Withdrawn, taciturn, silent, loner, moody, monotonous, sad, silent, antisocial, introvert, boring, smileless/grave
Hungarian	Talkative, sociable, friendly, laughing, winning, full of life, temperamental, lively, hyperactive, direct *Versus* Retiring, wordless, taciturn, withdrawn, quiet, distant, aloof, soft, grey
Italian (Rome)	Extraverted, warm-hearted, vivacious, sparkling, sociable, overwhelming/inspiring, communicative, free-and-easy, leader, cheerful, fanciful, dynamic *Versus* Taciturn, introverted, asocial, silent, solitary, boring, shy, cold, passive, reserved, colorless, apathetic
Italian (Trieste)	Warm-hearted, extraverted, open, vivacious, sociable, cheerful, chatterbox, exuberant, talkative, dynamic, active, playful *Versus* Taciturn, closed, silent, solitary, introverted, shy, reserved, boring, cold, sad, passive, meditative
Korean	Cheerful, lively, cheery/merry, extraverted, vigorous/lively, vivacious, sociable, energetic, active, merry, pleasant/cheerful, sociable *Versus* Introverted, internal, gentle/quiet, silent, inactive, reserved, shy, curt, timid, lonely, careful, passive
Polish	Potent, vigorous, active, brisk, resourceful, swift, efficient, enterprising, nimble, deft, lively, athletic *Versus* Phlegmatic, quiet, passive, resourceless, shy, awkward, helpless, secretive, reserved, bashful, slow, clumsy
Turkish	Energetic, vivacious, enterprising, dynamic, merry, active, exuberant, audacious, rash, talkative, dashing, agile *Versus* Dull, silent, unenergetic, pessimistic, weary, quiet, unhappy, sulky, worn-out, low-spirited, sad, unenthusiastic

Appendix A-4
Definition of HEXACO Agreeableness Factor and Adjectives Defining Indigenous Factor Interpreted as Agreeableness in Various Languages

HEXACO-PI Agreeableness Scale Definition
Is forgiving, does not harbour resentments / Is mild and lenient in dealings with other people, avoids judging others harshly / Is willing to compromise and cooperate, accepts others' suggestions / Is slow to feel or express anger, remains calm and patient even when provoked
Versus
Is slow to re-establish trust of those who have caused harm / Is critical and harsh in evaluating others / Is stubborn and willing to argue or quarrel / Gets angry, loses temper quickly

Language	*Adjectives Defining Indigenous Lexical Factor*
Croatian	Unirritable, tranquil, gentle, peaceful *Versus* Belligerent, explosive, quick-tempered, fierce, stubborn, irritable, defiant, spiteful, harsh, rash, aggressive, impulsive, self-willed, rebellious, quarrelsome, unyielding
Dutch	Good-natured, calm, patient, mild, tolerant, willing, agreeable, soft-hearted, peaceful, gentle, kind-hearted, lenient *Versus* Short-tempered, fierce, quick-tempered, hot-tempered, hot-headed, aggressive, mutinous, explosive, stubborn, unreasonable, bossy, authoritarian
English (1,710)	Good-tempered, patient, gentle, nonexplosive, good-natured, serene, good-hearted, gentle-hearted, nonhostile, undemanding, peaceful, nonirritable, tolerant *Versus* Sharp-tongued, hot-tempered, quarrelsome, quick-tempered, bossy, grumpy, argumentative, explosive, stormy, hostile, resentful, overviolent
English (449)	Agreeable, calm, peaceful, patient, cooperative, mild, relaxed, tolerant, forgiving, lenient, easygoing, pleasant *Versus* Quick-tempered, hot-tempered, short-tempered, aggressive, blunt, argumentative, bull-headed, stubborn, forceful, demanding, temperamental, bossy
Filipino	Forgiving, calm, kind *Versus* Irritable, hot-headed, sulky, ill-tempered, irascible, petulant, moody, impatient, peevish, snobbish, jealous, querulous
French	Gentle, nice, warm, friendly, tolerant, agreeable, positive, loving, kind, pleasant, flexible, peaceful *Versus* Hurtful, aggressive, brusque, choleric, hard, arrogant, irritable, violent, rough, fierce, authoritarian, provoking

Appendix A-4. (Contd.)

German	Gentle, kind, obedient, gentle/soft, artistic, patient *Versus* Pig-headed, obstinate, bull-headed, stubborn, obstructive, short-tempered, not self-controlled, violent-tempered, hot-headed
Greek	Calm, mild, patient, quiet, compliant, peaceful, polite, clement, obedient, bashful, naïve, good-natured *Versus* Touchy/irascible, aggressive, nervous, abrupt, reactive, "brawler/starts fights," fretful, neurotic, pushy, strong-minded, stubborn, impatient
Hungarian	Humanitarian, benevolent, friendly, complying, peaceful, gentle, tolerant, tactful, patient, humane, kind *Versus* Explosive, violent, hot-headed, obstinate, self-willed, stubborn, hot-tempered, hasty, cruel, pitiless, relentless, impulsive
Italian (Rome)	Peaceful, calm, mild, sympathetic, conciliatory, patient, tranquil, docile, tolerant, sensible, accommodating, serene *Versus* Irritable, aggressive, litigious, authoritarian, choleric, bellicose, overbearing, brusque, oppressive, arrogant, intolerant, impatient
Italian (Trieste)	Calm, patient, peaceful, mild, tranquil, tolerant, docile, serene, accommodating, affable, sympathetic, adaptable *Versus* Irascible, choleric, irritable, aggressive, quarrelsome, nervous, surly, overbearing, ill-tempered, rebellious, polemical, stubborn
Korean	Mild, warm, harmonious, generous, soft, meek, affectionate, benevolent, magnanimous, friendly, amiable, gentle *Versus* Dogmatic/opinionated, extremist,cold-hearted, aggressive, heartless, cold, outspoken, dogmatic, harsh/rude, choleric, blunt, touchy/temperamental
Polish	Self-possessed, gentle, even-tempered, agreeable, tractable, conciliatory, patient, good-natured, non-excitable, devoid of problems, tolerant *Versus* Vehement, quarrelsome, quick-tempered, irascible, disputatious, impetuous, choleric, impulsive, roistering, short-tempered, excitable, hot-headed
Turkish	Temperate, soft, easy-going, acquiescent, forgiving, tolerant, agreeable, peace-loving, calm, understanding, merciful, conciliatory *Versus* Quarrelsome, ill-tempered, irritable, tough, aggressive, peevish, obstinate, choleric, hurtful, rebellious, angry, bad-tempered

Appendix A-5
Definition of HEXACO Conscientiousness Factor and Adjectives Defining Indigenous Factor Interpreted as Conscientiousness in Various Languages

HEXACO-PI Conscientiousness Scale Definition
Seeks order, prefers tidy surroundings and a structured approach to tasks / Works hard, has a strong work ethic and is willing to exert oneself / Is thorough, checks carefully for mistakes and potential improvements / Considers options carefully, tends to be self-controlled
Versus
Is disorganized, does not mind messy surroundings or poor scheduling / Has little self-discipline, is not strongly motivated to achieve / Neglects details, accepts errors in own work / Acts on impulse, tends not to consider consequences

Language	*Adjectives Defining Indigenous Lexical Factor*
Croatian	Organized, industrious, thorough, hard-working, responsible, orderly, sedulous, systematic, diligent, precise *Versus* Disorganized, negligent, irresponsible, lazy, incautious, unsystematic, disorderly, inaccurate, unconscientious
Dutch	Careful, meticulous, precise, orderly, self-disciplined, industrious, diligent, conscientious, prompt, dutiful, punctual, thorough *Versus* Nonchalant, thoughtless, lazy, irresponsible, rash, rebellious, indolent, lax, licentious, careless, frivolous, wishy-washy
English (1,710)	Thorough, organized, orderly, constant, proper, thorough-going, efficient, purposeful, responsible, precise, consistent, diligent *Versus* Undisciplined, irresponsible, unthorough, haphazard, unsystematic, undutiful, inexact, unreliable, disorganized, inconsistent
English (449)	Organized, thorough, hard-working, efficient, self-disciplined, careful, tidy, proper, diligent, studious, meticulous, responsible *Versus* Irresponsible, careless, disorganized, reckless, sloppy, messy, untidy, inefficient, lazy, absent-minded, immature, irrational
Filipino	Thrifty, spiritual, pious, religious, "believes in God," goes to church, studious, godly, frugal, holy, disciplined, orderly *Versus* Wasteful, profligate, spendthrift, crazy, lazy, wandering
French	Tidy/orderly, disciplined, organized, diligent, studious, orderly, perfectionistic, tidy, meticulous, elegant, hard-working, graceful *Versus* Untidy/disorderly, undisciplined, lazy, negligent,

Appendix A-5. (Contd.)

	rebellious, languid, delinquent, disobedient, carefree, irresponsible, "non-believer"
German	Hard-working, industrious, diligent, conscientious, assiduous, goal-oriented, determined, purposeful, efficient, zealous, steadfast, consistent *Versus* Work-shy, fickle, inconsistent, indecisive, playful, reckless
Greek	Organized, hardworking, workaholic, industrious, responsible, consistent, stable, perfectionist, methodical, "makes progress," balanced, serious *Versus* Disorganized, neglectful, untidy, unscheduled, lazy, inconsistent, irresponsible, unstable, absent-minded, disobedient, superficial, incorrigible
Hungarian	Diligent, precise, thorough-going, careful, deliberate, orderly, industrious, disciplined, dutiful, thorough *Versus* Lax, neglectful, unsystematic, unserious, idle, lazy, inconsiderate, frivolous, irresponsible, happy-go-lucky
Italian (Rome)	Precise, scrupulous, conscientious, diligent, steadfast, provident, rational, disciplined, responsible, well-balanced, methodical, composed *Versus* Irresponsible, reckless, inconstant, imprecise, imprudent, irrational, rash, rambling, unreflecting, undisciplined, disorderly, absent-minded
Italian (Trieste)	Precise, steadfast, organized, orderly, methodical, disciplined, judicious, conscientious, diligent, well-balanced, rational, rigorous *Versus* Inconstant, reckless, inconsistent, irrational, absent-minded, imprudent, dissolute, untidy, bungling, chaotic, careless, inaccurate
Korean	Precise/faultless, organized, determined, precise, faultless, complete, prudent, thorough, consistent/steady, industrious, meticulous, enduring *Versus* Unclear, rash/careless, careless, unfaithful/unreliable, lazy, hasty, thoughtless, absent-minded, inattentive, dull/slow, silly, childish
Polish	Thoughtful, careful, reliable, scrupulous, businesslike, conscientious, precise, dutiful, systematic, sedulous, trustworthy, well-organized *Versus* Negligent, inaccurate, chaotic, reckless, irresponsible, inconsiderate, inattentive, disorderly, unwise, inconsequent, hasty, unpersevering
Turkish	Self-disciplined, tidy, methodical, systematic, organized, neat, hard-working, assiduous, principled, particular, thrifty, attentive *Versus* Disorderly, undisciplined, unsystematic, unorganized, untidy, slovenly, inattentive, undependable, nonconforming, thick-skinned, wasteful, unstable

Appendix A-6

Definition of HEXACO Openness to Experience Factor and Adjectives Defining Indigenous Factor Interpreted as Openness to Experience (or Intellect/Imagination/Unconventionality) in Various Languages

HEXACO-PI Openness to Experience Scale Definition

Enjoys beauty in art and in nature / Seeks knowledge, reads widely about the world, nature, and people / Likes to innovate and to experiment / Accepts the unconventional, is receptive to strange or radical ideas

Versus

Does not appreciate artistic works or natural wonders / Is not intellectually curious or inquisitive / Has little inclination for original or creative thought / Avoids and dislikes nonconformity or eccentricity

Language	*Adjectives Defining Indigenous Lexical Factor*
Croatian	Gifted, talented, sagacious, originative, bright, smart, intellectual, endowed, sharp-witted, quick-witted *Versus* Uncreative, ungifted, unintelligent, unintellectual, unimaginative, unskillful, unsophisticated
Dutch	Deep, original, philosophical, sharp, witty, artistic, critical, creative, ironic, inventive, versatile *Versus* Uncritical, superficial, bourgeois, meek, prudish, docile, unimaginative, narrow-minded, extremely shy, timid, conservative, conventional
English (1,710)	Penetrative, ingenious, rebellious, philosophical, sharp-witted, complex, unconventional, perceptive, poetic, profound, intense, imaginative *Versus* Unphilosophical, uninventive, uningenious, unsearching, unperceptive, unintelligent, uninquisitive, unintrospective, narrow, traditional
English (449)	Philosophical, insightful, complex, deep, introspective, articulate, inquisitive, unconventional, perceptive, analytical, individualistic, intuitive *Versus* Simple, conservative, conventional, narrow-minded, bigoted, close-minded
Filipino	Mentally keen, talented, sharp, learned, intelligent, rational, able, competent, sensible, brainy, systematic, wise *Versus* (none)
French	Artistic, creative, imaginative, inventive, original, eccentric, marginal, revolutionary, witty, rebellious, passionate *Versus* Conventional, obedient, conservative, reasonable
German	Bright, brilliant, talented, intelligent, knowledgeable, ingenious, very intelligent, gifted, highly gifted, able, intellectual, clever *Versus* Unintellectual, ungifted, untalented, ignorant, unintelligent, incompetent

Appendix A-6. (Contd.)

Greek	Inventive, multitalented, talented, genius, eclectic, ingenious, selective, pioneer *Versus* (none)
Hungarian	Bright, clever, intelligent, teachable, smart, sharp-witted, receptive, intellectual, perspicacious *Versus* Malicious, unpolished, bashful, shifty
Italian (Rome)	Progressive, eclectic, innovative, analytical, ironic, sharp, critical, original, receptive *Versus* Devout, traditional, puritanical, servile, religious, conservative, obedient, backward, observant, bigoted
Italian (Trieste)	Cultured, intelligent, gifted, sharp, capable, original, intellectual, educated, erudite, ironic, astute *Versus* Entirely dominated, uncultured, submissive, obtuse, incompetent, ignorant, "gives up easily," unsophisticated, weak, inept, backward, yielding
Korean	Bright, creative, intellectual, smart, relaxed, original, wise, clever *Versus* "Lacking individuality," faithful, impatient
Polish	Gifted, creative, intelligent, talented, receptive, wise, clever, acute, well-read, sharp, sagacious, thinking *Versus* Unintelligent, unperspicacious, unintelligent, dense, uneducated, silly, slow-witted
Turkish	Intellectual, contemporary, civilized, cultured, freedom-loving, creative, knowledgeable, original, unusual, progressive, modern, independent *Versus* Traditional, traditionalistic, narrow-minded, fatalistic, ordinary, uncultured, believer, conservative, old-fashioned, reactionary, artificial

Appendix B
Instruction Page and Example Rating Page for the Similarity Ratings Task

Instructions

On each of the next six pages, you will find a box named "TARGET PERSONALITY" that lists four pairs of opposing personality descriptions.

You will also find another BOX listing six sets of personality adjectives. (Please take a quick look at the next page.)

Your task on each of the next six pages is as follows:

First, consider all aspects of the Target Personality description on that page.

Next, consider each set of adjectives, and **judge how similar the Target Personality is to that set of adjectives**.

In making your judgment, please use the following scale:

0 (No Similarity)
1
2 (Weak Similarity)
3
4 (Moderate Similarity)
5
6 (Strong Similarity)
7
8 (Very Strong Similarity)

(When making this rating, don't worry about the order of the adjectives. For example, your ratings for "kind versus unkind" would be the same as for "unkind versus kind.")

If you have any questions, please ask now. Otherwise, please turn this page over and go ahead.

TARGET PERSONALITY – 1

Is genuine in interpersonal relations, is unwilling to manipulate others
Avoids fraud and corruption, is unwilling to exploit or take advantage of others
Has little interest in lavish wealth, luxury goods, or high social status
Is modest and unassuming, makes no claim to special treatment

Versus

Uses flattery and pretends to like others as a way to get ahead
Is willing to gain by cheating or stealing
Wants to enjoy and display great wealth and status
Considers self superior and entitled to privileges that others do not have

Please rate the similarity of the target personality to each of the six adjective sets using this scale.

0 (No Similarity)
1
2 (Weak Similarity)
3
4 (Moderate Similarity)
5
6 (Strong Similarity)
7
8 (Very Strong Similarity)

Your response here

Unirritable, tranquil, gentle, peaceful *Versus* Belligerent, explosive, quick-tempered, fierce, stubborn, irritable, defiant, spiteful, harsh, rash, aggressive, impulsive, self-willed, rebellious, quarrelsome, unyielding	
Sympathetic, good-hearted, regardful, humane, well-intentioned, honest, generous, fair, charitable, broad-minded *Versus* Hypocritical, greedy, rapacious, selfish, self-interested, covetous, conceited, self-centered, perfidious, self-important, mean, fame-thirsty	
Organized, industrious, thorough, hard-working, responsible, orderly, sedulous, systematic, diligent, precise *Versus* Disorganized, negligent, irresponsible, lazy, incautious, unsystematic, disorderly, inaccurate, unconscientious	
Gifted, talented, sagacious, originative, bright, smart, intellectual, endowed, sharp-witted, quick-witted *Versus* Uncreative, ungifted, unintelligent, unintellectual, unimaginative, unskillful, unsophisticated	
Communicative, extraverted, loquacious, open, sociable, energetic, talkative, dynamic, companionable, active *Versus* Reserved, withdrawn, unsociable, bashful, untalkative, introverted, taciturn, shy, unenergetic	
Oversensitive, sensitive, romantic, passionate, impassioned, suggestible *Versus* Unemotional, insensitive, uncompassionate, “without compassion”, cool-blooded, phlegmatic	