Oxford Handbooks Online

[−] Abstract and Keywords

A dictionary is the tangible repository of the common stock of words, although dictionaries comprise at best 10% of the full lexicon. Part of the lexicon is made up of the words used to describe what people do and what people are like. The psycholexical approach to personality focuses on this subset of words and on its exploitation, or what can be said to be the glossary of personality. This chapter is concerned with the history of the psycholexical approach to personality description, from ancient history to the more recent efforts, albeit focusing in particular on its modern history. Psycholexical taxonomies from around the world will be considered, as well as taxonomies based on nouns, verbs, adverbs, and their combinations. Ongoing controversies, difficulties, and disputes regarding alternative psycholexical personality structures will be considered, as well as recommendations for future research.

Keywords: Big Five, Five-Factor Model, lexicon, psycholexical, personality trait structure, taxonomy, etic, emic

In the history of personality psychology, the two related versions of the five-dimensional model of personality traits, the Big Five Model and the Five-Factor Model (FFM), are probably most prominent because they are both built on the understanding of having virtually exhausted the full domain of traits. The broad acceptance of the model is certainly a popularity index, but more important, it is an index of its authoritative nature. The origin of the model is characterized by the divide between the psycholexically based Big Five approach and the questionnaire-based approach of the FFM.

The five-dimensional model of personality traits is the trait model constituted by the five factors of Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Intellect or Openness to Experience. The two different wordings for the fifth factor are symbolic of one of the differences between the psycholexical approach and the questionnaire approach, respectively.

In this chapter, the history of the model is covered, going back to Cattell's pioneering work to which the two related model versions are linked, and before, but also briefly reviewing some competing models, most notably that of Eysenck, because they add to the discussion of the best way to structure the vast domain of traits. Moreover, the ideas from the history of (personality) psychology that gave floor, flesh, and flavor to the concept of having a comprising system of traits are also considered. An effort is also made to sketch the context in which ideas about persons are formed and find their way into the lexicon in a summarized format, most notably through trait-descriptive adjectival expressions. The term "lexical" in the title of this chapter implies that the building blocks of the model are to be found in the catalogue of a language's words, the collection of all words of a language community. For practical purposes, we might refer to the dictionary as the tangible repository of that common stock of words, although dictionaries comprise at best 10% of the full lexicon. Part of the lexicon is made up of the words used to describe what people do and what people are like. The psycholexical approach to personality focuses on this subset of words and on its exploitation; we might call it the glossary of personality.

Introduction

Exploiting the Lexicon for Scientific Use

It took a long time for the scientific study of personality to recognize the value of natural language for advancing personality psychology. With that growing insight, the notion increased that everyday language had shortcomings. Taking the shortcomings into account, it would, however, be foolish "to ignore such a storehouse of accumulated wisdom as a natural starting-point for the study of behavioral attributes" (Wiggins, 1973, p. 329).

There are different possible ways to exploit everyday language. The systematic study of person-talk (De Raad, 1985) is one option. This could involve recording actual conversations, and studying those conversations for personality-relevant utterances. Another option is tracing personages and their trait-attributions in literary works (cf. Bromley, 1977; McAdams, 1994). Other possibilities may be found in letters and films. The psycholexical approach usually involves the use of a dictionary as the tangible representation of the lexicon. The advantage of this latter method is the systematic representation of the more useful part of a lexicon by generations of lexicographers. Yet, choosing the dictionary over other lexical resources may have consequences in terms of collecting lexical items with a specific momentum of representation and of function.

The Lexical Hypothesis

Before the two versions of the five-factorial trait model started playing a significant role in the psychological literature, there is a rather clear timeline from Galton (1884) to Cattell (1943a, 1943b) in which ideas for a glossary of personality were given form and in which the large list of personality trait terms was summarized in an orderly system. During that timeline, the main principles of the psycholexical approach were formulated, starting with Galton and elaborated especially by Allport and Odbert (1936), resulting, among other things, in a rationale that had, according to Allport and Odbert, a "portion of plausibility":

> Linguistic symbols have demonstrated utility; they have been tested throughout the ages for their power of representing stable facts of experience…. If traits exist at all it is natural and proper to name them…. Naturally the more often a disposition … is encountered in the population the more chance it has of being christened.
>
> (Allport & Odbert, 1936, p. 10)

The purport of this rationale was described as the so-called lexical hypothesis by Goldberg (1981), who stated that traits or individual differences found to be important by people are represented or will be represented in language. The significance of this hypothesis was independently phrased by the philosopher of language Austin (1970), the writer and semantic poet Themerson (1974), and the psycholinguist Miller (1991).

The Context of Everyday Differentiation

People form an important topic in daily conversations. What people do or not do, their achievements and failures, what happened to them, their emotional reactions in regard to situational demands, etc. are talked over, evaluated, and explained.

In a cafe, possibly two-thirds of the conversation is person-talk, about who does what with whom, and whether that is good or bad; who is popular and who is not, and why; how we deal with a difficult child, a difficult partner, or colleague. The most frequently sold books are about how the main characters cope with their intimate experiences and how they react to changes of life. Everyday conversations at work or at home relate for a large part to behavior and traits of self or other. Ideas about people are put into words, as much as possible in a language that fits the idea. This is not only a matter of content—is the observation represented well? It is also a matter of use— how do people react to it? When there is a lack of words or when words fall short, new words or more prosaic expressions are invented or metaphors are used—and sometimes these new expressions are adopted by others. The practical usage provides feedback on the effectiveness of the expression: are feelings relieved, did we strike the right note, did we pluck someone's heartstrings? Words are continuously tested for their usefulness.

This everyday person-talk, and also written text, does form a kind of continuous "survival test." Lingual

expressions (e.g., *egoistic, aggressive*, or *shy*) that have proven their use in often longtime testing for their capacity to represent facts of experience, and to communicate about those experiences, have a good opportunity to create a firm position in the lexical storehouse. The more often a trait or disposition in the behavior of people is observed, the greater the chance that the trait is labeled and that it becomes a communicative commodity.

By focusing on what the lexical storehouse has in reserve for personality, expression is given to the appreciation of the descriptive and detailing potential of the lexicon of personality. That archive of everyday language with that enormous differentiating potential forms the rough material for the construction of a scientifically acceptable medium for the description of personality traits.

A problem of course is that everyday language is not a neutral language. The lingual elements that stood the test of survival are loaded in all kinds of respects. "Everyday interactions can thus be considered as the stage where conceptions about people, particularly concerning these peoples' personality or character, come into being, are maintained, or are changed" (De Raad, 1985, p. 1).

Sedimentation of Person-Talk

Interestingly, spontaneous everyday conversation of persons is not typically characterized by the types of words that are used in personality trait research. In addition to the fact that everyday person-talk is often incomplete, without explicit intention, and serves transient goals, most utterances are in behavioral wordings. Perhaps in 10% of the cases trait-descriptive adjectives are used (De Raad, 1985). Of immediate interest for the psycholexical procedure is not so much the single utterances that people may use to make sense of behaviors, but rather how they summarize and communicate those meanings. Hampson (1982, 1984) referred to this as a constructivist process: when it is observed that a person gives money to charity, remits someone a debt, and manages matters for someone else, for example, this may lead to the impression that the person is generous. We focus on the sedimentation (cf. Berger & Luckmann, 1966) of such impressions from person-talk into the lexicon of a language.

The Study of Abstract Trait Words

When the abstract trait-descriptive adjective forms the unit in studying personality, we may ask indeed whether we are studying words and their semantics or the behavior referred to by those words. A pressing issue in the psycholexical research, almost from the very beginning, has been the question: "What are we really studying, human behavior or relations between words on the basis of semantic similarity?" Both methods have explicitly been used, the one involving ratings of people and their behaviors on sets of trait-descriptive adjectives, and the other involving judgments of similarity between trait descriptive words. Wiggins (1973) suggested that the first method produced so-called external structures, and the second produced internal structures. D'Andrade (1965), a fervent critic of personality, equated the two methods, claiming that inferences on human behavior are derived from the semantic similarity judgments. D'Andrade (1965) was drawing on his study using Norman's 20 Big Five scales. He found the same factors in studies of judgments about people and in judgments of similarity of meaning. He repeated his conclusion in a subsequent publication (Shweder & D'Andrade, 1980). Peabody (1987) also studied internal structure using a much larger set of personality descriptors with 57 scales and 114 adjectives, totaling 6,498 judgments. He found six factors, much like the Big Five; the factors were, however, uneven in size, with three bigger factors (Agreeableness, Conscientiousness, and Surgency) and three smaller ones (Intellect, Emotional Stability, and Values). Opposed to D'Andrade, Peabody (1987) argued that the internal structure is simpler and that it is derived from external judgments. In a follow-up study, Peabody and Goldberg (1989) compared the results based on five external data sets and two internal data sets and found variants of the Big Five in all seven data sets. However, in every instance there were three larger factors, Surgency, Agreeableness, and Conscientiousness, thus giving birth to the Big Three model. Peabody and Goldberg (1989) also corroborated the finding that conceptual judgments or semantic similarity ratings were simpler than judgments of people. Church and Katigbak (1989) studied the internal and external structure in the Filipino language, found factors similar to the Big Five, and supported the cross-language generalizability of the Peabody and Goldberg (1989) study, and also further refuted D'Andrade's claims that judgments of people simply reflect semantic similarity or implicit personality notions.

The Questionable Nature of Everyday Language

Trait words are often contaminated by their context of development and application. Traits are named in terms of standards and interests of a certain space of time. For some words the meaning is particularly articulated under the influence of Christian values, such as "devout," "compassion," and "patience." The term "jovial" comes from astrology (under the influence of Jupiter), "radical" from politics, and "neurotic" from psychology. Not only the time frame, but also the spirit of the age is of influence. The extravert was once described as spiritually poor and superficial and the introvert as high and inwardly rich. Now the introvert is rather the eccentric and individualistic and the extravert is energetic and sociable. Some words are used only in specific contexts (they are region specific), belong to a certain jargon, or serve a fashionable purpose. Words can reveal secrets, frustrate, or hurt. Trait words can be used as weapons. As invectives they can become the verbal vitriol with which reputations are sometimes ruined and people are brought to stand apart.

John, Angleitner, and Ostendorf (1988) summarized the main criticisms regarding the use of ordinary trait language for scientific purposes, including the laypeople origin (cf. Block, 1995), the contextual loading, and the additional complication of communicability across languages. Saucier and Goldberg (1996) agreed that the natural language has shortcomings, but they argued that it represents the best approximation of the total population of personality variables. In addition, the lexical approach minimizes a prestructuring of variables according to theorists' preconceptions of personality (De Raad, 2000; Saucier & Goldberg, 1996). Hofstee (2003) argued that we can dispute that ordinary language is not subtle enough for scientific purposes, yet, in studies with questionnaires built on expert language (e.g., Digman & Inouye,1986), the Big Five were also recovered.

History

Ancient History

Trait archives from the past.

Plato (427–349 BCE) seems to be responsible for the earliest known register of traits of the human personality, a list of no more than four cardinal traits: courage, justice, temperance, and prudence. These traits may be seen as the result of a virtual dispute over the most important traits: basic traits needed for the foundation of an ideal society. People who were endowed with prudence expressed in traits of wisdom and intellect would be well-qualified for leading positions; those who were endowed with traits of courage, bravery, and duty would be fit for the protective and executive tasks in a society; and the masses of workers would ideally be equipped with temperance expressed through moderation and self-control. Finally, the basic trait, justice, was considered as a general trait important for the different layers of a society. Plato's student Aristotle (384–322 BCE; Ross, trans., 1988) amplified this trait register to a system with character traits, and provided each with its extremes in which its deficiency or excess was expressed, thus accounting for 39 distinct character traits. In turn, a student of Aristotle, Tyrtamus (called "Theophrastus" by Aristotle because of his divine writing style, 371–287 BCE), undertook the task of describing 30 characters, seemingly to give a fuller portrait of moral character, each provided with examples of strengths and weaknesses in a contextualized sketch. These ancient character descriptions all implied suggestions of what kind of persons we ought to be. The type of character writing introduced by Theophrastus became very popular since the renaissance. Aldington (1925) has brought together some 500 short character studies, including that of Theophrastus, thus providing a rich resource of moral character traits.

De Raad and Ceulemans (2001) studied the semantics of the 30 characters of Theophrastus, by identifying 345 typical actions in the character sketches and classifying them using the Abridged Big Five Circumplex (AB5C) model (De Raad, Hendriks, & Hofstee, 1992) as the accommodative system. Both the 345 typical actions and the 30 characters were best described by combinations of the negative poles of the factors, Agreeableness, Conscientiousness, and Intellectual Autonomy, thus supporting the often heard conjecture that Theophrastus' characters conveyed a moral message.

Recently, Dahlsgaard, Peterson, and Seligman (2005) have taken up the study of moral character traits again by examining philosophical and religious traditions around the world. They constructed a long catalogue of positive traits (character strengths, virtues) and classified them into six core virtues. De Raad and Van Oudenhoven (2011; see also Cawley, Martin, & Johnson, 2000) studied the Dutch lexicon of virtues from a psycholexical perspective, and concluded that six factors of virtues covered a lot of ground of the Big Five (Emotional Stability excluded). The

lexically based virtue factors showed only partial overlap with the core virtues described by Dahlsgaard et al. (2005).

Characters in text in ancient times.

Another interesting resource for trait descriptors, and the use of those descriptors in characterizing people, is evident in the literary text, as in a novel. In some novels certain psychological qualities are explicitly staged through the novel's protagonist, often with the function of furthering the plot of the story. Examples are *greed*, a main theme in *The Great Gatsby* by F. Scott Fitzgerald, and *apathy* and *drowsiness*, forming the theme in Ivan Goncharov's *Oblomov*. Going far back in history, an intriguing case can be found in Homer's *Iliad*, because of the hundreds of personages playing a role in the story, many of whom are provided with character descriptions. Passakos and De Raad (2009) identified 1,713 so-called epithets in the *Iliad*, which are adjectival phrases in which an adjective is combined with the name of a personage. A total of 1,057 of these epithets could be identified as trait-descriptive epithets. Those epithets were classified in the AB5C segments of the Big Five model. Whereas the *Iliad* is generally understood to form a display of the heroic character, the Big Five viewpoint specifies more than before the various sides of heroism as recorded in the lexicon of the time. Facets from all Big Five factors were used to capture the meaning of heroism, as in *venturesome, good, powerful, bellicose, resourceful*, and *fearless*. For treatises on how personality is conceived of in ancient Greek times, see, for example, Gill (1996) and Adkins (1970).

Modern History

The German inception of an alphabetical psychology: from Galton to Baumgarten.

While Germany became the main region for the development of psychology at the end of the nineteenth century and different psychological subdisciplines emerged, the lexical approach commenced in this fertile environment as well. The approach was later called "alphabetical psychology" by Kouwer (1963). The first who pointed to a dictionary as a valid resource was possibly Galton (1884), who examined Roget's *Thesaurus* and estimated that it contained "fully one thousand words expressive of character" (p. 181), with "character" referring to moral qualities. Some years after Galton, Rümelin (1890) pointed again at the availability of hundreds of character traits in language waiting to be exploited for scientific use. It took a few decades before Klages (1926) again took up the rationale of the lexical approach for the study of personality, and he roughly estimated that around 4,000 words in the German language could be useful for that purpose. Just a few years later Baumgarten (1933) made an effort to empirically test Klages' hypothesis by examining various German dictionaries and other publications, using frequency criteria for the occurrence of trait descriptive words, and she came up with a list of 941 adjectives and 688 nouns useful for describing personality.

Fruits from Webster's Unabridged Dictionary: from Allport and Odbert to Cattell.

In the years during which the center of the psychological evolution shifted from Germany to the United States, the lexical approach moved along. Allport and Odbert (1936) undertook the task of scrutinizing Webster's unabridged dictionary and they were able to select almost 18,000 words that might be useful for the description of personality. Those words were classified into four categories, differing in level of descriptiveness for everyday conversation and differentiation, thus taking into account the contextual issues mentioned earlier. Those categories were "Neutral terms designating possible personality traits," "Temporary moods or activity," "Evaluations," and a "Miscellaneous" category. The first category contained "most clearly 'real' traits of personality" (Allport & Odbert, 1936, pp. 24–38), with 4,504 lexical items. Interestingly, lexical items symbolizing abilities (e.g., able, competent, gifted, talented) ended up in the third or fourth category.

Starting with this first category of "real" personality traits, Cattell (1943a, 1943b) stretched the criterion for this category by adding a few hundred terms mainly from the second category of "temporary state" terms, following by removing rare and archaic terms and doubles that differed only through prefixes, thus yielding a list of between 2,100 and 2,200 terms, which were classified into 160 clusters on the basis of synonymity. Cattell next searched the psychological literature for personality-relevant terms that psychologists had used during a century or so, which led to an amplification with 11 new categories, not well represented in the dictionary, mainly in the areas of abilities and interests. The final set of 171 categories or trait variables was supposed to comprise the complete

personality sphere. On these 171 trait variables peer ratings from 100 participants were collected. Based on empirical correlations among these ratings, Cattell dropped quite a few variables and clustered the remaining ones into a final set of 35 traits.

Cattell's trait sphere summarized: 35 trait variables in 12 or 5 primary factors.

The set of 35 trait variables or somewhat reduced subsets has been used by different investigators who arrived at different sets of factors. Cattell (1945, 1947) conducted factor analyses using ratings on the 35 personality variables, and identified 11 to 12 factors, similar across samples. Cattell added four questionnaire-specific scales to complete a system with 16 primary personality factors (16PF). Fiske (1949), Tupes and Christal (1958, 1961), and Norman (1963) each collected their own ratings on the 35 Cattell variables and none of them was successful in replicating that many factors but rather arrived at a much simpler structure with five independent dimensions. Since Norman's (1963) study, those five factors had been referred to as the "Norman five" and were labeled Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Culture. The factors were dubbed the "Big Five" by Goldberg (1981; cf. Goldberg, 1990) in whose work the fifth factor shifted labels from Culture to Intellect (Goldberg, 1993a).

Norman's 2,800 stable traits.

The drastic reduction of the personality lexicon to a set of only 35 trait variables was "a matter of unhappy necessity" to Cattell (1945, p. 70), due to the technical limits of the time. Tupes and Christal (1961) thought that it was possible to find fundamental concepts other than those described by the five factors based on the set of 35 trait variables. Norman (1963) suggested going back to the total pool of trait names in the natural language. Norman (1967) actually started building a new taxonomy that would be "sufficiently exhaustive, precise and well structured to be useful for purposes of scientific communication and assessment" (p. 2). He used a new edition of Webster's *International Dictionary*, searching for trait terms not yet included in the Allport-Odbert list. To his surprise, he found only 171 new terms, yielding a complete set of 18,125 terms. In several rounds of reduction, Norman (1967) excluded about 11,000 terms according to criteria adopted by most lexical researchers to date, and sorted the remaining 7,000 terms into the three main rubrics of stable "biophysical" traits, temporary states and activities, and social roles, relationships, and effects, more or less similar to the classification made by Allport and Odbert (1936). Next, Norman collected a massive set of data for the 2,800 terms, or more precisely 2,797, from the category of biophysical traits, including ratings of their functionality, familiarity ratings, self and peer ratings, and social desirability ratings. Those terms were first clustered into categories defined by the Big Five poles, and subsequently into more narrow synonym clusters, thus forming 75 clusters of trait terms.

Goldberg's taxonomy of personality descriptive terms.

About a decade after Norman instigated his ambitious project, Goldberg embarked on bringing the project "to its logical fruition" (Goldberg, 1975). Goldberg (1981) laid the foundation for the contemporary methodology of the lexical approach through a series of careful analyses and by giving some first answers to important considerations: descriptions along a continual dimension are to be preferred over a typological approach; unipolarity and bipolarity of dimensions should both be given a role; orthogonality of dimensions has certain advantages but oblique dimensions should be considered because they seem to be more realistic; and the level of description should be neither too abstract nor too specific.

Goldberg (1982, 1990) shortened Norman's 2,797 list to 1,710 trait-descriptive adjectives using criteria of familiarity, removing dialect terms, and adding 40 adjectives, mostly from Gough's Adjective Check List. Goldberg (1990) aggregated the self ratings collected by Norman on the 1,710 adjectives into the 75 Norman clusters, thus obtaining cluster-scale scores, and applied different methods of factor extraction and rotation on those cluster scores, and repeatedly obtained five factors. Goldberg (1982, 1990) further reduced the 1,710 set, using various exclusion criteria, to the 479 most commonly used trait adjectives. A clustering of these 479 terms into 133 synonym clusters took place, and factor analyses on these 133 cluster variables in four samples of participants, including two self-rating samples and two peer-rating samples, again yielded clearly five factors. When the analysis of a further reduced set with 100 synonym clusters based on 339 adjectives produced again the Big Five, Goldberg (1990, p. 1223) was enthusiastic of Big Five breadth: "Consequently, it now seems reasonable to conclude that analyses of any reasonable large sample of English trait adjectives in either self- or peer-descriptions will elicit a

variant of the Big Five factor structure and therefore that virtually all such terms can be represented within this model." Goldberg (1992) eventually developed a set of 100 unipolar and 50 bipolar scales, calling them "standard markers of the Big Five factor structure." Goldberg's taxonomic endeavor continued with the development of an evaluation-explicit taxonomy, and three preliminary taxonomies, namely a taxonomy of nouns, one of temporary moods, states, and activities, and one of social roles and relationships or effects (Goldberg, 1982).

Cattell revisited: three secondary factors.

The early studies of Cattell (1943a, 1947) were also a valuable source of information for Costa and McCrae (1985) who were interested in using a measure of personality in the context of aging studies. A first cluster analysis of the Cattell's 16PF (Costa & McCrae, 1976) scales revealed two recurring clusters, i.e., Extraversion and Neuroticism, but also a hint of their future important dimension of Openness to Experience. The origin of Costa and McCrae's (1985) addition of Openness to Experience was Coan's (1972, 1974) Experience Inventory developed to measure components of Openness to Experience. The instrument formed part of Coan's strategy to study the humanistic-oriented concept of an optimal personality, which was felt to have openness to experience as a core quality. Coan (1974) agreed that Cattell had done a remarkable job in describing the common personality trait vocabulary. That vocabulary made it possible to differentiate people by their observable behavior and by their ways of expressing emotions. According to Coan, however, our language would be deficient in describing unexpressed experiences and thoughts (Coan, 1974, p. 21). The Experience Inventory was developed to fill that gap, and contained seven scales to measure the various facets of experiences. For the original NEO Personality Inventory (Costa & McCrae, 1985) six facets were selected to measure openness to experience, and subsequently also six facets for both the Neuroticism and Extraversion scales. The correlations of the three NEO scales with Goldberg's Agreeableness and Conscientiousness scales turned out to be essentially zero (McCrae & Costa, 1985a, 1987).

From the NEO-plus-two to the Five-Factor theory.

Costa and McCrae (1992b) later added Agreeableness and Conscientiousness to their model, which then constituted the FFM, so crucial for the popularization of the model and its expansion to the domain of questionnaires. In subsequent years Costa and McCrae conducted numerous studies (e.g., Costa, Busch, Zonderman, & McCrae, 1986; McCrae & Costa, 1985b, 1989a, 1989b) relating the five factors to other prominent personality instruments and models such as MMPI, MBTI, Eysenck's model, and Wiggins' circumplex. Those studies found substantial and meaningful relations between all the investigated personality instruments and the FFM dimensions and convinced Costa and McCrae (1992a) that five factors are basic dimensions of personality. This was corroborated by Goldberg and Rosolack (1994) who viewed the Big Five as an integrative framework for personality research. In recent years Costa and McCrae (e.g., McCrae, 2010; McCrae & Costa, 2008) built a Five-Factor Theory (FFT), going a step further from the usual Big Five interpretations, and claiming that five factors have not only descriptive but causal status, and that they are universal with strong genetic and biological bases.

Trait Taxonomies Around the World

A Diversion of Lexical Methods

Some 40 years after departing from Germany to the United States, the lexical approach to personality found its way back to Europe, mainly in the Netherlands and again in Germany. The first two studies followed different procedures. The first study was conducted in Dutch by Brokken (1978) who followed a straightforward procedure of selecting terms from the lexicon that had trait descriptive meaning. Those terms were identified using a practical definition of traits in the form of identification sentences. This was referred to later as the Dutch method. Angleitner, Ostendorf, and John (1990) performed the first German psycholexical study for which they developed an explicit and detailed schedule involving a variety of characterizational terms, including, for example, traits, roles, and reputations. The distinctive significance of the German project is in the detailed explanation on which terms are trait relevant, the minute development of the trait classification system, and the elaboration of the importance of the word class of nouns for personality description.

Central issues in these selection procedures involve (1) the definition of the lexical documentation used for finding trait terms; (2) the definition of the domain of characteristics that defines personality; (3) the definition of a trait to

be selected from those documents; and (4) defining the lingual categories of description. With respect to the first, typically dictionaries are used as the type of lexical documentation that is probably most comprehensive. However, it is also possible to use novels, or other types of documentation in which personality characterizations are provided. The use of dictionaries has been such that each and every page was scanned for personality descriptive terms. Tellegen and Waller (1987), however, sampled pages from a dictionary to arrive at a full and unrestricted set of traits. Regarding the second, the German lexical team, for example, defined personality in a very broad sense, including not only traits but also roles, attitudes, reputations, etc., because all these concepts may convey information on personality. With respect to the third, a general theoretical definition that is mostly used, explicitly or implicitly, is "disposition" or another term with the same intent (e.g., inclination). In the Dutch lexical program, practical definitions were used in the form of sentences in which a trait term should fit. Different practical definitions apparently produce different sets of traits (Brokken, 1978). Related to both the second and third issue, Tellegen and Waller (1987) proposed broadening the definitions of traits so as to also include evaluative descriptors.

Regarding the fourth, several studies have been performed with word categories different than adjectives, with De Raad and Barelds (2008) providing the ultimate study with word sorts from all relevant categories in one single study. The main idea was to capture all personality descriptive content in a lexicon, not only the semantics conveyed through adjectives.

The Dutch Taxonomic Project

Brokken (1978), in a major phase of reducing the starting set of 8,690 adjectives, devised two criteria for deciding what personality descriptors are the so called "Nature criterion" and the "Person criterion." According to the former, the Nature criterion, an adjective is useful for personality description if it could be meaningfully inserted in the following sentence: "He (she) is ... by nature." In accordance with the Person criterion, an adjective serves the purpose of personality description if it answers the question: "Mr/Mr X., what kind of person is he/she?" (De Raad, 2000). For the development of the taxonomy of personality verbs, a similar identification sentence was used: "If someone [verb]s more often than others, then that behavior shows his/her personality" (De Raad, Mulder, Kloosterman, & Hofstee, 1988). For the taxonomy of personality descriptive nouns for each noun judges were asked its usefulness in "describing, typifying, characterizing, etc. a person" (De Raad & Hoskens, 1990). In a study comparing the replicability of the Big Five using different trait descriptive word classes, De Raad (1992) concluded that the five factors are most clearly found in the structure of adjectives, but the structure of nouns and verbs can be also interpreted in terms of some of the Big Five factors or their blends. The Dutch method was also proven useful in lexical studies in other languages, such as in Italian by Caprara and Perugini (1994). Aspects of both the Dutch and the German methods were used in, for example, the Hungarian taxonomy (De Raad & Szirmák, 1994; Szirmák & De Raad, 1994).

The German Taxonomic Project

Angleitner et al. (1990) elaborated on Allport and Odbert's (1936) definition of personality relevance by dividing it into three main steps. The first step related to their expectation of six categories of person description to appear in the dictionary, such as (1) stable traits, (2) states and moods, (3) activities, (4) social aspects of personality, (5) abilities and talents, and (6) appearance. The second step related to exclusion criteria indicating that terms are not personality relevant if they could apply to all individuals or if they could be related to geographical origin, to occupational identity, only to a part of the person, or be doubtful and metaphorical. In the final and third step the Dutch method was drawn on and terms from the lexicon were considered personality relevant if they could be meaningfully inserted in any of two identification sentences.

The German team also included other word classes beyond adjectives, and distinguished between attribute nouns and type nouns. The former are abstract words and relate indirectly to people, describing their traits, behavior, and experience, such as *friendliness* (Angleitner et al., 1990, p. 93). The latter refer directly to people, characterizing their personality types, such as *nerd*.

The German method is reflected in the majority of the personality taxonomies developed later, including another Italian Roman taxonomy (Di Blas & Forzi, 1998), Czech (Hřebíčková, 2007), Polish (Szarota, 1996), Filipino (Church, Katigbak, & Reyes, 1996), Croatian (Mlačić & Ostendorf, 2005), Slovak (Ruisel, 1997), and Spanish (Quevedo-

Aguado, Iraegui, Anivarro, & Ross, 1996).

The Replicability of the Big Five in Germanic and Slavic Languages

In the late 1980s and 1990s, the lexically based taxonomy approach was followed in many languages, mainly in Europe, with the replication of the Big Five being most successful in Germanic and Slavic languages (Saucier, 2009).

The Dutch and German findings corroborated the Big Five structure. The Dutch studies (De Raad, 1992; De Raad & Hoskens, 1990; De Raad et al., 1988) found the Big Five in the structure of adjectives, but also to a greater or lesser extent in the structure of nouns and verbs. The noun and verb structures also suggest new meaningful dimensions or facets not covered by the adjective structure. Whereas the German structure gave a clear confirmation of the American-English-based Big Five structure, including an articulate intellect factor, in the Dutch taxonomy the fifth adjective-based factor not only covered more typical intellect facets but also those of rebelliousness and progressiveness, as opposed to conventionality, thus emphasizing intellectual independence (cf. De Raad, 1994).

The first study using the detailed German method clearly replicated the Big Five in the German language (Ostendorf, 1990), using self and peer ratings and corroborating Norman's (1967) finding that Agreeableness is the largest factor in the natural language, and Emotional Stability belongs to the smallest. Studies in the Slavic languages that followed the German method were also supportive of the Big Five. Szarota (1996) replicated the Big Five in Polish. The five-factor structure found in Czech (Hřebíčková, 2007) showed four factors similar to the first four of the Big Five, but the fifth factor was peculiar in that it referred to both abilities and dexterity. When exploring the trait structure in Czech with personality-descriptive verbs, Hřebíčková, Osecká, and Čermák (1999) found Big Five elements, but Intellect was absent. The Croatian personality taxonomy (Mlačić & Ostendorf, 2005) replicated the Big Five using self and peer ratings based on adjectives with three larger factors (Agreeableness, Extraversion, and Conscientiousness) and two smaller ones (Intellect and Emotional Stability), thus supporting the Big Five as well as the Big Three model. The Croatian study also yielded a clear relationship between Croatian emic dimensions and the respective imported American Big Five factors (Mlačić & Ostendorf, 2005). Even the study in Russian (Shmelyov & Pokhil'ko, 1993) that investigated the internal structure of traits found substantial congruencies between the Russian factors and the Big Five, but it should be noted that those five Russian factors were identified in a Six-Factor structure.

The Replicability of the Big Five in Other Indo-European Languages

Unlike Germanic and Slavic languages, the replication of the Big Five in other Indo-European languages was far from perfect. The first study that appeared in Romance languages was done in *Italian* by Caprara and Perugini (1994), and they settled on the five-factor solution. The factors, interpreted as Extraversion/Energy, Quietness versus Irritability, Conscientiousness, Selfishness versus Altruism, and Conventionality, did not align clearly with the Anglo-Germano-Slavic Big Five. The fifth factor in Caprara and Perugini (1994), Conventionality, was much more like the fifth factor in the Dutch structure, emphasizing the rebelliousness and progressiveness at the nonconventionality pole. In addition to this there was a clear shift in content between the Italian factors Quietness and Altruism and the classic Big Five Agreeableness and Emotional Stability. The other study in Italian language, done by Di Blas and Forzi (1998), also partially replicated the Big Five in two sets of data in a structure with a clear set of three factors (Conscientiousness, Extraversion, and Agreeableness), and the Emotional Stability dissipated into two factors, while a five factor solution did not yield an Intellect factor. In a study by De Raad, Di Blas, and Perugini (1988) combining the data sets of the two Italian taxonomies, and comparing the two structures, it turned out that the two taxonomies had produced essentially the same Five-Factor structure, with four typical Big Five factors and the fifth factor emphasizing Integrity versus Nurturance.

The study in *Spanish* (Benet-Martinez & Waller, 1997) was one of the first to demonstrate the so-called Big Seven model with factors interpreted as Positive Valence, Negative Valence, Pleasantness, Engagement, Temperament, Agreeableness, and Openness. Because Pleasantness was based on sociability, joy, energy, and self-assurance, Saucier and Goldberg (2001) saw a clear replication of the Big Three in the Spanish data, in addition to the Positive and Negative Valence factors. It should be noted that Benet-Martinez and Waller (1997) followed a specific methodology in which every fourth page of the Spanish dictionary was inspected for trait descriptors. That kind of

sampling may have systematically influenced the exclusion of terms beginning with, for example, "un" or "in" that denote the relative lack of a certain quality; this could, for example, have influenced the size of the negative poles of resulting factors.

Another taxonomy in the Romance language, *French* (Boies, Ashton, Pascal, & Nicol, 2001), in Canada was one of the first Indo-European studies distinctive in two aspects, namely the extraction of six factors, rather than five, and the interpretation of one of the factors as Honesty. The six factors in that study reported by their relative size were Agreeableness, Emotional Stability, Extraversion, Conscientiousness, Honesty, and Imagination (with the notable absence of Intellect-related terms). However, it must be noted that the factors of Agreeableness and Honesty shared some of the aspects regarding their cross-correlations with the adjective markers of noncorresponding factors, that is, the factor of Agreeableness had the highest correlation with the adjective markers of Agreeableness, but also a substantial secondary correlation with markers of Honesty and vice versa.

A study in the modern *Greek* language (Saucier, Georgiades, Tsaousis, & Goldberg, 2005) that used a modified German method examined both ipsatized and raw-data factors and it was concluded that only one- and two-factor solutions were invariant. The one factor was labeled as Evaluation and the two factors as Morality/Social Propriety and Dynamism (Saucier et al., 2005). Beyond that, the authors considered that the five- and Six-Factor solutions were also stable, but the factors did not resemble the classical Big Five interpretation. For example, the five factors in the ipsatized data set were labeled as Negative Valence, Morality/Agreeableness, Conscientiousness, Prowess/Heroism, and Positive Affect/Sociability whereas in the Six-Factor solution the Morality/Agreeableness factor broke into Honesty and Even Temper.

A recent taxonomy in *Hindi* (Singh, Misra, & De Raad, 2013) confirmed the stability of three factors in self ratings and peer ratings, but not the so-called Big Three. The three Hindi factors reflected the ancient Hindi cultural concept of Triguna, namely rajasic, tamasic, and sattvic. According to Singh et al. (2013) the rajasic factor represents ambition, friendliness, and humility, tamasic represents egoism, mean mindedness, and concealment, and sattvic represents competence, organization, and soberness. Singh et al. (2013) also concluded that the triguna factors covered much of the Big Five content and variance, which prevented the Big Five from appearing beyond triguna.

In conclusion, the studies in Indo-European languages other than Germanic and Slavic gave varying structures, with three, five, and up to seven factors, and the replication of the Anglo-Germano-Slavic Big Five was sporadic, usually with the lack of the Intellect factor and a dispersion of the Emotional Stability factor. Those studies also offered first versions of models that later became the competitors of the Big Five, such as the Big Six (Ashton & Lee, 2001) and the Multi-Language 7 (ML7; Saucier, 2003a) models. It seems, however, that the kernel structure that could be drawn from most of these studies, if not all, is the Big Three model with often broad versions of Agreeableness, Extraversion, and Conscientiousness.

The Big Five in Non-Indo-European Languages

Studies in *Hungarian*, a Finno-Ugric language (De Raad & Szirmák, 1994; Szirmák & De Raad, 1994), were not directly supportive of the Big Five. A Five-Factor solution did not contain Intellect, but a factor called Integrity (De Raad & Szirmák, 1994); only a Six-Factor solution additionally gave the Intellect factor. In a Five-Factor solution Agreeableness was well covered but had split into two factors, respectively called Agreeableness and Integrity. The Six-Factor solution formed the first appearance of the structure later confirmed in work of Ashton as the Big Six.

Studies in *Turkish*, a member of the Altaic language family, were more supportive of the Big Five (Goldberg & Somer, 2000; Somer & Goldberg, 1999). Somer and Goldberg (1999) reported a clear Five-Factor structure in both self and peer ratings with the first four factors being very similar to the corresponding factors of the Big Five, but the fifth factor being closer to an Openness reading rather than to an Intellect reading. In a study with a restricted item pool, Goldberg and Somer (2000) replicated these findings, however, with the fifth factor combining Intellect content with Unconventionality.

A study in *Hebrew* (Almagor, Tellegen, & Waller, 1995) led to the conclusion of seven factors, labeled Agreeability, Dependability, Negative Valence, Positive Valence, Positive Emotionality/Agentic, Negative Emotionality, and

Positive Emotionality/Communal. Although this finding seems to corroborate the Big Seven model found in Spanish with the dissipation of Emotional Stability, it must be noted that, unlike the Spanish study, Extraversion divided into two factors of Positive Emotionality; the Intellect terms were attached to the Positive Valence factor and Negative Valence was somewhat bipolar (Almagor et al., 1995). The study in Hebrew also suffered from the same limitation as the Spanish study; that is, it inspected only every fourth page of the dictionary, which could have systematically affected the outcomes.

Studies in Filipino, or *Tagalog* (Church, Katigbak, & Reyes, 1998; Church, Reyes, Katigbak, & Grimm, 1997) also settled for a Seven-Factor structure but, unlike the above Big Seven, the factors were interpreted as Concern for Others, Conscientiousness, Gregariousness, Intellect, Self-Assurance, Temperamentalness, and Negative Valence. The authors concluded that the first five factors were similar to the Big Five (with Agreeableness, Conscientiousness, Extraversion, Intellect, and Neuroticism, respectively), whereas the factor Temperamentalness covered aspects of three Big Five factors: Agreeableness, Conscientiousness, and Neuroticism (Church et al., 1997). A new study (Church et al., 1998) replicated this Seven-Factor structure, albeit with the positive evaluation or positive valence terms blending with the Intellect factor. However, the seven factors were found only in an Eight-Factor solution with an additional small factor labeled as Uninhibited or Flamboyant (Church et al., 1998). Church et al. (1998) concluded that the cross-cultural generalizability of the Spanish Big Seven model was not complete; however, it must be noted that the fusion of Positive Valence and Intellect also occurred in Hebrew.

Saucier (2003a) compared the Hebrew and Filipino structures. He emphasized the convergence between the studies, which he expressed in the so-called Multi-Language Seven (ML7), which he subsequently found to be recoverable in English and in Italian.

A study in *Korean* (Hahn, Lee, & Ashton, 1999) could be seen as supportive of the Big Three, like many studies discussed so far, but also of the model with six factors. Hahn et al. (1999) interpreted Three-Factor to Six-Factor solutions where the Three-Factor solution closely aligned to the classical Big Three; the Four-Factor solution correlated strongly with the first four Big Five factors and the five factors represented the Big Five with some rotation of Conscientiousness and Intellect. The Six-Factor solution unveiled the additional factor of Truthfulness, similar to the Hungarian Integrity factor (Hahn et al., 1999), a factor that later become known as Honesty (Ashton & Lee, 2001).

The first study in *Chinese* (Yu et al., 2009) selected a set of 6,000 personality descriptive adjectives, reduced them to 650, and interpreted five factors in self-ratings of 610 students: Intelligent, Emotional, Conscientious, Unsocial, and Agreeable. Although the labels of the Chinese factors seem supportive of the Big Five, it must be noted that there was a lack of descriptors describing the positive pole of Extraversion at the factor Unsociable, while the same factor gathered some adjectives describing the negative pole of Intellect. Nevertheless, based on the results of that study, Yu et al. (2009) developed a set of 100 marker adjectives and interpreted the same five factors in self-ratings of 720 students.

A second study in Chinese (Zhou, Saucier, Gao, & Liu, 2009) was less supportive of the Big Five. Zhou et al. (2009) started with 3,150 personality-descriptive adjectives, reduced them to 413, and applied them to obtain self ratings from 451 students as well as 500 peer ratings. Zhou et al. (2009) interpreted a hierarchical pattern of structures from one to seven factors and concluded that the One-Factor (Evaluation/Social Propriety) and Two-Factor (Social Propriety and Dynamism) structures agreed with those from previous studies. Moreover, Zhou et al. (2009) concluded that the Seven-Factor structure, consisting of the factors Extraversion, Conscientiousness/Diligence, Unselfishness, Negative Valence, Emotional Volatility, Positive Valence/Intellect, and Dependence/Fragility, was most stable across self ratings and peer ratings as well as across ipsatized and original data.

Judging by the lexical studies in non-Indo-European languages, it must be concluded that the results were mixed in terms of the support for the Big Five model. Although in some languages structures close to the Big Five model were found, in other languages only traces of the Big Five were identified, and some studies settled on interpreting various structures, from two up to seven factors. Some additional support was found for the Big Six-Factor and the Seven-Factor structures (e.g., ML7), but reservations remain about the methodology of some studies. Interestingly, just as was the case for the Indo-European languages, the Big Three factors seem to be identifiable in almost all non-Indo-European languages.

Exploiting the Lingual Means to Characterize Personality

Grammatical Categories and Semantic Coverage

From a linguistic viewpoint it seems logical to use the category of adjectives for the description of personality traits, because adjectives describe qualities of objects and persons, as in "an *honest* person." The psycholexical approach has indeed been largely dominated by the use of trait-descriptive adjectives. However, communication concerning persons allows for a great variety of linguistic forms for person characterization, including single nouns (he/she is a *comedian*), single adverbs (he/she behaves *aggressively*), single verbs (he/she *influences* people), but also more natural or even poetic expressions (he/she is a person who *looks at things from different angles*). Ryle (1949) argued that the personality vocabulary does not consist only of dispositional words: "The judge, the teacher, the novelist, the psychologist, and the man in the street are bound also to employ a large battery of episodic words when talking about how people do, or should, act and react" (p. 113). Episodic acts (is smoking a cigarette) may be used to derive tendency statements (is a cigarette smoker) (see also Osgood, 1970). Psychologically, all such characterizing sentences or derivative sentences are useful as long as they fulfill the "adjectival function"; that is, they communicate on dispositional qualities of persons. Allport and Odbert (1936) did not exclude other grammatical categories for personality description, and actually included adjectives, adverbs, nouns, and participial terms. To avoid duplication of semantics, nouns and other word classes appeared in their list only if no corresponding adjective existed. Allport and Odbert's (1936) first column, with terms that "seem to symbolize most clearly 'real' traits of personality," was suggested not to be the final list (p. 26). Compounds and idioms might well be added as "useful and apt phrases" (p. 30) for personality characterization.

In sum, there is more to language than just adjectives for personality descriptive purposes, and the lexical approach would do a "suboptimal" job (De Raad, 2000) if it would exclude classes of potentially relevant terms describing personality. The most obvious candidates in this respect would be adverbs, many of which appear in both adjectival and in adverbial format (e.g., *aggressive* and *aggressively*), verbs, expressions, and nouns. For the latter category, Angleitner et al. (1990) distinguished between type nouns (conservative) and attribute nouns (conservatism).

Nouns

The first to explore a different domain of lingual descriptors was probably Goldberg (1982) who studied the use of nouns especially within the framework of developing an evaluation-explicit taxonomy of trait terms. Goldberg (1982) catalogued 1,947 nouns from different sources, of which 1,342 were commonly used terms. Goldberg (1982) concluded that, compared to adjectives, nouns carry more negative implications and they are more colloquial and slangy. Although this observation generally holds, De Raad and Hoskens (1990) reasoned that it is probably a matter of degree and that there may be nouns for which the evaluative component does not dominate the potential descriptive component.

De Raad and Hoskens (1990) selected 8,450 possible personality-descriptive nouns from a database comprising two comprehensive Dutch dictionaries, reduced them to 3,200 nouns, using criteria of familiarity and of usefulness in personality description, and finally reduced them to a list of 755 nouns, on which self and peer ratings were collected from Dutch and Belgian participants. De Raad and Hoskens (1990) concluded that in the different data sets the Big Five factors can be easily identified with the noun-factor Anxiety representing Big Five Emotional Stability, the noun-factor Perseverance representing Big Five Conscientiousness, Antagonism representing Big Five Agreeableness, Culture representing Big Five Intellect, and same-named Extraversion. In addition, they found a factor they labeled Malignity, the largest in terms of accounted variance, a finding that corroborates Goldberg's (1982) observation that nouns carry more negative implications.

Henss (1995, 1998) investigated type nouns in the German language, starting with the list of around 5,500 type nouns, reduced it to 192, and used them in ratings of prominent persons as stimuli. Henss (1998) concluded that his noun factors are related to the Big Five factors, with an additional Physical Attractiveness factor, which may make sense considering the stimulus persons that were rated (cf. De Raad & Ostendorf, 1996).

Saucier (2003b) investigated the structure of English personality type nouns, starting with Goldberg's (1982) list of 1,947 type nouns. He made a reduction to the 557 nouns with the highest frequency of use and a further reduction

to 372 by excluding role nouns and profane terms. Analyses of self ratings and peer ratings of those 372 type nouns yielded one- and two-factor structures robust across samples, while within-gender analyses yielded a structure with eight orthogonal factors. The first of these was labeled Social Unacceptability, a factor closely related to the Malignity factor in Dutch. The second factor, labeled Autonomous Intellect, was similar to the Dutch Culture factor, and the third factor, Egocentrism, was related to the Dutch Antagonism. The seventh factor, called Liveliness, was related to the Dutch noun factor Extraversion. The sixth factor, Attractiveness, was related to the German factor with the same name. The remaining factors, Masculinity, Delinquency, and Disorientation, seemed to be more specific to the English study.

Di Blas (2005) investigated *attribute* nouns in the Italian language, starting with a list of 3,200 potentially personality-relevant attribute nouns, reduced to a final list with 447 nouns, using ratings of familiarity, frequency of use, and personality relevance. Analyses of self-rating data revealed a stable Three-Factor solution, corroborating the Big Three model, while the search for a stable solution beyond the three factors was unsuccessful (Di Blas, 2005). An unstable Six-Factor solution represented deviations of the Big Five with factors of Conscientiousness, Self-Assurance, Sociability, Placidity, Honesty/Humility, and Cleverness/Sophistication, which made Di Blas (2005) conclude that in the Italian context personality language reflects the Big Three and the Big Six, but not the Big Five.

Verbs

Apart from adjectives and nouns, the third word class that was sometimes investigated by the psycholexical researchers is the class of verbs. De Raad (2000) suggested that verbs somehow dropped from sight because they refer to phenomena of a transitory nature and most of the lexical researchers were interested in phenomena of a more permanent nature. However, De Raad et al. (1988) considered that verbs are important for personality description since they could be seen to be relevant not only for specific behavior but also for general behavior if coupled with an adverb "often." De Raad et al. (1988) started with a list of 1,557 potentially personality-descriptive verbs and reduced the list to 543, making use of ratings of usefulness for personality descriptions by indicating whether a verb would fit in the following sentence: "If someone [verb]s more often than others, then that behavior shows his/her personality" (p. 85). De Raad et al. (1988) interpreted 10 factors in both self ratings on verbs and in partner ratings, with six factors recurring in both self and other ratings, namely factors called Malignity, Support, Antagonism, Verbal Aggression, Perseverance, and Suppression. The largest factor in terms of accounted variance was Malignity, just as in the case of nouns (De Raad & Hoskens, 1990). De Raad (1992) compared the adjective, noun, and verb structure, using only self ratings and comparable criteria of factor extraction. Moreover, the ratings were all ipsatized. The direct visible effect was the removal of the Malignity factors from both the noun structure and the verb structure. The ratings on adjectives provided the Big Five structure with the possibility of an Agreeableness split-off in the form of sixth factor Boastfulness versus Sincerity. The noun structure consisted of the Big Five minus Emotional Stability. The verb structure was most optimal in the form of a Two-Factor structure with an Agreeableness factor and a factor then called Emotional Stability. This second factor may, however, be better understood in terms of being active and decisive, emphasizing striving features.

Hřebíčková et al. (1999) investigated the structure of Czech personality-descriptive verbs, starting with a list of 2,374 personality-relevant verbs and reduced them to 1,530 by eliminating archaic, dialectal, and rarely used verbs. Subsequently, judges rated clarity of meaning and personality relevance of those verbs, after which they were classified into a category system that was developed by Semin and Fiedler (1988). That system distinguished descriptive action verbs (e.g., to call, to kiss, and to talk) from interpretative action verbs (e.g., to help, to cheat, and to patronize) and state verbs (e.g., to like, to hate, and to trust). These latter steps yielded a final list of 289 verbs from the latter two categories. Those 289 verbs were used to obtain self ratings from 473 participants, and factoring after ipsatization provided solutions with two to six factors, without preference for any of the structures. A Two-Factor solution turned out to be much like the corresponding solution in Dutch. Hřebíčková et al. (1999) concluded that the structure of Czech personality descriptive verbs resembled the structure produced by adjectives, with the exception of content referring to Intellect or Openness to Experience. Such an absence was also the case in the Dutch study.

Adjectives, Nouns, Verbs, Adverbs, and Other Expressions Combined

Using this so-called nonrestrictive approach in selecting personality descriptors, allowing also the inclusion of

evaluative terms and state terms, Almagor et al. (1995) succeeded in producing the Big Seven model, which included versions of the Big Five plus two additional factors called Negative Valence and Positive Valence (cf. Benet & Waller, 1995; Tellegen & Waller, 1987). Regarding the use of word categories, a truly unrestricted approach would be one that makes use of all lingual forms in a single study. The adjectives may form the most typical carriers of trait meaning, but De Raad and Barelds (2008) argued that the exclusion of other word categories does not agree with the psycholexical aim to arrive at full coverage of personality semantics in ordinary language and it may also produce a biased and incomplete personality structure.

For this reason De Raad and Barelds (2008) once more undertook the task of going through the Dutch lexicon to register all words and (standard) expressions that could be used to characterize persons. All those units of description were put in a brief sentence format before they were administered to participants to obtain ratings. A total of 2,365 such items were finally administered to 1,466 participants for self ratings and for other ratings. Examples of items were "a friendly person," "someone one can trust," "someone who helps people," "a balanced person," "someone who rouses public sentiment," "a horny person," "a fortune hunter," and "someone who has wanderlust." Eight factors were ultimately extracted, were stable across subsamples, and were well interpretable. Those eight factors included four factors that related well to four of the Big Five, namely, Extraversion, Agreeableness, Conscientiousness, and Emotional Stability; a broad factor called Competence and a smaller factor called Conventionality, both reflecting aspects of Intellect; a factor called Virtue relating to both Big Five Agreeableness and HEXACO Honesty-Humilitty; and a last factor Hedonism capturing aspects of Sensation Seeking.

Other Categories of Words and Other Aspects of Personality

There is more to personality than dispositional traits. In the "constructive" process leading to conceptions of peoples' personalities (cf. Hampson, 1982), a variety of features may contribute to how persons think that people are and how they differ. This may include the physical appearance, the attitudes people have, their roles, their relationships to others, and so forth. The German taxonomic project has been most explicit in selecting these terms from the lexicon, covering most or all classes of person characteristics (see Angleitner et al., 1990).

Physical appearance.

Ostendorf and Angleitner (1994) investigated the structure of adjectives describing *overt characteristics and appearance* (one of the subordinate categories in the German classification system). Analyses of self ratings and peer ratings yielded six factors: Fatness, Height, Sturdiness, Stylish Appearance, Untidiness versus Well-Groomed Appearance, and Body Deformations versus Harmonious Body. Relations between these factors and the NEO-FFI scales showed that Conscientiousness was positively related with Well-Groomed Appearance, and to some extent with Stylish Appearance and Sturdiness; Neuroticism was negatively related to Sturdiness and Well-Groomed Appearance; Agreeableness was positively related to Well-Groomed Appearance.

Saucier (1997) investigated a range of terms, including references to dispositions, but also to state terms, social evaluation terms, and physical appearance terms. The terms were selected from pools of terms constructed by Norman (1967) and by Goldberg (1982). Ratings on the finally chosen set of 525 terms were factored and seven factors were extracted: the Big Five factors plus two additional factors, one describing Attractiveness and the other resembling Negative Valence.

Imperio, Church, Katigbak, and Reyes (2008) also conducted a study involving, among other things, 268 terms representing social and physical attributes, and markers of the Big Five, HEXACO, and the ML7. Considerable redundancy was found between the social and physical attribute dimensions and trait and evaluative dimensions. The conclusion was that social and physical attributes communicate information on personality, and vice versa.

Attitudes.

Ostendorf (1996) investigated the structure of the subcategory of *Attitudes and Worldviews* from the German classification system in relation to measures of the Big Five, with both lexically based dispositional measures and the NEO PI-R scales. An interesting question put by Ostendorf was whether attributes such as conservative, liberal, and traditional, co-defining the Openness to Experience scale, should be regarded as traits or as attitudes. Both self and peer ratings of 104 prototypical attitude terms yielded two dominant factors labeled as (1) Religiousness

and (2) Conservatism versus Radicalism. A joint factor analysis with both dispositional terms and attitude terms showed that the two attitude factors were independent of the Big Five in a Seven-Factor solution. Moreover, correlations between these seven factors and the NEO PI-R scales revealed that the Conservatism versus Radicalism factor was substantially negatively related to both the Openness to Experience domain scale and to all its facet scales, thus giving flesh to Ostendorf's proposal.

Saucier (2000) studied the structure of social attitudes by selecting terms from the dictionary that represented attitudes and beliefs, almost all attribute nouns, and almost all ending with "ism" (e.g., liberalism, utilitarianism, Marxism), henceforth called "Isms." An initial list contained 721 terms, with often more than one definition, totaling 1,208 definitions. These definitions were rated on relevance to the domain, and the relevance ratings were used to reduce the list to 374 definitions. After an adaptation of this latter list to a questionnaire format, ultimately 335 definitions remained as distinct ism-variables. Ratings of agreement–disagreement with the constructs were factor-analyzed. Three broad factors were obtained, of which the first two were suggested to have some cross-cultural generality. The first related to traditional religiosity, the second was defined by items containing egoistic and materialistic attitudes, and the third emphasized liberal, humanitarian, and enlightenment values (see also Saucier, 2013).

Roles and effects.

Saucier (2010) investigated social effects, a subcategory in the German classification system, interpreted as "an individual's footprint on the social world" (p. 224). Saucier (2010) started with an initial pool of 326 terms for social roles and effects. This list went through different rounds with familiarity ratings, and frequency of use ratings, ultimately ending in a classification with categories that described not only social effects but also social roles and relationships, social evaluations, and attitudes and worldviews. The result was a list of 27 prototypical terms describing social effects. Factoring of peer and self ratings of those terms resulted in a Two-Factor structure with one factor representing whether a person is a source of pleasure to others and the other factor representing whether a person is a source of pain to others.

Mlačić (2006) studied the terms belonging to a German superordinate category of social and reputational aspects of personality that includes roles and relationships, social effects, evaluations, and attitudes and worldviews. An analysis of self-ratings using 532 terms belonging to that larger more inclusive category of social and reputational aspects resulted in a Six-Factor structure with factors labeled as Left-Wing attitudes versus Religiosity, Social Effects, Accessibility, and Tendermindedness versus Tough-mindedness, Virtue, and Modernism (Mlačić, 2006). An investigation of relations of those factors with measures of personality (IPIP-NEO, Mlačić & Goldberg, 2007) and social attitudes (as measured by ISMS, Saucier, 2000, and by SAS_G, a social attitude scale, Milas, Mlačić, & Mikloušić, 2013) led to the conclusion that the lexical factors describing social and reputational aspects of personality are partly rooted in social attitudes and partly in dispositions ("personality proper;" Mlačić, 2006). For example, the factor Social Effects was strongly related to Big Five Extraversion and the factor Virtue was substantially related to Big Five Agreeableness. The factor Left-Wing attitudes versus Religiosity was strongly related to traditional religiosity factors from both social attitude measures whereas the factor Tendermindedness had relations of the same magnitude with Big Five Agreeableness and with Cosmopolitism from social attitudes.

Intellect or Openness to Experience

John (1990) observed that there seemed to be no single Big Five. Referring to a list of studies all reporting on Big Five dimensions, the variation in factor naming was striking, yet understandable considering the broadness and inclusiveness of the Big Five factors. Differences were clearest for factor five, referred to as Culture, Intellect, and Openness to Experience. Of special interest here are the two labels Intellect and Openness to Experience, of which the first, proceeding from lexical studies, is said to emphasize "intellectual" traits such as intelligent and insightful, and the second, boosted by Costa and McCrae (1985) using the questionnaire approach, emphasizes "open" traits such as imaginative and artistic. The question about the precise meaning of the fifth factor had led to a special issue of the *European Journal of Personality* (De Raad & Van Heck, 1994).

The underlying issue here is the understanding of the lexical hypothesis, which was introduced to encode distinctions made in daily transactions. McCrae (1990) argued that everyday language "does not register all the significant ways in which individuals differ in regard to Openness" (p. 123), and the concept Openness "appears to

knot together a wide variety of traits and topics of interest to personality psychologists" (p. 123). This may well be true. De Raad et al. (2010), for example, found that Emotional Stability (or its opposite Neuroticism) appeared relatively weak in cross-cultural lexical studies, which contrasts with its historical prominence. Emotional Stability may have less representation in most natural languages, in comparison to clinical language, in which its appreciation has led to many nuances of emotional experiences. Questionnaire developers may sample widely from the rich variety of specific variables from those clinical contexts.

McCrae's (1990) argument that Openness is inadequately represented in natural language trait terms was tested by Mulder (2006), who demonstrated that, in Dutch, there is no problem finding a sufficient number of descriptors in the natural language to reliably define both the domain of the Openness to Experience and the corresponding six facets. Making use of De Raad and Barelds' (2008) unrestricted lexically derived list of 2,365 descriptors, 127 items could be identified to represent Openness to Experience and its different facets. Factoring the ratings on those 127 items produced a lexically based Openness to Experience structure that matched the NEO PI-R Openness structure, with the exception of the Esthetics facet.

The Dutch lexical fifth factor has been described as capturing traits such as original, philosophical, broadminded, rebellious, constructive, nonconformist, critical, poetic, and creative (De Raad et al., 1992; cf. De Raad & Doddema-Winsemius, 2006). It is a factor capturing a rich variety of facets, of which some, for example the rebellious connotation, are not represented in the NEO PI-R Openness factor. Taking Openness instead of this Intellect factor would impoverish the complexity of everyday language, just as taking Openness instead of the lexical Intellect might impoverish psychological language. Hofstee (2003) argued that it is possible to dispute at length that ordinary language is not subtle enough for scientific purposes. Yet, in studies with questionnaires built on expert language (e.g., Digman & Inouye, 1986), the Big Five were also recovered.

The difference of opinion here lies in what should be considered as important or relevant differentiating traits. Costa and McCrae (1985) adopted Openness to Experience from Coan (1972), which they felt would capture the contents of a cluster of traits in their own work that they had referred to as an Experiential Style dimension. Coan (1972) had developed the Openness to Experience scale on the basis of a study using a battery of existing instruments (Coan, 1974). Coan (1972, 1974) distinguished various facets for his Openness to Experience scale for the purpose of expanding the humanistic psychology concept of the optimal personality, and Costa and McCrae (1985) made extensive use of those facets for their own purpose. That questionnaire origin in Coan's work may at least in part be held responsible for the expansion of Openness to Experience as the fifth factor, in comparison to what the lexical approach had been said to have generated (see also McCrae, 1994).

Block (1995) also criticized the ordinary language origin of the concepts proceeding from the lexical approach. Costa and McCrae (1992a) and Eysenck (1992) disputed the criteria to arrive at basic dimensions of personality. Much of these disputes relate to personality dimensions found elsewhere in the personality literature, which were hardly or not at all visible in the Big Five framework. Some of those dimensions covered specific areas of interest, such as locus of control (Rotter, 1954) and ego development (Loevinger, 1976); other dimensions were part of multidimensional systems, thus offering alternatives to the Big Five.

Competition and Validation

Competing Systems

Assuming the relevance of both the comprehensiveness and the trait semantic coverage of the Big Five approach, an important question for competing systems is whether they account for more or for less of the domain of traits (see also Chapter 19 by O'Connor). Are certain traits possibly theoretically inevitable? Just as in the case of Neuroticism and Openness to Experience, certain other concepts may be found to be underrepresented or completely missing in the presentation of a trait model. Zuckerman (1984), for example, made a strong point in showing that sensation seeking is a basic trait, particularly because of its temperamental meaning. Others may find that, for example, moral characteristics are underrepresented. Some other such "devoted" constructs are achievement motivation, field dependence, and locus of control. Zuckerman (2002) suggested an alternative five-factorial model, starting with the assumption that important traits are assumed to have a biological-evolutionary basis. Eysenck (1967) and Strelau (1983) have also emphasized the temperamental connotation of personality.

It is important to realize that the Big Five system does not reveal the whole story of personality. It is a comprehensive and differential descriptive system that is understood to form a rich starting point for further specification. Issues, such as change, unconscious processes, and heredity of traits, are not contained in the lexical trait vocabularies. Yet trait taxonomy helps to semantically understand the different features of those issues; moreover, empirical research around those issues often makes use of instruments based on the Big Five.

Psycholexically Based Departing Models

In recent years there has been an increase in propositions concerning the proper structure of lexically derived traits. Some focused on replicability in almost all languages or cultures around the world, and others focused on maximal semantic representation for which replicability might be found in as many languages or cultures as possible. Propositions that focus on cross-cultural validity contain structures that tend to have fewer factors than the Big Five, most often two or three, and propositions that focus on optimal semantic coverage contain structures that tend to have more factors than the Big Five (see also Chapter 20 by Wright).

Big Two.

Digman (1997) was possibly the first to suggest a recurrent Two-Factor solution. Digman made use of 14 studies of which the correlation matrices for Big Five scales were available, nine based on ratings from adult participants and five using children and adolescent participants. Digman (1997) found that his first factor, which he named α, was related to the Big Five factors Agreeableness, Conscientiousness, and Emotional Stability, whereas the second factor, labeled β, was related to the Big Five factors Extraversion and Intellect. Digman (1997) interpreted the α factor in terms of a socialization process and the β factor as personal growth. Those higher-order factors were related to the metaconcepts of *Communion* and *Agency*, respectively, understood to underlie the domain of interpersonal behavior (Bakan, 1966; Wiggins, 1991). Digman's factors found support in DeYoung (2006), who used the term Stability for the α factor and the term Plasticity for the β factor. Stability was described as "the need to maintain a stable organization of psychosocial function," and Plasticity as "the need to explore and incorporate novel information into that organization" (DeYoung, 2006, p. 1149). DeYoung also offered a neurobiological interpretation of those two factors, linking Stability to the functioning of the serotonergic system and Plasticity to the functioning of the dopaminergic system. A Two-Factor structure was also found in modern Greek (Saucier et al., 2005), with the factors being interpreted as Morality/Social Propriety and Dynamism, and in Chinese (Zhou et al., 2009) with factors named Social Propriety and Dynamism.

Big Three.

The Big Three model, with broad versions of the first three Big Five factors, Extraversion, Agreeableness, and Conscientiousness, which originated from the work of Peabody and Goldberg (1989), has proven itself to be a more serious competitor to the Big Five in terms of cross-cultural replicability. Throughout the text above, the Big Three, or its kernel aspects, were found in studies of adjectives in Italian (Di Blas & Forzi, 1998), Spanish (Benet-Martinez & Waller, 1997), Croatian (Mlačić & Ostendorf, 2005), Korean (Hahn et al., 1999), and Hungarian (De Raad & Szirmák, 1994; Szirmák & De Raad, 1994), in a study of personality-descriptive nouns (Di Blas, 2005), and in studies with internal data (Peabody, 1987). A study in Hindi (Singh et al., 2013) also referred to three factors, but those three reflected the Indian Triguna instead of the Big Three.

Big Six.

Judging by the number of publications in the past 10 years and by the apparent interest of the scientific community in finding out what is beyond the Big Five, another serious competitor for the Big Five is a model with six factors, in two versions: one is Ashton and Lee's (2007) HEXACO model and the other is Saucier's (2009) Big Six.

A first report of a lexically based Six-Factor structure with an additional factor beyond the Big Five was made for Hungarian by De Raad and Szirmák (1994). That additional factor, called Integrity (*veracious, just, trustworthy*), was considered as an incidental finding, tentatively explained in terms of the pertaining sociopolitical system. A similar factor (called Trustworthiness) was later found in Italian by Di Blas and Forzi (1999), and also in Korean (Hahn et al., 1999) and in French (Boies et al., 2001). In a discussion of various lexical studies, Ashton and Lee (2001) were led to the conclusion "that a six-dimensional taxonomy of personality variation provides the most

parsimonious and comprehensive framework for understanding the structure of personality characteristics" (p. 350), and this HEXACO consists essentially of the Big Five factors (with rotated versions of Agreeableness and Emotional Stability) plus an additional factor describing Honesty-Humility. The Honesty-Humility factor, defined by traits of sincerity, unassumingness, and fairness versus slyness, pretentiousness, and greed, appeared to be a split off from Big Five Agreeableness. This split had the effect of a reduced HEXACO-Agreeableness, defined by traits of patience, gentleness, and flexibility versus ill-temper, quarrelsomeness, and stubbornness. Another effect was that HEXACO-Emotional Stability lost the ill-temper content, which had moved to HEXACO-A. The later Openness naming of the HEXACO-O is peculiar, since the main defining traits in Ashton et al. (2004) stem from lexical studies with Intellect/Imagination factors. This change is based on their belief that intellectual ability lies outside personality proper (Lee & Ashton, 2004), and it implies that the HEXACO model is not directly rooted in the psycholexical approach to personality.

The additional factor in Saucier (2009) is not Honesty-Humility but a Negative Valence factor. According to Saucier (2009), Ashton and Lee's Six-Factor model should be seen as a "narrowband" model, because it was based on lexical studies that primarily excluded highly evaluative and emotional state terms. Consistent with the suggestions made by Almagor et al. (1995), Saucier followed a "wideband" approach, and analyzed studies from seven languages, namely Chinese, English, Filipino, Greek, Hebrew, Spanish, and Turkish, that all followed an inclusive variable selection approach, meaning that terms included in those studies did not reflect just dispositions, but also state terms, evaluative terms, and physical appearance. Saucier (2009) concluded with a "wideband cross-language six" structure on the basis of those studies with the factors Conscientiousness (Consistency/Organization), Negative Valence (versus Non-Violativeness), Agreeableness, Resiliency versus Internalizing Negative Emotionality, Gregariousness/Cheerfulness, and Originality/Talent. According to Saucier, those factors corresponded well with the disposition terms of the "narrowband," cross-language six of Ashton et al. (2004). Specifically, "wideband" Negative Valence and "narrowband" Honesty corresponded in their emphasis on amoral/moral traits. This correspondence agrees with the finding in De Raad and Barelds (2008), in which a Virtue factor (sincerity, honesty, friendly versus unfair, indecent, dishonest), correlated substantially with both Honesty-Humility and Negative Valence (negatively).

Big Seven.

The inclusion of evaluative terms and mood state terms in the Hebrew taxonomy (Almagor et al., 1995) led to the proposal of the Big Seven model. A similar study was done in Spanish (Benet-Martinez & Waller, 1997). The Big Seven forms the final Big Five competitor in the realm of the psycholexical approach, culled Multi-Language seven or ML7 by Saucier (2003a). ML7, with the factors Gregariousness, Self-Assurance, Even Temper versus Temperamentalness, Concern for Others, Conscientiousness, Originality/Virtuosity, and Negative Valence or Social Unacceptability, is based on the study in Hebrew and one in Filipino (Church et al., 1997) that also comprised seven factors. Saucier (2003a, p. 186) translated markers of the terms from the Hebrew and Filipino studies, applied them to the American sample, and concluded with a synthesis in the form of the ML7. None of the Seven-Factor studies was clearly fully replicated in any of the other languages; only some four or five of the Big Five factors recurrently appeared.

Cross-Cultural Findings

Cross-cultural psychologists have often endorsed the universality of psychological characteristics, as can be seen in cross-cultural studies on dimensions such as achievement motivation, anxiety, and authoritarianism (Church, 2000). Mayer, Lin, and Korogodsky (2011) studied the possibility of universality of personality conceptions in cultural traditions as different as Confucianism, Buddhism, and Judaism. They concluded that judging personality was an important aspect of all those different traditions.

With respect to the psycholexical approach, systematic cross-cultural studies using a good variety of languages or cultures have been performed with a focus on two factors (Saucier et al., 2014), on three factors (De Raad & Peabody, 2005; De Raad et al., 2010, 2014; Peabody & De Raad, 2002), on five factors (De Raad, Perugini, Hrebícková, & Szarota, 1998; De Raad, Perugini, & Szirmák, 1997; Hofstee, Kiers, De Raad, Goldberg, & Ostendorf, 1997), and on six factors (Ashton et al., 2004; De Raad et al., 2010). The emphasis here will be on the replicability of five factors (the Big Five). Other studies are referred to when they contribute to information on the cross-cultural validity of the Big Five.

The Big Five model has found cross-cultural support generally in two ways; these two are often linked to the distinction between emic and etic (Berry, 1969; see also Chapter 23 by Allik and Realo). The *etic* approach is typically followed by constructing a trait system (a questionnaire) in one language, and then translating and applying it in another language or culture. Studies with the Five-Factor Personality Inventory (FFPI; Hendriks, Hofstee, & De Raad, 1999) in 13 languages provided evidence that the FFPI was a reliable and valid measure in a large variety of countries (Hendriks et al., 2003). Similarly, studies with the NEO PI-R (Costa & McCrae, 1992b) showed replicability of the five factors in most cultures (McCrae et al., 2005). A lesson drawn by Allik, Realo, and McCrae (2013) from studies such as these was that it is apparently easy to transcend language barriers using such personality instruments. Notwithstanding such excellent cross-cultural findings, criticism has been expressed repeatedly, especially from the side of the cross-cultural methodologists (e.g., Berry, Poortinga, Segall, & Dasen, 2002). An important issue is that translated instruments tend to be relatively insensitive in detecting individual differences of interest in the target language. Ashton and Lee (2001), for example, found that that certain FFM-Openness to Experience facets were not very applicable in many Asian samples.

The *emic* approach in this case aims at finding a trait structure that best summarizes the trait domain of a particular language or culture. Linked to this first approach has been the repeated finding that independent psycholexical studies in various Western languages led to the Big Five structure. Studies comparing lexical Big Five structures from different languages, and leading to the conclusion that the Big Five is replicable across those languages, are often done through the analysis of the contents of the structures. Notwithstanding the recurrence of the Big Five, the structure is reproduced better in some languages than in others (Saucier & Goldberg, 2001).

Cheung, Van de Vijver, and Leong (2011) proposed an approach that would integrate etic and emic. Such a combined approach can be found in some studies that investigated the replicability of the Big Five across languages (De Raad et al., 1997, 1998; Hofstee et al., 1997), and in other studies that were not particularly restricted to only five factors (De Raad et al., 2010; Peabody & De Raad, 2002). De Raad et al. (2010) summarized those earlier studies focusing on the Big Five and concluded that the Big Five were not all cross-culturally replicable, a finding that was corroborated in Peabody and De Raad (2002), who found instead more support for a recurrent three-factorial structure (cf. also De Raad & Peabody, 2005).

De Raad et al. (2010) compared 14 independently developed trait structures. For each structure, the starting point was taken in the lexicon of the pertaining language. The trait terms of that language were used to obtain ratings, and those were factored to arrive at a trait structure meaningful to that language. The 14 taxonomies were pairwise compared, after finding a common part of the factor structures on the basis of acceptable translations of items into the languages of a pair. On average, the results indicated that not five, but rather three factors were well replicable across the languages under study. Beyond the first three factors (with traits that are typical of Extraversion, Agreeableness, and Conscientiousness, respectively), the equivalence of factors across languages tends to diverge.

When focusing on replicability of psycholexically based factors across most languages or cultures around the world, the Big Five tends to lose in competition with structures that have just two or three factors. Recently, Saucier et al. (2014) investigated whether a hypothesized Two-Factor structure (Saucier & Goldberg, 2001), with one factor describing Dynamism and the other describing Social Propriety or Social Self-Regulation, could be detected in nine diverse languages. These included seven data sets that were previously published taxonomies, namely Chinese, Korean, Filipino, Turkish, Greek, Polish, and Hungarian, and two new data sets, namely for Maasai and Senoufo. Those nine languages also represented, in addition to Indo-European languages, seven other language families: Sino-Tibetan, Korean, Austronesian, Altaic, Finno-Ugric, Nilotic, and Niger-Congo. Saucier et al. (2014) extracted two factors for each data set that could be interpreted as Dynamism and Social Self-Regulation in each language involved. They subsequently selected 50 markers for each of the two factors per language, totaling 900 markers. Of the translatable terms (into English), ultimately 10 turned out to mark Social Self-Regulation in most of the languages, and seven were found to mark Dynamism. These two factors are easily identified as being similar to Digman's (1997) socialization and personal growth and to DeYoung, Peterson, and Higgins' (2002) Stability and Plasticity factors, respectively. Saucier et al. (2014) noted that those two factors represented a "common denominator necessary-but-not-sufficient model" (p. 12), meaning there was substantial within-language personality variation that could not be covered by those Big Two factors.

A strong case for a cross-culturally tenable Three-Factor model was made by De Raad et al. (2014). In a previous

study, De Raad et al. (2010) concluded that only three factors are replicable across languages. In a subsequent study De Raad et al. (2014) looked for the joint structure of personality descriptors from 11 psycholexical studies by merging all the data in a "super matrix" with 1,993 trait terms and 7,104 participants. The results of a simultaneous component analysis (Kiers & ten Berge, 1994) again yielded the Big Three, interpreted as Dynamism, Affiliation, and Order, with traits from Extraversion, Agreeableness, and Conscientiousness, respectively, as kernel traits. Drawing on the results of those two studies, De Raad et al. (2014) referred to those factors as the "Pan-cultural trait structure."

Structuring the Big Five Trait Domain

The majority of factor structures of personality offered in the literature are presenting independent factors, whether they are three, five, eight, or another number. Such a structure is imposed upon the data through the application of the psychometric technique, most typically Principal Components Analysis followed by Varimax rotation (see also Chapter 20 by Wright). The related dominant viewpoint in factor analysis has been the "vertical viewpoint" (Goldberg, 1993b; McCormick & Goldberg, 1997). Under this viewpoint each factor is interpreted in terms of the variables that have high loadings on it. The underlying ideal is the *simple structure*, in which each trait variable loads substantially on only one factor and the loadings on the other factors are close to zero. The simple structure form is also hierarchical, since trait variables are specifications of factors. Whereas those factors are superordinate to the more specific traits, the factors are rather narrow in meaning, with high internal consistency and a rather fixed angular position in the trait space (Hofstee, 2003). A simple conception of the Big Five trait factors is thus the vertical view including a representation with five independent dimensions. Although there are trait variables that load on one factor only, the majority of trait variables tends to have substantial loadings on two factors (Hofstee, De Raad, & Goldberg, 1992); variables that load on more than two factors tend to be vague in meaning.

Given the observation that clear and meaningful traits load on no more than one or two factors, traits can be represented in two-dimensional arrangements, by using the pairs of loadings for all trait variables as coordinate values. The arrangement of traits that is thus formed in the two-dimensional space is called a circumplex (Guttman, 1954). In contrast to a simple structural understanding of traits, with narrow coverage of meaning, a circular arrangement of traits demonstrates the breadth in semantic coverage through the dispersion of the trait items along the circle (cf. Gurtman, 1997). Hofstee et al. (1992) integrated the Big Five model and the circumplex understanding of traits into a comprehensive representation. The interesting thing about the circumplex representation is that the positions of the trait variables relative to each other become clear, to variables with similar meaning, to variables belonging to adjacent clusters of meaning, and to variables with opposite meaning.

The importance of hierarchy has been discussed repeatedly by researchers in the field of personality (e.g., Cattell, 1947; Eysenck, 1970), with relations among traits running from more abstract to more specific (cf. John, Hampson, & Goldberg, 1991). The behavior "laughing at jokes" is more specific than "being lively," which in turn is more specific than "extraversion." This example from Eysenck (1970) represents what might be called a strict hierarchy (cf. De Raad, 2009). Most typically, hierarchies are studied in two ways, a bottom-up approach and a top-down approach (see Goldberg, 2006). The bottom-up hierarchies start with individual items, which are then clustered into semantic groups, which in turn are clustered into larger groups of traits, until the highest level is reached. The more recently developed top-down approach has been applied in Principal Components analyses of traits, in which structures are considered with one factor or component, two factors, up to a structure with the maximum number of factors considered relevant. The factors from adjacent levels of factor extraction are then correlated yielding the hierarchical configuration (cf. De Raad & Szirmák, 1994; Zuckerman, Kuhlman, & Camac, 1988). If all levels of extraction from one to the maximum number of interest are included in the hierarchy, the result may be conceived of as a continuum of abstraction (Goldberg, 2006). Since, theoretically or empirically, the interest has been in specific sets of recurrent factors, two, three, five, or six, we may well present only those levels of interest. An example can be found in De Raad et al. (2014), in which the relations between three and six factors are given.

Final Comments

The FFM and the Big Five model do not tell the full story of personality, but they do tell an important story. The potential of the psycholexical approach to taxonomize the trait domain has not been exploited to its fullest. Yet, the

approach has made good progress. In this chapter the thoughts, procedures, and findings, particularly in reference to its main finding, the Big Five, have been reviewed and put in a context of criticism.

The psycholexical approach has been seriously questioned from the very beginning, for several reasons. Criticisms have been recurrent regarding the use of ordinary language for scientific purposes, and the fact that the most exploited tangible form of a lexicon, the dictionary, contains single words, and not sentences in terms of which people spontaneously convey their opinions of persons. A convincing argument to exploit the ordinary language documentation of trait terms is its overwhelming richness. Generations of lexicographers have scrutinized and documented on a regular basis the many, many ways people have communicated during generations, and still tend to communicate on things and people, and this includes the vast domain of person-talk. It is almost impossible to generate, for example in one or more scientific sessions, a vocabulary of traits that is as complete and as rich as what has already been sedimented and documented in a lexicon. Yet, as has been observed for Neuroticism and for Openness to Experience, professionals may build up their own vocabulary for certain trait domains that agrees with their research or with their theory, and the specifics of such a vocabulary may or may not correspond to what can be found in ordinary language. In each case, it may be important to check such specific vocabularies for its ordinary language equivalence. Ultimately, psychological constructs with specific technical meaning may have to be translated into everyday language, if only for the purpose of arriving at intelligible items in a questionnaire that should cover the meaning of such constructs. As a more general note, when professional psychologists aim at generating a specific trait vocabulary, they are actually drawing upon their own individual (and restricted, and possibly even biased) lexicon, and are therefore operating along the lines of psycholexical procedures.

A dictionary as the tangible representation of a lexicon consists of single words and their explanations. The single words of interest, namely trait-descriptive words, are taken to contain abstracted information based on observations of actions and events in which people participated. Single trait-descriptive adjectives, for example, have been used extensively in research and they usually function well in communicating on traits. However, improvement is very possible, by turning each single trait-adjective into one or more behavioral sentences that cover the meaning of the trait well (cf. Goldberg, 2014; Hendriks, Hofstee, & De Raad, 1998).

The psycholexical approach has too extensively been restricted to trait-adjectives. Other word categories with adjectival potential should be exploited more systematically; in particular, unrestricted procedures should be followed, possibly in the format reported by De Raad and Barelds (2008). That study included the various word categories, used brief sentences, and was less restrictive in the coverage of trait phenomena than most other lexical studies.

An issue that has not been dealt with directly in this chapter is the use of facets. Yet, implicitly, it has been discussed in relation to the full exploitation of ordinary language and the many distinctions that are found in the lexicon for the description of certain traits. Hierarchies imply specificity, and circumplexes explicitly deal with trait nuances. A question is how many facets may be necessary or desired to communicate efficiently and economically on the many trait nuances. Professional psychologists may tend to exaggerate distinctions as compared to what laypeople do. A large part of the problem may be solved empirically, by factoring within specific trait domains; this may lead to different numbers of facets per trait domain. The other possibility is the use of circumplexes. The Abridged Big Five Circumplex (Hofstee et al., 1992), for example, defines a fixed set of facets related to combinations of pairs of factors. Some of those facets may turn out to be practically or nearly empty.

With respect to coverage of the domain of traits, particularly in relation to evaluative terms, there has been interest in subareas of traits that could serve the description of devoted research questions. Some studies have, for example, recently been performed to provide a full portrait of virtues, a specific subarea of traits that is relevant to discussions about morality. Such specific vocabularies indeed tend to provide "decomposed" representations in greater detail than the full trait taxonomy gives as the ultimate result. Examples include De Raad and Van Oudenhoven (2011) and Morales-Vives, De Raad, and Vigil-Colet (2014).

The 30 or so trait taxonomies that have been performed thus far do cover a rather restricted number of languages, with many belonging to the Indo-European language family (see De Raad et al., 2014). Many more lexical studies are needed, particularly in non-Indo-European languages, and in Asia and Africa, to arrive at a stage at which we might start to talk of global research findings, and draw tentative conclusions on a proper cross-culturally valid trait

structure. More indigenous studies in Africa, Asia, and also South America may also provide more insight on more culturally typical trait characteristics.

There is as yet little reason to expect some canonical solution for a trait structure; it seems to make more sense to focus on a consensually acceptable model that does justice to central trait concerns in most languages, and that may play a role in the development of instruments that are useful in integrated emic–etic research and practice (cf. Cheung et al., 2011). For such an approach it is crucial that large pools of trait descriptors are collected from the languages of the world and put in a joint catalogue after being translated into a common language, expectedly English. Such a pool of globally relevant trait words could then be used in a process of reduction taking the various cultural trait interests into account as much as possible.

References

Adkins, A.W. H. (1970). *From the many to the one: A study of personality and views of human nature in the context of Ancient Greek Society, values and beliefs*. London, England: Constable.

Aldington, R. (1925). *A book of "characters."* London, England: Routledge.

Allik, J., Realo, A., & McCrae, R. R. (2013). Universality of the Five-Factor model of personality. In T. A. Widiger & P. T. Costa, Jr. (Eds.), *Personality disorders and the five-factor model of personality* (pp. 61–74). Washington, DC: American Psychological Association.

Allport, G. W., & Odbert, H. S. (1936). Trait-names. A psycho-lexical study. *Psychological Monographs*, *47* (Whole No. 211).

Almagor, M., Tellegen, A., & Waller, N. (1995). The Big Seven model: A cross-cultural replication and further exploration of the basic dimensions of natural language of trait descriptions. *Journal of Personality and Social Psychology*, *69*, 300–307.

Angleitner, A., Ostendorf, F., & John, O. P. (1990). Towards a taxonomy of personality descriptors in German. A psycho-lexical study. *European Journal of Personality*, *4*, 89–118.

Aristotle (D. Ross, Trans.). (1988). *The nicomachean ethics*. Oxford, England: Oxford University Press.

Ashton, M. C., & Lee, K. (2001). A theoretical basis for the major dimensions of personality. *European Journal of Personality*, *15*, 327–353.

Ashton, M. C., & Lee, K. (2007). Empirical, theoretical, and practical advantages of the HEXACO model of personality structure. *Personality and Social Psychology Review*, *11*, 150–166.

Ashton, M. C., Lee, K., Perugini, M., Szarota, P., De Vries, R. E., Di Blas, L., … De Raad, B. (2004). A six-factor structure of personality-descriptive adjectives: Solutions from psycholexical studies in seven languages. *Journal of Personality and Social Psychology*, *86*, 356–366.

Austin, J. L. (1970). *Philosophical papers*. London, England: Oxford University Press.

Bakan, D. (1966). *The duality of human existence: Isolation and communion in Western man*. Boston, MA: Beacon.

Baumgarten, F. (1933). Die Charactereigenschaften. [The character traits]. In *Beiträge zur Charakter-und Persönlichkeitsforschung* (Heft 1). Bern, Switzerland: Verlag A Francke A.-G.

Benet, V., & Waller, N. G. (1995). The Big Seven factor model of personality description: Evidence for its cross-cultural generality in a Spanish sample. *Journal of Personality and Social Psychology*, *69*, 701–718.

Benet-Martinez, V., & Waller, N. G. (1997). Further evidence for the cross-cultural generality of the Big Seven factor model: Indigenous and imported Spanish personality constructs. *Journal of Personality*, *65*, 567–598.

Berger, P. L., & Luckmann, T. (1966). *The social construction of reality*. New York, NY: Doubleday.

Berry, J. W. (1969). On cross-cultural comparability. *International Journal of Psychology*, *4*, 119–128.

Berry, J. W., Poortinga, Y. H., Segall, M. H., & Dasen, P. R. (2002). *Cross-cultural psychology: Research and applications*. New York, NY: Cambridge University Press.

Block, J. (1995). A contrarian view of the Five-Factor approach to personality description. *Psychological Bulletin*, *117*, 187–215.

Boies, K., Lee, K., Ashton, M. C., Pascal, S., & Nicol, A. A. M. (2001). The structure of the French personality lexicon. *European Journal of Personality*, *15*, 277–295.

Brokken, F. B. (1978). *The language of personality*. Unpublished doctoral dissertation. Meppel, The Netherlands: Kripps.

Bromley, D. B. (1977). *Personality description in ordinary language*. London, England: John Wiley.

Caprara, G. V., & Perugini, M. (1994). Personality described by adjectives: The generalizability of the Big Five to the Italian lexical context. *European Journal of Personality*, *8*, 357–369.

Cattell, R. B. (1943a). The description of personality: Basic traits resolved into clusters. *Journal of Abnormal and Social Psychology*, *38*, 476–507.

Cattell, R. B. (1943b). The foundations of trait measurement. *Psychological Review*, *50*, 559–594.

Cattell, R. B. (1945). The description of personality: Principles and findings in a factor analysis. *American Journal of Psychology*, *58*, 69–90.

Cattell, R. B. (1947). Confirmation and clarification of primary personality factors. *Psychometrika*, *12*, 197–220.

Cawley, M. J., III, Martin, J. E., & Johnson, J. J. (2000). A virtues approach to personality. *Personality and Individual Differences*, *28*, 997–1013.

Cheung, F. M., Van de Vijver, F. J. R., & Leong, F. T. L. (2011). Toward a new approach to the study of personality. *American Psychologist*, *66*, 593–603.

Church, A. T. (2000). Culture and personality: Towards an integrated cultural trait psychology. *Journal of Personality*, *68*, 651–703.

Church, A. T., & Katigbak, M. S. (1989). Internal, external and self/report structure of personality in a non-western culture: An investigation of cross-language and cross-cultural generalizability. *Journal of Personality and Social Psychology*, *57*, 857–852.

Church, A. T., Katigbak, M. S., & Reyes, J. A. S. (1996). Toward a taxonomy of trait adjectives in Filipino: Comparing personality lexicons across cultures. *European Journal of Personality*, *10*, 3–24.

Church, A. T., Katigbak, M. S., & Reyes, J. A. S. (1998). Further exploration of Filipino personality structure using the lexical approach: Do the Big Five or Big-Seven dimensions emerge. *European Journal of Personality*, *12*, 249–269.

Church, A. T., Reyes, J. A. S., Katigbak, M. S., & Grimm, S. D. (1997). Filipino personality structure and the Big Five model: A lexical approach. *Journal of Personality*, *65*, 477–528.

Coan, R. W. (1972). Measurable components of openness to experience. *Journal of Consulting and Clinical Psychology*, *39*, 346.

Coan, R. W. (1974). *The optimal personality*. New York, NY: Columbia University Press.

Costa P. T., Busch C.M., Zonderman A. B., & McCrae R. R. (1986). Correlations of MMPI factor scales with measures of the Five Factor model of personality. *Journal of Personality Assessment*, *50*, 640–650.

Costa, P. T., Jr., & McCrae, R. R. (1976). Age differences in personality structure: A cluster analytic approach. *Journal of Gerontology*, *21*, 564–570.

Costa, P. T., Jr., & McCrae, R. R. (1985). *The NEO Personality Inventory Manual*. Odessa, FL: Psychological Assessment Resources.

Costa, P. T., Jr., & McCrae, R. R. (1992a). Four ways Five Factors are basic. *Personality and Individual Differences*, *13*, 653–665.

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

Dahlsgaard, K., Peterson, C., & Seligman, M. E. P. (2005). Shared virtue: The convergence of valued human strengths across culture and history. *Review of General Psychology*, *9*, 203–213.

D'Andrade, R. G. (1965). Trait psychology and componential analysis. *American Anthropologist*, *67*, 215–228.

De Raad, B. (1985). *Person-talk in everyday life; pragmatics of utterances about personality*. Unpublished dissertation, University of Groningen, The Netherlands.

De Raad, B. (1992). The replicability of the Big Five personality dimensions in three word-classes of the Dutch language. *European Journal of Personality*, *6*, 15–29.

De Raad, B. (1994). An expedition in search of a fifth universal factor: Key issues in the lexical approach. *European Journal of Personality*, *8*, 229–250.

De Raad, B. (2000). *The Big Five personality factors: The psycholexical approach to personality*. Göttingen, Germany: Hogrefe & Huber.

De Raad, B. (2009). Structural models of personality. In P. J. Corr & G. Matthews (Eds.), *The Cambridge handbook of personality psychology* (pp. 127-147). New York, NY: Cambridge University Press.

De Raad, B., & Barelds, D. P. H. (2008). A new taxonomy of Dutch personality traits based on a comprehensive and unrestricted list of descriptors. *Journal of Personality and Social Psychology*, *94*, 347–364.

De Raad, B., Barelds, D. P. H., Levert, E., Ostendorf, F., Mlačić, B., Di Blas, L., … Katigbak, M. S. (2010). Only three factors of personality description are fully replicable across languages: A comparison of 14 trait taxonomies. *Journal of Personality and Social Psychology*, *98*, 160–173.

De Raad, B., Barelds, D. P. H., Timmerman, M.E., De Roover, K., Mlacic, B., & Church, A. T. (2014). Towards a pan-cultural personality structure: Input from 11 psycho-lexical studies. *European Journal of Personality*, *28*, 497–510.

De Raad, B., & Ceulemans, E. (2001). The trait-dimensional scope of the characters of Theophrastus. In R. Riemann, F. M. Spinath, & F. Ostendorf (Eds.), *Personality and temperament: Genetics, evolution, and structure* (pp. 168–184). Lengerich, Germany: Pabst Science.

De Raad, B., Di Blas, L., & Perugini, M. (1988). Two independently constructed Italian trait taxonomies: Comparisons among Italian and between Italian and Germanic languages. *European Journal of Personality*, *12*, 19–41.

De Raad, B., & Doddema-Winsemius, M. (2006). *De Big 5 persoonlijkheidsfactoren; een methode voor het beschrijven van persoonlijkheidseigenschappen* [The Big 5 personality factors: A method for the description of personality traits]. Amsterdam, the Netherlands: Uitgeverij Nieuwezijds.

De Raad, B., Hendriks, A. A. J., & Hofstee, W. K. B. (1992). Towards a refined structure of personality traits. *European Journal of Personality*, *6*, 301–319.

De Raad, B., & Hoskens, M. (1990). Personality-descriptive nouns. *European Journal of Personality*, *4*, 131–146.

De Raad, B., Mulder, E., Kloosterman, K., & Hofstee, W. K. B. (1988). Personality-descriptive verbs. *European Journal of Personality*, *2*, 81–96.

De Raad, B., & Ostendorf, F. (1996). Quantity and quality of trait-descriptive type nouns. *European Journal of Personality*, *10*, 45–56.

De Raad, B., & Peabody, D. (2005). Cross-culturally recurrent personality factors: Analyses of three factors. *European Journal of Personality*, *19*, 451–474.

De Raad, B., Perugini, M., Hřebíčková, M., & Szarota, P. (1998). Lingua Franca of personality: Taxonomies and structures based on the psycholexical approach. *Journal of Cross-Cultural Psychology*, *29*, 212–232.

De Raad, B., Perugini, M., & Szirmák, Z. (1997). In pursuit of a cross-lingual reference structure of personality traits: Comparisons among five languages. *European Journal of Personality*, *11*, 167–185.

De Raad, B., & Szirmák, Z. (1994). The search for the "Big Five" in a non-Indo-European language: The Hungarian trait structure and its relationship to the *EPQ* and the *PTS*. *European Review of Applied Psychology*, *44*, 17–24.

De Raad, B., & Van Heck, G. L. (Eds.) (1994). The fifth of the Big Five. *European Journal of Personality*, *8*, Special Issue.

De Raad, B., & Van Oudenhoven, J. P. (2011). A psycholexical study of virtues in the Dutch language, and relations between virtues and personality. *European Journal of Personality*, *25*, 43–52.

DeYoung, C. G. (2006). Higher-order factors of the Big Five in a multi-informant sample. *Journal of Personality and Social Psychology*, *91*, 1138–1151.

DeYoung, C. G., Peterson, J. B., & Higgins, D. M. (2002). Higher-order factors of the Big Five predict conformity: Are there neuroses of health? *Personality and Individual Differences*, *33*, 533–552.

Di Blas, L. (2005). Personality-relevant attribute nouns. A taxonomic study in the Italian language. *European Journal of Personality*, *19*, 537–557.

Di Blas, L., & Forzi, M. (1998). An alternative taxonomic study of personality-descriptive adjectives in the Italian language. *European Journal of Personality*, *12*, 75–101.

Di Blas, L., & Forzi, M. (1999). Refining a descriptive structure of personality attributes in the Italian language: The abridged Big Three circumplex structure. *Journal of Personality and Social Psychology*, *76*, 451–481.

Digman, J. M. (1997). Higher-order factors of the Big Five. *Journal of Personality and Social Psychology*, *73*, 1246–1256.

Digman, J. M., & Inouye, J. (1986). Further specification of the five robust factors of personality. *Journal of Personality and Social Psychology*, *50*, 116–123.

Eysenck, H. J. (1967). *The biological basis of personality*. Springfield, IL: Charles C Thomas.

Eysenck, H. J. (1970). *The structure of human personality* (3rd ed.). London, England: Methuen.

Eysenck, H. J. (1992). Four ways five factors are not basic. *Personality and Individual Differences*, *13*, 667–673.

Fiske, D. W. (1949). Consistency of the factorial structures of personality ratings from different sources. *Journal of Abnormal and Social Psychology*, *44*, 329–344.

Fitzgerald, F. S. (1925). *The great Gatsby*. New York, NY: Charles Scribner's.

Galton, F. (1884). Measurement of character. *Fortnightly Review*, *36*, 179–185.

Gill, C. (1996). *Personality in Greek epic, tragedy, and philosophy*. Oxford, England: Clarendon Press.

Goldberg, L. R. (1975). *Toward a taxonomy of personality descriptive terms: A description of the O.R.I taxonomy project*. Oregon Research Institute Technical Report, Vol. 15, No. 2.

Goldberg, L. R. (1981). Language and individual differences. The search for universals in personality lexicons. In L. Wheeler (Ed.), *Review of personality and social psychology* (Vol. 2, pp. 141–165). Beverly Hills, CA: Sage.

Goldberg, L. R. (1982). From ace to zombie. Some explorations in the language of personality. In C. D. Spielberger

& J. N. Butcher (Eds.), *Advances in personality assessment* (Vol. 1, pp. 203–234). Hillsdale, NJ: Lawrence Erlbaum.

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

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

Goldberg, L. R. (1993a). The structure of phenotypic personality traits. *American Psychologist*, *48*, 26–34.

Goldberg, L. R. (1993b). The structure of personality traits: Vertical and horizontal aspects. In D. C. Funder, R. D. Parke, C. Tomlinson-Keasy, & K. Widaman (Eds.), *Studying lives through time: Personality and development* (pp. 169–188). Washington, DC: American Psychological Association.

Goldberg, L. R. (2006). Doing it all bass-ackwards: The development of hierarchical factor structures from the top down. *Journal of Research in Personality, 40*, 347–358.

Goldberg, L. R. (2014). *International Personality Item Pool: A scientific collaboratory for the development of advanced measures of personality traits and other individual differences* (**http://ipip.ori.org/**). Internet Web Site. Accessed February 18, 2014.

Goldberg, L. R., & Rosolack, T. K. (1994). The Big Five structure as an integrative framework. An empirical comparison with Eysenck's P-E-N model. In C. F. Halverson, G. A. Kohnstamm, & R. P. Martin (Eds.), *The developing structure of temperament and personality from infancy to adulthood* (pp. 7–35). New York, NY: Erlbaum.

Goldberg, L. R., & Somer, O. (2000). The hierarchical structure of common Turkish person-descriptive adjectives. *European Journal of Personality*, *14*, 497–531.

Goncharov, I. (1859; translation of 2006). *Oblomov*. New York, NY: Bunim & Bannigham.

Gurtman, M. B. (1997). Studying personality traits: The circular way. In R. Plutchik & H. R. Conte (Eds.), *Circumplex models of personality and emotions* (pp. 81–102). Washington, DC: American Psychological Association.

Guttman, L. (1954). A new approach to factor analysis: The radex. In P. F. Lazarsfeld (Ed.), *Mathematical thinking in the social sciences* (pp. 258–348). Glencoe, IL: Free Press.

Hahn, D.-W., Lee, K., & Ashton, M. C. (1999). A factor analysis of the most frequently used Korean personality trait adjectives. *European Journal of Personality*, *13*, 261–282.

Hampson, S. E. (1982). *The construction of personality: An introduction.* London, England: Routledge & Kegan Paul.

Hampson, S. E. (1984). The social construction of personality. In H. Bonarius, G. Van Heck, & N. Smid (Eds.), *Personality psychology in Europe: Theoretical and empirical developments*. Lisse, the Netherlands: Swets & Zeitlinger.

Hendriks, A. A. J., Hofstee, W. K. B., & De Raad, B. (1998). Short behavior-descriptive sentences as units of personality measurement. In J. Bermúdez, B. De Raad, J. De Vries, A. M. Pérez-García, A. Sánchez-Elvira, & G. L. Van Heck (Eds.), *Personality psychology in Europe* (Vol. 6, pp. 40–50). Tilburg, the Netherlands: Tilburg University Press.

Hendriks, A. A. J., Hofstee, W. K. B., & De Raad, B. (1999). The Five-Factor Personality Inventory (FFPI). *Personality and Individual Differences*, *27*, 307–325.

Hendriks, A. A. J., Perugini, M., Angleitner, A., Ostendorf, F., Johnson, J. A., De Fruyt, F., … Ruisel, I. (2003). The Five-Factor Personality Inventory: Cross-cultural generalizability across 13 countries. *European Journal of Personality*, *17*, 347–373.

Henss, R. (1995). From Aal to Zyniker. Personality descriptive type nouns in the German language. *European Journal of Personality*, *9*, 135–145.

Henss, R. (1998). Type nouns and the Five Factor model of personality description. *European Journal of Personality*, *12*, 57–71.

Hofstee, W. K. B. (2003). Structures of personality traits. In T. Millon & M. J. Lerner (Eds.), *Handbook of personality* (Vol. 5, pp. 231–254). Hoboken, NJ: John Wiley.

Hofstee, W. K. B., De Raad, B., & Goldberg, L. R. (1992). Integration of the Big Five and circumplex approaches to trait structure. *Journal of Personality and Social Psychology*, *63*, 146–163.

Hofstee, W. K. B., Kiers, H. A. L., De Raad, B., Goldberg, L. R., & Ostendorf, F. (1997). A comparison of Big Five structures of personality traits in Dutch, English, and German. *European Journal of Personality*, *11*, 15–31.

Hřebíčková, M. (2007). The lexical approach to personality description in the Czech context. *Ceskoslovenska Psychologie* [Czechoslovak Psychology], *LI*, 50–61.

Hřebíčková, M., Osecká, L., & Čermák, I. (1999). *Taxonomy and structure of Czech personality-relevant verbs*. In I. Mervielde, I. Deary, F. De Fruyt, & F. Ostendorf (Eds.), *Personality psychology in Europe* (Vol. 7, pp. 51–65). Tilburg, the Netherlands: Tilburg University Press.

Imperio, S. M., Church, A. T., Katigbak, M. S., & Reyes, J. A. (2008). Lexical studies of Filipino person descriptors: Adding personality-relevant social and physical attributes. *European Journal of Personality*, *22*, 291–321.

John, O. P. (1990). The "Big Five" factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In L.A. Pervin (Ed.), *Handbook of personality: Theory and research* (pp. 66–100). New York, NY: Guilford Press.

John, O. P., Angleitner, A., & Ostendorf, F. (1988). The lexical approach to personality. A historical review of trait taxonomic research. *European Journal of Personality*, *2*, 171–203.

John, O. P., Hampson, S. E., & Goldberg, L. R. (1991). The basic level in personality-trait hierarchies: Studies of trait use and accessibility in different contexts. *Journal of Personality and Social Psychology*, *60*, 348–361.

Kiers, H. A. L., & ten Berge, J. M. F. (1994). Hierarchical relations between methods for simultaneous components analysis and a technique for rotation to a simple simultaneous structure. *British Journal of Mathematical and Statistical Psychology*, *47*, 109–126.

Klages, L. (1926). *The science of character*. (Translated into English 1932). London, England: Allen & Unwin.

Kouwer, B. J. (1963). *Het spel van de persoonlijkheid* [The game of personality]. Utrecht, the Netherlands: Erven J. Bijleveld.

Lee, K., & Ashton, M. C. (2004). Psychometric properties of the HEXACO Personality Inventory. *Multivariate Behavioral Research*, *39*, 329–358.

Loevinger, J. (1976). *Ego development*. San Francisco, CA: Jossey-Bass.

Mayer, J. D., Lin, S. C., & Korogodsky, M. (2011). Exploring the universality of personality judgments: Evidence from the Great Transformation (1000 BCE–200 BCE). *Review of General Psychology*, *15*, 65–76.

McAdams, D. P. (1994). *The person: An introduction to personality psychology*. Fort Worth, TX: Harcourt Brace.

McCormick, C. C., & Goldberg, L. R. (1997). Two at a time is better than one at a time: Exploiting the horizontal aspects of factor representations. In R. Plutchik & H. R. Conte (Eds.), *Circumplex models of personality and emotions* (pp. 103–132). Washington, DC: American Psychological Association.

McCrae, R. R. (1990). How well is Openness represented in natural languages? *European Journal of Personality*, *4*, 119–129.

McCrae, R. R. (1994), Openness to experience: Expanding the boundaries of Factor V. *European Journal of Personality*, *8*, 251–272.

McCrae, R. R, (2010).The place of the FFM in personality psychology. *Psychological Inquiry*, *21*, 57–64.

McCrae, R. R., & Costa, P. T., Jr. (1985a). Updating Norman's "Adequate taxonomy." Intelligence and personality dimensions in natural language and in questionnaires. *Journal of Personality and Social Psychology*, *49*, 710–721.

McCrae, R. R., and Costa P.T., Jr. (1985b). Comparison of EPI and psychoticism scales with measures of the Five-Factor model of personality. *Personality and Individual Differences*, *6*, 587–597.

McCrae, R. R., & Costa, P. T., Jr. (1987). Validation of the Five-Factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, *52*, 81–90.

McCrae, R. R., & Costa, P. T., Jr. (1989a). Reinterpreting the Myers-Briggs type indicator from the perspective of the Five-Factor model of personality. *Journal of Personality*, *57*, 17–40.

McCrae, R. R., & Costa, P. T., Jr. (1989b). The structure of interpersonal traits. Wiggins's circumplex and the Five-Factor model. *Journal of Personality and Social Psychology*, *56*, 586–595.

McCrae, R. R., & Costa, P. T., Jr. (2008). The Five-Factor Theory of personality. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (pp. 159–181). New York, NY: Guilford Press.

McCrae, R. R., Terracciano, A., De Fruyt, F., De Bolle, M., Gelfand, M. J., Costa, P. T., Jr., … Yik, M. (2005). Universal features of personality traits from the observer's perspective: Data from 50 cultures. *Journal of Personality and Social Psychology*, *88*, 547–561.

Milas, G., Mlačić, B., & Mikloušić, I. (2013). Construct validation of a general social attitude scale (SAS_G). *Journal of Individual Differences, 34*, 203–213.

Miller, G. A. (1991). *The science of words*. New York, NY: Scientific American Library.

Mlačić, B. (2006). *Social and reputational aspects of personality: Findings from the Croatian neo-taxonomy*. Paper presented at the Symposium Advances in the Psycholexical Study of Personality, Thirteenth conference of the European Association of Personality Psychology, Athens, Greece, July 22–26.

Mlačić, B., & Goldberg, L. R. (2007). An analysis of a Cross-Cultural Personality Inventory: The IPIP Big Five Factor markers in Croatia. *Journal of Personality Assessment*, *88*, 168–177.

Mlačić, B., & Ostendorf, F. (2005). Taxonomy and structure of Croatian personality-descriptive adjectives. *European Journal of Personality*, *19*, 117–152.

Morales-Vives, F., De Raad, B., & Vigil-Colet, A. (2014). Psycho-lexically based virtue factors in Spain and their relation with personality traits. *The Journal of General Psychology*, *141*(4), 297–325.

Mulder, B. F. (2006). *Openheid voor ervaringen, lexical benaderd [Openness to Experience, lexically approached]*. Thesis, University of Groningen.

Norman, W. T. (1963). Toward an adequate taxonomy of personality attributes. Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal and Social Psychology*, *66*(6), 574–583.

Norman, W. T. (1967). *2800 personality trait descriptors: Normative operating characteristics for a university population*. Unpublished manuscript: Department of Psychology, University of Michigan, Ann Arbor, MI.

Osgood, C. E. (1970). Interpersonal verbs and interpersonal behavior. In J. L. Cowan (Ed.), *Studies in thought and language* (pp. 133–227). Tucson, AZ: University of Arizona Press.

Ostendorf, F. (1990). *Sprache und Persönlichkeitsstruktur: Zur Validität des Fünf-Faktoren-Modells der Persönlichkeit*. Regensburg, Germany: S. Roderer Verlag.

Ostendorf, F. (1996). The structure of attitudes and its relation to the Big Five factors of personality. Paper presented at the Symposium, *Current Research on the Big Five Factors of Personality on an International Scale*, XXVI International Congress of Psychology, Montréal, Canada, August 16–22.

Ostendorf, F., & Angleitner, A. (1994). Personality dimensions and appearance. Paper presented at the Symposium Personality Dimensions, Seventh conference of the European Association of Personality Psychology, Madrid, Spain, July 12-16.

Passakos, C. G., & De Raad, B. (2009). Ancient personality: Trait attributions to characters in Homer's *Iliad*. *Ancient Narrative, 7*, 75–95.

Peabody, D. (1987). Selecting representative trait adjectives. *Journal of Personality and Social Psychology*, *52*, 59–71.

Peabody, D., & De Raad, B. (2002). The substantive nature of psycholexical personality factors: A comparison across languages. *Journal of Personality and Social Psychology*, *83*, 983–997.

Peabody, D., & Goldberg, L. R. (1989). Some determinants of factor structures from personality-trait descriptors. *Journal of Personality and Social Psychology*, *57*, 552–567.

Quevedo-Aguado, M. P., Iraegui, A., Anivarro, E. M., & Ross, P. (1996). Linguistic descriptors of personality in the Spanish language: A first taxonomic study. *European Journal of Personality*, *10*, 25–34.

Rotter, J. B. (1954). *Social learning and clinical psychology*. New York, NY: Prentice-Hall.

Ruisel, I. (1997). Analysis of personality descriptors in the Slovak language. *Studia Psychologica*, *39*, 233–245.

Rümelin, G. (1890). Über die Temperamente [About temperaments]. *Deutsche Rundschau*, *64*, 397–412.

Ryle, G. (1949). *The concept of mind*. London, England: Penguin.

Saucier, G. (1997). Effects of variable selection on the factor structure of person descriptors. *Journal of Personality and Social Psychology*, *73*, 1296-1312.

Saucier, G. (2000). Isms and the structure of social attitudes. *Journal of Personality and Social Psychology*, *78*, 366–385.

Saucier, G. (2003a). An alternative multi-language structure for personality attributes. *European Journal of Personality*, *17*, 179–205.

Saucier, G. (2003b). Factor structure of English-language personality type nouns. *Journal of Personality and Social Psychology*, *84*, 695–708.

Saucier, G. (2009). Recurrent personality dimensions in inclusive lexical studies: Indications for a Big Six structure. *Journal of Personality*, *77*, 1577–1614.

Saucier, G. (2010). The structure of social effects: Personality as impact on others. *European Journal of Personality*, *24*, 222–240.

Saucier, G. (2013). Isms dimensions: Toward a more comprehensive and integrative model of belief-system components. *Journal of Personality and Social Psychology*, *104*, 921–939.

Saucier, G., Georgiades, S., Tsaousis, I., & Goldberg, L. R. (2005). The factor structure of Greek personality adjectives. *Journal of Personality and Social Psychology*, *88*, 856–875.

Saucier, G., & Goldberg, L. R. (1996). The language of personality: Lexical perspectives on the Five-Factor model. In J. S. Wiggins (Ed.), *The Five-Factor model of personality. Theoretical perspectives* (pp. 21–50). New York, NY: Guilford Press.

Saucier, G., & Goldberg, L. R. (2001). Lexical studies of indigenous personality factors: Premises, products, and prospects. *Journal of Personality*, *69*, 847–879.

Saucier, G., Thalmayer, A. G., Payne, D. L., Carlson, R., Sanogo, L., Ole-Kotikash, L., … Zhou, X. (2014). A basic bivariate structure of personality attributes evident across nine languages. *Journal of Personality*, *82*, 1–14.

Semin, G. R., & Fiedler, K. (1988). The cognitive functions of linguistic categories in describing persons: Social cognition language. *Journal of Personality and Social Psychology*, *54*, 558–568.

Shmelyov, A. G., & Pokhil'ko, V. I. (1993). A taxonomy-oriented study of Russian personality-trait names. *European Journal of Personality*, *7*, 1–17.

Shweder, R. A., & D'Andrade, R. G. (1980). The systematic distortion hypothesis. In R. A. Shweder (Ed.), *New directions of social and behavioral science, Vol. 4: Fallible judgment in behavioral research for methodology* (pp. 3–38). San Francisco, CA: Jossey-Bass.

Singh, J. K., Misra, G., & De Raad, B. (2013). Personality structure in the trait lexicon of Hindi, a major language spoken in India. *European Journal of Personality*, *27*, 605–620.

Somer, O., & Goldberg, L. R. (1999). The structure of Turkish trait-descriptive adjectives. *Journal of Personality and Social Psychology, 76*, 431–450.

Strelau, J. (1983). *Temperament-personality-activity.* London, England: Academic Press.

Szarota, P. (1996). Taxonomy of the Polish personality-descriptive adjectives of the highest frequency of use. *Polish Psychological Bulletin*, *27*, 343–351.

Szirmák, Z., & De Raad, B. (1994). Taxonomy and structure of Hungarian personality traits. *European Journal of Personality*, *8*, 95–117.

Tellegen, A., & Waller, N. G. (1987). *Re-examining basic dimensions of natural language trait descriptors*. Paper presented at the 95th Annual Convention of the American Psychological Association, New York.

Themerson, S. (1974). *Logic, labels, and flesh.* London, England: Gaberbocchus.

Tupes, E. C., & Christal, R. E. (1958). Stability of personality trait rating factors obtained under diverse conditions. *USAF WADC Technical Note No. 58-61*. U.S. Air Force: Lackland Air Force Base, San Antonio, TX.

Tupes, E. C., & Christal R. E. (1961). Recurrent personality factors based on trait ratings. *USAF ASD Technical Report No. 61-97*. U.S. Air Force: Lackland Air Force Base, San Antonio, TX.

Wiggins, J. S. (1973). *Personality and prediction: Principles of personality assessment*. Reading, MA: Addison-Wesley.

Wiggins, J. R. (1991). Agency and communion as conceptual coordinates for the understanding and measurement of interpersonal behavior. In L.W. M. Grove & D. Cicchetti (Eds.), *Thinking clearly about psychology, Vol. 2: Personality and psychopathology* (pp. 89–113). Minneapolis, MN: University of Minnesota Press.

Yu, S., Wei, L., He, W., Chai, H., Wang, D., Chen, W., & Wang, W. (2009). Description of personality traits by Chinese adjectives: A trial on university students. *Psychology of Language and Communication*, *13*, 5–20.

Zhou, X., Saucier, G., Gao, D., & Liu, J. (2009). The factor structure of Chinese personality terms. *Journal of Personality*, *77*, 363–400.

Zuckerman, M. (1984). Sensation seeking: A comparative approach to a human trait. *Behavioral and Brain Sciences*, *7*, 413–471.

Zuckerman, M. (2002). Zuckerman-Kuhlman Personality Questionnaire (ZKPQ): An alternative five-factorial model. In B. De Raad & M. Perugini (Eds.), *Big Five assessment* (pp. 377–396). Goettingen, Germany: Hogrefe & Huber.

Zuckerman, M., Kuhlman, D. M., & Camac, C. (1988). What lies beyond E and N? Factor analyses of scales believed to measure basic dimensions of personality. *Journal of Personality and Social Psychology*, *54*, 96–107.

Boele de Raad

Faculty of Behavioral and Social Sciences, University of Groningen

Boris Mlačić

Ivo Pilar Institute of Social Sciences