Abstract: The psycho-lexical approach is extended to Hindi, a major language spoken in India. From both the dictionary and from Hindi novels, a huge set of personality descriptors was put together, ultimately reduced to a manageable set of 295 trait terms. Both self and peer ratings were collected on those terms from a sample of 511 participants. Factor analyses (principal components analysis), performed separately on self and on peer ratings, suggested three up to six factors. From a comparison with an ancient but still popular system of personality description, called the triguna, and from a comparison with a recently developed comprehensive trait taxonomy in Dutch, it was concluded that only three factors, not to be confused with the Big Three, firmly stood out, all three belonging to the three-dimensional triguna. Congruence coefficients between factors based on self and on peer ratings confirmed the stability of these three factors. The three factors are called rajasic, representing ambition, friendliness, humility versus hypocrisy, deception and violence, tamasic, representing egoism, mean-mindedness and concealment, and finally sattvic, representing competence, impartiality, being organized, sober and harmonious. Copyright © 2013 John Wiley & Sons, Ltd.

Keywords: lexical studies; personality scales and inventories; cross-cultural research

INTRODUCTION

Some 30 personality trait studies have been performed or are being performed according to the psycho-lexical approach to personality. Reviews of or references to the majority of those studies can be found in Saucier, Hampson, and Goldberg (2000) and De Raad, Barelds, Levert, et al. (2010). Those studies include trait taxonomies in the major European languages (see, e.g. De Raad, 2000), some African languages (e.g. Saucier, Ole-Kotikash, & Payne, in preparation) and some Asian languages such as Korean (Hahn, Lee, & Ashton, 1999), Japanese (e.g. Aoki, 1971; Tsuji, 2001), Chinese (Wang, Fang, & Zuo, 1995; Yang & Wang, 1999; Zhou, Saucier, Gao, & Liu, 2009) and Tagalog (Church, Katigbak, & Reyes, 1996).

The coverage of languages of Asia in psycho-lexically based trait studies is far from ideal. About 60% of the world population lives in Asia, and the largest number of languages in the world is spoken in Asia (and the Middle East), about 10 times as many as in Europe. The languages belong to a variety of language families, Indo-European, Altaic, Sino-Tibetan, Austro-Asiatic, Austronesian and Afro-Asiatic, instead of mainly Indo-European as in Europe. Moreover, the number of people in Asia more than doubles the number of people in Europe. From the major language families in Asia, relatively few languages are represented in trait taxonomies: Indo-European in Russian (Shmelyov & Pokhil’ko, 1993), Altaic in Korean (Hahn et al., 1999) and Japanese (Aoki, 1971; Tsuji, 2001), Sino-Tibetan in Chinese (e.g. Yang & Wang, 1999) and Austronesian in Tagalog (Church et al., 1996). Interestingly, the handful of psycho-lexical studies in Asia show more diversity than the 20 or more in Europe.

Another language, belonging to the Indo-Aryan branch of Indo-European, is Hindi, which has developed from Sanskrit, which in turn has its roots in Vedic Sanskrit, an Old-Indic language and found in the ancient texts used in a large section of the Asian continent. The present study aims to describe and structure Hindi personality trait terms, along the lines of the psycho-lexical approach to personality. Hindi is spoken by a huge population in a large (mainly Northern) region of India comprising eight states. The majority of the national dailies, television programs, cinemas and scientific literature is prepared in Hindi. Hindi is taught up to high-school level in all educational institutions of the country, and it has a rich literary tradition. Hindi is taught up to high-school level in all educational institutions of the country, and it has a rich literary tradition. It is the primary official language of the country, next to English, the secondary official language. India, being a multilingual society, has been described as a ‘Linguistic Area’ (Emeneau, 1956), and as a sociolinguistic giant (Pandit, 1972) characterized by multilingualism (Annamalai, 1986). Every Indian has linguistic competence in at least two languages in which Hindi constitutes the largest proportion, acquired by Indians during childhood or at a later stage of development.

Personality conceptions in India

The concepts of person and of personality have been around in many ancient Indian texts culminating around the middle...
of the first millennium BCE in the Vedas (Sanskrit véda means ‘knowledge’ or ‘wisdom’), a large corpus of texts that includes the Upanishads (Sanskrit upanishad means: sitting nearby the teacher to receive instruction) and the Bhagavad-Gita. These texts distinguish between person and personality.

When referring to distinctive psychological characteristics of persons, the terms svabhava (typical) and prakriti are used, more or less resembling the term personality (Krishnan, 2002; Menon, 2008; Paranjpe & Rao, 2008). The term prakriti roughly stands for ‘human nature,’ which is constituted by three fundamental attributes called triguna. ‘Guna’ (Sanskrit) means ‘cord’ or ‘string’ and can refer to an attribute of an object or a modality of nature. The triguna is perhaps one of the most popular constructs in the Indian context (see Boss, 1966; Kapur, Hirisave, Reddy, Barnabas, & Singhal, 1997; Marutham, Balodhi, & Mishra, 1998; Mathew, 1995; Misra, Suvasini, & Srivastava, 2000; Murthy & Kumar, 2007; Pathak, Bhatt, & Sharma, 1992; Uma, Lakshmi, & Parameshwaran, 1971).

History of triguna

The triguna historically comprises sattvic guna (roughly referring to goodness, harmony and essence), rajasic guna (roughly referring to passion, mobility and energy) and tamasic guna (roughly referring to dullness, indifference and inertia), constituting personality (prakriti), and meant to comprise temperament, mental make-up and interaction patterns of the individual. Much, however, leaves to be said about the precise delineation of triguna, witness its elusive etymological and philosophical history.

During their long history, the original basic meanings of the three gunas (sattvic, rajasic and tamasic) have ‘organically’ accrued a certain complexity through long-time and changing philosophies, of which certain kernel characteristics contem- porarily seem to stand out as distinguishing features. The triguna has given rise to a variety of different interpretations, also with respect to their behavioural manifestations, although there seems to be some agreement.

The root meaning of sattvic is ‘to be’, expressed in a variety of related terms such as existence, reality, true essence, natural character, vital breath, energy and conscientiousness. Associated behavioural qualities are, for example, strength of character, firmness, resolution, courage, magnanimity and virtue. According to Murthy and Kumar (2007), sattvic refers to being good, pure, devoted, tolerant, mental equilibrium, mental control, intelligence, knowledge and determination. Krishnan (2002) emphasized persons with a predominance of sattvic guna to be idealistic, analytical, intelligent, careful, free from egoism and self-controlled. With the emphasis on being realistic, on energy and on character strength, sattvic seems to come close to the Competence factor as described by De Raad and Barelds (2008), in which the factor combines aspects of Extraversion, Intellect, Agreeableness and Conscientiousness.

The origin of rajasic seems to be the most elusive one of the three gunas, but its root meaning is most often found in ‘to be dyed’, also expressed in related terms such as being coloured, being moved, affected, excited, delighted and attracted. According to Murthy and Kumar (2007), rajasic is agreed to refer to emotions, passions, pain, restlessness, drive, desire and envy. It is about affection and emotion and about acting out the affection and the emotion. According to Krishnan (2002), persons with a predominance of rajasic guna are egoistic, proud, sensitive, ambitious, emotional, fickle, pleasure seeking and greedy. Rajasic guna seems to relate emotion-driven, self-oriented traits as captured in Big Five (dis)Agreeableness, Conscientiousness and possibly Emotional Stability. This guna could also relate to Honesty–Humility of the six-factor model (Ashton, Lee, Perugini, et al. 2004) and to Virtue as described in De Raad and Barelds’ (2008) eight-factor model.

The root meaning of tamasic seems to be in ‘gasping for breath’, and in expressions such as being exhausted, to perish, being distressed, immovable or stiff. According to Murthy and Kumar (2007), tamasic is agreed to refer to indifference, uncertainty, misunderstanding, elusion, inertia, fear, arrogance, helplessness, mental imbalance and inactivity. Krishnan’s (2002) description agrees with the generally apathetic and somewhat malevolent character of the person with a predominance of tamasic guna: they are evil minded, indolent and indiscrete; they find satisfaction in trivial joys and in vulgar pleasure. Connections to traits of the Big Five or other models are difficult to make, except maybe a reference to hedonism (De Raad & Barelds, 2008).

The triguna is not only still alive in the everyday context of Indians, but also some Indian psychologists have embraced the triguna to be of interest to psycho-spiritual and clinical fields (e.g. Stempel, Cheston, Greer, & Gillespie, 2006; Wolf, 1998, 1999). The triguna is now seen as to describe three fundamental, relatively enduring qualities of personality. The relative intensity of the gunas is used to characterize individual differences in behaviour. The gunas are supposed to constantly influence each other in such a way that when one dominates, the others automatically recede. Such a characterization of gunas implies a relative enduringness. Paranjpe (2004) suggested that this ‘changing’ nature of the gunas is because they reflect both states and traits (see also Paranjpe & Rao, 2008).

Culture and personality

Other analyses of Indian personality have focused on identity, lifestyle and cultural heritage. Misra and Giri (1994), for example, argued that Indians are distinguished by sharing an interdependent self-construal and relationship orientation. The interest in the shaping of personality under cultural–ecological conditions and in the culturally informed ways of appreciating personality has been expressed in Church and Loner (1998), Super and Harkness (1997) and Valsiner and Lawrence (1997). Regarding the Indian context, according to Sinha (1988), Indians believe in a shared lifestyle, relationship maintenance, dependence proneness and need for approval, while individual needs, aspirations and motives are guided by norms and standards of the group rather than by personal preferences (Misra & Gergen, 1993). The identity of Indians in terms of the aforementioned characteristics is the product of a long cultural heritage, which is reflected in everyday activities (Sen, 2006).
For the study of Indian personality, it is important that space is given at the empirical level to the socio-cultural ethos by which Indians are suggested to be guided in everyday life. The appropriate way to study personality accordingly is the study from an indigenous or emic perspective. Too often, psychological phenomena are viewed from the perspective of established theories. The approach is followed here, because it studies personality at the level of the everyday context where the interplay between personality and culture is given form. The approach assumes that the myriad of representations of cultural attributes shared by people, including everyday conceptualizations of personality, have been sedimented into the lexicon of the pertaining language, so that the first delineation of the personality domain may to a large extent take place within the confines of that lexical repository.

The psycho-lexical approach to personality

This approach assumes that ‘those individual differences that are most salient and socially relevant in people’s lives will eventually become encoded into their language’ (Goldberg, 1982, p. 204). In the various psycho-lexical studies that have been mentioned, the lexicons were scanned for personality trait descriptors in such a way that the trait semantics in those lexicons were turned into representative and manageable trait vocabularies. Those trait vocabularies have been administered to large samples of participants to obtain ratings to be used to structure the trait domains. Factor analyses of those ratings have yielded structures with three (e.g. Di Blas & Forzi, 1999) up to five or six factors (e.g. De Raad & Barelds, 2008). The most frequently found structures, however, are those with five or six factors. Reviews of the various trait-taxonomical studies can be found in Ashton, Lee, Perugini, et al. (2004), De Raad (2000), De Raad, Barelds, Levert, et al. (2010), Peabody and De Raad (2002), Saucier et al. (2000) and Saucier and Goldberg (2001).

The psycho-lexical approach has provided a range of candidates for cross-culturally replicable trait factors. The strongest empirical support has been gathered for three candidates. The first candidate involves three factors (e.g. De Raad, Barelds, Levert, et al., 2010; Di Blas & Forzi, 1999; Peabody & De Raad, 2002), the second involves five factors (e.g. Saucier et al., 2000) and the third involves six factors (Ashton, Lee, Perugini, et al., 2004; Saucier, 2009). Which one of these structures forms the best cross-cultural candidate is a debated issue (see, e.g. Ashton & Lee, 2010; De Raad, Barelds, Mlačič, et al., 2010).

A comparison of the Dutch, English and German Big Five structures (Hofstee, Kiers, De Raad, Goldberg, & Ostendorf, 1997), using congruence coefficients as criteria for factor similarity, casted doubt on an unequivocal replicability of all Big Five factors. Comparisons among Big Five structures from five languages (De Raad, Perugini, & Szirmák, 1997) and from seven languages (De Raad, Perugini, Hrebicková, & Szarota, 1998) suggested that three, at best four, factors of the Big Five are cross-culturally replicable. De Raad, Barelds, Levert, et al. (2010) pair-wise compared structures with one up to six factors from 14 trait taxonomies and found support for the replicability of a structure with no more than three factors. In a different type of comparisons of trait taxonomies, Peabody and De Raad (2002) and De Raad and Peabody (2005), also the relative consistency of such a recurrent three-factor structure was supported. Those Big Three factors are characterized by items typical for Extraversion, Agreeableness and Conscientiousness, respectively.

Big Five structures based on large-scale trait taxonomies in the various languages were all based on ipsatized, that is, standardized per participant, ratings. Support for a six-factor structure, as reported by Ashton, Lee, Perugini, et al. (2004), was similarly found in ipsatized ratings. The six-factor structure, adding an Honesty–Humility factor to the Big Five, includes a shift of irritability terms from the Emotional Stability factor to the Agreeableness factor. The additional factor Honesty–Humility was defined by terms such as honest, sincere and fair versus dishonest, conceited and boasting.

Seven- and eight-factor structures as respectively reported by Almagor, Tellegen, and Waller (1995) and De Raad and Barelds (2008) are both based on raw (non-ipsatized) data. Another characteristic shared by these latter studies was the nonrestrictive approach with respect to selecting trait descriptors from the lexicon. As a consequence, besides versions of the Big Five, two factors were extracted in the two studies that had a clear relationship (De Raad & Barelds, 2008). The first of these two factors, Virtue (strongly negatively related to Negative Valence in that study), refers to traits such as trustworthiness, decency and honesty versus unreliable, indecent, and dishonest. Obviously, the content of this factor also relates to the ipsatized ratings-based Honesty–Humility factor. The second of the two factors, Competence or Positive Valence, refers to traits such as excellence, problem-solving capacities, inventive and entrepreneurship versus giving up, passivity and lack of problem-solving capacities. De Raad and Barelds (2008) also reported a hedonism factor, which combines traits of sensation seeking, having pleasure and the search for sensual stimuli.

In the present article, two studies are described. Study 1 is about the selection of a full and representative set of Hindi trait items and the reduction of the list to manageable proportions. Study 2 gives the description of the structures in Hindi trait language; this part also includes explicit relationships with some relevant models in the research literature.

The present studies seek to find answers to the following more general and more specific questions. A first general question concerns the most appropriate structural configuration of the Hindi trait domain. Another general question is which structural configuration has the best chance to be replicated cross-culturally: does Hindi give evidence at this point? More specific questions relate to how the lexically based Hindi trait structure relates to both a Hindi model of personality and to the Big Five. Is most of the variance explained by the factor structure with Big Five related constructs, or is this rather the earlier described trigna? Also, the consistency of structural models across self and other ratings is examined.
STUDY 1: SELECTION OF PERSONALITY DESCRIPTIVE ADJECTIVES

In order to select the relevant personality descriptive adjectives in Hindi language, a thesaurus (Kumar & Kumar, 1996) was used, which had a collection of 160,850 lexical entries. A thesaurus was preferred over the dictionary, because it provided more words than most dictionaries in Hindi. The experience with the thesaurus and with dictionaries was that certain typical expressions often used in novels (especially expressions used to describe characters in certain settings) were missing. Examples are Jujharoo (the person who never gives up) and Jogadoo (person who uses all possible means to achieve a goal, both ethical and unethical). For this reason, we also consulted a few contemporary Hindi novels. The selected novels were about life in India both in rural and in urban settings with a focus on relationship and identity during different historical periods from the early 20th century to the last decade of the 20th century. A professor of Hindi literature recommended the novels for this purpose.

The initial selection of Hindi trait words and the further reduction took part in four steps. In order to prevent idiosyncrasies in selections, new judges were recruited for steps 3 and 4.

Step 1: Initial selection and first reduction. Two research scholars who were enrolled in a PhD programme at the Department of Psychology of the University of Delhi in north India went through the thesaurus and through the novels in order to identify trait words. Five novels were used, namely Nadi ke Dweep (Island of River) (Aghey, 1952), Ve Din (Those Days) (Verma, 1964), Maila Anchal (The Soiled Linen) (Renu, 1954), Godan (Cow Donation) (Premchand, 1936) and Chaak (Pushpa, 2009). From the thesaurus, the two judges independently selected quite similar lists of relevant trait adjectives (approximately 2950 and 2800, respectively). They were in agreement on 2750 adjectives, which were retained for further use. Around 700 adjectives were selected from the novels. For this, the one judge read three novels and selected around 1100 adjectives, and the other judge read two novels and selected around 645 adjectives. The two judges compared the lists and agreed to retain 523 of the words they had in common. The words they had not in common were discussed by the two judges upon which they agreed on still another 177 words to retain, resulting in the 700 list. The latter list was added to the 2750, and an overlap of 150 adjectives was removed, thus forming a full final list of 2750 + 550 = 3300 trait relevant adjectives, which was subjected to elimination criteria.

For this step, a conservative procedure was followed regarding elimination criteria. Words were removed upon agreement by two judges; the remaining set was subjected to the further steps of reduction. Adjectives were dropped if they clearly belonged to the following categories: (i) non-descriptive words of persons or behaviours (e.g. nouns such as Composer [Rachatta] and Consumer [Upbhokta]); (ii) complicated, unusual, outdated and jargon (e.g. phantoosh [person who behaves rustically]); (iii) role-oriented words that did not have a direct bearing on traits (e.g. plumber); (iv) words denoting groups of individuals (e.g. doctor); and (v) words reflecting an ideological overtone (e.g. extremist). Following these criteria, both the sources were scrutinized by the two judges. Only those words were removed on which the judges reached consensus. This procedural first reduction step resulted in the removal of 2473 adjectives so that 827 adjectives were retained for further inspection in the next reduction steps.

Step 2: Reduction of 827 to 465 adjectives. The list of 827 adjectives was subjected to further scrutiny by the same two judges as in Step 1 by applying some additional criteria. Those words were excluded if they referred to (i) physical features having no trait connotation (e.g. lamboo); (ii) physical and mental health (e.g. paralytic and depressive); (iii) power and status (e.g. feudal and anarchist); and (iv) politics and religion (e.g. Naxali and blasphemous). Agreement between the two judges was reached on 362 adjectives to be excluded, thus resulting in a list of 465 adjectives to be used for the next step.

Step 3: Reduction of 465 to 357 adjectives. The list of 465 adjectives was given to a team of three postgraduate students of psychology (from north India) to assess for each adjective whether it is to be considered obscure, ambiguous and unfamiliar (yes or no) (see De Raad et al., 1998). Only those adjectives were removed on which the three judges fully agreed, given the three criteria. This step resulted in the removal of 108 terms, yielding a set of 357 adjectives to be subjected to the last reduction step.

Step 4: Reduction of 357 to 295 adjectives. The list of 357 adjectives was given to another set of five judges with a postgraduate degree in psychology (also from north India). The judges were asked to rate each adjective on the criterion of ‘appropriateness’ for personality description on a 3-point scale running from ‘least appropriate’ (1) to ‘most appropriate’ (3). The adjectives with mean ratings of 1.5 or higher were retained, implying that 62 adjectives were dropped. A set of 295 personality descriptive adjectives was thus finally retained.

The construction of the list to obtain ratings

Considering the bilingual nature of Indians, the 295 adjectives were translated into English and again back-translated into Hindi with the help of three judges, in order to arrive at a bilingual personality trait list. They had 90% agreement on the translation of the adjectives. The adjectives that did not have exact English equivalents were kept only in Hindi. Finally, two versions were constructed, one for self ratings and the other for peer ratings, both in bilingual format. The lists were provided with a 5-point rating scale running from ‘least descriptive’ (1) to ‘most descriptive’ (5). The adjectives were arranged according to the Hindi alphabet. In Hindi, such an ordering is without problems regarding, for example, a clustering of words with a similar semantic tone as in English (e.g. words starting with ‘un-‘).
STUDY 2: STRUCTURING HINDI PERSONALITY TRAITS

Sample

A sample of 511 young Hindi speaking adults (M = 23.15 years, SD = 2.48) participated in the study. Among them were 318 men (62.2%) and 193 women (37.8%). They were enrolled in undergraduate courses (38.16%) and in postgraduate courses (61.84%) in north India where Hindi is the main language. The majority of the participants (72.31%) had an urban middle-class background; the rest had a rural middle-class background (27.69%). ‘Middle class’ was defined in terms of a monthly income level.

Material and procedure

The same personality descriptive adjective checklist consisting 295 adjectives was used twice, namely for both self and peer ratings. Because both Hindi and English are official languages in India, and the Hindi-speaking Indians are bilingual, the list was presented in a bilingual form (Hindi and English), in order to facilitate comprehension of the words by the participants who all had working knowledge of English. For some people, it was probably of help to have the English equivalent of a term next to the Hindi term. In the case of self ratings, the participants were instructed to indicate for each of the 295 adjectives the extent to which the adjectives described themselves. A 5-point rating scale was used ranging from ‘least descriptive’ (1) to ‘most descriptive’ (5). For the peer ratings, the participants were asked to keep in mind a well-acquainted other and to rate that person using the same scale format.

The responses were collected in two sessions. In the first session, half of the participants provided self ratings and other half peer ratings. In the second session, it was the other way around. Thus, the order was reversed for half of the group in each session. The two sessions together lasted for about 2 hours. In case that the participants had any difficulty in understanding the adjectives, clarification was provided.

Analyses

The majority of psycho-lexically based trait studies have been performed using ipsatized ratings, giving rise to Big Five and Six factor structures. The main reason to apply ipsatization was to remove individual differences in the participants’ use of the rating scale. Ipsatization has, however, been under serious dispute; it would practically mean sacrificing a large part of the first main component. If that component would be psychologically meaningful, instead of mainly representing bias in the use of the rating scale, its removal would be bad practice (cf. De Raad & Barelds, 2008). In order to find out first what the effect would be of ipsatization on the structure, in comparison with the use of raw data, we started applying principal components on raw (non-ipsatized) data followed by analysis of ipsatized data. In case a clear difference, especially regarding the removal of the first un-rotated component, would occur, both types of results are reported in some detail. If the difference is clearly small, we give preference to continue with analysing the raw data-based findings and give less emphasis to the results with ipsatized data.

RESULTS

We applied principal components analysis first on raw data and then on ipsatized data, for self and peer ratings. On the basis of the raw data analyses, we determined the numbers of factors that could be of interest for the analyses of the ipsatized data. This is followed by correlations between the two types of factors, again for self and peer ratings separately.

Principal components analyses: raw data

Both self- and peer-rating data were subjected to principal components analysis, followed by varimax rotation. For self ratings, the first 10 eigenvalues were 32.69, 22.27, 16.08, 9.11, 7.64, 6.17, 4.76, 4.19, 3.77 and 3.53. For peer ratings, the first 10 eigenvalues were 31.51, 21.30, 15.12, 10.27, 6.63, 5.78, 4.74, 4.42, 4.30 and 3.96. On the basis of the eigenvalue-patterns alone, it seemed that both the self and peer ratings could best be summarized by three large and up to four smaller components (henceforth called factors). To help making further decisions about the appropriate number of factors, we constructed the hierarchy of factors among solutions with one up to eight factors. Moreover, we calculated congruencies between factors based on self ratings and those based on peer ratings.

Following the procedure used by De Raad and Szirmák (1994), Ashton, Lee, and Goldberg (2004) and De Raad and Barelds (2008), both self- and peer-ratings factors were extracted with solutions including the single first un-rotated factor up to a solution with eight rotated factors, in order to observe the hierarchical emergence of the factors.

Figures 1 and 2 depict the emergence of factors in those difference solutions for self and peer ratings separately. Between the factors from different solutions, correlations are given to indicate how factors at two adjacent levels relate to each other. For this, only correlations of 0.40 or higher are used.

In both Figures 1 and 2, it can be observed that after the three factors, called satvic, rajasic and tamasic, had emancipated, these factors remained stable in all the subsequent solutions. From the three-factor level up to the eight-factor level, factors from adjacent levels correlated almost perfectly. New factors beyond the first three (4/4, 5/5 and 6/6) were difficult to interpret clearly, for which reason we used the first two highest loading terms for a tentative label. Factors with a question mark, which were also the factors explaining the smallest amounts of variance, remained virtually un-interpretable. On the basis of both the amounts of variance explained and the relative (un)interpretability, the best choices for extraction of factors seemed to be no more than six factors for both self and peer ratings.

Hindi trait factors based on raw data

Because internationally psycho-lexical studies were most about five factors and sometimes on six or more, we continued
with six factors, in order to have the best chances for connections to those systems. Thus, six varimax-rotated factors were investigated for both self and peer ratings. Tables 1 and 2 contain trait terms that load highest on those factors. A first inspection of the contents of both the six self-based factors and the six peer-based factors suggest the first three factors to be related to the so-called triguna. The first of the three remaining smaller self-based factors could tentatively be described as ‘Endeavor’, a term that should capture extraverted traits (lively and optimist), conscientious traits (perseverant and workaholic) and agreeable traits (hospitable and honest). The second of the smaller three factors could be called ‘Achievement’, with such traits as successful, self-restrained and efficient. The last factor seemed to relate to ‘Extraversion’, with such traits as assertive and extroverted versus shy and introverted.

The first of the three remaining peer-based factors could tentatively be described as ‘Agreeableness’, although it also refers to Extraversion, with such traits as forgiving, polite, humble and peace loving and also entertaining and resourceful. The second smaller peer-based factor seemed to refer to ‘Strength’, with a mix of extraverted traits (extroverted versus shy), emotional stable traits (strong-willed and brave) and (dis) agreeable traits (antagonistic and argumentative). The last peer-based factor contained traits typical of a follower, and might be called ‘Conventionality’, with traits such as silly, unsuccessful, imitative and traditionalist. Although for both the self and peer results the last three factors contained indications leading to the tentative interpretations, more is needed to grasp their meanings more precisely.

\footnote{Full matrices with loadings are available upon request from the first author.}
It is of interest to know whether the factors for self and for peer correlate among each other. We therefore also applied promax rotation for both six-factor solutions. The two promax-rotated six-factor solutions gave rise to the same interpretations as in the case of varimax rotations with average correlations between the corresponding varimax-rotated and promax-rotated factors of 0.99 for self factors and of 0.98 for peer factors. The correlations among the promax-rotated factors were small. For self, the correlations varied between $0.20$ (between rajasic and Endeavor) and $0.25$ (between sattvic and Endeavor) with an (absolute) average of 0.12. For peer, the correlations varied between $-0.27$ (between tamasic and rajasic) and $0.29$ (between sattvic and 'Strength') with an (absolute) average of 0.13.

**Principal components analyses: ipsatized data**

Because it was expected that analyses of ipsatized data would not yield more than the number of factors obtained with raw data, we performed principal components analyses and extracted six factors, followed by varimax rotation. For self ratings, the first 10 eigenvalues were 28.97, 17.19, 9.26, 8.34, 6.67, 6.01, 4.65, 3.99, 3.81 and 3.78. For peer ratings, the first 10 eigenvalues were 26.36, 16.10, 11.25, 7.49, 6.35, 5.47, 4.94, 4.45, 4.39 and 4.15. On the basis of the eigenvalue patterns, both self and peer ratings could best be summarized by three up to six factors. We used the six-factor structures for further inspection. The six self- and peer-rating factors are represented in Tables 3 and 4.

---

**Figure 2.** Hierarchy of factor solutions (principal components analysis followed by varimax rotation), based on peer ratings.
three factors in both cases were relatively easily identified as *rajasic*, *tamasic* and *sattvic*. The remaining three factors were more difficult to grasp in a label.

**Correlations between factors from raw and from ipsatized data, self and peer**

First, we wanted to know if and how the first un-rotated raw-data-based factor correlated with any of the six ipsatized factors, in comparison with correlations with the raw-data based factors, for self and peer ratings separately, and for varimax-rotated factors and un-rotated factors. The correlations are given in Table 5.

The correlations in Table 5 show a similar pattern for raw data and ipsatized data and for both self and peer ratings. These patterns, and especially also the high correlations between the first un-rotated factor and the un-rotated factors based on ipsatized data, give no reason to believe that ipsatization had the effect of removing the first un-rotated factor.

Table 6 contains the correlations between the six factors based on raw data and the six factors based on ipsatized data, for both self and peer ratings. The patterns of correlations between factors based on raw data and on ipsatized data were about the same (except for the signs) for self and peer for the first five factors. Although some differences could be observed, they did not seem to relate to the removal of the first un-rotated factor. In the further discussion, the emphasis will therefore be on the results based on the raw data.

**Stability of the factors: congruencies**

A further check on the stability of the factors and of their usefulness is made on the basis of congruencies calculated between the varimax-rotated self factors and the varimax-rotated peer factors, for solutions with two up to eight factors. Congruencies were calculated after rotation of the peer to the self solution and after rotation of the self to peer solution. The congruencies are given in Table 7. The average congruencies

<table>
<thead>
<tr>
<th>Table 1. Factors based on self ratings: raw data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1. Rajasic</strong> (‘is restless, envious, ambitious, &amp; is guided by passion &amp; motion’)</td>
</tr>
<tr>
<td>Brutish (0.83), hypocrite, flatterer, cunning, deceptive, emotionless, busybody, insensitive, violent, bully, cruel, showy, boastful and quarrelsome (0.56) versus ambitious (−0.73), friendly, hard-working, well-mannered, polite, tender-minded, sociable, generous, helpful, devoted, humble and faultless (−0.50)</td>
</tr>
<tr>
<td><strong>Factor 2. Tamasic</strong> (‘is evil-minded, indiscreet, vulgar, &amp; is guided by darkness &amp; concealment’)</td>
</tr>
<tr>
<td>Crooked (0.66), restless, snobbish, shrewd, egoistic, clamorous, uncivilized, mean-minded, a-social, unrelenting, frustrated, intolerant, impudent, arrogant, mischievous, dissatisfied, obstinate, wicked, self-destructive and indecent (0.49)</td>
</tr>
<tr>
<td><strong>Factor 3. Sattvic</strong> (‘is idealistic, analytical, careful, &amp; is guided by truth &amp; illumination’)</td>
</tr>
<tr>
<td>Well-behaved (0.68), impartial, competent, gentleman, abstemious, organized, virtuous, courteous, capable, caring, calm, humane, committed, gentle, civilized, sober, realistic, harmonious, simple, resourceful, level-headed and soft-spoken (0.48)</td>
</tr>
</tbody>
</table>

**Factor 4.** Perseverant (0.57), lively, hospitable, daring, self-confident, pious, curious, strict, genius, optimist, benevolent, compassionate, thoughtful, concentrated, honest, workaholic, self-controlled, good character, sagacious and aristocratic (0.39)

**Factor 5.** Successful (0.56), fatalist, talented, self-restrained, methodical, idealist, progressive, efficient and sensible (0.43) versus contentious (−0.40), apprehensive and argumentative (−0.34)

**Factor 6.** All-rounder (0.38), trickster, assertive, extroverted and splendid (0.29) versus anxious (−0.73), shy (−0.32), and introverted (−0.25)

**Note:** The figures between brackets are loadings; each two-per-factor pole indicates the range of loadings for the trait variables on the factors.

<table>
<thead>
<tr>
<th>Table 2. Factors based on peer ratings: raw data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1. Tamasic</strong> (‘is evil-minded, indiscreet, vulgar, &amp; is guided by darkness &amp; concealment’)</td>
</tr>
<tr>
<td>Obstinate (0.66), uncivilized, autocratic, unreliable, insecure, aggressive, mischievous, short-tempered, crooked, shrewd, jealous, restless, dissatisfied, maladroit, wicked, a-social, arrogant, immoral, mean-minded and indecent (0.48)</td>
</tr>
<tr>
<td><strong>Factor 2. Rajasic</strong> (‘is restless, envious, ambitious, &amp; is guided by passion &amp; motion’)</td>
</tr>
<tr>
<td>Hypocrite (−0.79), brutish, cunning, emotionless, flatterer, deceptive, bully, cruel, quarrelsome, violent, busybody, foul-mouthed and lazy (−0.48) versus hard-working (0.71), ambitious, well-mannered, social, friendly, helpful, generous, tender-minded, devoted, kind, strong and benevolent (0.47)</td>
</tr>
<tr>
<td><strong>Factor 3. Sattvic</strong> (‘is idealistic, analytical, careful, &amp; is guided by truth &amp; illumination’)</td>
</tr>
<tr>
<td>Self-confident (0.63), self-restrained, idealist, talented, dedicated, flamboyant, resolute, cheerful, gentleman, perseverant, disciplined, energetic, gentle, sagacious, attentive, progressive, strict, successful, genius, workaholic and virtuous (0.43)</td>
</tr>
</tbody>
</table>

**Factor 4.** Forgiving (0.64), sweet-tongued, entertaining, polite, realist, resourceful, parsimonious, amiable, humble, peace-loving, gifted, loyal, devout, empathetic (0.39) versus tyrannical (−0.53), resource-less, insensitive, suspicious and stubborn (−0.45)

**Factor 5.** Antagonistic (0.58), deviant, argumentative, liar, strong-willed, level-headed, impartial, brave, extroverted and daring (0.30) versus shy (−0.26)

**Factor 6**

Feeble-minded (0.47), silly, unsuccessful, imitative, anxious, dependent, absent-minded, traditionalist and fatalist (0.25)
Table 3. Factors based on self ratings: ipsatized data

Factor 1. Rajasic
Brutish (−0.81), hypocrite, flatterer, emotionless, deceptive, cunning, unlucky, busybody, insensitive, bully (−0.67), versus ambitious (0.76), friendly, hard-working, patriot, well-mannered, polite, helpful, smart, sociable, generous (0.57)

Factor 2. Tamasic
Mean-minded (0.69), shrewd, a-social, crooked, imposter, wanderer, wicked, seasoned, arrogant, acrimonious (0.48), versus perseverant (−0.54), lively, strict, self-confident, hospitalite, grateful, sagacious, good character, honest, optimistic (−0.45)

Factor 3. Satvic
Well-behaved (0.56), courteous, impartial, abstemious, gentle, understanding, competent, sober, capable, human (0.40), versus obstinate (−0.46), hard-mouthed, short-tempered, pessimistic, unashamed, sharp-tongued, aggressive, autocratic, angry, jealous (−0.24)

Factor 4.
Anxious (−0.54), withdrawn, careless, unsuccessful, dissatisfied, feeble-minded, restless, hesitant, ambivalent (−0.34), versus divine (0.38), splendid, cheerful, healthy, smiling, self-praising (0.29)

Factor 5.
Contentious (−0.52), argumentative, rigid, apprehensive, demanding, deviant (−0.36), versus idealist (0.44), fatalist, shy, methodical, self-restrained, absent-minded, talented, progressive (0.33)

Factor 6.
Resolute (−0.46), assertive, flamboyant, fearless, strong-willed, sensible, brave, active, extrovert (−0.24) versus introvert (0.34), miser, subdued, wavering (0.31)

Table 4. Factors based on peer ratings: ipsatized data

Factor 1. Rajasic
Hypocrite (−0.80), brutish, cunning, flatterer, emotionless, deceptive, bully, cruel, quarrelsome, violent (−0.54), versus hard-working (0.69), patriot, well-mannered, ambitious, sociable, helpful, friendly, tender-minded, gracious, devoted (0.57)

Factor 2. Satvic
Competent (0.52), humane, impartial, understanding, calm, level-headed, simple, committed, sober, soft-spoken, virtuous (0.39), versus unreliable (−0.43), arrogant, obstinate, short-tempered, autocratic dissatisfied, rigid, tight-headed (−0.38)

Factor 3. Tamasic
Uncivilized (0.55), coward, shrewd, inconsiderate, immoral, aimless, mean-minded, mischievous, sinful, indecent (0.42), versus resolute (−0.51), self-confident, flamboyant, nefarious, dedicated, self-restrained, conservative, responsible, energetic, self-controlled (−0.36)

Factor 4.
Entertaining (0.63), sweet-tongued, polite, forgiving, resourceful, realist, parsimonious, humble, amiable, loyal (0.45), versus insensitive (−0.62), resourceless, tyrant, inferior, lazy, suspicious, stubborn (−0.52)

Factor 5.
Astonished (−0.52), antagonistic, strong-willed, argumentative, deviant, liar, detached, fearless, daring, extrovert (−0.30), versus good (0.43), quiet, introvert, respectable, shy, honest, obedient, fatalist (0.31)

Factor 6.
Unsuccessful (−0.55), careless, feeble-minded, foolish, silly, anxious, imitative, distracted, dependent, lethargic (−0.32), versus scholar (0.38), demanding, investigative, talented, assertive, divine (0.29)

for the various solutions indicated identity for the first three factors across all solutions. Congruencies are preferably close to 0.90, in order for the factors to be considered as identical (Haven & ten Berge, 1977; Lorenzo-Seva & ten Berge, 2006). We considered 0.87 or 0.88 as close to 0.90. After the third congruency, there is a clear drop in level for all solutions. Therefore, no more than three factors should be considered stable across self and peer ratings.

Relationship between self-based and peer-based factors and triguna and Big Eight

In order to find out how the psycho-lexically based Hindi trait structure related to other systems of personality description, we turned to measures of an internationally established system of personality description and to a measure of triguna. We related the six factors for self and those for peer to these systems by means of markers for those systems, both for raw data and for ipsatized data.

As there were good reasons to identify the first three factors for both self and peer ratings in terms of triguna, an additional check was carried out by using markers of triguna. For this, a table was used from Frawley (2006, p. 141), in which a rather detailed description was given of triguna in terms of characteristic traits. The markers that could be identified on the basis of Frawley’s table are given in the Appendix. The correlations among these marker scales were low; for self, they were −0.14, 0.29 and −0.01, and for peer, they were −0.17, 0.33 and −0.27, for the pairs rajasic–sattvic, rajasic–tamasic and sattvic–tamasic, respectively.

Because the remaining three factors were somewhat elusive, yet seemed to convey characteristics of some of the Big Five dimensions, we used a more comprising system to enable us to catch the meanings of especially the remaining two sets of three factors. The markers were selected from the newly developed eight-factorial-trait system for Dutch (De Raad & Barelds, 2008). That system comprises not only Big Five traits but also dimensions representing Virtue, Competence and Hedonism. The markers of the Big Eight that could be identified are given in the Appendix. Unfortunately, for Hedonism, no sufficient markers were found. The Big Eight marker scales show substantial
Table 5. Correlations between first un-rotated raw-data based factor and the six varimax-rotated factors, both raw and ipsatized, and un-rotated ipsatized factors, for self and peer

<table>
<thead>
<tr>
<th></th>
<th>6/1</th>
<th>6/2</th>
<th>6/3</th>
<th>6/4</th>
<th>6/5</th>
<th>6/6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self ratings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw-data based factors, varimax rotated</td>
<td>— .64</td>
<td>— .48</td>
<td>— .37</td>
<td>— .44</td>
<td>— .15</td>
<td>— .08</td>
</tr>
<tr>
<td>Ipsatized-data based factors, varimax rotated</td>
<td>.60</td>
<td>.59</td>
<td>.30</td>
<td>.19</td>
<td>.08</td>
<td>.00</td>
</tr>
<tr>
<td>Peer ratings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw-data based factors, varimax rotated</td>
<td>— .59</td>
<td>— .60</td>
<td>— .46</td>
<td>— .28</td>
<td>— .04</td>
<td>— .06</td>
</tr>
<tr>
<td>Ipsatized-data based factors, varimax rotated</td>
<td>.61</td>
<td>.46</td>
<td>— .46</td>
<td>— .30</td>
<td>.18</td>
<td>.16</td>
</tr>
<tr>
<td>Ipsatized-data based factors, un-rotated</td>
<td>.96</td>
<td>— .16</td>
<td>.07</td>
<td>.00</td>
<td>.01</td>
<td>.00</td>
</tr>
</tbody>
</table>

correlations, with an average of 0.54 for self ratings and 0.52 for peer ratings.

Relationships for raw data

The correlations between the six self-based and six peer-based factors and both the *triguna* and the Big Eight factors are given in Tables 8 and 9, respectively. The first columns contain the number of marker scales that could be identified and the Cronbach’s alphas. Especially, Emotional Stability and also Conventionality were not sufficiently reliably measured. Both Tables 8 and 9 depict the first three Hindu factors indeed as the *triguna*, as expected. The first Hindu factor for self and the second Hindu factor for peer, now identified as *rajasic*, were related to Virtue and Agreeableness of the Big Eight. As may be observed in the listing of the *rajasic* markers in the Appendix, *rajasic* also contains references to Honesty, however in a negative sense (cf. Ashton, Lee, Perugini, et al., 2004), which also agrees with the contents of both Virtue and Agreeableness of the Big Eight. The second self-based factor and the first peer-based factor, identified as *tamasic*, did not find any representation in the Big Eight. The type of behaviour referred to by the *tamasic* factor is not usually found in trait studies. Some similarity may be found in studies where behavioural clusters are identified describing a broad area of aberrant and deceptive behaviour (cf. De Raad, 1999; Hopper & Bell, 1984). Such behaviours are part and parcel of everyday communication and behaviour that may not easily find their way into coherent sets of abstract trait descriptors. Both Murthy and Kumar’s (2007) and Krishnan’s (2002) descriptions of *tamasic* behaviour, however, suggest that *tamasic* may indeed capture a broad array of everyday behaviour that may be functional to survive in a complex society as in India. *Sattvic*, the third factor for both self and peer ratings, seemed to resonate in all seven of the available Big eight marker scales. For self ratings, all beta coefficients except for Extraversion and Virtue were significant (*p* < .001). There is some collinearity (see the variance inflation factor [VIF] in Table 8), especially associated with Agreeableness. Removing Agreeableness only changed Virtue to become a significant predictor (*p* < .002). For peer ratings, the situation was similar, except for the fact that Extraversion also had a significant beta coefficient. Considering the fact that the marker scale for Emotional Stability was not very reliable, the conclusion should be that across self and peer ratings, *sattvic* is especially related to Competence, Conscientiousness and Conventionality. According to Frawley (2006), *sattvic* indeed covers a pretty vast area of personality, cutting across cognitive, temperamental and motivational modalities (Murthy & Kumar, 2007), namely ‘peace of consciousness’ (inner peace, clarity, inner silence and calm), ‘clarity of cognition’ (perception, tolerance, truth and cleanliness), ‘control of mind’ (control of senses and desires, ability to endure pain and detachment from body) and ‘detachment from ego’ (selflessness, devotion, respect for others and compassion). Both the marker scale items and the high loading items on this factor seem to describe the type of people who respond adequately or even ideally to a broad

Table 6. Congruencies between self and peer for solutions with two up to seven factors

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self ratings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Rajasic</em></td>
<td>(6/1)</td>
<td>— .99</td>
<td>— .04</td>
<td>— .01</td>
<td>00</td>
</tr>
<tr>
<td><em>Tamasic</em></td>
<td>(6/2)</td>
<td>.03</td>
<td>.58</td>
<td>.37</td>
<td>.44</td>
</tr>
<tr>
<td><em>Sattvic</em></td>
<td>(6/3)</td>
<td>.03</td>
<td>— .01</td>
<td>81</td>
<td>.09</td>
</tr>
<tr>
<td>Peer ratings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Rajasic</em></td>
<td>(6/2)</td>
<td>97</td>
<td>— .09</td>
<td>— .05</td>
<td>10</td>
</tr>
<tr>
<td><em>Tamasic</em></td>
<td>(6/1)</td>
<td>— 15</td>
<td>— .67</td>
<td>27</td>
<td>00</td>
</tr>
<tr>
<td><em>Sattvic</em></td>
<td>(6/3)</td>
<td>.08</td>
<td>11</td>
<td>— .70</td>
<td>.03</td>
</tr>
<tr>
<td>Antagonistic and deviant</td>
<td>(6/5)</td>
<td>.02</td>
<td>51</td>
<td>.02</td>
<td>.12</td>
</tr>
<tr>
<td>Feeble-minded and silly</td>
<td>(6/6)</td>
<td>.07</td>
<td>— .02</td>
<td>15</td>
<td>.05</td>
</tr>
<tr>
<td>Forgiving and sweet-tongued</td>
<td>(6/4)</td>
<td>.08</td>
<td>18</td>
<td>15</td>
<td>95</td>
</tr>
</tbody>
</table>

Note: decimal points are omitted; to increase readability, correlations of .040 or higher are presented in bold.
variety of situations, and accordingly, this factor taps into the positive characteristics of a variety of factors.

Of the remaining self-based factors, Endeavor (Factor 4) had the strongest relations with Competence, Conscientiousness and Agreeableness, which agrees with the Endeavor interpretation. Factors 5 (Achievement) and 6 (Extraversion) were related to the semantically corresponding Conscientiousness and Extraversion marker scales. Of the remaining peer-based factors, the Agreeableness factor related indeed to the Agreeableness marker scales and with Competence. This makes sense as it was observed earlier that this factor also referred to Extraversion and some typical extraversion traits are part of the make-up of Competence. The second remaining peer-based factor, or ‘Strength’, related to Emotional Stability, which made sense. The last factor, referred to by ‘Conventionality’, had a rather moderate but still highest correlation with the Conventionality marker scale.

### Relationships for ipsatized data

The relevant correlations for self, peer, the triguna and the Big Eight are given in Tables 10 and 11, respectively. For the self ratings, the characterization of the of the first three Hindi factors is quite similar to the one for the raw data, albeit that also the fourth Hindi factor had some tanimate meaning. The first factor has clearly rajasic content and is related to Virtue and Agreeableness of the Big Eight. The third Hindi factor is best characterized as sattvic, again with highest betas for Competence, Conscientiousness and Conventionality, after leaving out Agreeableness because of high VIF value. The second Hindi factor for self, related to
tamasic, turns out to have some non-dramatic but significant betas especially for Conscientiousness, and also for Conventionality. For the peer ratings, the first factor is again identified best by rajasic characteristics, and the second factor now combines characteristics of both sattvic and tamasic, which obscures the overall picture to some extent.

**DISCUSSION**

Although there was good reason to analyse structures with six factors for both self and peer ratings, only three factors turned out to be substantial and stable, substantial in terms of amount of variance explained and stable in terms of both interpretability and congruency between self and peer. Those three factors do not correspond to Big Five factors, nor should they be confused with the Big Three, but they do have three factors do not correspond to Big Five factors, nor interpretability and congruency between self and peer. Those factors obviously reduce the chance of finding well-delineated Big Five factors beyond the triguna.

The ‘positive’ pole of rajasic contains high loading traits indicating a tendency towards maintaining a modest and polite attitude towards others in order to be acceptable. The ‘negative’ pole contains traits revealing a manipulative tendency with the desire to please others to gain benefit. The present rajasic factor showed similarity to Honesty–Humility (Ashton, Lee, Perugini, et al., 2004), witness negative adjectives such as flatterer, deceptive, cunning, busybody and showy. Positive adjectives on this factor, such as friendly, tender-minded, empathetic, and kind, apparently consumed substantial amounts of variance referring to Agreeableness (covered by the two marker scales for Virtue and Agreeableness) and to other Big Five factors, respectively. Sattvic seemed to capture many characteristics of Big Five factors in much the same way the Dutch Big eight factor Competence did: the markers in the Appendix indeed cover Extraversion (e.g. energetic), Agreeableness (e.g. helpful), Conscientiousness (e.g. straightforward), Emotional Stability (e.g. resolute) and Intellect (e.g. gifted).

Table 10. Relations between Hindi factors (ipsatized data, self), Triguna, and Dutch Big Eight

<table>
<thead>
<tr>
<th>Marker scales (N items)</th>
<th>Hindi factors</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Multiple-R</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Triguna</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sattvic (23)</td>
<td>0.12</td>
<td>–0.10</td>
<td>0.73</td>
<td>–0.05</td>
<td>–0.10</td>
<td>–0.28</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td>Rajasic (20)</td>
<td>–0.94</td>
<td>0.16</td>
<td>–0.09</td>
<td>–0.08</td>
<td>–0.11</td>
<td>–0.04</td>
<td>0.97</td>
<td></td>
</tr>
<tr>
<td>Tamasic (21)</td>
<td>–0.07</td>
<td>0.64</td>
<td>–0.26</td>
<td>–0.45</td>
<td>–0.14</td>
<td>–0.04</td>
<td>0.84</td>
<td></td>
</tr>
<tr>
<td>Multiple-R</td>
<td>0.96</td>
<td>0.65</td>
<td>0.77</td>
<td>0.46</td>
<td>0.19</td>
<td>0.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B8</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virtue (12)</td>
<td>0.56</td>
<td>–0.36</td>
<td>0.27</td>
<td>0.09</td>
<td>0.16</td>
<td>–0.16</td>
<td>0.76</td>
<td></td>
</tr>
<tr>
<td>Competence (21)</td>
<td>0.15</td>
<td>–0.37</td>
<td>0.31</td>
<td>0.07</td>
<td>–0.05</td>
<td>–0.52</td>
<td>0.73</td>
<td></td>
</tr>
<tr>
<td>Emotional Stability (6)</td>
<td>0.20</td>
<td>–0.15</td>
<td>0.25</td>
<td>–0.20</td>
<td>–0.15</td>
<td>–0.41</td>
<td>0.60</td>
<td></td>
</tr>
<tr>
<td>Agreeableness (21)</td>
<td>0.47</td>
<td>–0.39</td>
<td>0.42</td>
<td>–0.07</td>
<td>0.00</td>
<td>–0.20</td>
<td>0.77</td>
<td></td>
</tr>
<tr>
<td>Conscientiousness (10)</td>
<td>0.38</td>
<td>0.42</td>
<td>0.11</td>
<td>0.13</td>
<td>0.21</td>
<td>–0.32</td>
<td>0.70</td>
<td></td>
</tr>
<tr>
<td>Extraversion (8)</td>
<td>0.06</td>
<td>–0.22</td>
<td>0.08</td>
<td>0.18</td>
<td>–0.09</td>
<td>–0.65</td>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td>Conventionality (10)</td>
<td>–0.19</td>
<td>–0.32</td>
<td>0.40</td>
<td>–0.26</td>
<td>–0.09</td>
<td>–0.05</td>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td>Multiple-R</td>
<td>0.77</td>
<td>0.49</td>
<td>0.56</td>
<td>0.49</td>
<td>0.46</td>
<td>0.74</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: to increase readability, correlations of |0.40| or higher are presented in bold; multiple correlations are given in italics.

Table 11. Relations between Hindi factors (ipsatized data and peer), triguna and Dutch Big Eight

<table>
<thead>
<tr>
<th>Marker scales (N of items)</th>
<th>Hindi factors</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Multiple-R</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Triguna</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sattvic (23)</td>
<td>0.10</td>
<td>0.60</td>
<td>–0.34</td>
<td>0.32</td>
<td>–0.20</td>
<td>0.18</td>
<td>0.81</td>
<td></td>
</tr>
<tr>
<td>Rajasic (20)</td>
<td>–0.93</td>
<td>–0.07</td>
<td>0.06</td>
<td>–0.20</td>
<td>0.16</td>
<td>0.02</td>
<td>0.97</td>
<td></td>
</tr>
<tr>
<td>Tamasic (21)</td>
<td>–0.18</td>
<td>–0.59</td>
<td>0.30</td>
<td>–0.12</td>
<td>–0.38</td>
<td>–0.14</td>
<td>0.81</td>
<td></td>
</tr>
<tr>
<td>Multiple-R</td>
<td>0.94</td>
<td>0.77</td>
<td>0.41</td>
<td>0.36</td>
<td>0.50</td>
<td>0.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B8</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virtue (12)</td>
<td>0.48</td>
<td>0.22</td>
<td>–0.35</td>
<td>0.38</td>
<td>0.09</td>
<td>0.15</td>
<td>0.76</td>
<td></td>
</tr>
<tr>
<td>Competence (21)</td>
<td>0.04</td>
<td>0.13</td>
<td>–0.45</td>
<td>0.46</td>
<td>–0.25</td>
<td>0.30</td>
<td>0.77</td>
<td></td>
</tr>
<tr>
<td>Emotional Stability (6)</td>
<td>0.26</td>
<td>0.20</td>
<td>–0.33</td>
<td>0.02</td>
<td>–0.37</td>
<td>0.08</td>
<td>0.60</td>
<td></td>
</tr>
<tr>
<td>Agreeableness (21)</td>
<td>0.33</td>
<td>0.36</td>
<td>–0.35</td>
<td>0.47</td>
<td>0.13</td>
<td>0.11</td>
<td>0.73</td>
<td></td>
</tr>
<tr>
<td>Conscientiousness (10)</td>
<td>0.37</td>
<td>0.19</td>
<td>–0.51</td>
<td>0.14</td>
<td>0.06</td>
<td>0.16</td>
<td>0.70</td>
<td></td>
</tr>
<tr>
<td>Extraversion (8)</td>
<td>–0.08</td>
<td>0.13</td>
<td>–0.52</td>
<td>0.20</td>
<td>–0.31</td>
<td>0.15</td>
<td>0.67</td>
<td></td>
</tr>
<tr>
<td>Conventionality (10)</td>
<td>–0.25</td>
<td>0.29</td>
<td>–0.32</td>
<td>0.19</td>
<td>–0.13</td>
<td>–0.16</td>
<td>0.57</td>
<td></td>
</tr>
<tr>
<td>Multiple-R</td>
<td>0.74</td>
<td>0.44</td>
<td>0.63</td>
<td>0.67</td>
<td>0.60</td>
<td>0.45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: to increase readability, correlations of |0.40| or higher are presented in bold; multiple correlations are given in italics.

represent at least in part the Agreeableness domain of personality. The adjectives loading on the sattvic factor convey being clear minded, being organized, without being distraction and being in balance with others. This description coincides well with the main gist of Competence, Conscientiousness, Conventionality and also Agreeableness (Tables 1 and 2; see also the relevant markers in the Appendix).

The adjectives that loaded on the tamasic factor reflect a cynical and destructive tendency, apparently at the cost of others. Individuals with such traits have little control over emotions, play the system and play others, often evoked by impulse. No apparent consistent relations with any of the Big Five or Big eight were observed.

From a Western perspective, these findings may come as a surprise, given the fact that, although with variations and not always fully, the Big Five were often relatively easily identified in psycho-lexical material (see, however, De Raad, Barelds, Levert, et al., 2010). Much of what the Big Five is about what seems to be related to personal initiative, entrepreneurship, self-realization, autonomy and individual responsibility, especially expressed in Extraversion, Conscientiousness and Intellect or Intellectual Autonomy. According to Hsu (1985), the concept of personality is a typical expression of the Western emphasis in individualism. In non-Western civilization, however, the concept of personality is much less central for the understanding of behaviour (cf. Triandis, 1995). In Eastern conceptions, as for example, conveyed in Confucianism and Buddhism, relational characteristics are much more constitutional of the core of personality (e.g. Church, 2001).

Indians are primarily characterized as collectivists (Hofstede, 1980; Triandis, 1995), but they also maintain an individualistic orientation in life with a ‘well-protected secret’ self that contains highly personal thoughts, feelings and fantasies (Roland, 1987). The core characteristics of the Indian psychological make-up are family orientation, preference for hierarchy and maintenance of personalized relationship, which are indeed the major dimensions of collectivism (Sinha et al., 1994). At the same time, in everyday life, especially outside the family context, Indians are selfish, display extreme forms of egotism and are said to lack consideration for others. This pattern of behaviour, however, sometimes also extends to the family context. These two faces of Indians indicate a paradox in the Indian mentality (Sinha, 1999, pp. 23–24), characterized by a co-existence of contrasting values and behaviour dispositions (Sinha, 1988; Sinha & Tripathi, 1994).

If personality is shaped under cultural–ecological conditions, some of this paradoxical nature is possibly playing a role in the appreciation of personality. Up to a certain extent, this culturally informed way of evaluating personality may explain the different Hindi personality trait structure in comparison with Western findings.

More generally, psychological studies in non-Western cultures point to a variety of constructs that seem to be culturally specific. In Japanese culture, for example, persons ‘are often described in an idiom of rashii’ (cf. Markus & Kitayama, 1998, p. 73), referring to ideal image of a given social role. Although one student can be distinctively diligent, and the other can be distinctively spirited, they both may be student rashii, but they are each rashii in their own ways (Markus & Kitayama, 1998, p. 73). Individual distinctions are made in a context-contingent way. Another example is the Chinese renqing, which is a variant of the universal equity rule, but much more elaborated and more tightly bound up with ideas of reciprocity than it is in many other cultures (Hwang, 1987, p. 946). In psychological terms, if an individual can understand other people’s emotional responses to various circumstances of life, feeling happy, sad and so on, then we may say that such a person knows renqing. Acting out of renqing, obligations of reciprocity are heavily shaped by the hierarchically structured network of the culture (Hwang, 1987, p. 953).

Psycho-lexical studies in Asia have shown some resemblance to Big Five constructs but one-to-one correspondences between, for example, Chinese trait dimensions and the Big Five were hard to find (Cheung, Conger, Hau, Lew, et al., 1992; Yang & Bond, 1990; Yik & Bond, 1993; cf. Church, Reyes, Katigbak, & Grimm, 1997). In a comparison of 14 trait taxonomies, most of Western origin, but including Tagalog (Church et al., 1997), it was found for structures with two up to six factors, that Tagalog had the most deviant structure for all distinguished factors in the comparisons.

One might object that the present study used a relatively small set of trait terms to obtain ratings, namely 295. It is true indeed that the majority of psycho-lexically based studies used 400 to 500 traits, but in some cases, smaller numbers of trait descriptors were used with excellent results (Caprara & Perugini, 1994: 285 terms; Szarota, 1996: 287 terms). Therefore, we do not consider the number of adjectives used in this study as a serious limitation.

The present study used students as participants; to some extent, this is a limitation of the study, as the structure is based on a clearly restricted subset of the population. Compared with other psycho-lexical studies, it is not a problem, as the majority of these studies were based on ratings from student-participants. One good reason to use students is that adjectives are of a somewhat abstract nature, and they are more easily understood by participants who have a certain level of education. Yet it remains true that it is generally advisable to involve non-student participants in this type of study too.

The main limitation of this study is probably in its deviant results, not in the procedure that was followed; that procedure was pretty much along the traditional lines of the psycho-lexical approach. The results are indeed different if seen from a Western-oriented Big Five perspective. For Indians, the findings are quite ‘natural’, as they agree with the contemporary everyday personological understanding (e.g. Stempel et al., 2006).

**CONCLUSION**

The present study mapped the taxonomic structure of personality using personality descriptive adjectives of the Hindi language. The findings indicate support for a three-dimensional
system covering the so-called triguna, with sattvic (goodness, harmony and essence), rajasic (passion, mobility and energy) and tamasic (dullness, indifference and inertia). These three factors, explaining the largest bulk of the variance, are not the Big Three. Only the additional set of three smaller factors resemble of the Big Three or of the related Big Five factors, namely Extraversion, Agreeableness and Conscientiousness, but from self to peer, these findings were far from stable.

So, although the present findings lend support for a relatively strong three-dimensional structure, they do not provide support for the Big Three.

Although the procedure in this study agrees with the principles of other psycho-lexically performed studies, and the list of trait terms extracted from the Hindi lexicon may be expected to cover the domain of the Hindi trait lexicon rather well, the findings lend more support to a strong cultural influence in terms of differences in appreciation of the trait items than to an understanding in terms of a robust cross-culturally replicable system of traits (cf. Heine & Buchtel, 2009).

REFERENCES


**APPENDIX**

**Markers of triguna**

*Sattvic*: well-behaved, impartial, competent, gentleman, organized, understanding, virtuous, capable, caring, adored, scholar, calm, humane, committed, gentle, civilized, sober, realist, harmonious, simple, resourceful, level-headed

*Tamasic*: crooked, restless, arrogant, neglected, egoist, frustrated, a-social, intolerant, disorganized, mean-minded, orthodox, snobbish, mischievous, dissatisfied (2×), self-destructive, obstinate, prudish, unsuccessful, irritable, indecent

*Rajasic*: hypocrite, flatterer, cunning, deceptive, busybody, insensitive, violent, bully, cruel, showy, boastful, quarrelsome, foul-mouthed, versus ambitious, friendly, hard-working, well-mannered, smart, sociable, knowledgeable

**Markers of Big Eight**

*Virtue*: friendly, loyal, good, good character, civilized, honest, polite, kind, benevolent, gentle, respectable, virtuous  

*Competence*: capable, competent, energetic, entertaining, flamboyant, gifted, helpful, imaginative, impartial, leader, open-minded, optimist, realist, resolute, resourceful, sagacious, scholar, splendid, straightforward  

*Emotional Stability*: balanced, calm, self-controlled, grownup, strong, strong willed  

*Agreeableness*: amiable, caring, contented, cooperative, empathetic, forgiving, generous, gentleman, grateful, harmonious, humane, humble, peace-loving, pious, religious, responsible, sociable, soft-spoken, sweet-tongued, sympathetic, tender-minded  

*Conscientiousness*: ambitious, dedicated, disciplined, efficient, hard-working, methodical, organized, perseverant, persistent, workaholic  

*Hedonism*: none  

*Extraversion*: active, assertive, cheerful, extroverted, lively, smiling, spontaneous, witty  

*Conventionality*: adaptive, fatalist, devout, dependent, lethargic, obedient, ritualistic, simple, traditionalist, well-behaved