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Personality in Swahili Culture: A Psycho-Lexical Approach to Trait Structure in a Language Deprived of Typical Trait-Descriptive Adjectives

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This study was an endeavor to map out a personality trait structure of the Swahili language that may be used to develop indigenous eastern African personality assessment instruments. We followed the psycho-lexical approach where we not only identified trait terms from the Swahili dictionary but also from free descriptions collected from indigenous Swahili speakers. In combination, these two routines led to a pool of 3,732 personality-relevant terms, which was reduced in several steps to a set of 948 terms, identified as the most relevant trait-descriptive terms, including a small set of 26 adjectives, a large set of 531 nouns, and a substantial set of 391 verbs. This working set of 948 terms was lastly reduced to a final set of 661 most useful terms, converted into brief communicable sentences based on 439 nouns (comprising 250 type nouns and 189 attribute nouns), 199 verbs, and 23 adjectives. The list of 661 items was used to collect self and peer ratings from 480 university and high school students. An analysis of ratings on the 661 items revealed a six-factor personality trait structure that included Virtue, Imprudence, Negative Valence, Self-importance, Deceptiveness, and Attentive Conversation. Separate analyses were done using the type nouns, the attribute nouns, and the verbs, to assess the differential contribution of these word classes to the makeup of these Swahili Six.

Keywords: personality traits, trait taxonomy, psycho-lexical approach, Swahili, cross-cultural

Personality refers to relatively stable and partly heritable characteristics of individuals that affect the way they feel, think, and behave (e.g., Eysenck & Eysenck, 1985). Numerous studies have shown personality characteristics to be related to a variety of important life outcomes, such as physical and psychological health; quality of relationships with peers, family, and romantic others; occupational choice, satisfaction, and performance; and finally community involvement, criminal activity, and political ideology (for an overview, see, e.g., Ozer & Benet-Martínez, 2006). Not surprisingly, there are several practical contexts in which the assessment of personality characteristics is highly relevant, such as the selection of personnel, school settings, and clinical (psychological and psychiatric) settings.

In order to effectively assess relevant personality characteristics, it is essential to have reliable and valid standardized personality questionnaires. Like other economically deprived areas of the world, most African countries currently lack measures of personality traits that are standardized and validated for this region. The review on personality assessment in the French-speaking Western part of Africa by Rossier et al. (2017) is exemplary for this observation.

Africa is the second (after Asia) richest continent in terms of number of languages, with the sub-Saharan Niger–Congo languages constituting the largest group and Bantu as its largest branch, geographically covering most of Central, Southeast, and Southern Africa. The present study focuses on the most spoken Bantu language, namely, Swahili, and seeks to use the psycho-lexical approach to examine which dimensions are most relevant in summarizing the structural details of the personality language in Swahili. Realizing this goal not only enables the development of assessment instruments with direct relevance to the Eastern African region but may also add to the integration of cross-culturally recurrent findings on trait factors and those that have a more culturally specific relevance.

Psycho-Lexical Approach to Personality

The question concerning the number and content of the most important personality factors has been a central focus of personality psychology since at least the beginning of the previous century (De Raad, 1998). Although theories have been proposed regarding the number and content of the most basic personality factors (e.g., Eysenck's model, capturing Psychoticism, Extraversion, and Neuroticism; Eysenck & Eysenck, 1985), most recent studies in this field have adopted the nontheoretical psycho-lexical approach,

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which aims to comprehensively catalog all relevant personality-descriptive characteristics in a language. This approach assumes that

> Those individual differences that are of most significance in the daily transactions of persons with each other will eventually become encoded into their language. The more important is such a difference, the more people will notice it and wish to talk of it, with the result that eventually they will invent a word for it. (Goldberg, 1981, pp. 141–142; cf. Goldberg, 1982)

This assumption, popularized as the "lexical hypothesis," implies that relevant individual differences are expected to be documented in the natural language and that, therefore, (most of) these individual differences may be observed in a lexicon of that language. The more important an individual difference is, the more words describing (aspects of) this individual difference will be available. By selecting personality-descriptive terms from a lexicon, administering these to participants, and then reducing these terms (usually several hundreds) to clusters of related terms (usually by means of factor analysis), the psycho-lexical approach tries to identify those personality characteristics that are most important (e.g., De Raad, 2000).

In the few decades after Goldberg (1981, 1982), psycho-lexical studies in a variety of, especially Indo-European, languages have not only independently produced inclusive word lists with trait-descriptive utility but also have arrived at clusters of trait semantics that fairly summarize the trait vocabularies in those languages. Many of those studies have taken the Big Five, suggested by Tupes and Christal (1961, 1992) and by Norman (1963), as a reference model. The model, comprising the factors Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Intellect (Goldberg, 1990), has since then been of great significance as a medium for discussing human personality. Although the Big Five model has built an international reputation for its usefulness in diverse contexts of research and application, it has also been subject of serious criticisms, relating to the claim of the Big Five factors covering and representing the entire trait domain (e.g., Almagor et al., 1995; Ashton & Lee, 2001; cf. De Raad & Barelds, 2008) and relating to its suggestion of universality (e.g., De Raad et al., 1998, 2010).

Saucier and Iurino (2020) recently suggested to stretch the extraction of factors to what seems maximally possible according to, for example, parallel analysis (Horn, 1965). Such a step is of interest both from a theoretical and a predictive point of view, yet does not agree well with the need for intelligibility and communication in the context of psychological assessment (cf. De Raad et al., 2023).

Although it has been suggested that the Big Five model is cross-culturally tenable, this suggestion is at odds with earlier findings indicating that the Big Five factors are not all cross-culturally replicable (cf. De Raad et al., 1998; Hofstee et al., 1997). About 30 studies have so far used the psycho-lexical approach to develop taxonomies of personality descriptors in different languages, such as German, Dutch, English, Italian, French, Polish, Czech, Hungarian, Filipino, Korean, Spanish, Turkish, Hebrew, and Greek. The large majority of these studies have focused on European languages. The general message from these studies is that three, or at best four, of the Big Five factors are replicable across European languages (De Raad et al., 2010). The few structures of personality that have been found in non-European languages (most notably Hindi and Filipino) have been found to deviate most from the Big Five model. The Hindi structure (Singh et al., 2013), for example, consists of six personality factors, of which three firmly stand out. These three factors—rajasic, tamasic, and sattvic—bare little or no resemblance to the Big Five factors, but rather reflect the traditional *triguna*, roughly describing passion and energy, dullness and indifference, and goodness and harmony, respectively.

Thalmayer et al. (2020) put two different African languages to the psycho-lexical test, namely, the East African Maa, through a sample from the Southern Kenyan Rift Valley, and the West African Supyire, through a sample from the Sikasso Region of Southern Mali. Maa belongs to the Nilo-Saharan language family, and Supyire belongs to the Niger–Congo language family. The results from both samples emphasized differentiation along morality-related dimensions (circling around respect, or lack thereof), and they provided insight in local indigenous themes such as competence, power, and strength. The Big Five did not emerge. Thalmayer et al. (2021) performed a psycho-lexical study in Khoekhoegowab, a language spoken in Southern Africa, yet non-Bantu, with data collected in Namibia. Up to levels with five or six factors, the results seem to refer to a strong evaluative theme as indicated by the Big One and to a rich variety of indigenous factors with labels of which quite a few are certainly not alien to the trait semantics as covered by models such as the Big Five: Prosocial Diligence, for example, can well be understood as a blend of Big Five Conscientiousness and Agreeableness, and Courage is well caught by the combination of Big Five Emotional Stability and Intellect (cf. Hofstee et al., 1992).

The first large-scale psycho-lexical study in sub-Saharan Africa was carried out in South Africa (Nel et al., 2012), a study that featured the 11 official languages of South Africa including nine Bantu languages (Zulu, Xhosa, Swati, Tswana, Ndebele, Southern Sotho, Northern Sotho, Tsonga, and Venda) in addition to English and Afrikaans. That project is characterized by an extensive qualitative process of cleansing (e.g., removing pure evaluative words) and categorization into clusters and subclusters, ultimately leading to a system with nine clusters that fitted well in a six-dimensional structure with Big Five-related factors, with the Agreeableness domain captured by two factors, one describing Positive Social–Relational traits and the other describing Negative Social–Relational traits (Fetvadjiev et al., 2017). The results have been used for the construction of the South African Personality Inventory (SAPI; Fetvadjiev et al., 2015), an emic-driven tool for a multicultural society.

An etic-driven study involving adapting a Big Five-based instrument (BFI; John et al., 1991) to the Swahili-speaking community in Eastern Africa only partially replicated the Big Five model while using both raw and ipsatized data (Garrashi et al., 2023).

Based on the above results, we expect that the Big Five model might not be the optimal personality model to be used in Eastern Africa (in Swahili). The present research, aiming at examining the structure of personality in Swahili following the psycho-lexical approach, may encounter breaches of Big Five-related expectations, due to the specific routines of the approach and its assumptions, but maybe even more due to the specifics of the Swahili language and the culture of which it is the main communication vehicle.

The Swahili Language and Personality

Swahili, also referred to as Kiswahili, is the most widely spoken Bantu language in Africa. The language is indeed basically African Bantu, but with strong Arabian influences through longtime contacts with Arabian traders in the coastal area (cf. Coleman, 1971;

Mwaliwa, 2018; Thompson, 2013). The word *Swahili* is itself an Arabic loanword, meaning "of the coast." It is the mother tongue (first language) of the Swahili people, who live along the east African coast stretching from southern Somalia all the way to northern Mozambique (Appiah & Gates, 1999; Encyclopedia Britannica, 2005). Although only about 15 million people speak Swahili as their mother tongue, Swahili is spoken as a second language by more than 100 million people, most of whom are found in eastern and central Africa (Appiah & Gates, 1999; Encyclopedia Britannica, 2005). Swahili is a national and/or official language in Tanzania, Kenya, Uganda, and the Democratic Republic of the Congo. Swahili is also one of the official languages of the African Union. At the global level, the United Nations Development Programme launched its first Swahili edition of the Human Development Report in Kenya in 2013, thus putting Swahili on the path toward joining Arabic, Chinese, English, French, Russian, and Spanish, as the 7th official and working language of the United Nations. While the Swahili language has a number of local dialects, modern standard Swahili, Kiswahili *sanifu*, has its origin in *Kiunguja*, the Zanzibar dialect.

When considering the personality-descriptive potential of Swahili, an immediate apparent issue is its known small number of adjectives which at first sight may seem in conflict with a feature of the lexical hypothesis. The main reason to focus on adjectives has been that they typically function to describe qualities of objects or persons. Indeed, most previous personality taxonomic studies have focused on personality-descriptive adjectives (De Raad & Barelds, 2008). While in Indo-European languages adjectives are in plenty, certain languages, such as Central Mexican *Otomi* (Palancar, 2006), Tibeto-Burman *Jinghpaw* (Kurabe, 2019), Austronesian *Muna* (Van den Berg, 1989), and *Swahili*, have been found to be less endowed with adjectives or have no adjectives at all (cf. Dixon, 1977, 1982), implying that the number of personality-descriptive adjectives is also small.

The number of adjectives contained in the Swahili dictionary *Kamusi ya Kiswahili Sanifu* (edition 2004) is counted to be about 300 (Kahigi, 2008; cf. Lusekelo & Mpobela, 2017). That set includes adjectives describing qualities with no relevance for personality (e.g., colors, sizes), which would leave a rather small list of adjectives that may be used for personality description. In comparison, Brokken (1978) identified 8,690 personality-relevant adjectives in a comprehensive Dutch dictionary (excluding those referring to colors, sizes, and such), and Ostendorf (1990) identified 4,827 personality trait relevant adjectives in a German dictionary. In the vast majority of the more than 30 psycho-lexical studies using dictionaries as trait-descriptive resource, the numbers of personality-relevant adjectives counted several thousands.

Thus, for the exploitation of the lexicon of the Kiswahili language to make its personality-descriptive potential employable for personality assessment, the class of adjectives is certainly not the most promising one.

Of the small number of adjectives that are in fact recorded in the Swahili dictionary, those that may seem appropriate for personality description actually must first be transformed into nouns before they can meaningfully be used to describe a person, with the exception of Arabic loanwords which often remain invariable. For example, the term *vivu* ("lazy") is listed in the dictionary as an adjective, but in order to use it to describe a person, it has to be transformed into a type noun by adding a prefix *M* to make it *Mvivu* (best translated as "a lazy person"), or into an attribute noun (laziness) by adding the prefix *U* to make it *Uvivu*. The majority of type nouns and attribute nouns are provided with these prefixes. Table 1 gives a few more examples of adjective forms that have to be transformed to either of the two noun forms before they can be used to talk about people.

In such cases where there is a scarcity of adjectives, it may be expected that the adjectival-attributional function is generally dealt with by other word categories such as *nouns* and *verbs*. The latter appears true indeed for Swahili, where person talk takes place especially by using nouns as the more natural personality-relevant word category; the class of verbs may form a supplementary role in this.

From language to language, psycho-lexical work seems to have silently assumed that word classes can be compared directly across languages, but that is not the case (cf. Croft, 2000; Haspelmath, 2012). In addition to the fact that different word classes do not contain words in similar proportions across languages, the identification of words to belong to a certain class does not follow the same criteria. Restricted to Western linguistics, it was only in the 19th century that adjectives and nouns emancipated from the single category of *nomen*, pointing to a certain level of descriptive similarity between adjectives and nouns.

The "lexical hypothesis" that gives direction to psycho-lexical studies does, in fact, not exclude other word classes. A few psycho-lexically based studies have actually been performed with valuable results using only nouns (e.g., De Raad & Hoskens, 1990; Di Blas, 2005; Henss, 1998; Saucier, 2003a) or only verbs (e.g., De Raad et al., 1988; Hřebíčková et al., 1999). With respect to the use of nouns for personality description, one can make use of so-called type nouns (e.g., *pessimist*) or attribute nouns (e.g., *pessimism*), a distinction made by John et al. (1984, p. 85; cf. also Angleitner et al., 1990). Di Blas (2005) did a first study showing the relevance of attribute nouns for personality-descriptive purposes.

Because generally other word categories may communicate trait meanings as well (e.g., *patience*, *to procrastinate*, *careerist*), the restriction to the use of adjectives may result in a suboptimal representation of trait semantics (Barelds & De Raad, 2015; De Raad & Barelds, 2008). In Hungarian, nouns and adjectives are by their form very often not even distinguished (Szirmák & De Raad, 1994). De Raad and Barelds (2008) have shown that the inclusion of the different available word classes provides for a fuller coverage of the trait domain.

The specific *method* employed to arrive at a comprehensive personality vocabulary may also result in more prominent roles for other word categories. The use of free descriptions and of

Table 1
Swahili Adjectives and How They Can Be Used in Person Descriptions

Adjective form	Type noun *(English)*	Attribute noun *(English)*
Vumilivu	Mvumilivu *(patient)*	Uvumilivu *(patience)*
Tulivu	Mtulivu *(calm)*	Utulivu *(calmmness)*
Vivu	Mvivu *(lazy)*	Uvivu *(laziness)*
Nyenyekevu	Mnyenyekevu *(humble)*	Unyenyekevu *(humility)*
Roho	Mroho *(greedy)*	Uroho *(greed)*

Note. For the nouns, the English translations are provided in italics in parenthesis.

interviews, instead of exploiting dictionaries, for example, tends to result in an increase of behavioral descriptions and thus in the use of verbs (e.g., Valchev et al., 2013; cf. De Raad, 1985).

The more general issue with verbs is the transitory nature of what they refer to (cf. Bolinger, 1980), which makes them often not fit immediately for communicating stable characteristics of people. Very often, additional information is needed, in order to communicate its (personality relevant) meaning: To help yourself is different from to help others. A specific thing with using Swahili verbs for personality-descriptive use is that, comparable to the use of adjectives, the verbs have to be provided with a prefix. Take the Swahili verb *foka* ("reprimand"); a person might be said to have the tendency to reprimand other people and, thus, be called a "reprimanding person" or "a person who reprimands." In order to make the word *foka* useful to communicate on the actual enduring physical action of reprimanding, a prefix *ku* is added to make it *kufoka*, as in the expression *mtu wa kufoka* ("a reprimanding person"), or it has to undergo a more advanced transformation into a type noun: *mfokaji* ("one who reprimands"). Very often, though, verbs do not reach the stage where they can play an adjectival-attributional role without being turned into somewhat lengthy and rather uncommon expressions.

The Swahili Culture and Personality

In Western cultures, personality is a virtually unavoidable concept, a celebrated commodity in popular magazines, in furnishing career planning, and in individualization of commercial products. Personal initiative and individual responsibility represent important values that may play a role in the appreciation of certain personality characteristics and may foster the articulation of distinctive personal features (cf. De Raad, 2006). In non-Western cultures, personality seems to be much less central for the understanding of what motivates individual persons. According to Triandis (1995), for example, personality is less central in collectivistic cultures than in individual, Western, cultures. In East and South Africa, the emphasis is on interdependence and need for community, rather than on the individual autonomy. The underlying philosophy, expressed in the concepts Utu (East African) and Ubuntu (Southern African), disseminates the view that each person should live in accordance to the norms of affiliation and companionship, emphasizing dignity for all. This implies espousing solidarity, sharing, and inclusiveness.

Although Utu–Ubuntu is directly translatable in humanness, or in being human, the wider tenor is that one can only be human through the recognition of others, as expressed in the maxim "I am well if you are well" (cf. Eze, 2016). According to Mugumbate and Chereni (2020), an authentic individual human being is part of a larger and more significant relational, communal, societal, environmental, and spiritual world. Politically, Utu–Ubuntu emphasizes collective prosperity and sharing, at the same time recognizing individual differences in capacities, talents, and potencies.

The Present Study

The goal of the present study is to develop an indigenous taxonomy of Swahili personality factors that is sufficiently systematic, comprehensive, and well structured to be useful in the construction of a personality inventory, to be used in a variety of practical settings. For this purpose, we use an integrated psycho-lexical approach that combined a dictionary study with a field study reflecting in part the approach followed in the SAPI project in South Africa (Cheung et al., 2011; Nel et al., 2012). This combined approach of using a dictionary and free descriptions from the field is adopted because Swahili consists of a number of dialects and the dictionary is based on the standard version of the language which borrows heavily from the Zanzibar dialect. Guided by the Bantu belief that "a person is only a person through others," and hence "a person perceives himself/herself through the perception of others" (Nel et al., 2012, p. 920), the present study takes as its fundamental database the set of words referring to individual differences that are of sufficient social significance, widespread occurrence, and useful to make distinctions, to have been encoded and retained as descriptive predictors in the Swahili language during the course of its development.

An important theme in this study is certainly the primary use of a large set of nouns in the description of personality traits, in comparison to the use of adjectives. For American English, for example, where trait-descriptive adjectives are plenty, Rodin (1972) found that person descriptions of different forms (behavioral: "he yells at people"; trait: "he is aggressive"; metaphors: "he is an injured alligator") differ in their communicational informativeness, with, of the three forms, behavioral descriptions communicating most accurately and metaphors least accurately. Nouns in general, and maybe indeed especially those of the metaphoric type, may have a stronger persuasive function, witnessing their vast presence in the domain of personal insults in various languages (e.g., De Raad et al., 2005). Goldberg (1982) warned against using nouns for personality description because of their strong evaluative loading. Noun-based trait taxonomic studies by De Raad and Hoskens (1990) in Dutch, Henss (1998) in German, and Saucier (2003a) in English indeed confirmed rather strong clusters of evaluative character, but in addition, also demonstrated a rich vocabulary of trait differentiation, comparable to what is generated by the use of adjectives. In another Dutch study on nouns by De Raad (1992), the data were first ipsatized (standardized per person), in order "to neutralize some of the idiosyncrasies in using the rating scales" (p. 22), with a strong reduction of the evaluative emphasis in the noun factors as a result.

Given the different unknown factors (lack of adjectives, a non-Indo-European language and culture), it seemed wise to follow the conventional tracks of the psycho-lexical approach. This involves the exploitation of the Swahili language for its personality-descriptive potential with an emphasis on what is quintessential to be implemented in personality assessment systems, with instruments based on structures such as the Big Five as referential examples.

The present research to arrive at a comprehensive taxonomy of Swahili personality descriptors comprises two parts. The first part (Part 1) consists of constructing a full list of trait-descriptive terms that may be considered to adequately cover the semantics of the Swahili personality vocabulary. In order to optimize the chances for a full personality trait vocabulary, we not only followed the psycho-lexical standard by exploiting a tangible dictionary but also examined the actual lexicon from where people draw to communicate about personality characteristics in daily life. This first construction part consists of three steps. The first step involves the extraction of trait-descriptive terms from the Swahili dictionary (*Kamusi*). Although this dictionary is based on standard Swahili, it reflects much of the Zanzibar dialect and possibly less of other Kiswahili dialects. For this reason, we also followed a second step that describes the extraction

of trait-descriptive terms from free self and peer descriptions, collected from a heterogeneous sample of Swahili speakers from the Kenyan coastal area. The third step concerns the combination of the results of the two previous steps and the preparation of the final list of items to be used in the second part (Part 2). In this latter, second part, we report on the determination of the personality structure in the Swahili language by conducting an exploratory factor analysis of the self- and peer ratings obtained on the terms generated in Part 1.

Transparency and Openness

We inform in detail on how the data sets are collected, on the measures used, and on subsequent data exclusions. The raw data set used to arrive at conclusions is posted in the repository of the University of Groningen, The Netherlands. The data set can be accessed upon request. The methods toward the final processed data are given in the method sections. The recruitment of samples of participants is described, and the size of the samples was done in agreement of relevant rules for sufficient power. The present study was not preregistered, but was performed according to standards applied in the relevant field of personality research. Hypotheses were not formulated, since the approach followed is largely exploratory in nature.

Part 1: Constructing a Full List of Trait-Descriptive Terms

Method

This study has been reviewed and approved by the Ethics Review Committee of Pwani University, Kenya, under reference number ERC/PHD/006/2015.

First Step: Extraction of Trait-Descriptive Terms From the Swahili Dictionary (Kamusi)

We used the *Kamusi ya Kiswahili Sanifu, Toleo la Tatu* (Taasisi ya Uchunguzi wa Kiswahili, 2013), Dictionary of Standard Swahili, 3rd Edition, prepared by the University of Dar es Salaam's Institute of Kiswahili Research and published by Oxford University Press. This *Kamusi* has more than 285,000 entries.

We used the same selection criteria as described in De Raad and Barelds (2008). Personality-relevant terms were generally defined as all those terms (adjectives, nouns, and verbs) that could be used "to distinguish the behavior of one human being from that of another" (Allport & Odbert, 1936, p. 24). Specifically, we used the following inclusion criteria:

1. Call a term personality descriptive if it could be used to answer the following question: "Yeye ni mtu aina gani?" (What kind of a person is he/she?).
2. Call a term personality descriptive if it could be used to complete any of the following sentences:
   "Yeye ni mtu (ambaye) … … … ." (He/she is a … … … . person).
   "Yeye ni mtu mwenye … … … … …" (He/she is a person with … … … …).
   "Yeye ni mtu anayependa/asiyependa … … … ." (He/she does/does not [verb] frequently).

Participants, Procedure, and Results

The first author and two research assistants (undergraduate students both majoring in Psychology and minoring in Kiswahili, at Pwani University in Kilifi, Kenya), independently, carried out the culling process using the *Kamusi*. The first author went through the entire *Kamusi* from A to Z, while the two research assistants divided the *Kamusi* into two, one handling A to M and the other N to Z. The procedure was to read each page and select all adjectives (e.g., *ajwadi*—generous), nouns (e.g., *mgomvi*—quarrelsome person, *ugomvi*—quarrel, *wivu*—jealousy), and verbs (e.g., *kugombana*—quarreling, *kunung'unika*—grumbling) that could be used to answer/complete any of the questions/sentences in the inclusion criteria. The guiding principle was to be as inclusive as possible, and if one was not sure as to whether a word fits the inclusion criteria or not, the word was to be picked but written with a star symbol against it.

Culling Personality-Relevant Words. The two research assistants managed to identify a total of 3,390 personality-relevant terms from the dictionary, while the first author identified 3,420 terms. These two lists were combined and screened for overlap; duplicates and synonyms were removed, leaving a list of 2,938 terms. Because of the "overinclusion" instruction, 58 adverbs were included in this list, and also 44 terms that could not be unambiguously assigned to one of the three main word classes (nouns, verbs, and adjectives). Since the main target of the present study was to focus on adjectives, nouns, and verbs, the research team decided to exclude these 102 terms from further consideration, leaving a starting list of 2,836 possibly relevant adjectives, nouns, and verbs, as presented in Table 2 (Dictionary selection panel). This list went through three more phases of scrutiny each resulting in a reduction before arriving at the final and optimal list in terms of both usefulness and comprehensiveness.

Reduction Phase 1. Four judges took part in this phase, all four first-language speakers in Swahili (the first author, two majors in psychology, and one major in Swahili language and literature). They went through the list of 2,836 terms and marked all the terms they were unfamiliar (U) with. All terms that were marked U by at least three judges were excluded from further analysis. A total of

Table 2
Person Descriptors Culled From the Dictionary and From Free Descriptions

Word classe	Starting list	Phase 1 reduction	Phase 2 reduction	Final reduction
Dictionary selection panel				
Adjectives	188	147	42	22
Nouns	1,507	1,090	652	478
Verbs	1,141	819	449	282
Total	2,836	2,056	1,143	782

Word classe	Starting list	Final reduction
Free-description selection panel		
Adjectives	23	15
Nouns	545	208
Verbs	328	168
Total	896	391

2,056 words thus remained: 147 adjectives, 1,090 nouns, and 819 verbs (see Table 2).

Reduction Phase 2. The four judges (from Phase 1) together went through the list generated in Phase 1, and all terms that could fit in any of the following five categories, were, through consensus, considered nonpsychological traits and were therefore excluded from further analysis:

- Physical attributes, for example, mrembo (pretty), mfupi (short), mnene (fat), mrefu (tall).
- Masculine/feminine, for example, changudoa (female prostitute).
- Words expressive of specific religious traditions, for example, msalihina (prays a lot). A term like mchamungu (pious) would be included.
- General terms/evaluative, for example, mbaya (bad), mwema (good).
- Socioeconomic status, for example, fukara (very poor), mnyonge ([socioeconomically] weak), duni (low class).

A total of 913 words were excluded using these criteria, leaving a list of 1,143 words for further analysis. This list of 1,143 terms comprised 42 adjectives, 652 nouns, and 449 verbs (see Table 2).

Reduction Phase 3. The research team used the noun as the reference word when eliminating redundancy from the list, since the noun had become established to be the most natural trait-descriptive word class in Swahili. All terms, across all word categories, touching on a trait that had already been expressed using a noun, were excluded from further analysis. Within the class of nouns, preference was given to the *type noun*, since through the use of a type noun a trait is more directly attached to a person and it is seen as the more natural vehicle to communicate on personality, while the *attribute noun* is generally more abstract (representing ideas and concepts) and more distant from actual communication. For example, *mwizi* (thief), which is a type noun, would be retained but *wizi* (theft; attribute noun) and *kuiba* (stealing; verb) would be excluded. This led to a further deletion of 361 terms leaving a final list of 782 trait terms, of which 22 were adjectives (3%), 478 nouns (61%), and 282 verbs (36%; see Table 2).

The results indicate that when it comes to personality trait descriptors, adjectives stand at a distant third position compared to nouns and verbs in making up the Swahili trait vocabulary. This is very unlike the Indo-European languages where adjectives form the main kind of terms when talking about people's personality characteristics. As the results of the present study indicate, in Swahili (and possibly most Bantu languages), people describe each other's personality characteristics using mainly nouns, and less so by verbs. The results of the present study confirm the claim by Dixon (1977) that the Swahili language has a limited number of adjectives, and they bring back the question of the universality of adjectives.

Second Step: Free Swahili Self- and Peer Descriptions From the Community

The approach that was adopted for this second step is in part comparable to that for the SAPI project. Kiswahili has different dialects, and the *Kamusi*, though considered to be the standard Swahili dictionary, primarily reflecting the Zanzibar dialect, might miss words used in other dialects. The free response approach aimed at getting personality descriptions from the community in order to capture those trait terms that are not (yet) included in the Swahili dictionary.

Participants, Procedure, and Results

This free-description collection was carried out in Lamu, Malindi, and Mombasa, which are towns lying along the Kenyan coast and are inhabited mainly by common indigenous Swahili-speaking people whose descriptions we were interested in. We had targeted a heterogeneous convenience sample of about 360 participants from the homesteads in these three towns (120 respondents from each area), but we managed to get responses from 395 participants. The majority of these Swahilis were Muslims who had attended or were still attending the Islamic education system called madrasa. The group comprised 138 respondents from Lamu (55% male; M_{age} = 35.90 with SD = 15.30), 137 from Mombasa (59% female; M_{age} = 20.28 with SD = 5.76), and 120 from Malindi (50% male; M_{age} = 25.83 with SD = 10.41).

Each participant was asked to describe each of the three targets in 10 statements: himself/herself, a person they like, and a person they dislike, resulting in a total of 11,850 statements (395 participants × 3 targets × 10 statements). Of the 395 liked other targets, 59% was female (M_{age} = 27.78 with SD = 12.02); of the 395 disliked other targets, 54% was male (M_{age} = 27.83 with SD = 12.49).

The first author and two research assistants (a Swahili major and a Psychology major) together went through all the statements (one by one) and extracted the key trait-descriptive terms using the inclusion criteria as specified in the first step of Part 1. Only statements that contained terms that could fit the criteria specified in that first step were selected, and statements that did not depict a clear-cut trait term were discarded. Also, there was a lot of similarity in the terms the people used in describing each other, also giving rise to a substantial reduction. With these criteria, the screening of the three separate lists (Lamu, Malindi, Mombasa) were ultimately shortened to 643 statements from Lamu, 509 from Mombasa, and 686 from Malindi, totaling 1,838 personality-relevant statements. The following selected three statements are rather exemplary for this final list:

- For self: Mimi sipendi kukerwa watu (I don't like bothering people).
- For liked other: Yeye ni mtu mtulivu (He is a peaceful person).
- For disliked other: Yeye ni mtu anaependa kusema urongo (He likes telling lies).

Next, duplicates were removed from this combined list, resulting in a total of 896 personality-relevant items to be retained for further analysis. Of these 896, 23 were adjective based, 545 were noun based, and 328 were verb based (see Table 2).

Like in the first step of Part 1, these 896 items were taken through several phases of screening and reduction to arrive at a useful final list. Since the items were obtained from the Swahili speakers themselves, the exclusion criteria of Unfamiliarity as specified in the first step were not applied. We did apply the criteria of the reduction Phases 2 and 3 of the first step (words describing physical attributes, socioeconomic status, and more words that repeat semantics already

expressed through other terms). This led to a final list of 391 items, of which 15 were with adjectives (4%), 208 were with nouns (53%), and 168 were with verbs (43%).

Again, like with the findings in the first step, the results indicate that adjectives play a rather insignificant role when people are talking about people's psychological attributes in the Swahili language. So, also in the day-to-day talk about persons, people describe each other using mostly nouns and occasionally using verbs, a result that agrees with findings by De Raad (1985), who investigated spontaneous utterances about personality in daily life.

Third Step: Combining Step 1 and 2 Lists and Preparing the List for the Collection of Ratings

The two lists, with 782 terms that resulted from the dictionary approach and 391 terms that resulted from the free-description approach, were combined giving a set of 1,173 words. This set was screened for clear duplicates leading to a final list of 948 personality-descriptive terms, including 26 adjectives (3%), 531 nouns (56%), and 391 verbs (41%).

For their final use in a questionnaire, at this phase the 948 available items were put into a brief sentence format, a procedure comparable to the one used by De Raad and Barelds (2008) who administered items built on different word forms (e.g., adjectives, nouns, verbs). Because of those different word forms, items could not be listed under a single general instruction (e.g., "please indicate for each the extent to which it applies to a person"), but were listed in sentence format, as in "… an *aggressive* person," "… someone who *protects* people," "… someone who shows *jealousy*," thus embedding adjectives, verbs, and nouns in a personality attribution. A corollary of this procedure, where words are put in a communicable sentence form, is that some of the more abstract words (adjectives, attribute nouns) are more easily recognized as less useful and familiar for practical attributional purposes—frequency-of-use related—which may be a reason to remove them (given sufficient semantic equivalents). In a similar way, the variety of attributive forms in Swahili demanded putting each single item in a sentence format. If one wants to use the word wivu (attribute noun for *jealousy*) in a brief item-sentence format, the noun must be preceded with a possessive word, thus producing a two-word expression as in "mwenye wivu," which directly translates to English into the four-word expression "one who has jealousy." If one wants to use *hodari* (clever), it is turned into a three-word expression in English as in "ni mtu hodari" (is a clever person). In these item-sentence formats, there seems to be a tendency to use fewer words in Swahili than in English.

Of the still long list with 948 terms, the vast majority was understood to have clear and communicable meaning, and they could easily be turned into a brief item-sentence format with two, three, or sometimes four words, with the trait word being the key word in the sentence. In certain cases, a qualifier (in parenthesis) was added to make the sentence more meaningful. For example, "ni mtu wa kutangamana" ("one who interacts") was provided with the qualifier "na watu" ("with others"), to turn it into the more meaningful "one who interacts with others." With the maximum of four words for the item-sentence format, quite a few terms were removed, because they needed too many words to have them contained in a clear sentence format, often resulting in rather unusual sentences. This was especially the case with verbs.

Through the process of conversion into meaningful, familiar, and brief sentences, the list of 948 terms could thus be reduced to an acceptable number of 661 items to be administered for rating purposes. Of this list of 661 short sentences, 23 were adjective based, 199 were verb based, and 439 were noun based. These short sentences had been formulated in such a way that they could be used either for self- or peer ratings. For example, "ni mjeuri" (is rude) could apply as a description of either self or other. A 5-point Likert scale was used for the ratings, where "1" stood for least descriptive (*sivyo alivyo kamwe*) and "5" most descriptive (*ndivyo alivyo haswa*). To ensure a clear understanding of the final set of items by the targeted respondents, the terms which were suspected to be difficult were provided with short explanations in parenthesis and in italics. For example, the item "ni mgobo" ("one who argues") was provided with the brief explanation "anaependa ugomvi na ufidhuli" ("likes quarreling and is ill mannered").

On the opening page of the questionnaire, the participant was asked to indicate whether they would rate self or another person they know well (e.g., partner, family member, colleague/fellow student, friend), and they were asked to provide age and gender of self and, when applicable, the (estimated) age and gender of the other person. The questionnaire items were put in a fixed random order.

Part 2: Determining the Structure of Personality Traits in Swahili

To determine the structure of personality in Swahili, self- and peer ratings were collected for the list of items based on the set of 661 personality-descriptive terms generated in Part 1.

This study has been reviewed and approved by the Ethics Review Committee of Pwani University, Kenya, under reference number ERC/PHD/006/2015.

Method

Participants and Procedure

We aimed at a sample size of minimally 400, which would be clearly beyond the recommended number to arrive at stable correlations (e.g., Schönbrodt & Perugini, 2013). The initial sample of participants consisted of 505 Swahili speakers, all from the coastal areas, in particular from Kilifi and Mombasa, thus enhancing the chances that Swahili is the first language of the participants. The group included 387 university students, four professionals, and 114 adolescents. Of the university students, 310 were from the Pwani University in Kilifi, and 77 were from the Technical University of Mombasa. Both universities are public universities. The four professionals were from the Coast Professional Forum (CPF), a group that brings together all the professionals from the coastal region of Kenya. The 114 adolescents (15–17 years old) were recruited from the Majaoni Secondary School in Kilifi County. The recruitment of the university students was done by the first author, with the help of the Pwani University Psychology Students Association, while for the CPF the first author sent an email to the group requesting for volunteers. The adolescents were recruited by the first author with the help of the school's administration.

Considering the length of the questionnaire, it was not easy to fill it out in one session, and therefore the participants were allowed to carry the questionnaires with them and fill them at their own

convenient time and return them within 1 week. In case of the four CPF volunteers, the questionnaires were sent to them through email with the same request of sending back the filled-out questionnaires within 1 week.

Out of the 505 returned questionnaires, 25 were removed because they had more than 50% of the pages blank, most with just the first and last pages filled out. This left us with a response from 480 participants. Of these 480 respondents, 246 were male (51%), 200 female (42%), while 34 (7%) gave no gender information. Mean age was 20.67 years (SD = 5.66; range = 15–59; mode = 20), and 43 gave no age information. The brief item sentences were designed to be applicable for both self- and peer ratings, leaving the respondents to decide to either self-rate or peer rate. Of the returned 480 questionnaires, 102 turned out to be self-ratings, 358 were peer ratings, while for 20 cases the person being rated was not indicated. The data obtained can be made available upon request.

Results and Discussion

As was expected, in Part 1 both resources (dictionary and free descriptions) showed a predominance of nouns, as compared to particularly adjectives, when talking about human attributes in the Swahili language. Of the total set of 661 items, of which only 23 were adjective based, the primary set consisted of 250 type nouns; attribute nouns (of which there were 189) and verbs (199) were only added when their meaning was not already represented by the type nouns. Because we aimed at the fullest view possible on the Swahili personality vocabulary, our primary focus was on the exploration of the trait-factor structure using the full set of the 661 terms. This first analysis was followed by separate analyses of the role the subsets may have in their contribution to the semantics of the factors; moreover, because of the weight of nouns in the Swahili communication on personality, special attention was given to a combined set of type nouns and attribute nouns. Because of their small number, the adjectives are not separately analyzed. The data of the subsets might allow some more insight in the roles the different word classes play in the makeup of the factors. Barelds and De Raad (2015), for example, found indication that, in Dutch, trait-descriptive verbs played a specific role in adding to the semantics of some of their (eight) factors. Yet, it must be noted that the role of especially the attribute nouns and the verbs is not based on a full trait relevant coverage of their word categories. In order to deal with acquiescence bias, all the data were ipsatized (standardized per person) before subjecting them to principal component analysis (PCA) and varimax rotation.

Factor Structure Based on the 661 Terms (Full Set)

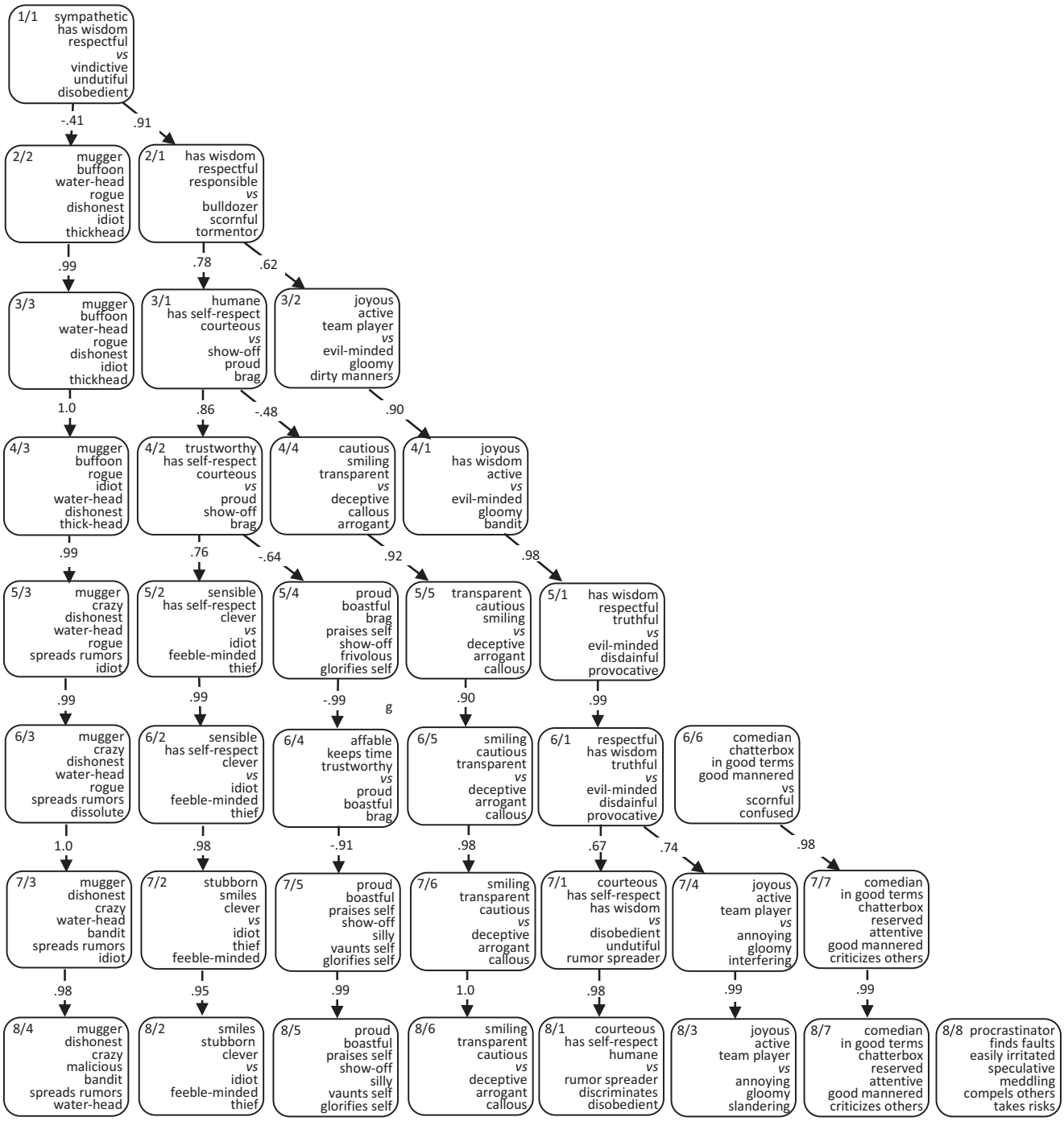
The first 10 eigenvalues were 39.4, 11.6, 8.8, 7.5, 7.0, 6.3, 5.8, 5.8, 5.7, and 5.5, explaining 16% of the total variance. In order to make a selection of an appropriate and useful set of principal components (henceforth called factors), we started with the scree test, then made use of a hierarchy of factor solutions, and focused on substantial loadings of contributing trait variables, and especially also on interpretability of factors. The pattern of eigenvalues (scree plot) suggested four to six or seven factors to capture the main substance of the trait semantics and beyond which factors will produce "increasingly diminishing returns" (Hofstee, 2003, p. 239). In order to explore further the factor structure for this data set, we inspected solutions with one up to 10 factors. We focused on structures with trait variables that had substantial loadings, and of which the factors were interpretable. The process of interpretation was aided by knowledge of factors as they have appeared frequently in the trait-taxonomy research literature. We constructed a hierarchy of the different factor solutions, with correlations between factors from adjacent levels of factor extraction (cf. Goldberg, 2006). In Figure 1, a hierarchy of the factor solutions is shown, using solutions with one up to eight factors; beyond that, additional factors did not give sufficiently loading variables with distinct and well interpretable semantics. Each factor in Figure 1 is represented by some of the items with the highest loadings on the factor and with correlations of |.45| and above between factors from adjacent levels.

As an additional aid in the interpretation of the factors, we constructed marker scales using the present Swahili data and representing relevant known factors from the psycho-lexical literature, namely, the Big Five factors, Honesty–Humility, and Negative Valence. Marker scales were developed by finding sufficient item equivalents in the Swahili list generally agreeing with what is exposed in Goldberg's (1982) 100 unipolar markers (for the Big Five), in Ashton et al.'s (2004) summary table of their six factors (for Honesty–Humility), and in Benet and Waller's (1995) Inventory of Personal Characteristics–seven items (for Negative Valence). Translations into English were done by the first author who is an indigenous Swahili speaker and bilingual, with the aid of two bilingual dictionaries (A Standard Swahili-English Dictionary, 2013; A Standard English-Swahili Dictionary, 2013). The various marker scales are listed in the Appendix. The one dimensionality of each scale was examined by extracting the first unrotated factor based on the sets of marker items. For all scales, most of the pertaining items loaded substantially on the first unrotated factor, with some scales having two and three items with loadings below a level of |.30|. Those items were kept to retain the integrity of meaning of the factor scales of origin. The approach using items from the data set under investigation has clear shortcomings, but under the present circumstances where no independent instruments were administered to the participants who provided the trait ratings, it was considered a useful aid in the interpretation. The marker scales should not have a decisive role in arriving at the best interpretation of the Swahili factors, but only be used as an aid in their identification and interpretation. The correlations between the marker scales and the Swahili factors that proceeded from the eight studied factor solutions are given in Table 3. In Table 3, also the reliabilities of the marker scales are given; they ran from .74 to .86. One general observation in Table 3 concerns the rather meager identification of Extraversion in the different factor solutions. A meager presence of Extraversion has also been observed in southern African Khoekhoegowab (Thalmayer et al., 2021).

The first unrotated factor (Factor 1/1) draws its meaning from socially desirable qualities in a mixed set of traits in the one pole, such as *compassionate*, *wisdom*, *respectful*, *courteous*, *perseverant*, *responsible*, *thrifty*, *good-mannered*, and *obedient*, and from socially undesirable attributes in the negative pole, such as *vindictive*, *undutiful*, *disobedient*, *tormentor*, *revealer of secrets*, *disgusting manners*, *bulldozer*, and *disorderly*. With an emphasis on the nondescriptive, evaluative binding element, this single first factor could be interpreted as Evaluation (Good vs. Bad), as in Saucier et al. (2005), as the individual's Desirability (Hofstee, 2003), or as Virtue (De Raad & Barelds, 2008). The substantial

Figure 1

Factor Solutions in Hierarchy, Based on the 661 Ipsatized Data Set



Note. The terms in the hierarchy are the closest equivalents of the single Swahili original words.

correlations given for Factor 1/1 with most of the marker scales in Table 3 confirm this interpretation.

The first factor of the two-factor solution (2/1) is, in terms of contents, difficult to distinguish from Factor 1/1, with which it correlates .91. The Evaluation/Desirability interpretation still fits. Factor 2/2 is largely loaded on one pole with such terms as *mugger*, *buffoon, water-head*, *rogue*, *malicious*, *idiot*, *thick-head*, *foolish*, *gossip*, *corrupt*, and *foulmouthed*. Part of this factor may reminisce of Negative Valence (NV; Almagor et al., 1995), considering the correlation of .39 with NV and of −.43 with the I-scale (Table 3).

Table 3
Correlations Between Swahili Factors and Marker Scales

	Big Five						
Swahili factor	E	A	C	N or ES	I	HH	NV
α	*.74*	*.82*	*.78*	*.80*	*.76*	*.79*	*.86*
Factor 1/1	−.17	**−.88**	**−.85**	**−.71**	**−.81**	**−.75**	**.67**
Factor 2/1	−.13	**−.81**	**−.81**	**−.73**	**−.70**	**−.77**	**.56**
Factor 2/2	−.12	−.33	−.28	−.11	**−.43**	−.13	.39
Factor 3/1	.15	**−.64**	**−.59**	**−.65**	**−.54**	**−.75**	**.52**
Factor 3/2	**−.40**	**−.56**	**−.59**	−.37	**−.51**	−.32	.31
Factor 3/3	−.08	−.26	−.20	−.06	−.37	−.09	.36
Factor 4/1	−.24	**−.60**	**−.64**	**−.47**	**−.49**	**−.41**	.39
Factor 4/2	.00	**−.60**	**−.53**	**−.55**	**−.57**	**−.68**	**.45**
Factor 4/3	−.12	−.25	−.19	−.03	−.36	−.06	.34
Factor 4/4	.39	−.06	−.05	−.18	.06	−.19	.18
Factor 5/1	−.21	**−.66**	**−.69**	**−.52**	**−.51**	**−.50**	**.43**
Factor 5/2	−.13	**−.41**	−.39	−.38	**−.55**	−.35	.34
Factor 5/3	−.09	−.25	−.19	−.04	−.34	−.09	.34
Factor 5/4	.23	−.35	−.28	−.36	−.16	**−.59**	.26
Factor 5/5	.33	.03	.02	−.11	.06	−.02	.12
Factor 6/1	−.20	**−.64**	**−.69**	**−.54**	**−.51**	**−.50**	**.44**
Factor 6/2	−.16	−.37	−.34	−.32	**−.52**	−.27	.29
Factor 6/3	−.06	−.24	−.20	−.06	−.34	−.10	.36
Factor 6/4	.21	**−.40**	−.33	**−.40**	−.23	**−.63**	.30
Factor 6/5	.24	−.05	.02	−.07	.03	−.04	.08
Factor 6/6	−.28	−.20	−.02	.11	−.11	−.03	−.09
Factor 7/1	.01	**−.62**	**−.65**	**−.54**	**−.53**	**−.51**	**.47**
Factor 7/2	−.17	−.36	−.32	−.32	**−.50**	−.30	.28
Factor 7/3	−.05	−.21	−.17	−.05	−.31	−.09	.34
Factor 7/4	−.29	−.38	−.38	−.25	−.26	−.27	.20
Factor 7/5	.18	−.29	−.22	−.31	−.09	**−.56**	.20
Factor 7/6	.22	−.01	.07	−.03	.07	−.01	.04
Factor 7/7	.23	.17	−.01	−.13	.10	.01	.10
Factor 8/1	.01	**−.61**	**−.63**	**−.56**	**−.50**	**−.51**	**.46**
Factor 8/2	−.14	−.34	−.32	−.28	**−.50**	−.27	.29
Factor 8/3	−.29	**−.40**	**−.40**	−.25	−.29	−.28	.22
Factor 8/4	−.05	−.20	−.16	−.06	−.30	−.07	.33
Factor 8/5	.18	−.29	−.22	−.30	−.12	**−.57**	.22
Factor 8/6	.21	−.03	.08	−.04	.06	−.03	.05
Factor 8/7	−.25	−.21	−.03	.10	−.14	−.06	−.08
Factor 8/8	−.02	−.03	−.04	−.21	−.02	−.08	.02

Note. The αs in the first row are in italics. Correlations ≥.40 are in bold; E = extraversion (20 items); A = agreeableness (20 items); C = conscientiousness (16 items); N/ES = neuroticism/emotional stability (20 items); I = intellect (20 items); HH = honesty–humility (20 items); NV = negative valence (20 items).

The factor seems also to agree both with a factor called Malignity (De Raad & Hoskens, 1990) and with Social Unacceptability (Saucier, 2003a). It is the type of words that is frequently used in cases of breaches of social rules and may be conveyed especially in the form of terms of abuse (cf. De Raad et al., 2005). Considering the perfect correlations across the various levels of factor extraction (Figure 1), the interpretation of this Factor 2/2 remains unchallenged with the extraction of more factors, as shown in the Factors 3/3, 4/3, 5/3, 6/3, 7/3, and 8/4, respectively. The patterns of correlations these factors have with the marker scales in Table 3 confirm this consistent recurrence.

At the three-factor level, the content of Factor 2/1 splits into Factor 3/1 and Factor 3/2. Factor 3/1 is loaded on the one pole by a wide array of Agreeableness-related traits such as *self-respecting*, *benevolence*, *courteous*, *trustful*, *compassion*, and *patience*, but also by Conscientiousness- and Intellect-related terms such as *responsible*, *discernment*, and *thrifty*; there is a moral tone to this factor. On the opposite pole, the factor is loaded by such terms as *show off*, *proud*, *boastful*, *backbiting*, *tormenting*, *bully*, and *disorderly*. Factor 3/1 could thus well be seen as a "Communion" (Bakan, 1966) related factor, as has been observed in DeYoung (2006) who called it Stability; in Saucier et al. (2005), who called it Social Propriety; and in De Raad, Barelds, et al. (2018), who called it Affiliation. Factor 3/2 is loaded by terms expressing positive nonostensible moral action as in *joyous*, *active*, *team player*, *modest*, *truthful*, *takes responsibility*, *good-mannered*, and *god-fearing*; this is opposed to negative action as in *gloomy*, *malignant*, *bad manners*, *bandit*, *noisy*, and *embarrassing*. The few highest loading terms referring to positive action could be understood as reflecting an "Agentic" (Bakan, 1966) style of behavior and thus in part completing Bakan's two-factor model, or related models, though the factor does not seem to be as emphatically dynamic as expressed in the "Dynamism" factors described in, for example, Saucier et al. (2014) and De Raad, Barelds, et al. (2018). The main gist of this Factor 3/2 reflects prosocial versus antisocial activity.

With four factors, three remain nearly the same as those of the three-factor solution, and Factor 4/4 shows an emphasis on a combination of terms related to the negative poles of Big Five Conscientiousness (e.g., *careless*, *lazy*) and Big Five Agreeableness (e.g., *callous*, *arrogant*, *deceptive*), on the one hand. The deceptiveness and callousness of this one pole is opposed to just a few terms loading on the other pole with *cautious*, *smiling*, and *transparent*, rather suggesting warmth and receptiveness. The factor might be called Deceptiveness (vs. Receptiveness).

With five factors, Factor 4/2 has split into Factor 5/2 and Factor 5/4. Factor 5/2 fares by traits representing Big Five Intellect (see also the correlation with the I-marker scale in Table 3), mixed with terms describing friendly cooperation as in *clever*, *contentious*, *open-minded*, *cooperative*, and *trustworthy* as opposed to *idiot*, *feeble-minded*, *confused*, *childish*, and *ignoramus*. The factor seems to combine some aspects of sagacity and prudence on the positive pole, but it is especially characterized by a much larger number of items loading on the negative pole, which emphasize ignorance, foolishness, and low intellect. Accordingly, we label this factor Imprudence. Factor 5/4 is loaded by terms such as *proud*, *boastful*, *brags*, *praises self*, *show off*, and *frivolous*, thus describing Self-importance.

With six factors, Factor 6/6 is added, the other five factors remaining the same as at the five-factor level. Factor 6/6, showing no relation with any of the marker scales, is loaded by terms that seem to express cheerful, attentive conversation, namely, *comedian*, *likes chatting*, *is on good terms with others*, *peaceful*, *good-mannered*, *humble*, *good conversationalist*, and *pays attention*. These terms are opposed to being *scornful*, *confused*, and *despising others* at the other factor pole. The "conversational" interpretation should not be mixed up with the emphatically active, talkative, and outgoing aspects of Extraversion. The factor expresses a mix of Extraversion and Agreeableness, pointing at Sociability or Interpersonal Relatedness (see Nel et al., 2012; Valchev, 2012) or, indeed, at Attentive Conversation.

With seven factors, Factor 6/1, of which the contents are similar to the Factors 5/1, 4/1, and 3/2, splits into the Factors 7/1 and 7/4, both reflecting prosocial activity, but in a somewhat different manner. Factor 7/1 is characterized by such terms as *self-respect*, *courteous*, *discernment*, *benevolent*, *selfless*, *confident*,

responsible, and *kind*, as opposed to (the moderately loading) *irresponsible* and *rumor-spreading*. Factor 7/4 is characterized by such terms as *joyous*, *active*, *team player*, *truthful*, *humble*, and *responsible*, as opposed to (the moderately loading) *annoying* and *uncheerful*. The correlations with marker scales indicate a stronger resonation of Agreeableness in Factor 7/1 than in Factor 7/4. We find the two factors 7/1 and 7/4 hard to distinguish; they both seem less intelligible than Factor 6/1 to which they both relate. With eight factors, Factor 8/8 is added, with just a few terms (all listed in Figure 1) loading .30 or just above, and with little cues about what binds the items, and with no relations with the marker scales.

Based on the exploratory factor analyses of the full data set, using the hierarchy of factor solutions and the interpretability of factors, a six-factor solution seems to do a good job in summarizing the trait structure in the Swahili language. This factor solution consists of six interpretable factors that also seem to carry enough substance. Table 4 summarizes this six-factor structure, tentatively called the Swahili Six, with the factor labels of choice, and using maximally 25 trait terms per factor pole with their highest loading of minimally |.30| on the factor.

The Different Word Categories in the Swahili Trait Structure

For the present study, the two word categories of attribute nouns and verbs were not independently exploited to arrive at the full descriptive potentials of those word categories; attribute nouns and verbs were only added if their meanings were not already represented by type nouns. The separate sets of type noun-, attribute noun-, and verb-based items were large enough to arrive at a fair impression of their contribution to the makeup of the six factors based on the full set of 661 items (the "Swahili Six") and to further check the appropriateness of that six-factor solution. Because of their small number, adjectives were left out from this analysis. The dominant role of nouns in the present study called for special attention to be given to the combined set of 439 type nouns and attribute nouns (second panel in Table 5). That analysis was followed by the separate roles of 250 type nouns (third panel), the 189 attribute nouns (fourth panel), and the 199 verbs (fifth panel).

We first counted the numbers of word category-related items contributing to the six full set-based factors. The first panel of Table 5 gives the absolute numbers of items for each of the separate word categories that have their highest loading of at least |.25| on the pertaining factor of the Swahili Six. Of the 250 type nouns, there were 141 such items, of which most loaded substantially on Virtue (49 items) and on Negative Valence (50 items). Of the 189 attribute nouns, 120 loaded substantially on the six factors, and of the 199 verb-based items, 83 contributed to the makeup of the factors. These counts tell that type nouns contribute most to the factors F6/1 and F6/3 of the Swahili Six, that attribute nouns contribute especially to the factor F6/1, and that verbs also contribute most to F6/1. Across the word categories, it shows that F6/1 (Virtue) is made up of attribute and type nouns mostly, that F6/2 (Imprudence) is least formed by attribute nouns, that F6/3 (Negative Valence) is a

Table 4
The Swahili Six-Factor Structure of Personality Traits

Factor	Defining trait term
6/1: Virtue	Respectful (.53), wise, truthful, joyous, active, obedient, shifty, composed, compassionate, modest, hospitable, friendly, persevering, takes responsibility, cheerful, good-mannered, convivial, strong-willed, sticks to his/her position, thrifty, responsible, clean, astute, hardworking, careful (.42) versus *Evil-minded* (−.39), disdainful, *provocative*, disobedient, rumor-spreader, idling around, promiscuous, vindictive, bothersome, robber, gloomy, does not care, interferes, bulldozer, arrogant, vain, indiscreet, argumentative, reprimands, irresolute, likes chaos, confrontational, spiteful, dirty manners (−.30)
6/2: Imprudence	Imbecile (−.42), feeble-minded, cons people, confused, ignoramus, childish, imbecile, slanderer, foolish, snatches things, *stupid*, sows discord between people, blabbermouth, blames others, rude, impudent, slovenly, likes loitering, talks without thinking (−.30) versus *Smiling person* (.36), clever, contentious, self-regarding, open-minded, cooperates (.30)
6/3: Negative valence	Mugger (.50), crazy, dishonest, breaks social norms, rogue, taleteller, dissolute, *stupid*, talks continuously, corrupt, pompous, a toad, thick-headed, silly, full of foul language, *provocateur*, sleepy brain, mischievous, loves troubles, deceitful, chatterbox, likes strife, seducer, creates enmity between people, simpleton, bandit, dunderhead, gossipmonger, traitor, domineering, feels superior, deceiver, crook, inconstant, licentious, fearless, steals things, pickpocket, *evil-eyed*, quarrelsome, unjust, never bothered (.30)
6/4: Self-importance	Proud (.43), boastful, brags, showy, praises oneself, frivolous, glorifies self, boasts (.32) versus Keeps time (−.32), trustworthy, affable, fair, attentive (−.30)
6/5: Deceptiveness	*Wears a smile* (.46), cautious, open, affectionate, can be relied upon, team player (.30) versus Full of deception (−.58), contemptuous, callous, takes pleasure in others' misfortunes, laid-back, likes jesting, parasite, easily frightened, makes jokes full of arrogance (−.40)
6/6: Sociability/interpersonal relatedness/attentive conversation	Comedian (.40), likes chatting, in good terms with others, peaceful, good-mannered, humble, good conversationalist, heedful (.30) versus Despises others (−.30), has weakness of mind (−.30)

Note. All original Swahili words in this table are different. As a consequence of translations into English, certain words may turn out to reappear with similar translations under different factors; these words are put in italics.

Table 5
Relations Between the Six 661 Items-Based Factors and Those Based on the Word-Category Subsets

Five panel	Factor based on the 661 set of items (Swahili Six)					
	F6/1: Virtue	F6/2: Imprudence	F6/3: Negative valence	F6/4: Self-importance	F6/5: Deceptiveness	F6/6: Attentive conversation
Panel with items loading on the Swahili Six						
141 type nouns loading ≥|.25|	49	28	50	8	1	5
120 attribute nouns loading ≥|.25|	61	13	0	21	18	7
83 verbs loading ≥|.25|	34	23	1	19	1	5
Panel with 439 type noun- and attribute noun-based factors						
F6/1	**.43**	.13	.03	**.65**	.14	**.40**
F6/2	**.85**	.08	−.01	−.18	−.14	−.22
F6/3	−.02	.01	**.97**	.04	−.06	.01
F6/4	−.07	**.88**	.02	−.19	.01	.00
F6/5	.03	−.03	.06	−.04	**.92**	−.16
F6/6	.14	−.13	.01	**−.56**	.09	**.62**
Multiple correlation	.97	.91	.98	.90	.95	.79
Panel with 250 type noun-based factors						
F6/1	**−.76**	−.17	−.08	−.14	.13	.22
F6/2	−.14	.07	**.84**	−.10	.05	.00
F6/3	.02	**.81**	−.03	.08	.03	.16
F6/4	.25	.03	**.40**	−.11	−.07	.05
F6/5	−.02	−.19	.25	**.72**	.12	.22
F6/6	**.37**	−.09	.01	−.21	.01	**.52**
Multiple correlation	.89	.86	.93	.78	.20	.67
Panel with 189 attribute noun-based factors						
F6/1	**−.64**	**−.35**	−.26	−.27	−.04	−.27
F6/2	.02	.01	−.08	−.08	**.84**	−.02
F6/3	.00	**.38**	.01	**.40**	.02	−.34
F6/4	.21	−.19	−.12	**.42**	.09	−.14
F6/5	**.41**	−.08	−.10	−.15	.16	.01
F6/6	.25	−.03	**−.37**	−.08	−.27	.16
Multiple correlation	.82	.56	.48	.66	.90	.49
Panel with 199 verb-based factors						
F6/1	.18	.05	−.02	**.64**	.07	−.17
F6/2	.04	**.47**	.10	.31	−.09	.13
F6/3	**.41**	.10	.34	−.16	.18	−.09
F6/4	.29	.27	.16	.06	.05	**.48**
F6/5	.16	**.40**	−.18	.09	.02	−.14
F6/6	**.39**	.05	−.17	.00	.21	−.19
Multiple correlation	.68	.69	.46	.73	.30	.58

Note. Correlations ≥|.35| are in bold. The factors F6/1 to F6/6 in the four word category-related panels remain without labels. The first panel shows the numbers of word category-related items that contribute to the Swahili Six; the other four panels give the correlations between the Swahili Six and the separate word category-based factors.

typical type noun-loaded factor, that F6/4 (Self-importance) is least influenced by type nouns, that F6/5 (Deceptiveness) is typically an attribute noun factor, and that F6/6 (Attentive Conversation) does not show a distinctive emphasis of word categories.

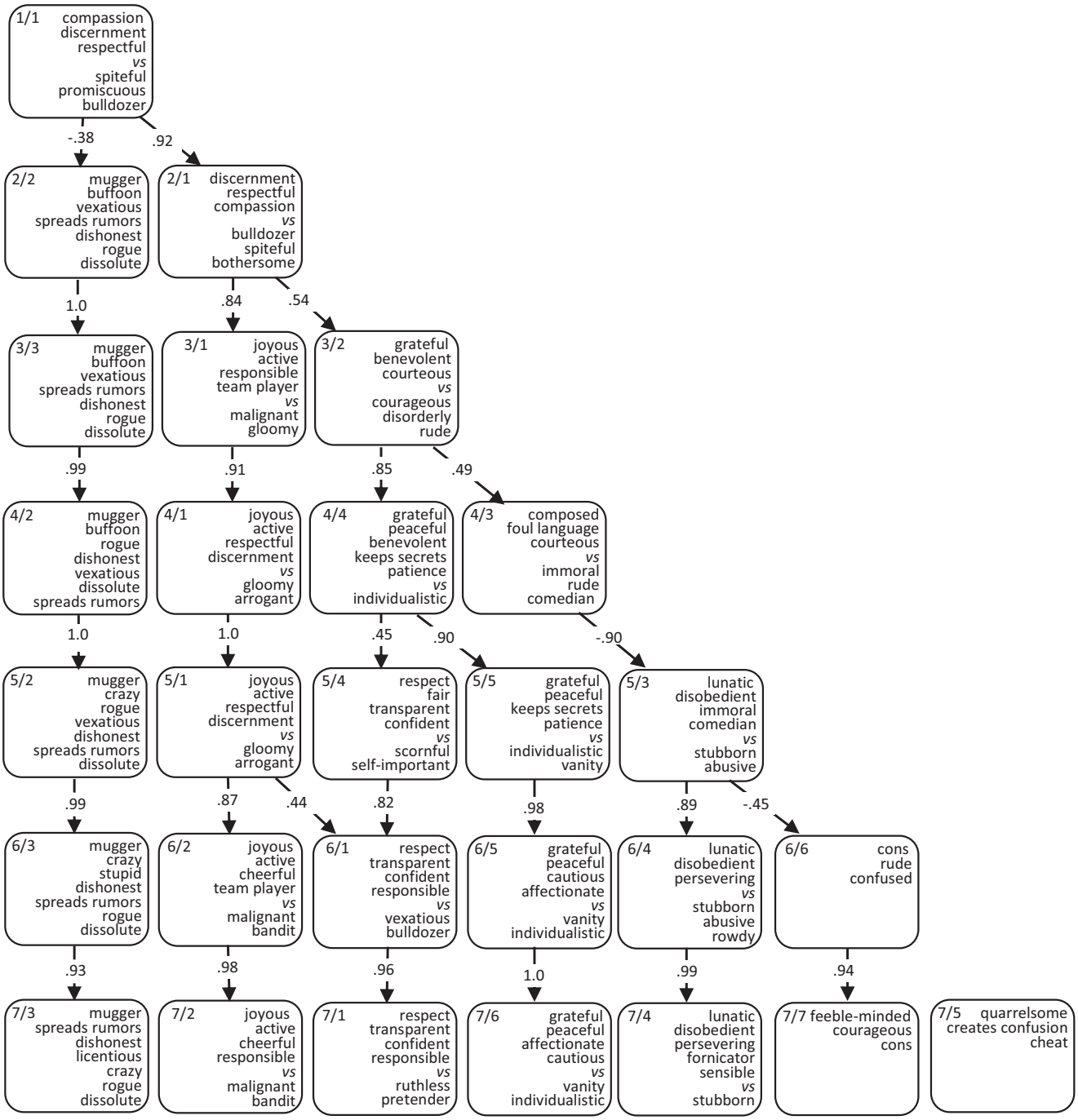
Next, we performed separate PCAs on the four subsets of the data based on the ratings on the combined set of 439 type nouns and attribute nouns, on the 250 type nouns, on the 189 attribute nouns, and on the 199 verbs and estimated the relations between the factors obtained per word category and those based on the full set of 661 items. The results, given in the four pertaining panels of Table 5, are discussed in the next paragraphs.

The Combined Set of Type Nouns and Attribute Nouns. Exploratory factor analyses were conducted on the set of 439 nouns. The first 10 eigenvalues in the case of the combined set of type nouns and attribute nouns were 27.7, 9.4, 7.0, 6.0, 5.7, 5.2, 4.8, 4.6, 4.5, and 4.2. The scree test suggests some five or six factors. Solutions with five, six, and seven factors respectively explained 12.7%, 13.9%, and 15% of the variance. For this case with the 439 nouns, we constructed a hierarchy between different factor solutions based on the correlations between factors from adjacent levels of factor extraction. Figure 2 shows the hierarchy for up to seven noun-based factors.

We compared the factors from the different factor solutions for the 439 nouns set with those from the corresponding solutions for the full set of 661 items. In the solutions with one up to five factors, each factor in one set had a single high correlation with a factor in the other set; those correlations ran from .83 to .98. In case of five factors, the Factors 5/1, 5/2, 5/3, 5/4, and 5/5 in the 661 set correlate between .87 and .97 with the respective Factors 5/1, 5/3, 5/2, 5/4, and 5/5 in the 439 set. With six factors, the direct linkage of factors to those in the Swahili Six is not continued; the relevant correlations are in the first panel of Table 5. As an additional piece of information, we calculated the multiple correlations using 439-based factors as predictors. These correlations are given in the last row of the Nouns panel. The multiple correlations tell that especially the first five factors based on the 661 set are rather well covered by the contents

Figure 2

Factor Solutions in Hierarchy, Based on Type Nouns and Attribute Nouns (Ipsatized Data)



Note. The terms in the hierarchy are the closest equivalents of the single Swahili original words.

of the factors based on the 439 nouns. Also, the additional Factor 6/6 in the 439 nouns set is not well uninterpretable, with just a few items all with loadings $\leq|.37|$ (see Figure 2). This lack of substantially loading items is also true for the Factors 7/5 and 7/7 shown in Figure 2. A conclusion is that a five-factor solution is left as the optimal solution in case of the 439 nouns only.

Type Noun Factors. Using the ratings on the 250 type nouns, PCA was applied, followed by varimax rotation of six factors. That number of factors agrees with the scree in the eigenvalues suggesting around five factors: 16.8, 7.4, 5.0, 4.3, 4.1, 3.6, 3.4, 3.3, 3.1, and 3.1. The six factors explain 16.5% of the total variance. The six type noun-based factors were correlated with the six factors based on the full set

of 661 variables. The correlations are given in the second panel of Table 5. The multiple correlations in the last row of the Type noun panel tell that the first three or four factors based on the 661 set are rather well covered by the contents of the 250 type noun factors, while F6/5 Deceptiveness remains unrelated to the type noun-based factors.

Attribute Noun Factors. The first 10 eigenvalues in case of the 189 attribute nouns were 15.2, 5.3, 4.2, 3.5, 3.2, 3.1, 3.0, 2.9, 2.9, and 2.7, with six factors explaining 18.3% of the total variance. The scree test would suggest some four or at best five factors. The same routine with using correlations and multiple correlations was followed here; the results are given in the Attribute noun panel of Table 5. There is a rather clear indication that F6/5 (Deceptiveness) is reproduced by the attribute noun-based set of factors; in addition, there is a reproduction of the factor F6/1 (Virtue) in the attribute noun factors.

Verb-Based Factors. The first 10 eigenvalues in case of the 199 verbs were 13.6, 4.8, 4.1, 3.8, 3.6, 3.2, 3.1, 3.0, 2.9, and 2.8, with six factors explaining 16.6% of the total variance. The scree test suggests some five factors. The relevant correlations and multiple correlations are given in the Verbs panel of Table 5. There were virtually no relations between the 661-based factors F6/3 and F6/5 on the one hand and any of the verb-based factors on the other hand. The 661-based factor F6/4 (Self-importance) seems best related to the 199-based F6/1 factor.

The Meaning of the Six Factors Caught in Swahili Concepts, and the Role of Word Class

The interpretations of the six factors based on the full set of 661 items have been done in terms of what has been found elsewhere in the lexical literature, but such interpretations (summarized in Table 4) might be more or less alien to the Swahili language and culture. Because of this, we provide a parallel Swahili interpretation, in terms of somewhat abstract or even philosophical wordings. The discussion of the word classes in the makeup of the factors is restricted to the single word classes, type nouns, attribute nouns, and verbs.

The *first factor* (F6/1), defined by terms such as *respectful*, *active*, and *careful* as opposed to *evil-minded* and *confrontational*, and called Virtue—with a slight agentic tone—is expressed through all three word classes, but strongest through attribute nouns, followed by type nouns and then verbs. In Swahili this factor could be called *Wema*, which stands for goodness, kind-heartedness, moral excellence, integrity, and virtue, all characteristics that come close to the central meaning of what is called Utu in Swahili, expressing the Swahili philosophy on human relationships. The Swahili Utu is similar to the Ubuntu philosophy found in Southern Africa, especially among the Bantus (Nel et al., 2012), and directly translatable into humaneness. This *Utu* philosophy is often expressed in the popular utterance—"mtu ni utu, mtu si kitu"—which can directly be translated as "a person is defined by their humaneness, a person is not defined by what they own."

The *second factor* (F6/2), called Imprudence (vs. sagacity and prudence), is expressed more or less evenly through type nouns and verbs, and it is well reproduced when using type nouns only and less so when using verbs only. The factor fares by traits representing the Big Five Intellect dimension, with a relatively large set of terms on the negative pole such as *idiot*, *feeble-minded*, *confused*, *childish*, *foolish*, and *ignoramus*, *as opposed to the* positive pole describing mindful cooperation as in *clever*, *self-regarding*, *open-minded*, and *cooperative*. The factor has indeed its strongest correlation with the Intellect marker scale (Table 3). In the Swahili culture, a person who cannot make wise decisions is referred to as weak-minded and brainless. This factor may capture that inability of persons to use their minds and make sound decisions in the social domain, as opposed to those who act wisely and demonstrate prudence. In Swahili this distinction is captured by the pair of terms *Ubahaluli* versus *Busara*. A *Bahaluli* is indeed a foolish, "brainless" person, someone who shows inability to act wisely (*kukosa busara*).

The *third factor* (F6/3), called Negative Valence (NV; Almagor et al., 1995), defined by such terms as *mugger*, *crazy*, *corrupt*, *water-headed idiot*, *foulmouthed*, and *mischievous*, is loaded by type nouns only. The factor correlated strongest (see Table 4) with both the NV marker scale (.36) and the I-marker scale (−.34). The Malignity and Social Unacceptability semantics of this factor, combined with its emphatic expression through type nouns, may put the factor in a context of restorative or corrective verbal communication (cf. De Raad et al., 2005). The Swahili version of the concept is captured by *Uwi*, capturing traits that work against the spirit of *Utu*.

The fourth factor (F6/4), called Self-importance, and defined by such terms as *proud*, *boastful* versus *trustworthy* and *attentive*, is most expressed through verbs and attribute nouns. The Swahili expression for this is *Kibri* (literally: arrogance). Among the Swahili speakers, a person who feels very important and behaves arrogantly is said to have *Kibri*.

The fifth factor (F6/5), called Deceptiveness (vs. Receptiveness) and defined by such terms as *deception*, *callous*, and *parasite*, as opposed to *smiling*, *open*, and *affectionate* is expressed typically through attribute nouns. Moreover, factoring only attribute nouns, the pertaining 661-based factor is fully reproduced. This factor does not substantially relate to any of the marker scales. The Swahili expression for deception or deceptive tendencies is *Unafiki*. According to Swahili culture, a *Mnafiki* is a person who is characterized by three major attributes, namely, speaking untruths, giving false promises, and betraying trust.

The sixth factor (F6/6), referred to as Attentive Conversation, with an apparent link to Sociability/Interpersonal Relatedness, and defined by such terms as *comedian*, *likes chatting*, *good-mannered*, *conversational* versus *despises others*, and *weakness of mind*, has 17 terms only with relatively substantial loadings. The Swahili equivalent is *Muamala*, which is about keeping good relations with others, in line with the spirit of Utu–Ubuntu. The Swahilis talk of people (especially relatives) who are in good talking terms as having "Muamala."

General Discussion

In the present study, we aimed to map out the personality trait structure in Swahili. We first conducted two qualitative studies where we identified trait-descriptive terms from both the Swahili dictionary (Kamusi) and free self and peer descriptions. From the Kamusi, we managed to generate a list of 782 Swahili terms that could be used to describe peoples' traits. From the free descriptions, we were able to identify 391 trait terms. The first results confirm the meager presence in Swahili of adjectives functioning as trait descriptors. Instead, nouns (both type nouns and attribute nouns) and verbs were found to be employed to describe people's attributes.

The qualitative studies to identify trait descriptors were followed by a quantitative study in which a mix of self and peer ratings, collected on a final selection of 661 items, was factor analyzed using PCA, followed by varimax rotation. Although we acknowledge that both the interpretation of factors and the decision on the appropriate number of factors are inherently subjective, we decided on a six-factor structure with the factor labels Virtue, Imprudence, Negative Valence, Self-importance, Deceptiveness, and Attentive Conversation, in that order.

The Swahili equivalents for the six dimensions would be Wema, Ubahaluli, Uwi, Kibri, Unafiki, and Muamala, respectively, summarized as the Swahili Six, an interesting amalgamation of new factors and factors from already known models, that have been discovered elsewhere. The Virtue factor compares to the Virtue factor from the Dutch eight-factor structure (De Raad & Barelds, 2008) and the Social Self-regulation factor of Saucier's basic bivariate structure (Saucier et al., 2014). The Imprudence factor compares to, and actually correlates substantially with, the Big Five Intellect marker scale. Our Negative Valence factor compares to the NV factor of Tellegen and Waller (Almagor et al., 1995, or the Saucier, 2003b). Our Self-importance factor compares to the negative pole of the Honesty–Humility factor of Ashton and Lee's (2007) model. The correlation of the Honesty–Humility marker scale with Self-importance confirms that relationship, but with the main load on the negative pole the factor may better be considered as a somewhat narrow version of Narcissism (cf. De Raad, Nagy, et al., 2018). The Deceptiveness and Attentive Conversation factors seem to deal with trustworthiness and thoughtfulness facets in social intercourse, neither of the two being identified by any of the marker scales.

With this finding, we turn to some obvious other questions, such as "can the Big One be identified" in the Swahili trait vocabulary, and the Big Two, the Big Three, and so forth? Regarding the Big One, the conclusion seems obvious: the first unrotated factor (F1/1) captures largely evaluative meaning or social desirability. A solution with two factors, of which the first (F2/1) is quite similar to F1/1, and of which the second (F2/2) was concluded to capture Negative Valence, does not show any similarity with the Big Two, with its distinctive Agentic and Communal features. Only with three factors, one could, next to the recurrent NV factor in F3/3, discern communal aspects in F3/1 and agentic aspects in F3/2. It should be added, though, that the communal-agentic distinction in these two factors is far from articulate. A factor covering order or structure or even Conscientiousness, to enable the possibility of the three-factor model, is hard to find in any of the studied factor solutions. The Big Five were not identified; at best one could appreciate Imprudence, reflecting Intellect, and in the combined set of the three factors Self-importance, Deceptiveness, and Attentive Conversation, one might observe difference aspects or facets of Big Five Agreeableness. The results could therefore be an indication of the existence of an alternative six-factor structure that may be unique to Eastern African Swahili cultures.

Because of the reported Arabian influences, with the consequence of Arab loanwords in the Swahili lexicon, one might surmise possible Swahili-Arabic connections in terms of trait structure. In this respect, the study by Zeinoun et al. (2017) on the trait structure in the Arab Levant did, however, not confirm such a link, but rather demonstrated a fair representation of what is covered in the Big Five and six-factor domains.

Where is Extraversion in Swahili? The talkative, cheerful, active, outgoing, energetic person, easily identifiable through most personality trait vocabularies in many languages, is not a typical pedestrian on Swahili streets. This may well be taken as a sign that those streets are paved in a collectivistic-oriented culture. This relative absence of typical extraverted behavior is not a matter of poverty, but rather a matter of priority and value. In Swahili culture, the Utu (Ubuntu) maxim "a person is well when others are well" applies. "The collectivistic identity is defined in terms of relationships to others" (Ma & Schoeneman, 1997). People in collectivistic cultures place greater value in social alliance and being committed to group goals than those who live in individualistic cultures, and they may therefore be less preoccupied in celebrating the self-enhancing tendencies that seem to be most typically expressed in extraversion-related traits (cf. Arpaci et al., 2018; Church et al., 2006; Heine, 2001; McCrae & Allik, 2002; McCrae & Terracciano, 2005; Triandis, 1995).

Most striking about the Swahili Six is the strong emphasis on value and morality loaded factors, seemingly reflecting traits that express the importance of collective goals. The morality contents of those factors also emerged quite strongly in Thalmayer et al.'s (2020, 2021) studies in Mali, Kenya, and Namibia. In the SAPI project, much of the morality content seemed to have been removed (pure evaluative items) or accommodated in subclusters (e.g., Hostility), and the remainder was finally brought to terms with Social–Relational factors. Factors with similar contents have repeatedly been found in other lexical studies (referred to as Virtue, Evaluation, Negative Valence). The Virtue factor in Swahili, its first and strongest factor, tells which are desirable traits and which are undesirable traits with respect to what binds the community. The second factor, Imprudence, captures traits that indicate that something is understood to be clearly wrong in the minds of people. In Swahili, the term intellect signifies both power of the mind (intelligence or wisdom) and manners. "Kukosa akili" (imprudence) can mean either lack of wisdom or bad manners. Those people are ridiculed through the use of behavioral words (verbs) or through words of insult (type nouns), almost excusing their inability to understand and participate in realizing shared goals. The third factor, Negative Valence, captures a great variety of traits, but all conveying the extent to which a person is considered worthless or even harmful with respect to what is cherished in the community. The words that are used in this regard are almost all of the disdainful type, carried through type nouns. The contents of the fourth factor, Self-importance, reflecting a rather recurrent facet of personality emerging in quite a few different languages, either as subdomain of (dis)Agreeableness or as central theme of the negative pole of Honesty–Humility, may be seen as blasphemous in the collectivistic context. The fifth factor, Deceptiveness, may be considered as reflecting one more way of distinguishing those who show community endangering behaviors from those who do not. Both the Self-importance and Deceptiveness related factors have emerged elsewhere, in Africa (in the SAPI project, contained in Negative Social Relations; in Maa captured by Hubris/Pride; in Khoekhoegowab through Vanity), and elsewhere, captured by either Agreeableness or Honesty–Humility). Those first five Swahili factors could, from a collectivistic cultural point of view, all be considered as different ways of differentiating the bad ones from the good ones, in regard to the highly revered communal context. The sixth factor, Attentive Conversation, on the other hand, may well be seen as referring to

the central platform of that revered communal context, where certain people, more than others, stand out in daily conferencing on what is going on locally, and in the world at large, against the background of *Utu–Ubuntu*.

To facilitate the interpretation of the factors and to investigate the relationships between the found factors and factors previously reported in lexical studies, the present study used marker scales for the Big Five factors (based on Goldberg, 1992) plus Honesty–Humility (based on Ashton et al., 2004) and Negative Valence (based on Benet & Waller, 1995). Although the Big Five factors were not identified in the Swahili structure (with the partial exception of Intellect, which was covered to some extent by the factor Imprudence, and Agreeableness, which appears to play a role in three Swahili factors: Self-importance, Deceptiveness, and Attentive Conversation), the marker scales themselves displayed adequate reliabilities and appeared to be unidimensional. This may be somewhat surprising, given the fact that a study examining a Swahili version of the Big Five Inventory (BFI; John et al., 1991) failed to replicate the five factors in the BFI and also found just poor to moderate scale reliabilities for the Swahili BFI scales (Garrashi et al., 2023). It must be noted though that the present study's marker scales are substantially longer (all marker scales are made up of 20 items, except Conscientiousness, which consists of 16 items) than the scales in the BFI (each comprising eight to 10 items), thus increasing reliability. Moreover, the identified sets of items per marker scale do not all cover the different facets of the originals. The marker scale for Extraversion, for example, is rather narrow in semantics with repeated terms expressing chat and joy. There may indeed be marker words in Swahili to represent traits from different models, but this does not mean that both those models and Swahili fully and mutually represent each other's cultural and lingual semantic specifics. The results from the present study suggest that it is possible to reliably measure the Big Five factors in Swahili (at the least using the longer marker scales), although these factors, particularly Extraversion, are not identified well in the present study's factor structure. This fits our explanation that the Big Five factors may play a less important role in the collectivistic East African culture examined here than the reported value and morality-oriented lexical Swahili factors. The resulting relatively small selection of Big Five-related terms in Swahili makes it less likely for those factors to emerge.

Type nouns play a big role in the semantic make up of all factors, except of the Deceptiveness factor, which is, in Swahili, almost exclusively communicated through the more abstract attribute nouns. Of the other five factors, trait content is communicated, sometimes with less emphasis, by attribute nouns and verbs, except for Negative Valence, which is more typically communicated through type nouns.

Limitations

While the study was about Swahili personality language, the sampling of participants took place in the coastal area of Kenya only. People who speak Swahili as their first language are most found in Kenya and in Tanzania, and indeed in the coastal districts. This means that generalization of the present findings to Tanzania, and especially also to the wider geographical area where Swahili is spoken as a second language, should be done with proper reserve. In this study, there was no registration of whether Swahili was the first or second language of the participants; the chances for second language speakers are small in the pertaining area but not impossible.

Another issue relates to the lack of familiarity of the participants with filling out questionnaires, in particular such lengthy ones as was used in this study. The length of the questionnaire was responded to by allowing a week time before returning it; the lack of familiarity may have caused a certain amount of noise.

Although we decided on a structure with six factors in the present study, which is a relatively common number of factors in lexical studies (e.g., De Raad et al., 2010), the percentage of variance that was explained by these six factors was quite low (16%), meaning that the majority of the variance in the present study's variables is not accounted for by the final six-factor structure. This percentage of explained variance is also relatively low in comparison to other lexical studies (e.g., De Raad & Barelds, 2008). There are several potential causes for finding a low percentage of explained variance in exploratory factor analyses, such as the number of variables analyzed, the number of factors extracted, the composition and size of the sample, and the number of scale categories used (Peterson, 2000).

For example, the larger the number of variables analyzed, and the larger the sample size, the lower the percentage of variance accounted for (Peterson, 2000). Also, the variance accounted for tends to be a bit lower in student samples. In the present study, we analyzed a large number of variables (661), in a substantial sample (480), consisting mostly of students. This may explain why the percentage accounted for was quite low. In addition, the previously mentioned limitation that the current sample lacks experience when it comes to filling out (lengthy) questionnaires may have introduced error variance that in turn negatively affected the percentage of variance accounted for in the factor analyses.

An issue in need of further investigation is the use of language that has hardly adjectives to communicate on personality. Together with the distinctive factor results in a psycho-lexically new language, a question is whether the results should be attributed to a unique feature of the language, to the African cultural context, or a combination of such characteristic.

Conclusion

In this study, we followed the psycho-lexical approach in order to map out the implicit personality trait structure in the Swahili language. The results concluded to a six-factor structure in Swahili, the Swahili Six, including Virtue (Wema), Imprudence (Ubahaluli), Negative Valence (Uwi), Self-importance (Kibri), Deceptiveness (Unafiki), and Attentive Conversation (Muamala). Our study has also indicated that the Big Five factor model was not confirmed, neither was the six-factor HEXACO model.

This is the first study that has applied a pure emic approach to explore the personality structure of Eastern African Bantu in sub-Saharan Africa (excluding South Africa). It is also one of the very few studies to combine a dictionary approach study with a free-description approach in exploring the personality trait vocabulary in a language. And it is the first study to our knowledge studying trait language that hardly contains the trait typical adjective. The interesting but rather deviant results requires further investigation of the Swahili personality structure, in comparison to other languages, and taking into account, among other things, the role of word categories and the dimension individualistic versus collectivistic.

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Appendix

Marker Scales for the Big Five Factors, Honesty-Humility, and Negative Valence

Marker scales for the Big Five factors, Honesty–Humility, and Negative Valence (sometimes, items of the same scale turned out to be the same after translation into English: their frequency is indicated between brackets). The marker items, often consisting of more than one word, are separated by semicolons.

Big Five Extraversion: chatterbox; chatterer and talebearer; chatterer and gossiper; likes chatting (2×); energetic and passionate; full of jokes; laughing; likes pleasure and easy life; likes gossiping; conversationalist; cheerful and good-humored; joyous; active; outgoing and cheerful; likes smiling (2×); open and transparent; takes initiative (2×).

Big Five Agreeableness: humble and kind; forgiving; respectful; generous; generous and hospitable; kind and friendly; courteous and full of respect; full of compassion and sympathy; kindhearted; sociable; humane and benevolent; cooperates with others; in good terms with others; amiable and gracious; trustworthy; quarrelsome; arrogant and conceited; shows off; full of arrogance and vanity; boasts and brags.

Big Five Conscientiousness: weighs things up; careful; clean and tidy; patient and persevering; good-mannered; hardworking and diligent; does not like working; idler; sluggish; lazybones; disorderly; chaotic; loafing; slovenly; negligent; time waster.

Big Five Emotional Stability: brave and strong-willed; steadfast and resolute; daring and bold; loses temper and full of rage; irascible and short-tempered; irresolute; doubtful; confused and worried; lacks courage and confidence; gets angry easily; easily startled; troubles self and worries; despairs and loses hope easily; gets irritated easily; likes crying and lamenting; gets upset easily; lacks self-confidence; restless; gets excited easily; hot-tempered.

Big Five Intellect: creative; clever and ingenious; intelligent and good-mannered; clever; has foresight and sagacity and prudence; has wisdom and discernment; thoughtful and sensible; has a good mind and reflects first; sensible and open-minded; never uses his brains and blockhead; idiot (2×); empty headed and dunderhead; nondescript and uncivilized; immature mind and idiot; brainless and foolish; stupid and fool; stupid and ignorant; imbecile; inexperienced and ignoramus.

Honesty–Humility: truthful; humble and kind; humble; humble and modest; modest; trustworthy and reliable (2×); full of arrogance and vanity; arrogant and conceited (2×); swagger;

(*Appendix continues*)

praises oneself and boasts (2×); boastful; glorifies self; shows off (2×); vaunts oneself (2×); boasts and brags.

Negative Valence: corrupt; dishonest and malicious; traitor and betrayer; rogue and bandit; mugger; malignant and evil-minded; snatcher and thief; aggressor; nondescript and uncivilized; makes false accusations; slanderer and calumniator; arrogant and conceited; ruthless and foolish; deceives and uses tricks; torments others; tells concocted stories about people; liar; slovenly negligent; lecherous and immoral; ruthless.

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