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2

Measures of the Personality Factors Found Recurrently in Human Lexicons

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How can attributes of personality best be organized and measured? Answers to this crucial scientific question provide the foundation not only for personality tests, but also for much research on personality and individual differences. Studies of natural languages provide an important source of answers. In this chapter I review the approach used in such lexical studies of personality attributes, as well as basic findings and major measures associated with these studies.

Lexical measures of personality factors are used primarily in research settings. Because the items themselves are terms from the lexicon, they are easily embedded within lexical-study stimuli, where they provide the most direct representation of lexical factors. They have also proven to be extremely useful templates for the development of more sophisticated assessment instruments. Moreover, because lexical factors have a solid content-validity basis, they can be used in the validation of other measures. This chapter presents an array of measures for lexical personality factors, concentrating on those measures based most directly on lexical structures; that is, those designed to be markers of these structures. Inquiries into the structure of attributes hinge strongly on how personality is defined. Therefore, the definition of personality is a good place to begin a discussion of structure.

DEFINING PERSONALITY

Definitions make one's assumptions explicit. How one defines personality is consequential, affecting how one selects variables when studying personality. There is no single canonical definition in current use. Personality is defined either as (a) a set of attributes characterizing an individual, or as (b) the underlying system that generates the set of attributes. Funder (1997) provided a definition that includes both (a) and (b): Personality is 'an individual's characteristic patterns of thought, emotion, and behavior, together with the psychological mechanisms – hidden or not – behind those patterns' (1997: 1–2). Funder refers to a broad

array of attributes that simultaneously are (i) ascribed to individuals, (ii) stable over time, and (iii) psychological in nature.

But there are other ways to define personality. In a classic early textbook, Allport (1937) catalogued 50 distinct meanings found in definitions of personality. These meanings can be arrayed in a continuum ranging from one's externally observable manner to one's internal self. Reacting against broad omnibus definitions of personality (e.g. Prince, 1924), Allport's definition – 'personality is the dynamic organization within the individual of those psychophysical systems that determine his unique adjustments to his environment' (1937: 48) – highlights attributes that are seen as residing 'within' the individual.

However, other ways of defining personality, consistent with a 'biosocial' view that Allport deprecated, emphasize attributes that are more external or that involve the effect the individual tends to have on others. These include (a) attributes of external appearance (including qualities like physical size), (b) attributes associated with the role one assumes or the status one has achieved in society (e.g. professional, motherly, famous), and (c) attributes of an evocative type, that involve the pattern of reactions that the individual generates in others given the kind of stimulus s/he is (e.g. charming, intimidating, boring, believable, lovable, respected, offensive). Such social effects represent a person's social stimulus value (Allport, 1937: 41; based on May, 1932).

Another class with controversial status as personality attributes is that containing highly evaluative terms (e.g. stupid, evil, abnormal, good). Most personality concepts are decidedly evaluative (clearly favorable or unfavorable; Goldberg, 1982), but these are distinct in the high ratio of the evaluative to the descriptive component. Highly evaluative terms are not 'pure evaluation'; one can find descriptive dimensions from selections consisting purely of such terms (Benet-Martinez and Waller, 2002), so they do have *some* descriptive component.

What about patterns of belief and attitudes? Allport (1937) generally regarded attitudes as behavioral dispositions of a specific and external sort, being 'bound to an object or value' (1937: 294); that is, aroused in the presence of a specifiable class of stimuli. If, however, an attitude is 'chronic and temperamental', expressed in almost any sphere of the person's behavior' (1937: 294), as in for example radicalism or conservatism, then for Allport it differed little from a trait. Thus, generalized attitudes – those for which it is difficult to specify the object – can be considered personality traits. Factors derived from the correlations among large numbers of more specific attitudes and beliefs define traits, in that they represent consistent patterns across many attitude objects.

Values can be seen as beliefs regarding 'how one ought or ought not to behave, or about some end-state of existence worth or not worth attaining' (Rokeach, 1968: 124), and, echoing Allport's distinctions, 'not tied to any specific attitude object or situation' (Rokeach, 1968: 124). Super (1995) characterized interests as related to values, being preferences for classes of activities in which individual expect to attain their values. Interests involve assessing objects according to how liked or disliked they are (rather than their favorability or importance more generally). Career-interest measures show even higher stability than do personality measures (Low et al., 2005). And there are dimensions of variation in career-interest items that are relatively independent of currently popular trait dimensions (Ackerman, 1996; Ackerman and Heggestad, 1997).

Including all such additional variables, one arrives at a broader definition of personality: all of the relatively stable attributes, qualities, or characteristics that distinguish the behavior, thoughts, and feelings of individuals. Such a broad definition is close to that proposed by Roback (1931): 'an integrative combination of all our cognitive (knowledge), affective (feeling), conative (volitional) and even physical qualities' (1931: 31–32).

Such broad definitions are not unusual. However, since Allport and Odbert (1936), personality has often been defined broadly

but operationalized narrowly, so that many classes of relevant variables are excluded. These narrow variable selections have been achieved by either (a) starting with a full range of attributes of persons and then purging those judged to fall in categories considered unsuitable using exclusion rules (e.g. Allport and Odbert, 1936; Ashton et al., 2004; Goldberg, 1990; Norman, 1967), or (b) relying on vaguely defined 'personality relevance' ratings of judges. In effect, a narrower definition is being used, that personality is pattern of behavior (including stable affective tendencies but generally not patterns of thinking) that are believed to reside within the individual and that cannot be disqualified as attitudes, temporary states, social effects, or social roles, or because they are overly evaluative. Such definition-by-exclusion makes personality into a remarkably gerrymandered construct.

Previous research indicates that the structure of personality attributes encoded in lexicons depends in major ways upon the upstream selection of variables. This is unsurprising. If astronomers forbade themselves from investigating regions of the sky beyond that narrow band of the firmament where the most obvious objects of interest (the sun, the moon, the planets) move across the sky, astronomy's conclusions about the universe would certainly be altered. To remove the risk that we ignore important phenomena and miss major discoveries, we need a wider view. We should couple our focus on the most prototypical attributes of personality with a simultaneous 'bigger picture' examination of a wider range of psychological attributes.

PARSIMONY IN PERSONALITY MODELS

How many important traits are there? Surveying the scales in current personality inventories, one finds a bewildering variety of constructs. And if one turns to single words in modern world languages, the situation becomes overwhelming: Allport and Odbert (1936), for example, found nearly 18,000 words in *Webster's Second International Dictionary* referring to characteristics that might distinguish one human being from another. One needs a parsimonious summary of this vast domain of concepts.

In the field of personality the search for a scientifically compelling classification of the huge number of personality attributes excites increasing interest. A classification systematically divides phenomena into ordered groups or categories; it 'chunks' things. A scientific classification helps organize and integrate knowledge and research findings, providing a standard scientific nomenclature that facilitates communication and aids in the accumulation of empirical findings. Because personality attributes describe continua and not categories, such a classification will naturally be a 'dimensional classification' – more like those used for classifying colors than like those for classifying species.

In constructing a classification a variety of procedures could be used to group the phenomena under study. The most useful is a class of statistical methods generically referred to as factor analysis. Factor analysis can be considered a variable-reduction procedure, in which many variables are organized by a few factors that summarize the interrelations among the variables (Goldberg and Velicer, 2006).

THE BASIS FOR THE LEXICAL APPROACH

However, prior to conducting factor analysis, one must determine which variables to include in the analysis. Variable selection is vitally dependent on how personality is defined. It is also guided, to some degree, by the investigator's beliefs about the criteria for the goodness of a structural model (see Saucier and Simonds, 2006, for a listing of such criteria).

As has long been recognized (e.g. Allport and Odbert, 1936; Cattell, 1943; Goldberg, 1981; Norman, 1963), basic personality

dimensions might be discovered by studying conceptions embedded in the natural language. The key premise of the lexical approach is this: The degree of representation of an attribute in language has some correspondence with the general importance of the attribute in real-world transactions. If terms in a language are used as variables, an attribute that is represented by multiple terms in that language will likely appear as a factor. Moreover, if the factor includes terms that are used with high frequency, the importance of the factor is underscored.

Such factors are but a starting point for several reasons. The lexicon could omit or underemphasize some scientifically important variables. Moreover, the meaning of single natural-language terms can be vague, ambiguous, or context-dependent (John et al., 1988). Folk concepts of personality (Tellegen, 1993) provide basic but not exhaustive (necessary but not sufficient) components for a science of personality attributes (Goldberg and Saucier, 1995). These components operate on the descriptive or phenotypic level, without implication as to what might be the underlying biological or other causal basis. An established causal basis is an important criterion for the goodness of a structural model (Saucier and Simonds, 2006). Ultimately, a structural model of personality ought to align the descriptive level with the causal level, and there may turn out not to be perfect homology between the two levels.

Nonetheless, lexicalized concepts – especially those represented in very frequently used words – tend to have high social importance. So variables and factors based on lexicalized concepts have a virtual guarantee of being important. Lexicalized concepts can be found in standard sources created by disinterested parties (e.g. linguists and lexicographers), and basing variable selection on such a source reduces the likelihood of investigator bias in the selection process. And because lexicalized concepts constitute a finite domain, one can sample them representatively and so establish content-validity benchmarks for personality variables. For drawing conclusions regarding personality structure, these concepts thereby have a major advantage over statements and sentences: Drawing on the generative capacity of a human language, a nearly infinite number of personality-descriptive sentences might be formed, meaning that establishing any selection of statements and sentences is representative would be quite difficult.

The lexical-study paradigm gives special importance to one other demanding criterion. *Cross-cultural generalizability* can be used to judge among competitor structures. Structural models derived within one limited population, or a limited sample from that population, are prone to reflect the unique patterns found within that population or sample. Although culture-specific patterns are certainly interesting, models that transfer well – across populations, languages, and sociocultural settings – better satisfy scientific standards of replicability and generalizability.

We can apply this criterion in either a lenient or a stringent way. The lenient way is to export a set of variables (e.g. those in a single personality inventory) for use in other populations, and then examine whether these preselected variables (after translation, if necessary) generate the same factor structure in each new language or culture (as in Rolland et al., 1998; Rossier et al., 2005). If the inventory's scales generate similar factors across populations, one might argue (as in McCrae and Costa, 1997) that the structure is widely generalizable. A more stringent test is to identify the most salient and important personality concepts *within* each linguistic/cultural context, derive an indigenous factor structure from those variables, and then examine how much this new structure corresponds to previously proposed structures. A structure that met this demanding test in any language could be considered more truly ubiquitous and universal than a merely 'translatable' structure.

The lexical approach involves such an indigenous research strategy. Analyses are carried out separately within each language, using a representative set of native-language

descriptors, rather than merely importing selections of variables from other languages (e.g. English).

The following review will detail the structures that have emerged from lexical studies of some 16 languages, and that appear most replicable. These structures involve alternatively one, two, three, five, six, and seven factors. In all cases, measures of lexically derived factors will be described in conjunction with the structure.

What if we were constrained to only one factor?

Several lexical studies have reported evidence about factor solutions containing only one factor (Boies et al., 2001; di Blas and Forzi, 1999; Goldberg and Somer, 2000; Saucier, 1997, 2003b; Saucier et al., 2006). Findings have been quite consistent. The single factor contrasts a heterogeneous mix of desirable attributes at one pole with a mix of undesirable attributes at the other pole. This unrotated factor can be labelled 'evaluation'. A more specific interpretation, which fits reported findings from lexical studies, would be 'virtues' versus 'bad character'.

Evaluation is the first factor to emerge in the cognitions of young children. Whereas older children employ more differentiated trait concepts, younger children typically rely on global, evaluative inference (Alvarez et al., 2001). One can refer also to a classic finding in cognitive psychology: In judgments about the meanings of diverse objects in a wide array of cultural settings, a global evaluation factor (good vs. bad) was found recurrently to be the first and largest factor (Osgood, 1962; Osgood et al., 1975). Osgood hypothesized that the ubiquity of this evaluative factor was related to basic evolutionary principles: Our forebears would not have survived if they had not become adapted at a very basic level to any signals of good versus bad objects or events – those to approach versus those to avoid, those leading to pleasure versus those leading to pain (e.g. 'Can I eat it or will it eat me?'). This motivational dimension – what is liked and approached, as opposed to what is disliked and avoided – provides one possible theoretical account for the one-factor model. There is no widely used measure of this 'Big One' factor. Indeed, the factor has had relatively little attention in personality studies. This contrasts strikingly with the situation in the field of cognitive abilities where a one-factor taxonomy has long been dominant (Carroll, 1993).

For measuring a general evaluation factor, several research measures are available. Saucier (1994b) developed an adjectival marker scale for the single 'general evaluation' (Ge) factor. This scale was intended to be relatively orthogonal to four non-evaluative dimensions derived in the same study. The content at the favorable pole was characterized as largely a combination of likeability, good judgment, and perceived maturity. Constituent terms and psychometric indices are provided in Table 2.1, both for the longer 24-adjective scale (Ge-24) and a briefer 12-item subset (Ge-12). An alternative measure was developed specifically to minimize correlations with the octant scales for the Non-Evaluative Personality Circumplex (NEPC) (Saucier et al., 2001; described later under three-factor models). Terms and indices for this scale (NEPC-E) are also presented in the table. As part of a study of the structure of English type-nouns, Saucier (2003b) used an economical ten-adjective marker scale for the one broad factor (derived from the Big One factor in the lexical study of Saucier, 1997) labeled 'socially desirable qualities'. As another alternative, one could employ terms from the bipolar scales recommended by Osgood et al., 1975, table 4:18), among which good–bad, pleasant–unpleasant, nice–awful, and beautiful–ugly proved the most ubiquitously useful across a wide range of cultural settings. Table 2.1 presents such a set. A characteristic of Osgood's items is that they can be used to describe inanimate objects as well as animals or people, because they use terms (e.g. pleasant, beautiful) without strong and specific moral/ethical connotations.

Table 2.1 Psychometric Indices for Marker Scales for Lexical One- and Two-Factor Structures

Marker Scale	*No. of Items*	*Sample*	*Coefficient Alpha*	*Mean r*	*SD of r*	*% of Variance 1st – 2nd Factor*	*Mean*	*SD*	*Skew*
General Evaluation (Ge-24) (Saucier, 1994b)	24	ESCS-1993	.87	.23	.09	26 – 8	5.60	.54	–.56
		ICS	.84	.18					
General Evaluation (Ge-12) (Saucier, 1994b)	12	ESCS-1993	.78	.24	.08	31 – 10	5.69	.57	–.65
		ICS	.72	.18					
		OCS-Self	.64	.14					
		OCS-Peer	.77	.23					
NEPC Evaluation Scale (Saucier et al., 2001)	20	ESCS-1998a	.81	.19	.09	24 – 9	5.46	.64	–.68
		OCS-Self/Peer	.70						
SDQ	10	ESCS-1995	.65	.18	.10	27 – 14	5.80	.60	–1.17
Osgood Unipolar-Item Evaluation Scale	10	ESCS-1995	.70	.23	.15	33 – 18	5.67	.60	–.80
Big-Two Social Propriety and Morality (S)	10	ESCS-1995	.73	.24	.10	32 – 13	5.82	.66	–.84
Big-Two Dynamism (D)	10	ESCS-1995	.79	.28	.09	35 – 13	4.97	.83	–.44

Note: ESCS – Eugene-Springfield Community Sample (ESCS-1993, N=1125; ESCS-1995, N=700; ESCS-1998a, N=733; for intercorrelations, N=592). ICS – Illinois College Students (see Saucier, 1994b), N=250. OCS - Oregon College Student Sample, Self-Ratings N=320, Peer-Ratings N=316. NEPC – Non-Evaluative Personality Circumplex. % of variance figures based on a principal-axes analysis of all items in the scale. SDQ – Socially Desirable Qualities, for which items are Responsible, Patient, Warm, Clever, Sociable versus Cruel, Irritable, Disorganized, Corrupt, Dishonest. Osgood Scale items are Good, Nice, Lovely, Beautiful, Pleasant versus Bad, Cruel, Dangerous, Awful, Uncomfortable. Ge-12 items are all part of the Ge-24. S items are Tolerant, Patient, Courteous, Responsible versus Cruel, Harsh, Irritable, Reckless, Corrupt, Egotistical. D items are Expressive, Talkative, Bold, Clever, Sociable, Good-looking, Humorous versus Timid, Dull, Bashful.

Several psychometric indices are included in Table 2.1 and succeeding tables. Two reference internal consistency: coefficient alpha and the mean inter-item correlation. Two are relevant to unidimensionality: (a) the standard deviation of the inter-item correlations, which decreases as unidimensionality increases, and (b) the ratio of variance between the first and second unrotated factors from the scale items, which becomes more lopsided as unidimensionality increases. Finally, the table includes the scale mean, where scores are the average response on a 1-to-7 multipoint rating scale, as well as the scale standard deviation and the skewness statistic (where values less than −1 or greater than +1 indicate extreme negative or positive skew, respectively). Comparing the five alternative marker scales with respect to these indices, it appears that the Ge-24 and Ge-12 scales are superior, as they combine strong internal consistency and unidimensionality with somewhat less skewness than the other measures.

If dimensions of psychopathology are constrained to be only one, that dimension would represent general maladjustment. General maladjustment is probably strongly related to the evaluation factor in personality. One difference is that studies of psyhopathology, understandably, pay little attention to favorable qualities. Abnormal psychology tends to contrast varieties of dysfunction with the mere absence of dysfunction (i.e. normality).

The big two

Two-factor solutions from lexical studies also suggest a consistent pattern: One factor includes attributes associated with positively valued dynamic qualities and individual ascendancy, whereas the other factor includes attributes associated with socialization, social propriety, solidarity, and community cohesion (Caprara et al., 1997; di Blas and Forzi, 1999; Digman, 1997; Goldberg and Somer, 2000; Hrebíckov· et al., 1999; Paulhus and John, 1998; Saucier, 1997, 2003b; Saucier et al., 2005, 2006; Shweder, 1972; White, 1980). These two factors may be aligned with some of the other sets of dual personological constructs reviewed by Digman (1997) and by Paulhus and John (1998), including Hogan's (1983) distinction between 'getting ahead' (dynamism) and 'getting along' (social propriety). They seem also to resemble higher-order factors of the Big Five (DeYoung, 2006; Digman, 1997).

To date, this two-factor structure appears to be as ubiquitous across languages and cultures as the one-factor structure. Moreover, like the one-factor structure and unlike structures described later, it appears to be relatively impervious to variable-selection effects. These two factors seem to appear whether there is a relatively restricted or inclusive selection of variables (Saucier, 1997), and whether one studies adjectives or type-nouns (Saucier, 2003b) or even more diverse combinations of variable types (De Raad and Barelds, 2006; Saucier et al., 2006). Not yet known is the extent to which the two-factors will be robust across even broader selections of variables (e.g. those that also include variables representing beliefs, attitudes, values, and interests). If both the one- and two-factor structures eventually turn out to be universal, the latter has a clear advantage, because two factors provide more information than one.

No consensual theory is as yet associated with the Big Two, but Paulhus and John (1998) reviewed a number of theories associated with two-factor structures of personality. De Young has specifically proposed that the two higher-order factors, which he labels 'stability' and 'plasticity', are related respectively to individual differences in serotonin and in dopamine functioning. These two factors might alternatively stem from the operation of basic human motivations that operate in the observer: 'social propriety' might reference the degree to which an observed person is safe versus dangerous or hazardous (i.e. punishing) for others, whereas 'dynamism' might reference the degree to which an observed person is stimulating versus boring (i.e. rewarding) for

others. Studies are needed to evaluate these hypotheses.

There are as yet no widely used standard measures of the Big Two. Measures of the interpersonal circumplex (e.g. Wiggins et al., 1988) will not serve, because its two dimensions are too narrow – omitting contributions, for example, of openness/intellect, conscientiousness, and emotional stability. The same is true of Eysenck's older 'Big Two' – extraversion and neuroticism – which obviously leave out contributions of a different combination of three Big Five factors.

As markers of the Big Two in lexical studies in newly studied languages, Saucier has used a relatively brief collection of English adjectives derived from the two-factor structure in an English lexical analysis (Saucier, 1997). Constituent terms and psychometric indices for these 'initial approximation' scales are provided in Table 2.1.

There may be strong homology between structures in the domains of personality and psychopathology at the two-factor level. A favored two-dimensional model for psychopathology separates externalizing and internalizing disorders, conceived as two correlated factors (e.g. Krueger and Markon, 2006). A reasonable hypothesis is that externalizing disorders represent low social propriety (morality) whereas internalizing disorders have a stronger relation to low dynamism. More studies are needed to establish homologies between domains at the two-factor level. Just as the single evaluative factor is a higher-order combination of the favorable poles of the Big Two, the single psychopathology factor (i.e. maladjustment) is a higher-order combination of the externalizing and internalizing dimensions.

Personality descriptors in three-dimensional space

In three-factor solutions, studies of most languages of European origin (plus those in Turkish, Korean, and Chinese) have produced factors corresponding to extraversion, agreeableness, and conscientiousness. This structure was not observed in Filipino, French, Greek, or Maasai studies. Still, this three-factor structure does appear readily in a large subset of languages, and in more languages than the Big Five (De Raad and Peabody, 2005).

Peabody (1987; Peabody and Goldberg, 1989) demonstrated that the unrotated-factor versions of this Big Three can be labeled as evaluation, assertive versus unassertive (or aggressive vs. accommodating), and tight versus loose (or impulse control vs. impulse expression). The first two of these are the most ubiquitous, as they rotate into the social propriety (morality) and dynamism factors that make up the Big Two. The Big Three does not replicate in all lexical studies simply because a tight–loose factor does not necessarily appear third, but rather sometimes fourth or later, in the sequence of unrotated factors.

For the rotated versions of these three dimensions, scales for the first three of the Big Five – that is, for extraversion, agreeableness, and conscientiousness (see Table 2.3) – will function reasonably well. But the unrotated versions are also of interest, because they concentrate social-desirability responding in only one of the factors (i.e. evaluation), and thus remove it from the other two. This was demonstrated by Saucier et al. (2001), who likewise showed that these unrotated factors are quite similar in English and in German. This set of factors includes one evaluative factor and two non-evaluative factors, and the latter were presented as a non-evaluative circumplex (cf. di Blas et al., 2000). Saucier et al. (2001) provided psychometric indices for the octant scales taken separately. These scales produce unusually symmetric (non-skewed) distributions but tend to be multidimensional and only moderately homogeneous.

An additional three-factor model is the affective-meaning dimensions of Osgood and colleagues, which have a quasi-lexical basis, being drawn from ratings of a wide variety of objects and entities. The most

ubiquitous bipolar-scale markers for activity and potency across cultures (Osgood et al., 1975, table 4:18) appear to be strong–weak, big–little/small, and heavy–light (for potency), and fast–slow, young–old, active–passive, and alive–dead (for activity). Although the three Osgood dimensions are known to apply well across a very broad range of target entities, activity and potency have not provided a particularly good account of lexical factors.

Another three-factor alternative is evident in the convergence between models of Eysenck (Eysenck and Eysenck, 1975), of Tellegen and colleagues (Tellegen, in press; Clark and Watson, 1999), and of Rothbart (Rothbart and Bates, 1998), all of which share an emphasis on affect and on biological bases of temperament. One factor is extraversion, approach, or positive emotionality. A second is neuroticism, negative affectivity, or negative emotionality. A third is psychoticism (which might be better labeled as some combination of psychopathy and impulsive sensation seeking), constraint (labeled by the opposite pole), or effortful control (labeled by the opposite pole). Although this model is prominent in contemporary psychology, it is yet to be reported from a lexical study, perhaps because it tends to omit content from agreeableness, a large and prominent constituent of the personality lexicon.

Saucier (1997) found that, for English adjectives, this structure was as robust across variable selections as were the one- and two-factor structures described previously. However, that remains the only demonstration of this sort. Saucier's (2003b) study of the structure of English type-nouns failed to confirm this three-factor structure although it did confirm the Big One and Big Two. And the three factors did not appear in two recent lexical studies with more inclusive selections of variables (Saucier et al., 2005; Saucier et al., 2006). A conclusion is that they are not very robust across variable selections.

The same variable-selection caveat pertains to the next two structural models to be discussed. In the case of the Big Five and the Cross-Language Six, the structure seems to be dependent on a narrow way of operationalizing personality (using exclusion rules). And all of these models may be dependent on the use of adjectives, to the exclusion of other word-forms. In order to increase our understanding of the contingencies between variable selection and obtained structure, all lexical studies should ideally compare results from a conventional, narrow variable selection with that from a more inclusive selection of variables (as in Saucier, 1997; Goldberg and Somer, 2000; Saucier et al., 2006).

At this point, the reader may be interested in how the one-, two-, and three-factor levels are related. Table 2.2 provides the correlations among all of the adjective marker scales described in this chapter; some of the higher correlations are affected by item overlap between marker sets at different levels. The general evaluation factor, regardless of the scale for it, is related to both S (social propriety) and D (dynamism) but more to S than to D.

Regularities at the five-factor level

The Big Five factors are extraversion, agreeableness, conscientiousness, emotional stability, and intellect/imagination. Lexical studies in Germanic and Slavic languages (including English) have been supportive of the Big Five, and so has a study in Turkish (Goldberg and Somer, 2000). But studies in Italian (De Raad et al., 1998) and Hungarian (Szirmàk and De Raad, 1994) found no counterpart to the intellect factor in five-factor solutions. Extraction of additional factors was necessary to find a factor related to intellect. In a study of modern Greek (Saucier et al., 2005), there was no intellect or imagination factor (intellect terms were more associated with a factor emphasizing courage and self-confidence).

Several lexical studies have included a relatively broad selection of variables, each including many terms that could be classified as referring to emotions and moods or as

Table 2.2 Intercorrelations among adjective marker scales for structures of one to seven factors

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1. Ge-24																												
2. Ge-12	*95*																											
3. NEPC-E	*62*	*60*																										
4. SDQ	*55*	*54*	*52*																									
5. Osgood E	*50*	*51*	*45*	*68*																								
6. S	49	49	47	**75**	58																							
7. D	36	33	40	43	41	*04*																						
8. TL	05	03	–04	05	–07	00	–22																					
9. TALU	–04	–08	–06	–14	–20	–35	10	*43*																				
10. AU	–01	–03	–03	–08	–07	–45	43	*11*	*58*																			
11. ALUT	04	04	08	04	04	–21	57	*–50*	*03*	*40*																		
12. B5MM-I	27	25	31	33	30	00	**84**	–13	09	44	57																	
13. B5MM-II	52	53	51	**71**	**65**	**75**	27	–25	–46	–29	04	*21*																
14. B5MM-III	39	35	31	58	40	36	20	48	11	10	–19	*17*	*31*															
15. B5MM-IV	46	44	48	50	38	52	19	11	06	–12	00	*19*	*37*	*28*														
16. B5MM-V	25	23	39	27	19	07	41	–11	14	22	20	*20*	*16*	*10*	*16*													
17. CL6-H	57	58	41	59	49	**65**	10	09	–26	–29	–16	08	**61**	40	37	03												
18. CL6-E	–31	–28	–27	–27	–17	–05	–36	–26	–57	–32	–12	–32	06	–27	–43	–25	*–03*											
19. CL6-X	36	34	37	45	41	14	**81**	–18	–02	34	55	**92**	36	24	25	17	*22*	*–27*										
20. CL6-A	41	43	44	**65**	49	**81**	02	–09	–36	–51	–15	–06	**65**	21	55	09	*49*	*–08*	*07*									
21. CL6-C	45	41	32	55	40	40	15	50	08	05	–26	14	34	**84**	23	07	*46*	*–20*	*20*	*23*								
22. CL6-O	29	26	40	27	23	05	51	–16	17	26	32	29	16	09	20	**87**	*02*	*–31*	*27*	*06*	*04*							
23. ML7-gr	17	16	18	23	22	01	**68**	–33	–15	28	**62**	**79**	24	–02	04	05	05	–03	**81**	–04	–05	13						
24. ML7-sa	48	47	41	45	37	18	53	05	38	34	26	45	20	33	47	32	23	**–75**	46	18	30	41	*20*					
25. ML7-et	39	38	44	54	39	**70**	07	02	–20	–36	–05	09	48	19	**71**	06	37	–21	16	**79**	17	06	*04*	*23*				
26. ML7-cfo	41	40	38	50	42	**62**	06	–16	–47	–42	–06	02	**69**	28	22	–02	**66**	20	17	51	35	–03	*09*	*06*	*32*			
27. ML7-co	24	21	19	37	26	19	11	52	09	10	–27	11	18	**75**	10	02	30	–09	15	06	**75**	–04	*–03*	*20*	*03*	*22*		
28. ML7-ov	30	28	44	26	21	04	45	–07	18	27	19	22	14	12	16	**84**	02	–29	19	09	10	**84**	*04*	*35*	*06*	*–05*	*05*	
29. ML7-nv	34	36	24	58	53	56	10	24	–06	–11	–21	13	43	45	35	00	48	–16	22	36	49	–03	*04*	*24*	*31*	*29*	*34*	*–04*

Note: Eugene-Springfield Community Sample (ESCS), N=533. Decimal points omitted. Between-set correlations above 0.60 in magnitude are printed in boldface type. All correlations within set (the same level, structure; and number of factors) are in italics. For Big Five, correlations are based on ESCS-1995. Some scales from different sets have overlapping items, which may inflate the correlations among the more closely related scales.

being unusually highly evaluative, and two of these studies (Goldberg and Somer, 2000; Saucier, 1997) included terms referring to physical appearance. In these studies, there has been no difficulty in replicating the one- and two-factor structures reviewed earlier. But none of these analyses has found the Big Five in a five-factor solution.

Because of the long history of Big Five models and its long salience in lexical studies, numerous measures of the lexical Big Five have been constructed. Saucier and Goldberg (2002) provide a detailed account of the some major adjectival Big Five marker scales in English. A shorter summary is provided here.

Goldberg (1990) originally experimented with bipolar and cluster scoring methods for measuring the Big Five as found in adjectives. Then he settled on a standard set of 100 'unipolar' adjectives, 20 for each factor (Goldberg, 1992). Although this marker set has been widely used, it is now judged overly long for many purposes. This influential marker set became the starting point for reduced-length marker scale sets. The first was the Mini-Markers (Saucier, 1994a), which included only a 40-item subset of the 100, those most univocally loading on each of the five factors; there are indications that validity is comparable with that for the longer marker set (Dwight et al., 1998). An alternative subset is the Ortho-40 (Saucier, 2002), differing from the Mini-Markers in having lower interscale correlations. Another problem with the 100 unipolar adjectives, and to some degree these reduced-length descendents, was the use of many negations (un- terms) (Graziano et al., 1998). By including some adjectives not contained in the 100 unipolar set, Saucier (2002) devised an alternative 40-adjective set (the 3M40) that had fewer negations while retaining interscale correlations as low as those from the Ortho-40.

Constituent terms and psychometric indices are provided in Table 2.3 for the Mini-Markers for peer-ratings as well as self-ratings. The 569 peer-ratings are averaged ratings from three well-acquainted peers nominated by each of the 569 persons who provided self-ratings, who were described by the three peers. The scales scored from peer ratings sometimes have higher internal consistency – specifically for agreeableness, conscientiousness, and emotional stability (the Big Five factors most highly associated with the broader social propriety/morality factor). When aggregated, peer ratings have the potential for psychometric properties superior to what self-ratings can provide (Hofstee, 1994). Correlations between self and aggregated peer ratings were 0.66, 0.45, 0.50, 0.41, and 0.49, respectively, for extraversion, agreeableness, conscientiousness, emotional stability, and intellect/imagination.

Big Five scales are also available from the items of the International Personality Item Pool (Goldberg, 1999). Goldberg used the 100 markers as orienting points for selecting items for 20-item scales (in the IPIP-100) and 10-item scales (in the IPIP-50), with an eye to maximizing internal consistency while balancing the number of forward- and reverse-keyed items (Saucier and Goldberg, 2002). Donnellan et al. (2006) recently developed a 'mini-IPIP' questionnaire by shortening the IPIP-50 to only 20 items. These IPIP scales can be expected to measure factors similar to the lexical ones captured by the 100 markers; however, they are one step removed from the lexical studies (Goldberg, 1990, 1992) that led to the 100 markers, and they do not share method variance with adjective scales. Thus, they are not lexical-factor measures by a strict criterion.

The same can be said for the NEO Personality Inventory (Costa and McCrae, 1985, 1992), described in another chapter in this volume, as well as its short form, the NEO Five Factor Inventory (NEO-FFI). It is worth noting, however, that the development of the agreeableness and conscientiousness domain scales for the NEO measures was strongly influenced by earlier lexical measures of the corresponding Big Five factors (McCrae and Costa, 1985).

Table 2.3 Psychometric indices for marker scales for the Big Five

Marker scale	*No. of items*	*Sample*	*2-year retest r*	*Coefficient alpha*	*Mean r*	*SD of r*	*% of variance 1st – 2nd Factor*	*Mean*	*SD*	*Skew*
Mini-markers (self-ratings)										
I -Extraversion	8	ESCS-1993	0.83	0.83	0.38	0.13	47 – 13	4.10	0.56	–0.02
II- Agreeableness	8	ESCS-1993	0.70	0.79	0.34	0.08	42 – 12	5.74	0.65	–0.91
III-Conscientiousness	8	ESCS-1993	0.78	0.83	0.38	0.11	46 – 12	5.30	0.84	–0.70
IV-Emotional stability	8	ESCS-1993	0.73	0.76	0.28	0.12	39 – 14	4.59	0.88	–0.14
V-Intellect/imagination	8	ESCS-1993	0.77	0.79	0.33	0.13	42 – 17	5.17	0.82	–0.38
Mini-markers (self-ratings)										
I -Extraversion	8	ESCS-1998b		0.86	0.42	0.13	50 – 12	3.47	0.80	–0.36
II- Agreeableness	8	ESCS-1998b		0.81	0.36	0.11	45 – 13	4.30	0.53	–0.76
III-Conscientiousness	8	ESCS-1998b		0.86	0.43	0.14	51 – 11	4.08	0.66	–0.86
IV-Emotional stability	8	ESCS-1998b		0.80	0.33	0.13	42 – 16	3.67	0.70	–0.38
V-Intellect/imagination	8	ESCS-1998b		0.83	0.38	0.14	46 – 18	3.85	0.64	–0.49
Mini-markers (peer-ratings)										
I -Extraversion	8	ESCS-1998b		0.86	0.43	0.13	51 – 12	3.70	0.66	–0.54
II- Agreeableness	8	ESCS-1998b		0.87	0.46	0.08	53 – 12	4.28	0.50	–0.95
III-Conscientiousness	8	ESCS-1998b		0.89	0.49	0.13	57 – 10	4.12	0.61	–0.96
IV-Emotional stability	8	ESCS-1998b		0.84	0.40	0.15	48 – 17	3.57	0.63	–0.26
V-Intellect/imagination	8	ESCS-1998b		0.81	0.36	0.17	44 – 20	3.98	0.49	–0.43

Note: ESCS – Eugene-Springfield Community Sample (1993, N=1125; 1998b and 1998b samples, N=569). ESCS-1998b used a 1-5 rating scale rather than 1–7. % of variance figures based on a principal-axes analyses of all items in the scale. See source articles (Saucier (1994a, 2002) or author's web-pages for list of Mini-marker items and for indices based on other samples. Some comparable indices for the 100 markers, Ortho-40, and 3M40 are available in previous publications (Saucier, 2002; Saucier and Goldberg, 2002).

Two other lexically influenced questionnaires deserve mention. One is the Big Five Inventory (BFI) (Benet-Martinez and John, 1998). This measure has 44 short phrase items. The content and positions for the five factors on this instrument were clearly influenced by both the Big Five adjective scales and by the NEO inventory. For example, in Big Five measures one factor is intellect or imagination, whereas the corresponding NEO domain is labeled as openness to experience. In the BFI, the corresponding scale has elements of all three kinds of content, and so overall represents a sort of compromise. Hendriks and her colleagues developed the Five Factor Personality Inventory (FFPI) (Hendriks et al., 1999), a 100-item Big Five inventory using an IPIP-style item format that has been translated and used in numerous languages (Hendriks et al., 2003). The FFPI was constructed based in large part on results of Dutch lexical studies, especially the innovative study of Hofstee and De Raad (1991). The BFI and FFPI are useful Big Five measures, although not lexical-factor measures by a strict criterion.

Even shorter measures of the Big Five have begun to appear. Gosling et al. (2003) developed a ten-item Big Five measure that showed adequate retest reliability and adequate convergence both with other Big Five measures and between self and observer ratings. Major sources for the items were Goldberg's marker sets and the BFI.

As these examples of Big Five measures illustrate, measures of lexical personality factors tend to be provisional and are used primarily in research, but they have also provided a useful template for the development of more sophisticated assessment instruments.

Lexical six-factor models

Ashton et al. (2004) have presented evidence that many of the lexical studies conducted to date yield a consistent pattern in six-factor solutions. Although the structure was first detected in studies of Korean (Hahn et al., 1999) and French (Boies et al., 2001), it has also appeared to a recognizable degree in Dutch, German, Hungarian, Italian, and Polish. This structure seems less bound to the Germanic and Slavic language families than the Big Five.

Empirically, the extraversion, conscientiousness, and intellect factors in this six-factor model differ relatively little from corresponding factors in the Big Five. Emotionality is more related to (low) emotional stability than to any other Big Five factor. The other two factors emerge largely out of the interstitial areas between Big Five factors: agreeableness from big five agreeableness and emotional stability, and honesty/humility from big five agreeableness and conscientiousness. However, as Table 2.2 indicates, emotionality and honesty in particular tend to have relations to more than two Big Five factors.

Evidence to date indicates that the replicability of the six-factor structure across languages probably exceeds that for the Big Five. Moreover, this 'Cross-Language Six' might be considered superior because it provides more information than the Big Five. In the first reported 'horse races' between the models, replication comparisons in lexical study of modern Greek (Saucier et al., 2005) and of the language of the Maasai (Saucier et al., 2006), the six-factor model seemed about equally as replicable as the Big Five. In neither study, however, were five- or six-factor models nearly as well replicated as were one- and two-factor models.

Other measures focused on in this chapter have included adjectives as items, and one might employ adjective markers to index these six factors. The best approach would be to utilize as many as possible of the adjectives that Ashton et al. present in their 'summary of the six-factor solutions' (2004: 363) in various languages. Table 2.4 presents the constituent terms and psychometric indices for a set of marker scales so constructed; large subsets of these terms (in translation) have been used as marker scales for the Cross-Language Six in two previous lexical studies (Saucier et al., 2005, 2006).

Table 2.4 Psychometric indices for adjective marker scales for the Cross-Language Six

Marker scale	*No. of items*	*sample*	*Coeff. alpha*	*Mean r*	*SD of r*	*% of variance 1st – 2nd factor*	*Mean*	*SD*	*Skew*	r *with HEXACO-PI* *H*	*E*	*X*	*A*	*C*	*O*
Honesty/Humility (H)	10	ESCS	0.71	0.24	0.12	33 – 13	5.94	0.58	–0.69	0.40	0.10	0.02	0.25	0.22	–0.08
Emotionality (E)	11	ESCS	0.65	0.14	0.15	23 – 18	3.80	0.67	0.17	0.05	0.57	–0.17	–0.02	–0.15	–0.13
Extraversion (X)	8	ESCS	0.75	0.28	0.11	37 – 15	4.89	0.89	–0.21	–0.01	0.08	0.70	0.00	0.12	0.08
Agreeableness (A)	9	ESCS	0.76	0.29	0.11	38 – 12	5.25	0.79	–0.54	0.27	0.02	–0.08	0.59	0.04	0.02
Conscientiousness (C)	9	ESCS	0.76	0.26	0.11	35 – 13	5.70	0.72	–0.96	0.13	0.00	0.06	–0.01	0.69	–0.16
Openness (O)	11	ESCS	0.76	0.23	0.14	31 – 13	5.18	0.70	–0.48	–0.15	–0.16	0.33	–0.02	0.03	0.60

Note: ESCS – Eugene–Springfield community sample, $N = 533$, except $N = 519$ for correlations with HEXACO-PI. % of variance figures based on a principal-axes analysis of all items in the scale. Adjectives selected as markers for Cross-Language Six are drawn from those cited as most recurrent across languages by Ashton et al. (2004), and are as follows: (honesty/humility) honest, sincere, fair, loyal, modest, vs. deceitful, hypocritical, conceited, sly, greedy; (emotionality) anxious, fearful, vulnerable, emotional, sensitive, sentimental vs. strong, courageous, independent, tough, independent, self-assured; (extraversion) talkative, sociable, cheerful, energetic vs. quiet, shy, passive, withdrawn; (agreeableness) gentle, tolerant, peaceful, agreeable, good-natured vs. irritable, argumentative, aggressive, short-tempered; (conscientiousness) orderly, precise, careful, self-disciplined vs. disorganized, lazy, negligent, reckless, irresponsible; (openness) creative, intellectual, philosophical, talented, educated, witty unconventional vs. uncreative, unintellectual, uneducated, conventional. Psychometric indices for the HEXACO Personality Inventory (HEXACO-PI) can be obtained from Lee and Ashton (2004).

However, the standard way to measure these six factors is with a questionnaire called the HEXACO Personality Inventory (HEXACO-PI) (Lee and Ashton, 2004). In this inventory, each of the six factors has four subscales measuring facets of the six factors. Psychometric indices for the six higher-order scales are presented elsewhere (Lee and Ashton, 2004). Correlations between HEXACO scales and adjective markers for the Cross-Language Six are also included in Table 2.4. The correlations indicate good lexically based content validity for the HEXACO scales, with one exception: The convergence of lexical and questionnaire honesty/humility ($r = 0.40$) is rather weak. This is probably due to the H scale's use of fairly specific contextualized items. Generally, the questionnaire scale appears less suffused with evaluation and agreeableness than the lexical version.

This six-factor model may be found only in the adjective domain. Saucier (2003b) found that the structure of type-nouns in English yielded six factors very similar to those found in studies of Dutch (De Raad and Hoskens, 1990) and German (Henss, 1998). However, these six factors – liveliness, antagonism, malignancy/cowardice, masculinity, intellect/openness, and attractiveness – as a set do not correspond closely to the Cross-Language Six described here.

Seven-factor models found with a wider inclusion of lexical variables

Analyses leading to the five- or six-factor structure have involved, in effect, removal of the most extremely evaluative terms at an early stage of the variable-selection process. Indeed, Allport (Allport and Odbert, 1936) and Norman (1963) both favored removal of highly evaluative terms. Also removed have been (a) terms indicating relative eccentricity (e.g. average, strange, unusual); (b) terms that can refer to both stable and temporary attributes (e.g. happy, tired, bored); (c) tendencies to affect others in a consistent way (e.g. likeable, annoying); (d) social status indicators (e.g. wealthy, famous); and (e) attributes of physique and health (e.g. tall, fat, sickly). When investigators have used wider variable selections (i.e. those including many or all of these excluded types of variables), the Big Five has not appeared readily in five-factor solutions. Studies in English and Turkish, however, did find Big-Five-like factors within a seven-factor solution (Goldberg and Somer, 2000; Saucier, 1997; Tellegen and Waller, 1987).

Of the two additional factors, one was found in all three studies: 'negative valence' is a factor emphasizing attributes with extremely low desirability and endorsement rates and with descriptive content involving morality/depravity, dangerousness, worthlessness, peculiarity, and stupidity (cf. Benet-Martinez and Waller, 2002). Its overall themes – extreme social impropriety, failing a threshold for social acceptability, and not being worthy of trust or credence – involve non-normativeness: Does one stand outside of social norms to a high enough degree that one becomes liable for exclusion from the group? The other factor varied more across the three studies and involved descriptors indicating some kind of power to impress others, either in the form of a 'positive valence' factor emphasizing positive attributes (possibly social effects) like 'impressive' and 'outstanding' (found by Tellegen and Waller, 1987) or, where attractiveness terms were included, an 'attractiveness' factor (found by Goldberg and Somer, 2000; Saucier, 1997; also Saucier, 2003b). Whether attractiveness or negative valence fall within the domain of personality can be debated, but both factors involve phenomena of great interest to social psychologists.

The structure labeled the Big Seven was established in an unpublished lexical study of English descriptors that used the method of sampling one descriptors from one in every four pages of a dictionary (Tellegen and Waller, 1987). The structure includes five Big-Five-like factors, except that 'intellect/ imagination' is reconceived as 'unconventionality'.

The two additional factors are labeled 'positive valence' and 'negative valence'. Scrutiny of empirical indices of replication indicate that two attempts to replicate this structure, in studies of Spanish (Benet-Martinez and Waller, 1997) and Hebrew (Almagor et al., 1995) had only modest success, although each of these studies found structures of interest in their own right. A standard lexical measure of the Big Seven in its original English-study structural form is the Inventory of Personal Characteristics (IPC-7) (Tellegen et al., 1991).

Studies in some other languages with broad variable-selection criteria indicate an alternative seven-factor structure. The convergences between these studies occurred in spite of their many differences in methodology. Lexical studies in Filipino (Church et al., 1997, 1998) and Hebrew (Almagor et al., 1995) – languages from unrelated language-families and cultures – yielded a highly convergent seven-factor structure, even though this similarity was obscured by discrepant labels. The English translations of marker adjectives for the Filipino and Hebrew factors have been shown to correspond in a one-to-one way (Saucier, 2003a).

One of these new factors resembles the negative valence factor just described. Two of them resemble Big Five factors – consc ientiousness and intellect. The other three Big Five factors – extraversion, agreeableness, and emotional stability – correlate substantially with the remaining *four* factors, which map an affective-interpersonal domain (cf. Saucier, 1992). These four can be labeled 'gregariousness' (or 'liveliness'), 'self-assurance' (or 'fortitude'), 'even temper' ('tolerant' versus 'temperamental'), and 'concern for others' (versus 'egotism'). Big Five extraversion is related to gregariousness and self-assurance, emotional stability to self-assurance and even temper, and agreeableness to even temper and concern for others.

The relation of the Multi-Language Seven (ML7) to the Cross-Language Six (CL6) is best explained with the help of Figure 2.1. This

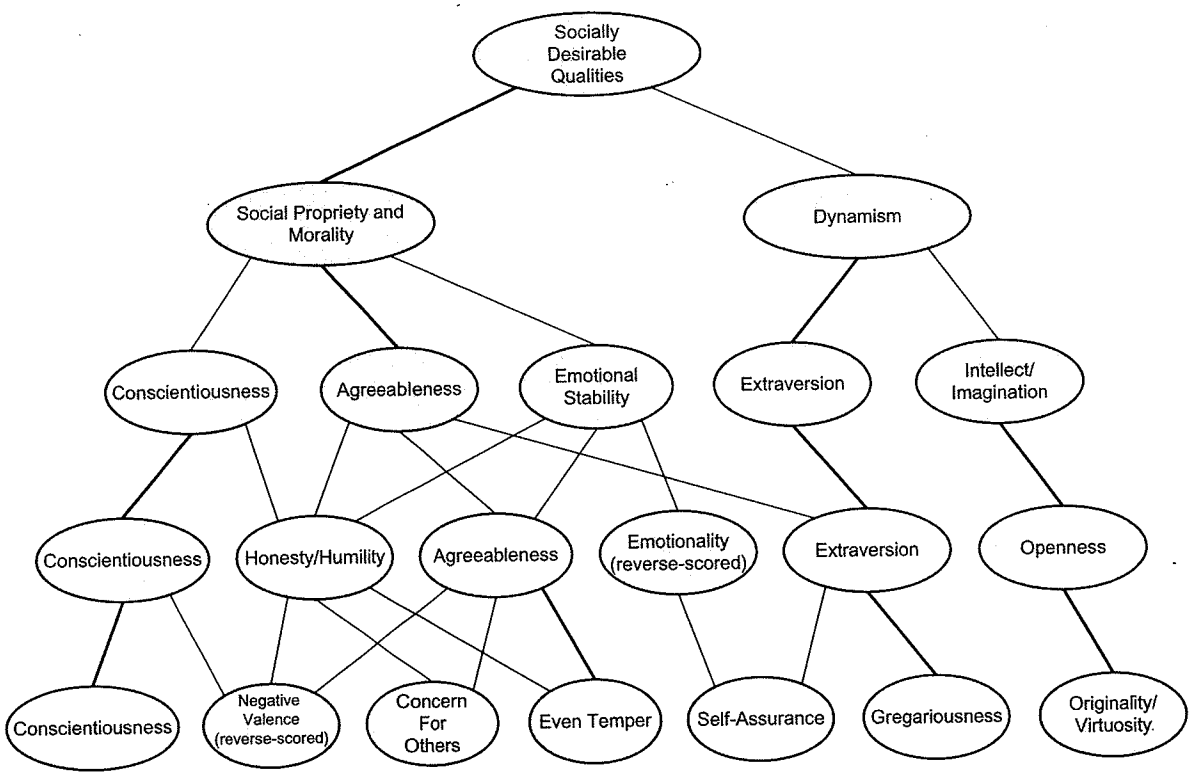

Figure 2.1 Relation Between Structures of One, Two, Five, Six, and Seven Factors Based on Adjective Markers

figure shows the relations between lexical structures of one, two, five, six, and seven factors. It joins any factors at adjacent levels that have a substantial correlation (more than 0.35 in magnitude) in Table 2.2. The SDQ scale was used for the one-factor level. Pairs of factors correlated most highly (above 0.70) are joined by a thick and bold line. The figure depicts very strong relations between CL6 extraversion and ML7 gregariousness, between CL6 agreeableness and ML7 even temper, between the conscientiousness factors, and between CL6 openness and ML7 originality/virtuosity. ML7 self-assurance is related to both CL6 emotionality (reverse-scored) and extraversion, whereas ML7 concern for others and negative valence (reverse-scored) are both related both to CL6 agreeableness and honesty/humility, negative valence being related also to CL6 conscientiousness.

It is noteworthy that negative valence is substantially correlated with CL6 honesty (H), conscientiousness (C), and agreeableness (A) (–0.36 to –0.49 with each), another indicator is that this factor contains descriptive content. Unlike extraversion, emotionality, and openness, these three factors (H, C, and A) concern moral and prosocial behavior, and are clearly related to the broad social propriety and morality factor (and not to dynamism). The aspect of social propriety and morality uniquely captured by so-called negative valence is normality violation; that is, the tendency to behave in ways that are awry, askew, and violative of normal standards for behavior, by way of undependability, recklessness, abusiveness, incompetence, or sheer eccentricity. The favorable pole of this dimension is characterized by 'vanilla' descriptors like normal and trustworthy (Saucier, 2003a). The unfavorable pole is particularly richly represented (in English) by type-nouns, like creep, idiot, fool, twit, crook, and deadbeat, terms whose use implies that the target is being singled out for social exclusion (Saucier, 2003b). The contempt implied in these descriptors may not be unusual when we encounter others who violate the standards of what we consider normal.

Saucier (2003a) developed a 60-adjective marker set for the seven factors. Constituent terms and psychometric indices are provided in Table 2.5.

An integrative framework for structures of one to seven lexical factors

How are the structures (and measures) of one, two, three, five, six, and seven lexical factors related to one another? Some answers might be found by examining the intercorrelations of the scales measuring their factors (Table 2.2). This table leads to a clear picture of the relation of the one- and two-factor structures with each other and with the five-, six-, and seven-factor structures. The general evaluation factor bifurcates into S and D. Social propriety divides into agreeableness, conscientiousness, and emotional stability (Big Five), or into honesty, agreeableness, and conscientiousness (Cross-Language Six), or into even temper, concern for others, conscientiousness, and (reversed) normality violation (ML7). Dynamism divides into extraversion and intellect/imagination (Big Five), into extraversion, openness, and (low) emotionality (CL6), or into gregariousness, self-assurance, and originality/virtuosity (ML7). Thus, the Big Two is a sensible higher-order organization for each of these three structures. However, it is far more difficult to give a simple description of how the five-, six-, and seven-factor structures relate to each other. Indicating complexity, in Figure 2.1 the lines joining levels of five, six, and seven factors have several crossing lines.

A hierarchical structural representation combining both broader and narrower constructs will provide the best compromise between parsimony and accuracy. The broad levels, with wider bandwidth constructs, offers higher efficiency (i.e. parsimony). The narrower levels offer higher fidelity

Table 2.5 ***Psychometric indices for adjective marker scales for the Multi-Language Seven***

Marker Scale	*No. of items*	*Sample*	*Coefficient alpha*	*Mean r*	*SD of r*	*% of variance 1st – 2nd factor*	*Mean*	*SD*	*Skew*
Gregariousness (GR)	8	ESCS	0.78	0.30	0.13	40 – 14	4.07	0.96	0.06
Self-assurance (SA)	9	ESCS	0.74	0.25	0.11	34 – 13	5.21	0.78	–0.63
Even temper (ET)	8	ESCS	0.81	0.35	0.15	45 – 12	4.60	1.06	–0.29
Concern for others (CFO)	8	ESCS	0.70	0.25	0.12	35 – 17	5.46	0.71	–0.41
Conscientiousness (CO)	9	ESCS	0.72	0.23	0.16	35 – 13	4.84	0.81	–0.44
Originality/virtuosity (OV)	9	ESCS	0.73	0.25	0.12	34 – 14	4.98	0.79	–0.32
Negative valence or Normality violation (NV)	9	ESCS	0.76	0.27	0.10	36 – 15	6.39	0.64	–1.72

Note: N = 592. % of variance figures based on a principal-axes analysis of all items in the scale

(i.e. predictive accuracy). Given the differences in covariation structure between languages, it seems appropriate to defer such studies of lexically derived facets until a consensual hierarchical structure at the broad levels is better defined.

Belief, value, and attitude factors as additions to the dimensional classification

As the above review indicates, the Big Five and Cross-Language Six are structures whose appearance seems contingent on a relatively narrow selection of variables, and thus on an operational definition of personality that has many exclusion clauses. The Multi-Language Seven may be contingent on a more inclusive variable selection and definition of personality. Structures with one or two broad factors seem less dependent on the variable selection on the definition of personality. However, none of the previous lexical studies of personality has included a substantial representation of belief, value, and attitude variables. Would including such variables lead to additional factors?

Unfortunately, the research literature on the structure of beliefs, values, and attitudes has been poorly developed. To rectify this situation, Saucier (2000) used a lexical rationale, extracting from a large dictionary all English nouns ending in '-ism,' such terms postulated to represent many of the most important beliefs and attitudes. From the definitions of these terms, Saucier developed 389 questionnaire items, which he administered to a large sample of college students, who indicated their extent of agreement with each item. Analyses revealed four broad dimensions of beliefs and attitudes, which were replicated in a follow-up sample, and later in Romanian (Krauss, 2006). The study yielded important increments to knowledge about belief/attitude dispositions: Two of the four factors are little represented in previous measures.

Saucier's (2000) four 'isms' factors are labeled as traditional religiousness (α), subjective spirituality (δ), unmitigated self-interest (β), and protection of civil institutions (γ). These four dimensions showed low correlations with markers for the Big Five (Saucier, 2000), indicating that adding the stable dispositions underlying beliefs and attitudes in a dimensional classification of personality will result in at least four additional factors. Contemporary personality inventories, however, include scales for constructs like self-transcendence, traditionalism, and openness to experience, which are more highly related to belief, value, and attitude dispositions.

Saucier (2006) has developed a brief set of marker items for these four factors, the items being based mostly on dictionary definitions from the earlier study (Saucier, 2000). Table 2.6 provides psychometric indices for these scales. In addition to reasonable internal consistency (a from 0.69 to 0.79), the scales show impressive retest stability (r from 0.64 to 0.85) across nearly four years, and retest stability for tradition-oriented religiousness (0.85) well exceeds that for the typical personality measure. Table 2.7 provides the correlations between the four isms scales and lexical marker scales reviewed earlier in this chapter. The highest r is 0.31 (between subjective spirituality and loose vs. tight) and, consistent with these being factors additional to those in the lexical marker scales, there are few correlations above 0.20 in magnitude.

As for values, Renner (2003a, 2003b) developed a questionnaire from a lexical study of German, and found four factors in common across adjective and noun variable selections. These factors were labeled: salvation, profit, intellectualism, and balance; the first two may correspond to tradition-oriented religiousness and unmitigated self-interest from Saucier (2000). The same author completed a similar project using the Northern Sotho language from South Africa (Renner et al., 2003). Again, factors related to salvation and profit (though differently labeled), plus three additional factors, were found. Renner's program of studies makes

Table 2.6 Psychometric indices for dictionary-based marker scales for the Four Isms Factors

Marker scale	*No. of items*	*Sample*	*4-year retest r*	*Coefficient alpha*	*Mean inter-item r*	*SD of inter-item r*	*% of variance 1st – 2nd factor*	*Mean*	*SD*	*Skew*
Tradition-oriented religiousness (TR; α)	6	ESCS	0.85	0.79	0.39	0.11	50 – 14	2.94	0.90	–0.10
Unmitigated self-interest (USI; β)	8	ESCS	0.65	0.70	0.23	0.08	33 – 15	1.72	0.50	0.77
Protection of civil institutions (PCI; γ)	8	ESCS	0.64	0.69	0.22	0.10	33 – 16	4.28	0.46	–1.05
Subjective spirituality (SS; δ)	6	ESCS	0.77	0.75	0.33	0.08	45 – 15	2.94	0.81	–0.15

Note: N = 703, except retest *r*, based on *N* = 652. % of variance figures based on a principal-axes analysis of all items in the scale.

Table 2.7 Correlations between Isms Factor Scales and adjective marker scales for structures of one to seven factors

Adjective scale	*TR (α)*	*USI (β)*	*PCI (γ)*	*SS (δ)*
Ge-24	–0.09	–0.11	0.19	0.07
Ge-12	–0.08	–0.10	0.18	0.08
NEPC-E	–0.08	–0.17	0.18	0.10
SDQ	–0.01	–0.07	**0.25***	0.00
Osgood E	0.02	–0.09	0.18	0.09
S	0.05	–0.12	**0.22***	0.03
D	–0.10	–0.02	0.07	0.08
TL	0.00	–0.03	0.15	**–0.31***
TALU	–0.17	0.10	–0.04	–0.18
AU	–0.16	0.10	0.01	–0.07
ALUT	–0.09	0.06	–0.17	0.19
B5MM-I	–0.03	–0.03	0.08	0.04
B5MM-II	0.07	–0.14	**0.22***	0.12
B5MM-III	0.04	–0.02	**0.22***	–0.13
B5MM-IV	–0.07	–0.07	**0.20***	–0.11
B5MM-V	–0.15	–0.11	–0.07	0.07
CL6-H	0.14	–0.16	**0.24***	–0.03
CL6-E	0.18	–0.02	–0.02	0.11
CL6-X	–0.02	–0.02	0.14	0.06
CL6-A	0.02	–0.05	**0.20***	0.06
CL6-C	0.07	–0.08	**0.27***	–0.14
CL6-O	**–0.20***	–0.09	–0.08	0.10
ML7-gr	0.00	–0.02	0.07	0.11
ML7-sa	–0.10	0.02	0.11	–0.03
ML7-et	0.03	–0.06	0.13	–0.04
ML7-cfo	**0.23***	–0.07	0.16	0.16
ML7-co	**0.24***	–0.05	**0.27***	–0.14
ML7-ov	**–0.21***	–0.10	–0.03	0.09
ML7-nv	–0.02	0.08	**–0.29***	**0.22***

Note: Eugene-Springfield Community Sample, $N = 521$. All correlations 0.09 and above are significant, $p < .05$. For Big Five, correlations are based on ESCS-1995, which is closer in time to the administration of the isms measures. *correlations over 0.20 in magnitude. Highest correlation in each column is underlined. TR – tradition-oriented religiousness, USI – unmitigated self-interest, PCI – protection of civil Institutions, SS – subjective spirituality

clear that values can be studied by the lexical approach, and that lexical value factors probably have some relation to lexical isms factors. These studies promise to lead eventually to lexically based measures of values. Analogous lexical studies of interests would be very useful.

CONCLUSIONS

Lexical studies of personality attributes, narrowly defined, have now reached a stage mature enough that key aspects of their structure are becoming evident in the recurrent findings from these studies. However, the 'personality' represented in most of these studies is a considerably narrower phenomenon than personality as it is typically defined, and the structure of personality attributes encoded in lexicons depends in major ways upon the upstream selection of variables. Therefore, personality psychology should couple the focus that it already has, on the most prototypical attributes of personality, with a simultaneous 'bigger picture' examination of all psychological attributes on which there are stable individual differences.

Recurrent aspects of the factors at the top of the personality-attribute hierarchy – the one- and two-factor levels – are already quite clear. Beneath this top level, findings seem more dependent on variable selection. Given relatively narrow variable selection

procedures, the Big Five emerges readily from some languages (mainly those having origins in northern Europe) while the Cross-Language Six emerges readily from an apparently even wider range of languages. Given more inclusive procedures, studies to date are too few to permit firm conclusions. More studies are needed, and the direct measures of lexicon-derived personality factors reviewed in this chapter are a vital tool for these studies. These measures help facilitate the search for what is recurrent and ubiquitous (and what is not) in the personality tendencies that differentiate humans, as sedimented in human lexicons.

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REFERENCES

Ackerman, P.L. (1996) 'A theory of adult intellectual development: Process, personality, interests, and knowledge', *Intelligence*, 22(2): 227–57.

Ackerman, P.L. and Heggestad, E.D. (1997) 'Intelligence, personality, and interests: Evidence for overlapping traits', *Psychological Bulletin*, 121(2): 218–45.

Allport, G.W. (1937) *Personality: A Psychological Interpretation*. New York: Holt.

Allport, G.W. and Odbert, H.S. (1936) 'Trait names: A psycho-lexical study', *Psychological Monographs*, 47(211): 171–220.

Almagor, M., Tellegen, A. and 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(2): 300–7.

Alvarez, J.M., Ruble, D.N. and Bolger, N. (2001) 'Trait understanding or evaluative reasoning? An analysis of children's behavioral predictions', *Child Development*, 72(5): 1409–25.

Ashton, M.C., Lee, K., Perugini, M., Szarota, P. De Vries, R.E., di Blas, L., Boies, K. and 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(2): 356–66.

Benet-Martínez, V. and John, O.P. (1998) '*Los Cinco Grandes* across cultures and ethnic groups: Multitrait multimethod analyses of the Big Five in Spanish and English', *Journal of Personality and Social Psychology*, 75(3): 729–50.

Benet-Martinez, V. and 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(3): 567–98.

Benet-Martinez, V. and Waller, N.G. (2002) 'From adorable to worthless: Implicit and self-report structure of highly evaluative personality descriptors', *European Journal of Personality*, 16(1): 1–41.

Boies, K., Lee, K., Ashton, M.C., Pascal, S. and Nicol, A.A.M. (2001) 'The structure of the French personality lexicon', *European Journal of Personality*, 15(4): 277–95.

Caprara, G.V., Barbanelli, C. and Zimbardo, P.G. (1997) '"Politicians" uniquely simple personalities', *Nature*, 385(6616): 493.

Carroll, J.B. (1993) *Human Cognitive Abilities: A Survey of Factor-analytic Studies*. New York: Cambridge University Press.

Cattell, R.B. (1943) 'The description of personality: Basic traits resolved into clusters', *Journal of Abnormal and Social Psychology*, 38(4): 476–506.

Church, A.T., Katigbak, M.S. and 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(4): 249–69.

Church, A.T., Reyes, J.A.S., Katigbak, M.S. and Grimm, S.D. (1997) 'Filipino personality structure and the Big Five model: A lexical

approach', *Journal of Personality*, 65(3): 477–528.

Clark, L.A. and Watson, D. (1999) 'Temperament: A new paradigm for trait psychology', in L.A. Pervin and O.P. John (eds), *Handbook of Personality: Theory and Research* (2nd edn). New York: Guilford, pp. 399–423.

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

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

De Raad, B. and Barelds, D. (2006) 'A new taxonomy of Dutch personality traits based on a comprehensive and unrestricted list of descriptors', Unpublished manuscript, University of Groningen.

De Raad, B., di Blas, L. and Perugini, M. (1998) 'Two independently constructed Italian trait taxonomies: Comparisons within Italian and between Italian and Germanic languages', *European Journal of Personality*, 12(1): 19–41.

De Raad, B. and Hoskens, M. (1990) 'Personality-descriptive nouns', *European Journal of Personality*, 4(2): 131–46.

De Raad, B. and Peabody, D. (2005) 'Cross-culturally recurrent personality factors: Analyses of three factors', *European Journal of Personality*, 19(6): 451–74.

DeYoung, C.G. (2006) 'Higher-order factors of the Big Five in a multi-informant sample', *Journal of Personality and Social Psychology*, 91(6): 1138–51.

di Blas, L. and Forzi, M. (1998) 'An alternative taxonomic study of personality descriptors in the Italian language', *European Journal of Personality*, 12(2): 75–101.

di Blas, L. and 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(3): 451–81.

di Blas, L., Forzi, M. and Peabody, D. (2000) 'Evaluative and descriptive dimensions from Italian personality factors', *European Journal of Personality*, 14(4): 279–90.

Digman, J.M. (1997) 'Higher order factors of the Big Five', *Journal of Personality and Social Psychology*, 73(6): 1246–56.

Donnellan, M.B., Oswald, F.L., Baird, B.M. and Lucas, R.E. (2006) 'The Mini-IPIP Scales: Tiny yet effective measures of the Big Five factors of personality', *Psychological Assessment*, 18(2): 192–203.

Dwight, S.A., Cummings, K.M. and Glenar, J.L. (1998) 'Comparison of criterion-related validity coefficients for the Mini-Markers and for Goldberg's markers of the Big Five personality factors', *Journal of Personality Assessment*, 70(3): 541–50.

Eysenck, H.J. and Eysenck, S.B.G. (1975) *Manual of the Eysenck Personality Questionnaire*. London: Hodder & Stoughton.

Funder, D.C. (1997) *The Personality Puzzle*. New York: Norton.

Goldberg, L.R. (1981) 'Language and individual differences: The search for universals in personality lexicons', in L.W. Wheeler (ed.), *Review of Personality and Social Psychology* (Vol. 2). Beverly Hills, CA: Sage, pp. 141–65.

Goldberg, L.R. (1982) 'From Ace to Zombie: Some explorations in the language of personality', in C.D. Spielberger and J.N. Butcher (eds), *Advances in Personality Assessment* (Vol. 1). Hillsdale, NJ: Erlbaum, pp. 203–34.

Goldberg, L.R. (1990) 'An alternative "description of personality": The Big-Five factor structure', *Journal of Personality and Social Psychology*, 59(6): 1216–29.

Goldberg, L.R. (1992) 'The development of markers for the Big-Five factor structure', *Psychological Assessment*, 4(1): 26–42.

Goldberg, L.R. (1999) 'A broad-bandwidth, public-domain, personality inventory measuring the lower-level facets of several five-factor models', in I. Mervielde, I. Deary, F. De Fruyt and F. Ostendorf (eds), *Personality Psychology in Europe* (Vol. 7). Tilburg, The Netherlands: Tilburg University Press, pp. 7–28.

Goldberg, L.R. and Saucier, G. (1995) 'So what do you propose we use instead? A reply to Block', *Psychological Bulletin*, 117(2): 221–5.

Goldberg, L.R. and Somer, O. (2000) 'The hierarchical structure of common Turkish person-descriptive adjectives', *European Journal of Personality*, 14(6): 497–531.

Goldberg, L.R. and Velicer, W.F. (2006) 'Principles of exploratory factor analysis', in S. Strack (ed.), *Differentiating Normal and Abnormal Personality* (2nd edn). New York: Springer, pp. 209–37.

Gosling, S.D., Rentfrow, P.J. and Swann, W.B. (2003) 'A very brief measure of the Big Five personality domains', *Journal of Research in Personality*, 37(6): 504–28.

Graziano, W.G., Jensen-Campbell, L.A., Steele, R.G. and Hair, E.C. (1998) 'Unknown words in self-reported personality: Lethargic and provincial in Texas', *Personality and Social Psychology Bulletin*, 24(8): 893–905.

Hahn, D.W., Lee, K. and Ashton, M.C. (1999) 'A factor analysis of the most frequently used Korean personality trait adjectives', *European Journal of Personality*, 13(4): 261–82.

Hendriks, A.A.J., Hofstee, W.K.B. and De Raad, B. (1999) 'The Five-Factor Personality Inventory (FFPI)', *Personality and Individual Differences*, 27(2): 307–25.

Hendriks, A.A.J., Perugini, M., Angleitner, A., Ostendorf, F., Johnson, J.A., De Fruyt, F., Hřebíčková, M., Kreitler, S., Murakami, T., Bratko, D., Conner, M., Nagy, J., Rodriguez-Fornells, A. and Ruisel, I. (2003) 'The Five-Factor Personality Inventory: Cross-cultural generalizability across 13 countries', *European Journal of Personality*, 17(5): 347–73.

Henss, R. (1998) 'Type nouns and the five factor model of personality description', *European Journal of Personality*, 12(1): 57–71.

Hofstee, W.K.B. (1994) 'Who should own the definition of personality?', *European Journal of Personality*, 8(3): 149–62.

Hofstee, W.K.B. and De Raad, B. (1991) 'Persoonlijkheidsstructuur: de AB-sub-5C-taxonomie van Nederlandse eigenschapstermen [Personality structure: The Abridged Big Five-Dimensional Circumplex (AB5C) structure of Dutch trait adjectives]', *Nederlands Tijdschrift voor de Psychologie en haar Grensgebieden*, 46(6): 262–74.

Hogan, R. (1983) 'A socioanalytic theory of personality', in M.M. Page (ed.), *Nebraska Symposium on Motivation*. Lincoln: University of Nebraska Press, pp. 336–55.

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

John, O.P., Angleitner, A. and Ostendorf, F. (1988) 'The lexical approach to personality: A historical review of trait taxonomic research', *European Journal of Personality*, 2(3): 171–203.

Krauss, S. (2006) 'Does ideology transcend culture? A preliminary examination in Romania', *Journal of Personality*, 74(4): 1219–56.

Krueger, R.F. and Markon, K.E. (2006) 'Reinterpreting comorbidity: A model-based approach to understanding and classifying psychopathology', *Annual Review of Clinical Psychology*, 2: 111–33.

Lee, K. and Ashton, M.C. (2004) 'Psychometric properties of the HEXACO Personality Inventory', *Multivariate Behavioral Research*, 39(2): 329–58.

Low, K.S.D., Yoon, M., Roberts, B.W., and Rounds, J. (2005) 'Stability of vocational interests from early adolescence to middle adulthood: A quantitative review of longitudinal studies', *Psychological Bulletin*, 131(5): 713–37.

May, M.A. (1932) 'The foundations of personality', in P.S. Achilles (ed.), *Psychology at Work*. New York: McGraw-Hill.

McCrae, R.R. and Costa, P.T. (1985) 'Updating Norman's "adequate taxonomy": Intelligence and personality dimensions in natural language and in questionnaires', *Journal of Personality and Social Psychology*, 49(3): 710–21.

McCrae, R.R. and Costa, P.T. (1997) 'Personality trait structure as a human universal', *American Psychologist*, 52(5): 509–16.

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): 574–83.

Norman, W.T. (1967) *2800 Personality Trait Descriptors: Normative Operating Characteristics for a University Population*. Ann Arbor: Department of Psychology, University of Michigan.

Osgood, C.E. (1962) 'Studies on the generality of affective meaning systems', *American Psychologist*, 17(1): 10–28.

Osgood, C.E., May, W. and Miron, M. (1975) *Cross-cultural Universals of Affective Meaning*. Urbana: University of Illinois Press.

Paulhus, D.L. and John, O.P. (1998) 'Egoistic and moralistic biases in self-perception: The

interplay of self-descriptive styles with basic traits and motives', *Journal of Personality*, 66(6): 1025–60.

Peabody, D. (1987) 'Selecting representative trait adjectives', *Journal of Personality and Social Psychology*, 52(1): 59–71.

Peabody, D. and Goldberg, L.R. (1989) 'Some determinants of factor structures from personality-trait descriptors', *Journal of Personality and Social Psychology*, 57(3): 552–67.

Prince, M. (1924) *Psychotherapy and Multiple Personality: Selected Essays*. Cambridge, MA: Harvard University Press.

Renner, W. (2003a) 'A German value questionnaire developed on a lexical basis: Construction and steps toward validation', *Review of Psychology*, 10(2): 107–23.

Renner, W. (2003b) 'Human values: A lexical perspective', *Personality and Individual Differences*, 34(1): 127–41.

Renner, W., Peltzer, K. and Phoswana, M.G. (2003) 'The structure of values among Northern Sotho speaking people in South Africa', *South African Journal of Psychology*, 33(2): 103–8.

Roback, A.A. (1931) *Personality: The Crux of Social Intercourse*. Cambridge, MA: Sci-Art.

Rokeach, M. (1968) *Beliefs, Attitudes, and Values: A Theory of Organization and Change*. San Francisco: Jossey-Bass.

Rolland, J.P., Parker, W.D. and Stumpf, H. (1998) 'A psychometric examination of the French translations of the NEO-PI-R and NEO-FFI', *Journal of Personality Assessment*, 71(2): 269–91.

Rossier, J., Dahouru, D. and McCrae, R.R. (2005) 'Structural and mean-level analyses of the five-factor model and locus of control: Further evidence from Africa', *Journal of Cross-Cultural Psychology*, 36(2): 227–46.

Rothbart, M.K. and Bates, J.E. (1998) 'Temperament', in W. Damon (series ed.) and N. Eisenberg (vol. ed.), *Handbook of Child Psychology: Vol. 3, Social, Emotional and Personality Development* (5th edn). New York: Wiley, pp. 105–76.

Saucier, G. (1992) 'Benchmarks: Integrating affective and interpersonal circles with the Big-Five personality factors', *Journal of Personality and Social Psychology*, 62(6): 1025–35.

Saucier, G. (1994a) 'Mini-markers: A brief version of Goldberg's unipolar Big-Five markers', *Journal of Personality Assessment*, 63(3): 506–16.

Saucier, G. (1994b) 'Separating description and evaluation in the structure of personality attributes', *Journal of Personality and Social Psychology*, 66(1): 141–54.

Saucier, G. (1997) 'Effects of variable selection on the factor structure of person descriptors', *Journal of Personality and Social Psychology*, 73(6): 1296–312.

Saucier, G. (2000) 'Isms and the structure of social attitudes', *Journal of Personality and Social Psychology*, 78(2): 366–85.

Saucier, G. (2002) 'Orthogonal markers for orthogonal factors: The case of the Big Five', *Journal of Research in Personality*, 36(1): 1–31.

Saucier, G. (2003a) 'An alternative multi-language structure of personality attributes', *European Journal of Personality*, 17(3): 179–205.

Saucier, G. (2003b) 'Factor structure of English-language personality type-nouns', *Journal of Personality and Social Psychology*, 85(4): 695–708.

Saucier, G. (2005) 'Framework for integrating lexical structures of five, six, and seven factors', ORI Technical Report, 45(3). Eugene: Oregon Research Institute.

Saucier, G. (2006) 'A brief measure of the four factors in the Survey of Dictionary-based Isms (SDI)', Unpublished manuscript, University of Oregon.

Saucier, G., Georgiades, S., Tsaousis, I. and Goldberg, L.R. (2005) 'The factor structure of Greek personality adjectives', *Journal of Personality and Social Psychology*, 88(5): 856–75.

Saucier, G. and Goldberg, L.R. (2002) 'Assessing the Big Five: Applications of 10 psychometric criteria to the development of marker scales', in B. De Raad and M. Perugini (eds), *Big Five Assessment*. Seattle: Hogrefe & Huber, pp. 29–58.

Saucier, G., Ole-Kotikash, L. and Payne, D.L. (2006) 'The structure of personality and character attributes in the language of the Maasai', Unpublished report, University of Oregon.

Saucier, G., Ostendorf, F. and Peabody, D. (2001) 'The non-evaluative circumplex of personality adjectives', *Journal of Personality*, 69(4): 537–82.

Saucier, G. and Simonds, J. (2006) 'The structure of personality and temperament', in D.K. Mroczek and T.D. Little (eds), *Handbook of Personality Development*. Mahwah, NJ: Erlbaum, pp. 109–28.

Shweder, R.A. (1972) 'Semantic structure and personality assessment', Unpublished doctoral dissertation, Harvard University.

Super, D.E. (1924) 'Values: Their nature, assessment, and practical use', in D.E. Super and B. Sverko (eds), *Life Roles, Values, and Careers: International Findings of the Work Importance Study*. San Francisco: Jossey Bass, pp. 54–61.

Szirmák, Z. and De Raad, B. (1994) 'Taxonomy and structure of Hungarian personality traits', *European Journal of Personality*, 8(2): 95–118.

Tellegen, A. (1993) 'Folk concepts and psychological concepts of personality and personality disorder', *Psychological Inquiry*, 4(2): 122–30.

Tellegen, A. (in press) *Manual for the Multidimensional Personality Questionnaire*. Minneapolis: University of Minnesota Press.

Tellegen, A., Grove, W. and Waller, N.G. (1991) 'Inventory of personal characteristics # 7', Unpublished measure, University of Minnesota.

Tellegen, A. and 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.

White, G.M. (1980) 'Conceptual universals in interpersonal language', *American Anthropologist*, 82(4): 759–81.

Wiggins, J.S., Trapnell, P. and Phillips, N. (1988) 'Psychometric and geometric characteristics of the Revised Interpersonal Adjective Scales (IAS-R)', *Multivariate Behavioral Research*, 23(4): 517–30.