

The Hierarchical Structure of Common Turkish Person-Descriptive Adjectives

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Abstract

Findings from analyses of self-descriptions by 631 native speakers of Turkish, using 498 familiar Turkish person-descriptive adjectives, are compared to those of Saucier (1997), who analyzed 500 familiar English adjectives. In the total item pools in both studies, variants of the English/German 'Big-Five' factors were recovered, along with a broad Attractiveness factor and another factor composed of items of extremely low endorsement rates. Moreover, in both studies when the item pools were restricted to terms that are less pejorative and more clearly related to personality traits, again variants of the Big-Five factors were recovered. These latter findings replicate those from Somer and Goldberg (1999), who analyzed Turkish synonym clusters rather than single person-descriptive adjectives. We discuss some of the pitfalls of comparative studies of personality lexicons, and suggest some procedures for reconciling diverse findings. Copyright © 2000 John Wiley & Sons, Ltd.

INTRODUCTION

Back-to-back articles in a recent issue of the *Journal of Personality and Social Psychology* each report the findings from extensive analyses of the personality-related adjectives in two languages: Turkish (Somer and Goldberg, 1999) and Italian (Di Blas and Forzi, 1999). Both articles include multiple studies of carefully selected terms. Both articles provide evidence about the hierarchical structures of those terms, ranging from one to seven factors. Both articles present enough detailed evidence on those structures so as to permit their comparison with those from other languages and cultures. Clearly both articles are important sources of information for investigators interested in cross-cultural comparisons among personality lexicons.

Yet the conclusions from these two articles differ: one finds a version of the 'classical' Big-Five factor structure found in English and German (Goldberg, 1981,

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1990, 1993b, 1995; Ostendorf, 1990; Saucier and Goldberg, 1996b), whereas the other does not. Ironically, given the fact that the Big Five was discovered in Indo-European languages, the confirmation occurred in the language that is most distant from that linguistic family (Turkish) and it was not confirmed in an Indo-European tongue (Italian). What's going on here?

All comparisons between factor structures derived from different languages are limited by possible differences in the selection of variables from the different lexicons, and neither of these two projects can be exempted from this general rule. In pairs of languages where the indigenous factor structures appear to differ in some substantial way, it is never clear whether that difference really reflects something of cultural significance or it is merely an artifact of different strategies for sampling the two lexicons. Moreover, in studies such as that of Somer and Goldberg (1999) where the factor structures replicate those found in previous analyses, the investigators face the charge of somehow 'prestructuring' (Block, 1995) the variable set so as to find what they set out to find.

One large difference between these two projects is that the Italian investigators administered single personality-descriptive adjectives to their research participants, whereas Somer and Goldberg (1999) administered more complex variables (synonym clusters). Somer and Goldberg noted that the procedures that led to the selection of the 358 variables used in their first study could be criticized, in that the attempt to provide *comprehensive* coverage of the Turkish person-descriptive lexicon may have inadvertently served to curtail at least slightly the *representativeness* of the resulting variable set. Two procedures seemed particularly prone to permit subjectivity into their variable-selection process: (a) the decision to combine single terms into quasi-synonym sets; and (b) the construction of new antonym variables (often involving adjectival phrases) for those synonym clusters with no antonym clusters already available. In their words: "[A] large-scale replication of these studies, modeled after that of Saucier (1997) and using about 500 of the most familiar Turkish single person-descriptive adjectives, should be our next order of business" (p. 447). That is precisely the goal of the present study.

In addition, our new analyses should provide a useful comparison with those from one of the few previous large-scale analyses of any non-Indo-European language, the Tagalog language of the Philippines. In their landmark Filipino study, Church, Katigbak and Reyes (1998) used 502 familiar adjectives from a comprehensive item pool and concluded that "At least seven factors are needed to identify dimensions resembling all of the Big Five" (p. 249). In the present study, we include a similarly large set of highly familiar Turkish person-descriptive adjectives, a set that is not restricted to those that are clearly personality traits, and thus we provide an important comparison to the findings of Saucier (1997) in English, and Church *et al.* (1998) in Tagalog.

METHOD

Selection of a representative set of Turkish personality adjectives

As described in Somer and Goldberg (1999), a team of five native speakers of Turkish (a professor and three graduate and one undergraduate students of psychology) culled all terms that in their judgments referred to person descriptions (broadly construed)

from each of three modern abridged Turkish dictionaries. The team started with the approximately 50,000-entry volume by Eren, Gozaydin, Parlatur, Tekin and Zulfikar (1992), and later added terms from the approximately 40,000-entry volumes by Aras, Ozdamar, Ozkan and Saltik (1985) and by Demiray and Alaylioglu (1964). Team members scanned every entry in all three dictionaries, converting all person-descriptive nouns to their adjectival form. Using this procedure, the team compiled an initial set of 2200 person-descriptive adjectives.

This set was then narrowed to adjectives that are more highly related to personality attributes by the omission of many (but not all) terms describing physical characteristics and appearance (e.g. Tall, Thin), mere evaluations (e.g. Good, Bad), social attitudes (e.g. Racist), and special abilities (e.g. Good dancer), as well as unusually slangy terms; when in doubt about a term's personality relevance, it was retained. The resulting set included 1300 terms.

These 1300 terms were divided into two sets of 650, and each set was administered to a different sample of 150 university students from a variety of academic disciplines. Their instructions were to carefully examine each of the adjectives and to indicate whether it was a familiar term that would be useful in describing someone's personality (1) or not (0). Based on these data, the 498 adjectives with the highest familiarity ratings were selected for the present study¹.

Subjects and procedures

The 498 adjectives, plus two that were repeated, were assembled in a 500-item questionnaire, which was administered to 689 college students from Ege University in Izmir, Turkey. Items were assembled in a quasi-random order, and administered with a seven-step response scale, with instructions to the participants to describe themselves as accurately as possible. Of the 689 participants, 422 (61%) were women. The mean age of the total sample was 21.1 years, with a standard deviation of 2.6 years².

As an initial check on data quality, we first examined the response frequencies from each participant across the 500 items in search of aberrant response patterns, such as unusually high frequencies of the same response or a relatively large number of omitted responses. The number of omitted responses varied from 0 items (451 participants) to 468 items (one participant). At this stage, we excluded 27 participants who had omitted 17 or more items, leaving a sample of 662 (96% of the total sample); the very few remaining response omissions were given middle values on the rating scale.

As an additional test of data quality, we constructed a set of 25 synonym pairs and another set of 25 antonym pairs from the 498 item pool, with no duplicated items

¹The decision to employ approximately 500 terms was based on the following considerations: (a) in the trade-off between lexical inclusiveness (the more the better) and participant convenience (the fewer the better), 500 seems like the maximum-sized item pool that can be administered in a single experimental session; and (b) this size item pool is virtually identical to those used in studies by Saucier (1997) and Church *et al.* (1998), with which the present findings can be compared.

²Most of the participants were enrolled in education courses that are elected by students who may wish to work as school teachers; of these students, 190 (28% of the total sample) came from the social sciences, 267 (39%) from the natural sciences, and 73 (11%) from the arts and sports. An additional subsample of 54 (8%) students from the health sciences were enrolled in an introductory psychology class. All of these students were promised extra course credits for participating in this research. A final subsample of 105 (15%) students from engineering and other technical faculties was recruited by psychology student volunteers.

within either set. We selected those item pairs that were empirically most highly correlated, and then screened the initial set to ensure that all pairs were matched semantically. We then correlated the responses of each participant across the synonym pairs, and again across the antonym pairs, with each pair included twice, once in each order (AB and BA). The individual differences in synonym correlations ranged from -0.26 to $+1.00$, with a median of $+0.75$. The individual differences in antonym correlations ranged from $+0.26$ to -0.99 , with a median of -0.70 . Only 20 participants had synonym correlations lower than 0.25, and only 20 had antonym correlations higher than -0.21 , with 9 participants in both sets. Excluding these 31 participants, the remaining sample size was 631 (which is 92% of the original total sample). Of these, 63% were women.

Finally, to attenuate any individual differences resulting from their use of the rating scale, the responses of each participant were standard (*Z*) scored across the 498 items, and these values were then used in the subsequent analyses.

Development of an etic (imported) measure of the Big-Five factor structure

In order to provide an objective measure of the degree of correspondence between the indigenous (emic) Turkish factors and those previously found in English and German, we classified the English translations of the 498 Turkish terms by their locations in the factor structures provided by Goldberg (1990, 1992), Ostendorf (1990), and Saucier and Goldberg (1996a). For each of the first four Big-Five factors, we were able to find ten terms that could easily be classified as clear exemplars of its two poles, thus providing us with a balanced set of 80 markers for those factors. In the case of Factor V (Intellect), the set of 498 adjectives included considerably more terms associated with its positive than its negative pole, and consequently we selected 17 positive and three negative markers for that factor. In total, then, the imported marker set included 100 terms, 20 marking each of the Big-Five factors³.

RESULTS

Analyses of the imported factor markers

Using the *Z*-scored data set, we factored the 100 markers, extracting five components which were rotated by the varimax algorithm. All 100 of the marker terms had their highest loadings on the factor for which they were initially targeted, and 87 of those highest loadings were above 0.40; moreover, only six terms had loadings as high as 0.30 on any other factor. In an oblique promax analysis of the 100 markers, all of the intercorrelations among the factors were near zero, with three exceptions: Factors I and V ($r = 0.45$); Factors I and IV ($r = 0.41$); and Factors IV and V ($r = 0.36$). In

³As examples, the English translations of these factor markers include: (I) Active, Assertive, Energetic, Extraverted versus Inactive, Quiet, Silent, Unenergetic; (II) Agreeable, Forgiving, Peace-loving, Tolerant versus Cruel, Quarrelsome, Ruthless, Selfish; (III) Methodical, Organized, Systematic, Tidy versus Disorderly, Negligent, Sloppy, Undependable; (IV) Calm, Secure, Unemotional, Untroubled versus Anxious, Apprehensive, Emotional, Worried; (V) Analytical, Creative, Cultured, Intellectual, Intelligent, Original versus Narrow-minded, Simple, Uncreative. The complete set of 100 Turkish terms is available from the first author. The coefficient alpha reliabilities of these marker variables when considered as 20-item scales (rather than as the orthogonal factor scores that were actually analyzed) are 0.91, 0.86, 0.92, 0.84, and 0.79 for Big-Five factors I to V, respectively.

subsequent analyses, we computed the orthogonal factor scores on these 100 Big-Five markers, and related them to the indigenously derived factors.

Analyses of the 498 Turkish adjectives

As advocated by De Raad and Szirmák (1994) and Saucier (1997), the most informative way to compare factor structures across samples of subjects, variables, or languages is to examine solutions at different hierarchical levels. In the present study, we compared the first unrotated principal component and varimax (orthogonal) and promax (oblique) rotations of two, three, four, five, six, and seven components. For consistency with previous studies, we first present the findings based on orthogonal rotations of the *Z*-scored data.

The first ten eigenvalues of this data matrix, expressed as percentages of total variance, were 10.0, 5.7, 3.2, 3.1, 2.0, 1.6, 1.5, 1.2, 1.1, and 1.0, with breaks after one, two, four, five, and seven factors, and a solid unbroken scree beyond that point. Figure 1 provides the structure of the varimax-rotated factors across seven hierarchical levels. The values in the figure are the correlations of the factor scores at each level with those immediately above and below them. Factors are identified by their hierarchical level (1 through 7) and by their size; thus, the label '5/2' refers to the second largest factor in the five-factor solution. Because the factors at the lowest level can be easily identified, they are also labeled by the traditional Big-Five factor numbers—I (Extraversion), II (Agreeableness), III (Conscientiousness), IV (Emotional Stability), and V (Intellect–Imagination–Openness)—plus NV (Negative Valence) and At (Attractiveness). This convention permits the reader to determine the highest level at which a particular factor first appears.

The information displayed in Figure 1 can be captured in words: Reading from the top down, the first unrotated principal component (FUPC), which here as in most analyses generally serves to differentiate desirable from undesirable person descriptors, split into two broad factors, one combining Extraversion (I) with Emotional Stability (IV), and the other combining everything else. The broad I/IV factor stayed together until the five-factor solution, when it broke apart into its two components. The other broad second-level factor spawned a Conscientiousness (III) factor in the three-factor solution, and then an Agreeableness (II) factor at the fourth level. As a consequence, the five-factor solution reveals the first four of the Big Five, plus a broad factor that combined Intellect (V) with Negative Valence and Attractiveness⁴.

Table 1 presents the factor loadings from the seven-factor solution, with the factors ordered by their relative size (I, III, II, IV, NV, V, and At); the 108 terms whose highest loadings were below 0.30 have been omitted. Included in the table are both the Turkish terms and our best approximations of their corresponding English translations. Both sets of terms are written in Roman script, although Turkish script was used in the original questionnaire.

⁴One may wonder how these two- and three-factor structures compare with similar higher-level solutions found in previous studies (for a review, see Saucier, Hampson and Goldberg, in press): At the two-factor level, the present findings are not the same as those of Digman (1997), who suggested that Factors I and IV should be associated with different factors. At the three-factor level, whereas most previous studies have uncovered broad versions of Big-Five factors I, II, and III, the present findings are more complex.

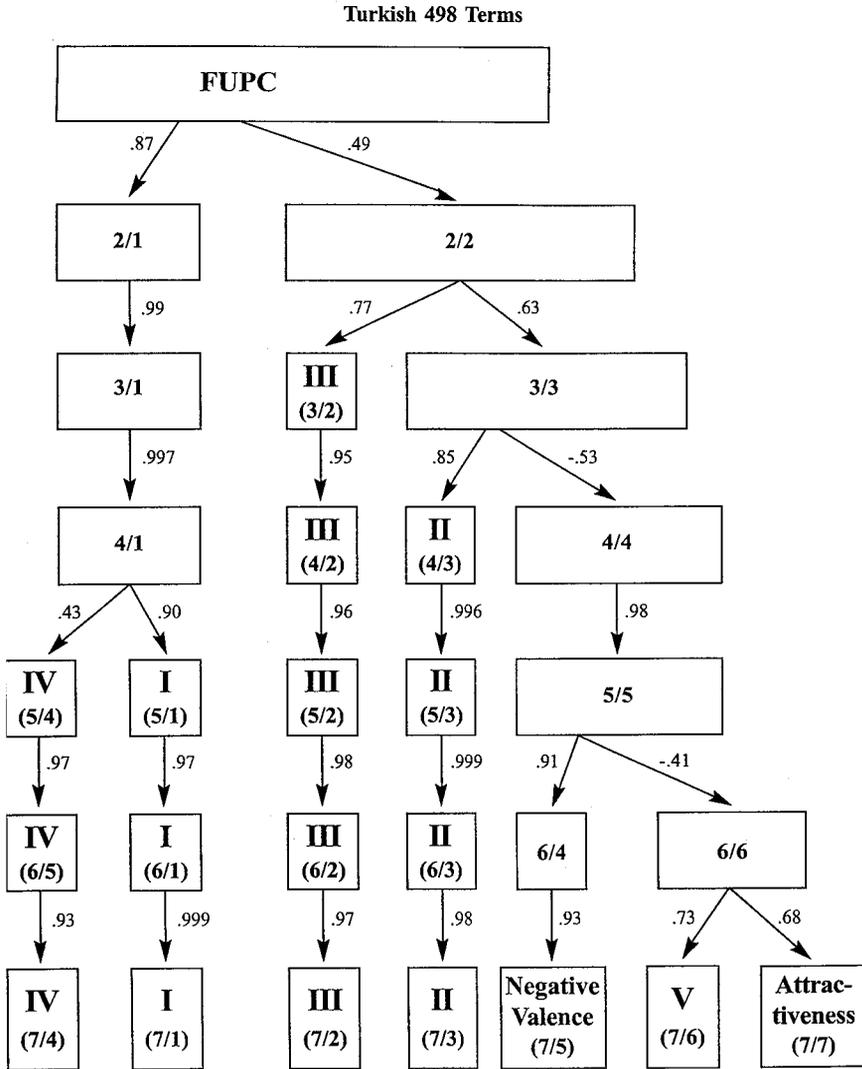


Figure 1. The seven-level hierarchical factor structure based on all 498 Turkish adjectives: FUPC, first unrotated principal component; I, Extraversion; II, Agreeableness; III, Conscientiousness; IV, Emotional Stability; V, Intellect.

Bearing in mind the inevitable difficulties involved in translating single adjectives, it is clear that these seven factors include the Big Five. Indeed, for the first four factors, the fit to the English/German factors could hardly be much closer. Factor I (Extraversion) is defined by such terms as Energetic, Vivacious, Merry, Enterprising, Exuberant, Dynamic, Talkative, Active, and Assertive (versus Lethargic, Unenergetic, Silent, Pessimistic, and Quiet). Factor II (Agreeableness) includes such terms as Tolerant, Fair, Peace-loving, Forgiving, Understanding, Agreeable, Philanthropic, and Helpful (versus Brawling, Ill-tempered, Aggressive, Ruthless, and Sarcastic). Factor III (Conscientiousness) is marked by such terms as Tidy,

Table 1. Seven-factor varimax-rotated loadings of the 498 Turkish adjectives ($N = 631$)

Turkish term	English translation	I	III	II	IV	NV	V	At
canli	energetic	0.70*	0.09	0.08	0.00	0.05	0.05	0.08
hareketli	vivacious	0.67*	0.10	0.05	-0.09	0.04	0.16	-0.14
sen	merry	0.66*	-0.09	0.08	-0.03	0.07	-0.08	0.18
giriskan	enterprising	0.66*	0.15	0.00	0.06	0.04	0.18	-0.10
coskulu	exuberant	0.65*	0.03	0.12	-0.01	-0.02	0.01	0.15
enerjik	energetic	0.64*	0.18	-0.01	0.01	0.02	0.11	-0.12
dinamik	dynamic	0.62*	0.31	0.04	0.14	0.06	0.12	-0.12
konuskan	talkative	0.61*	-0.02	0.04	-0.15	-0.01	0.05	-0.02
aktif	active	0.61*	0.18	-0.03	0.10	-0.06	0.19	-0.19
atilgan	assertive	0.59*	0.25	-0.07	0.08	-0.07	0.12	-0.18
atak	rash	0.59*	0.21	-0.04	0.10	-0.02	0.09	-0.17
disadonuk	extraverted	0.58*	0.00	0.09	0.00	-0.06	0.15	-0.02
neseli	cheerful	0.58*	-0.06	0.23	0.00	-0.03	-0.08	0.24
faal	active	0.58*	0.13	0.04	0.12	-0.09	0.23	-0.03
atik	agile	0.58*	0.12	-0.03	0.06	-0.04	0.07	-0.23
sevincli	joyful	0.57*	0.00	0.14	0.02	0.05	-0.10	0.19
atilmci	dashing	0.56*	0.26	-0.01	0.16	-0.10	0.16	-0.11
cevik	nimble	0.56*	0.17	0.00	0.18	-0.04	0.07	-0.25
dinc	vigorous	0.55*	0.18	0.06	0.18	0.01	0.02	-0.08
keyifli	joyous	0.54*	-0.09	0.16	0.10	0.05	-0.05	0.27
delidolu	impulsive	0.52*	-0.15	-0.13	-0.19	-0.03	0.18	-0.15
eglendirici	entertaining	0.52*	-0.21	0.07	-0.10	-0.07	-0.02	0.19
gulec	cheerful	0.51*	-0.04	0.23	-0.13	0.01	0.01	0.26
mutlu	happy	0.50*	0.09	0.16	0.19	0.15	-0.24	0.22
populer	popular	0.50*	0.00	-0.08	0.13	-0.12	0.14	0.21
hossohbet	conversational	0.49*	-0.02	0.24	-0.02	-0.14	0.08	0.09
esprili	witty	0.49*	-0.20	0.06	0.03	-0.03	0.03	0.14
guleryuzlu	merry	0.49*	0.01	0.39	-0.10	0.02	-0.08	0.14
sosyal	sociable	0.48*	0.16	0.17	0.12	-0.16	0.24	0.04
katilmci	participative	0.47*	0.21	0.01	0.02	0.00	0.10	-0.14
sakaci	being a joker	0.46*	-0.21	0.07	0.04	-0.08	0.01	0.06
sempatik	likable	0.45*	-0.07	0.23	-0.05	-0.04	0.07	0.34
hizli	quick	0.45*	0.27	-0.07	0.01	-0.09	0.05	-0.22
sicak	warm	0.45*	0.02	0.43	-0.04	-0.10	0.05	0.07
cilgin	original, daring	0.43*	-0.17	-0.19	-0.11	-0.06	0.33	-0.07
renkli	colorful	0.43*	-0.17	0.03	-0.02	-0.12	0.18	0.23
umitli	hopeful	0.42*	0.16	0.16	0.22	0.03	-0.08	0.13
iyimser	optimistic	0.42*	0.09	0.33	0.21	-0.02	-0.18	0.09
sevimli	pretty	0.41*	-0.02	0.24	-0.04	-0.09	0.11	0.41
cesur	brave	0.41*	0.17	-0.06	0.37	-0.15	0.14	-0.17
yakin	warm	0.40*	0.04	0.40	-0.01	0.03	0.04	0.05
olumlu	positive	0.40*	0.15	0.32	0.31	0.06	-0.13	0.11
huzurlu	easygoing	0.40*	0.12	0.19	0.33	0.15	-0.21	0.18
cokyonlu	having broad interests	0.40*	0.04	-0.04	0.11	0.01	0.37	0.02
rahat	sociable	0.38*	-0.16	-0.05	0.21	0.05	0.06	0.08
ucari	impulsive,	0.37*	-0.25	-0.18	-0.17	0.01	0.32	-0.05
	promiscuous							
etkili	effective	0.36*	0.12	-0.02	0.20	-0.22	0.20	0.25
uyanik	alert	0.36*	0.11	-0.17	0.20	-0.21	0.04	-0.05
istekli	enthusiastic	0.35*	0.29	0.06	0.09	0.00	-0.02	0.07
maceraci	adventurous	0.34*	-0.07	-0.04	-0.01	-0.07	0.28	-0.18

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Table 1 continued

Turkish term	English translation	I	III	II	IV	NV	V	At
haberdar	aware	0.32*	0.05	0.05	0.13	-0.09	0.12	0.02
hazircevap	quick-witted	0.32*	-0.05	-0.22	0.13	-0.19	0.16	-0.09
ilgili	enthusiastic	0.31*	0.28	0.24	-0.06	-0.06	0.11	0.01
yapici	creative	0.31*	0.09	0.26	0.13	-0.01	0.18	0.06
atesli	fiery	0.31*	-0.01	-0.21	-0.14	-0.10	0.20	-0.11
durgun	lethargic	-0.65*	0.07	0.07	-0.03	0.03	-0.07	0.03
cansiz	unenergetic	-0.62*	-0.08	0.06	0.02	0.09	-0.08	-0.09
suskun	silent	-0.62*	0.07	0.12	0.05	0.04	-0.19	0.00
karamsar	pessimistic	-0.60*	-0.03	-0.05	-0.36	-0.05	0.05	-0.14
sessiz	quiet	-0.59*	0.10	0.22	0.17	0.05	-0.15	0.06
mutsuz	unhappy	-0.59*	0.01	-0.09	-0.26	0.04	0.10	-0.24
bezgin	disgusted	-0.59*	-0.20	0.01	-0.17	0.00	-0.07	-0.07
somurtkan	sulky	-0.59*	-0.01	-0.19	0.02	-0.04	-0.01	-0.09
nesesiz	low-spirited	-0.58*	0.06	0.01	0.08	-0.01	-0.04	-0.18
bunalimli	emotionally troubled	-0.56*	-0.11	-0.09	-0.38	-0.07	0.21	-0.19
bitkin	worn-out	-0.55*	-0.14	0.08	-0.22	-0.02	-0.07	0.00
uzuntulu	sad	-0.54*	0.00	0.00	-0.39	-0.10	0.10	-0.20
problemli	troubled	-0.53*	-0.11	-0.15	-0.33	-0.08	0.17	-0.22
kederli	unhappy	-0.53*	-0.03	-0.06	-0.24	-0.03	-0.02	-0.27
huzursuz	uneasy	-0.53*	-0.11	-0.11	-0.30	-0.09	0.07	-0.11
sikintili	easily bored	-0.52*	-0.06	-0.01	-0.30	-0.08	0.05	-0.18
isteksiz	unenthusiastic	-0.52*	-0.21	0.02	-0.05	0.01	-0.11	0.01
hareketsiz	inactive	-0.52*	-0.15	0.08	0.07	0.09	-0.18	0.13
sikilgan	bashful	-0.51*	-0.01	0.09	-0.16	-0.05	-0.18	-0.07
soguk	cold	-0.51*	0.01	-0.23	0.16	0.01	-0.06	0.00
cekingen	timid	-0.51*	0.01	0.19	-0.09	0.02	-0.24	0.01
kotumser	pessimistic	-0.50*	-0.08	-0.20	-0.33	-0.08	-0.01	-0.05
huzunlu	melancholic	-0.50*	-0.03	0.03	-0.36	-0.11	0.08	-0.21
umitsiz	hopeless	-0.48*	-0.10	0.00	-0.33	0.02	0.03	-0.14
dertli	pained	-0.48*	-0.03	-0.01	-0.33	-0.13	0.04	-0.23
yalniz	lonesome	-0.48*	0.03	-0.01	-0.18	0.01	0.10	-0.21
yorgun	tired	-0.48*	-0.14	0.11	-0.17	-0.04	-0.09	-0.07
cekimser	indecisive	-0.47*	-0.02	0.14	-0.09	0.03	-0.26	0.03
suratsiz	grouchy	-0.46*	-0.01	-0.24	0.00	0.15	-0.01	-0.16
gergin	tense	-0.46*	-0.02	-0.13	-0.35	-0.10	-0.07	-0.15
urkek	fearful	-0.45*	-0.05	0.19	-0.39	0.03	-0.10	0.07
tedirgin	unsettled	-0.45*	-0.12	0.00	-0.43	-0.11	-0.10	-0.06
olumsuz	negative	-0.44*	-0.11	-0.14	-0.23	-0.11	0.01	-0.06
takintili	obsessive	-0.44*	-0.09	-0.11	-0.39	-0.09	-0.05	-0.03
pisirik	unassertive	-0.43*	-0.09	0.12	-0.08	0.28	-0.14	-0.03
kuruntulu	apprehensive	-0.43*	-0.10	-0.09	-0.41	-0.14	-0.06	0.06
monoton	boring	-0.43*	0.04	0.06	-0.01	0.16	-0.38	-0.12
kaygili	worried	-0.43*	-0.02	0.01	-0.39	-0.15	0.04	-0.08
yavas	slow	-0.43*	-0.22	0.14	0.01	0.09	-0.13	0.13
caresiz	helpless	-0.42*	-0.07	0.08	-0.22	0.14	0.00	-0.08
sikici	boring	-0.40*	0.02	-0.04	0.03	0.13	-0.09	-0.23
uyusuk	passive, lethargic	-0.40*	-0.34	0.03	-0.05	0.08	-0.20	0.08
sorunlu	troubled	-0.40*	-0.10	-0.08	-0.28	-0.10	0.21	-0.16
ters	bad-tempered	-0.39*	-0.08	-0.39	-0.05	-0.12	0.01	-0.12
korkak	fearful	-0.38*	-0.11	0.11	-0.30	0.22	-0.13	0.18

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Table 1 continued

Turkish term	English translation	I	III	II	IV	NV	V	At
dayaniksiz	weak, frail	-0.38*	-0.13	0.09	-0.31	0.15	-0.17	0.10
guvensiz	distrustful	-0.37*	-0.26	0.04	-0.23	0.11	0.00	0.00
tereddutlu	doubtful	-0.36*	-0.07	0.05	-0.35	-0.04	-0.09	-0.02
gucsuz	weak	-0.36*	-0.09	0.10	-0.34	0.15	-0.18	-0.02
gayretsiz	lacking zeal	-0.36*	-0.31	0.08	-0.02	0.19	-0.06	0.03
misikin	lazy, indolent	-0.35*	-0.31	-0.11	-0.17	0.15	-0.07	0.11
dalgin	preoccupied, distracted	-0.34*	-0.22	0.13	-0.27	-0.03	0.01	-0.05
agirbasli	slow, overcontrolled	-0.32*	0.29	0.26	0.23	-0.12	-0.23	0.01
cesaretsiz	cowardly	-0.31*	-0.07	0.19	-0.25	0.08	-0.14	0.06
duzenli	tidy	0.01	0.71*	0.13	0.01	0.12	-0.10	0.02
sistemli	systematic	0.01	0.70*	0.04	0.12	0.11	0.01	0.05
disiplinli	self-disciplined	0.04	0.69*	0.07	0.10	0.02	-0.09	0.04
programli	methodical	0.07	0.68*	0.04	-0.01	0.11	0.04	0.15
planli	organized	0.02	0.67*	0.07	0.06	0.09	0.02	0.11
tertipli	neat	-0.01	0.65*	0.22	-0.03	0.01	-0.15	0.00
caliskan	hard-working	0.18	0.60*	0.16	0.02	-0.03	-0.10	0.02
itinali	meticulous	0.06	0.58*	0.23	0.02	-0.05	-0.02	0.11
titiz	fussy	-0.09	0.57*	0.13	-0.12	0.06	-0.09	0.00
prensipli	principled	0.05	0.55*	0.04	0.16	-0.06	-0.03	0.00
azimli	determined	0.20	0.51*	0.06	0.15	-0.10	-0.11	-0.11
ozenli	very careful	0.05	0.50*	0.24	-0.01	-0.06	-0.02	0.06
gayretli	zealous	0.20	0.50*	0.03	0.05	-0.04	-0.06	-0.06
tutumlu	thrifty	-0.03	0.49*	0.20	0.12	0.08	-0.08	0.09
iradeli	resolute	0.13	0.47*	0.16	0.29	-0.10	0.04	0.07
basarili	successful	0.28	0.47*	0.12	0.16	-0.14	-0.01	0.16
dikkatli	careful	0.12	0.46*	0.09	0.27	-0.05	0.09	0.01
istikrarli	stable	0.26	0.46*	0.18	0.24	-0.09	0.02	0.06
kuralci	rule-abiding	-0.08	0.44*	-0.09	0.06	-0.11	-0.24	-0.09
dengeli	stable	0.18	0.44*	0.33	0.27	-0.06	-0.15	0.04
kontrollu	controlled	0.04	0.44*	0.19	0.32	-0.04	-0.06	0.02
tedbirli	prudent	-0.04	0.44*	0.05	0.14	-0.03	-0.05	0.10
mesuliyetli	responsible	0.00	0.43*	0.20	-0.02	-0.07	-0.12	-0.01
kararli	determined	0.17	0.42*	-0.01	0.34	-0.12	0.09	-0.12
hesapli	planful	-0.07	0.42*	0.15	0.13	0.04	-0.08	0.08
hirsli	ambitious	0.26	0.40*	-0.20	0.11	-0.15	-0.11	-0.13
ciddi	serious	-0.24	0.40*	0.01	0.26	-0.13	-0.16	-0.10
tutarli	steady	0.06	0.37*	0.23	0.29	-0.16	0.05	0.03
dakik	prompt	0.07	0.37*	0.05	0.06	-0.05	-0.02	0.00
olculu	moderate	-0.06	0.37*	0.27	0.16	-0.23	-0.13	0.05
verimli	productive	0.26	0.36*	0.14	0.21	-0.09	0.15	0.12
mucadeleci	persevering	0.29	0.35*	-0.06	0.25	-0.15	0.04	-0.16
temkinli	deliberative	-0.07	0.34*	0.17	0.14	-0.14	-0.02	0.05
ahlakli	moral	0.04	0.34*	0.30	0.16	-0.19	-0.31	0.05
duzensiz	untidy	-0.10	-0.67*	-0.02	0.04	0.00	0.06	-0.04
programsiz	unsystematic	-0.11	-0.66*	0.07	0.02	-0.02	-0.04	-0.07
disiplinsiz	undisciplined	-0.11	-0.66*	-0.04	-0.01	0.12	0.08	-0.05
tertipsiz	disorderly	-0.07	-0.65*	0.01	0.06	0.00	0.07	-0.04
plansiz	unorganized	-0.14	-0.64*	0.05	0.05	-0.02	-0.04	-0.06

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Table 1 continued

Turkish term	English translation	I	III	II	IV	NV	V	At
daginik	sloppy	0.00	-0.61*	-0.04	0.01	-0.02	0.06	0.01
pasakli	slovenly	-0.04	-0.54*	-0.04	0.09	0.19	0.15	-0.02
savruk	clumsy	-0.02	-0.52*	-0.14	-0.04	0.01	0.07	-0.09
ihmalkar	neglectful	-0.12	-0.50*	-0.03	-0.08	0.08	-0.15	0.07
vurdumduymaz	thick-skinned	0.02	-0.49*	-0.11	0.10	0.03	0.02	0.07
usenmec	lazy	-0.25	-0.47*	0.01	-0.10	-0.11	-0.23	0.08
sorumsuz	undependable	-0.03	-0.47*	-0.14	0.07	0.21	0.04	0.03
ihmalci	negligent	-0.24	-0.46*	0.02	0.00	0.05	-0.15	0.06
savurgan	wasteful	-0.02	-0.44*	-0.13	-0.05	-0.03	-0.01	-0.07
tedbirsiz	imprudent	-0.10	-0.43*	0.04	-0.08	0.04	-0.16	-0.01
dengesiz	unstable	-0.25	-0.43*	-0.20	-0.16	0.16	0.14	0.00
tutumsuz	wasteful	-0.02	-0.42*	-0.13	-0.12	-0.10	0.01	-0.09
basibos	unreliable	-0.05	-0.42*	-0.18	0.06	0.06	0.20	-0.22
dikkatsiz	careless	-0.18	-0.39*	0.07	-0.26	0.12	-0.05	-0.03
serseri	rootless	0.18	-0.39*	-0.30	0.08	-0.02	0.22	-0.17
olcusuz	immoderate	0.04	-0.37*	-0.09	-0.15	0.17	0.04	-0.07
tutarsiz	inconsistent	-0.32	-0.36*	-0.06	-0.20	0.07	-0.02	-0.05
unutkan	absent-minded	-0.21	-0.36*	0.12	-0.16	0.04	-0.06	0.01
haylaz	idle	0.24	-0.35*	-0.26	-0.12	0.02	0.03	-0.06
dalgaci	laggard	0.17	-0.35*	-0.19	0.03	-0.03	0.01	-0.08
muzip	mischievous	0.26	-0.34*	0.01	-0.03	-0.17	0.05	-0.01
ozensiz	slipshod	-0.15	-0.33*	-0.02	0.07	0.25	-0.15	-0.05
ilgisiz	apathetic	-0.16	-0.33*	0.00	0.05	0.07	-0.02	0.04
iradesiz	irresolute	-0.02	-0.32*	0.08	-0.21	0.11	-0.06	-0.12
basinabuyruk	disobedient	0.04	-0.31*	-0.22	0.00	-0.02	0.25	-0.16
laubali	promiscuous	0.13	-0.30*	-0.15	-0.09	0.22	-0.08	-0.14
vefasiz	unfaithful	-0.05	-0.30*	-0.15	0.08	0.22	-0.07	0.16
hosgorulu	tolerant	0.14	-0.04	0.54*	0.12	-0.08	-0.03	0.02
vicdanli	just, fair	-0.10	0.03	0.53*	0.03	-0.23	-0.06	0.02
yumusak	soft	-0.06	0.09	0.53*	-0.10	0.00	-0.13	0.15
barisci	peace-loving	0.12	0.01	0.52*	0.04	-0.08	0.05	-0.01
bagislayici	forgiving	-0.04	-0.08	0.51*	-0.04	0.14	-0.01	0.01
gecimli	easygoing	0.25	0.06	0.50*	0.19	0.01	-0.12	0.10
fedakar	devoted	-0.05	0.11	0.49*	-0.05	-0.06	-0.05	-0.15
anlayisli	understanding	0.00	0.09	0.49*	0.11	0.00	0.07	0.03
uyumlu	agreeable	0.23	0.09	0.48*	0.11	0.01	-0.16	0.04
yardimsever	philanthropic	-0.03	0.13	0.48*	-0.07	-0.15	-0.10	-0.10
iyiliksever	helpful	0.00	-0.01	0.48*	0.03	-0.19	-0.09	-0.12
uyusal	acquiescent	-0.11	0.17	0.47*	0.06	0.07	-0.22	0.10
insafli	merciful	0.01	-0.03	0.47*	0.02	0.03	-0.17	0.01
degerbilir	appreciative	-0.05	0.18	0.46*	0.09	-0.12	-0.03	0.04
insancil	humanistic	0.06	0.03	0.46*	0.13	-0.15	-0.06	-0.02
ilimli	temperate	0.05	-0.04	0.45*	0.07	0.11	-0.13	0.15
sevkatli	affectionate	0.11	0.01	0.45*	-0.03	-0.15	-0.05	-0.03
merhametli	merciful	-0.07	0.03	0.44*	0.03	-0.06	-0.12	-0.01
uzlasic	conciliatory	0.10	-0.07	0.43*	0.09	-0.01	-0.07	0.03
candan	warm	0.32	-0.02	0.42*	-0.08	-0.17	-0.02	0.00
vefali	faithful	0.02	0.32	0.41*	0.01	-0.16	0.04	-0.11
verici	unselfish	0.05	-0.03	0.41*	0.00	-0.12	0.13	-0.06
mutevazi	modest	-0.08	0.15	0.41*	0.13	-0.03	-0.12	0.00
hayirli	good-hearted	0.05	0.28	0.41*	0.06	-0.22	-0.08	0.00

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Table 1 continued

Turkish term	English translation	I	III	II	IV	NV	V	At
duygulu	sensitive	-0.14	0.06	0.40*	-0.24	-0.22	0.01	0.00
sadakatli	loyal	-0.06	0.21	0.40*	0.00	-0.13	-0.18	-0.06
hayirsever	helpful	0.04	0.10	0.39*	-0.08	-0.12	-0.20	-0.11
ozverili	unselfish	0.00	0.22	0.38*	0.00	-0.16	-0.04	-0.05
saygili	respectful	0.01	0.21	0.38*	0.06	-0.04	-0.22	0.10
sakin	self-possessed, quiet	-0.25	0.15	0.37*	0.37	0.10	-0.08	0.13
sade	down-to-earth	-0.21	0.09	0.37*	-0.01	-0.04	-0.04	-0.03
durust	honest	-0.04	0.14	0.37*	0.26	-0.30	-0.11	0.00
kaprissiz	not capricious	0.12	0.06	0.37*	0.28	0.06	0.01	-0.05
hisli	sensitive	-0.12	0.06	0.36*	-0.22	-0.16	-0.06	0.01
guvenilir	reliable	0.00	0.06	0.36*	0.08	-0.33	-0.07	-0.09
sevecen	compassionate	0.30	0.01	0.36*	-0.03	-0.17	0.05	0.20
nazik	courteous	0.13	0.13	0.36*	-0.01	-0.07	0.03	0.26
terbiyeli	courteous	-0.05	0.25	0.36*	0.13	-0.22	-0.23	0.10
edepli	well-mannered	-0.01	0.35	0.36*	0.18	-0.10	-0.29	0.07
comert	generous	0.09	0.06	0.36*	0.12	-0.06	0.04	-0.04
duygusal	emotional	-0.10	0.03	0.34*	-0.30	-0.09	-0.06	0.06
samimi	sincere	0.18	0.02	0.34*	0.01	0.02	0.02	-0.05
adil	just	-0.06	0.10	0.33*	0.10	-0.15	0.15	-0.05
icten	friendly	0.21	-0.02	0.31*	0.04	-0.14	-0.01	0.01
sabirli	patient	-0.01	0.22	0.31*	0.29	0.13	0.03	0.01
vefakar	faithful	-0.01	0.22	0.30*	0.05	-0.06	-0.02	-0.12
dogal	natural	0.04	0.09	0.30*	0.20	-0.13	0.06	0.10
kavgaci	brawling	0.01	-0.13	-0.51*	-0.05	-0.08	-0.08	-0.15
hircin	ill-tempered	-0.01	-0.11	-0.46*	-0.23	-0.20	0.05	-0.12
saldirgan	aggressive	0.05	-0.15	-0.46*	-0.04	-0.03	0.03	-0.18
kirici	hurtful	-0.24	-0.13	-0.46*	-0.11	-0.04	-0.03	-0.08
acimasiz	ruthless	-0.11	-0.08	-0.46*	0.14	0.09	-0.01	0.05
igneleyici	sarcastic	-0.03	-0.16	-0.45*	-0.05	-0.16	0.02	-0.10
tehlikeli	dangerous	0.06	-0.10	-0.45*	0.08	0.01	0.16	-0.11
gecimsiz	quarrelsome	-0.27	-0.12	-0.44*	-0.03	0.03	-0.05	-0.07
kati	tough	-0.14	0.05	-0.44*	0.06	-0.15	-0.10	-0.13
aksi	peevish	-0.25	-0.12	-0.43*	-0.12	-0.16	-0.06	-0.10
kinici	vindictive	-0.12	0.02	-0.43*	0.03	-0.12	-0.11	0.00
zalim	cruel	-0.05	0.04	-0.42*	0.05	0.20	-0.06	0.01
ukala	smart-alecky	-0.03	-0.23	-0.41*	-0.06	0.03	0.10	-0.05
dikbasli	conceited	-0.07	-0.18	-0.41*	-0.14	-0.20	0.06	-0.06
baskici	coercive	0.03	0.05	-0.41*	0.03	0.01	-0.25	-0.06
kibirli	arrogant	-0.12	-0.01	-0.40*	0.01	-0.03	-0.04	0.04
kindar	revengeful	-0.15	0.04	-0.40*	-0.02	-0.16	-0.12	-0.03
asabi	irritating	-0.20	-0.10	-0.40*	-0.17	-0.17	-0.04	-0.17
bencil	selfish	-0.16	-0.05	-0.40*	-0.15	0.04	-0.04	0.04
merhametsiz	merciless	-0.06	-0.01	-0.39*	0.11	0.35	-0.11	0.10
insafsiz	unmerciful	-0.01	-0.09	-0.38*	0.12	0.18	0.02	0.03
kaprisli	capricious	-0.18	-0.04	-0.36*	-0.30	-0.12	-0.07	0.07
sinirli	nervous	-0.19	-0.05	-0.36*	-0.26	-0.16	-0.07	-0.16
kustah	insolent	0.00	-0.16	-0.35*	0.03	0.11	0.12	-0.01
huysuz	temperamental	-0.28	-0.22	-0.35*	-0.17	-0.10	-0.04	-0.02
kurnaz	cunning	0.25	-0.01	-0.35*	0.19	-0.21	-0.05	-0.08
numaraci	tricky, phony	0.14	-0.23	-0.35*	-0.02	0.19	-0.04	0.01
vahsi	wild	0.09	-0.11	-0.34*	0.04	0.09	0.02	-0.02

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Table 1 continued

Turkish term	English translation	I	III	II	IV	NV	V	At
hosgorusuz	intolerant	-0.11	-0.02	-0.33*	0.01	0.11	-0.14	-0.04
alayci	cynical	0.09	-0.30	-0.33*	-0.02	-0.08	0.02	-0.10
asi	rebellious	-0.03	-0.24	-0.33*	-0.08	-0.21	0.27	-0.21
otoriter	authoritarian	0.09	0.30	-0.33*	0.20	-0.17	-0.16	-0.10
sinsi	stealthy	0.04	-0.07	-0.33*	0.06	0.21	-0.03	0.01
gosterisci	ostentatious	0.20	-0.04	-0.32*	-0.04	0.07	-0.12	0.14
kizgin	angry	-0.18	-0.03	-0.31*	-0.19	-0.20	-0.09	-0.22
kiskanc	jealous	-0.07	-0.07	-0.31*	-0.28	-0.16	-0.26	-0.09
anlayissiz	inconsiderate	-0.10	-0.08	-0.30*	-0.02	0.22	-0.16	0.07
telassiz	calm	-0.01	-0.16	0.02	0.48*	0.13	0.07	-0.07
emin	secure	0.25	0.26	0.06	0.44*	-0.12	0.09	0.03
sogukkanli	calm	0.11	0.00	-0.03	0.44*	0.02	0.12	-0.10
direncli	strong	0.18	0.13	0.03	0.41*	0.02	0.17	-0.11
guclu	strong	0.30	0.17	-0.04	0.41*	-0.14	0.06	0.01
serinkanli	unemotional	0.13	-0.03	0.00	0.40*	0.05	0.17	-0.03
cesaretli	courageous	0.37	0.22	-0.07	0.39*	-0.14	0.08	-0.21
ozguvenli	self-assured	0.35	0.20	0.08	0.39*	-0.10	0.15	0.04
mantikli	logical	0.00	0.27	0.04	0.35*	-0.06	-0.06	0.08
olgun	mature	-0.07	0.29	0.11	0.34*	-0.04	0.00	0.07
dayanikli	tough	0.17	0.15	0.02	0.34*	-0.01	0.11	-0.18
korkusuz	fearless	0.28	0.08	-0.06	0.34*	-0.08	0.08	-0.21
sorunsuz	untroubled	0.21	0.00	0.12	0.32*	0.06	-0.11	0.17
gercekci	realistic	-0.04	0.24	0.05	0.32*	-0.07	-0.01	-0.05
saglam	consistent, stable	0.12	0.19	0.06	0.32*	-0.12	0.05	-0.01
duygusuz	tough, hard	-0.01	-0.04	-0.13	0.31*	0.25	0.00	0.00
problemsiz	untroubled	0.24	-0.04	0.08	0.30*	0.07	-0.15	0.07
zeki	intelligent	0.24	0.04	0.03	0.30*	-0.27	0.14	0.29
akilci	rational	0.09	0.26	0.06	0.30*	-0.22	0.19	0.07
kisilikli	principled	0.07	0.13	0.12	0.30*	-0.15	0.03	0.17
telasli	agitated	-0.10	0.06	0.00	-0.54*	-0.10	-0.13	0.03
evhamli	suspicious	-0.26	0.10	-0.05	-0.46*	-0.06	-0.12	0.06
endiseli	anxious	-0.39	-0.02	-0.05	-0.46*	-0.11	-0.11	-0.01
saplantili	obsessive	-0.35	-0.11	-0.12	-0.42*	-0.04	0.02	-0.03
saskin	confused	-0.26	-0.20	0.02	-0.41*	0.05	0.09	-0.09
kararsiz	hesitant	-0.31	-0.26	0.12	-0.39*	-0.06	-0.09	0.06
heyecanlı	emotional	0.13	0.07	0.05	-0.39*	-0.07	-0.04	0.04
aceleci	impatient	0.03	-0.08	-0.11	-0.37*	-0.05	-0.09	-0.08
hayalperest	romantic	-0.01	-0.20	0.06	-0.37*	-0.10	0.04	-0.10
hayalci	being a dreamer	-0.04	-0.19	0.04	-0.35*	-0.08	0.03	-0.06
sabirsiz	impatient	-0.08	-0.12	-0.14	-0.33*	-0.15	-0.08	-0.08
mizmiz	fussy, fretful	-0.27	-0.12	-0.23	-0.33*	0.00	-0.10	0.15
romantik	romantic	0.04	0.08	0.29	-0.33*	-0.07	0.06	0.12
alingan	touchy	-0.28	0.01	-0.08	-0.33*	-0.19	-0.17	0.01
cocuksu	childish	0.12	-0.21	0.10	-0.32*	-0.12	0.05	0.11
nazli	coquettish	-0.13	-0.05	-0.12	-0.32*	-0.04	-0.15	0.19
kuskucu	skeptical	-0.27	0.02	-0.17	-0.31*	-0.19	-0.03	0.04
karactersiz	unprincipled	0.01	0.02	0.02	-0.02	0.59*	-0.09	-0.12
alcak	cowardly	0.01	0.03	-0.09	0.06	0.56*	0.03	0.08
namussuz	dishonest	-0.11	-0.06	0.02	0.03	0.55*	0.17	0.13
kisiliksiz	styleless	-0.10	0.01	0.05	-0.02	0.53*	-0.01	-0.06

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Table 1 continued

Turkish term	English translation	I	III	II	IV	NV	V	At
adi	vulgar	0.05	0.07	-0.06	0.10	0.51*	0.01	0.06
budala	idiotic	-0.20	-0.10	0.02	-0.02	0.51*	-0.09	-0.13
serefsiz	dishonorable	0.03	0.11	0.16	0.18	0.51*	0.10	0.00
dolandirici	swindler	0.07	0.04	-0.19	0.11	0.50*	0.02	0.16
nezaketsiz	impolite	-0.08	-0.15	-0.20	0.03	0.49*	-0.08	-0.16
aptal	dull	-0.15	-0.02	0.11	-0.09	0.47*	-0.02	-0.15
bos	empty-headed	-0.15	0.02	0.01	0.05	0.46*	-0.25	-0.15
onursuz	lacking self-respect	-0.01	0.04	0.10	0.07	0.45*	0.02	-0.05
rusvetci	giving/taking bribes	0.08	0.01	-0.19	0.16	0.45*	-0.01	0.14
bayagi	banal	0.02	0.04	0.07	0.05	0.45*	-0.17	-0.17
gorgusuz	ill-mannered	0.04	-0.12	0.05	0.10	0.44*	-0.06	-0.23
medeniyetsiz	uncivilized	-0.05	-0.01	0.03	0.05	0.43*	-0.16	0.00
yilisik	overdependent, clingy	0.08	-0.12	-0.06	-0.01	0.42*	-0.07	-0.14
terbiyesiz	rude	0.01	-0.26	-0.20	0.06	0.42*	0.17	-0.07
ahlaksiz	immoral	-0.04	-0.31	-0.11	0.11	0.42*	0.19	0.05
zavalli	miserable	-0.23	0.01	0.03	-0.12	0.42*	-0.07	-0.05
kultursuz	uncouth	-0.17	0.04	0.05	0.03	0.41*	-0.24	-0.16
hain	treacherous	0.06	-0.01	-0.22	0.02	0.41*	0.01	0.11
taklitci	imitative	-0.03	-0.05	-0.02	-0.12	0.41*	-0.11	-0.07
iftiraci	slanderer	0.11	0.07	-0.07	0.00	0.39*	-0.06	-0.04
saygisiz	disrespectful	-0.07	-0.13	-0.16	0.04	0.38*	0.08	-0.09
yuzsuz	brazen	0.03	-0.07	-0.18	0.05	0.38*	0.03	-0.09
sevimsiz	unlovable	-0.33	0.05	-0.05	0.11	0.38*	-0.08	-0.28
donek	two-faced	-0.11	-0.10	-0.03	-0.02	0.37*	-0.04	0.08
yobaz	religious fanatic	0.04	0.09	0.00	0.12	0.37*	-0.16	-0.06
basit	simple	-0.11	-0.02	0.09	0.00	0.36*	-0.11	-0.21
bedavaci	exploitative	-0.01	-0.09	-0.16	0.05	0.36*	-0.08	0.11
yalanci	dishonest	0.02	-0.08	-0.07	-0.03	0.35*	0.06	0.08
yeteneksiz	clumsy	-0.19	-0.09	0.13	-0.07	0.35*	-0.15	-0.10
vicdansiz	unscrupulous	0.01	0.02	-0.34	0.14	0.35*	-0.08	0.04
cikarci	selfish	-0.03	0.00	-0.25	0.03	0.34*	-0.14	0.09
nankor	ungrateful	-0.13	-0.19	-0.32	-0.10	0.34*	-0.09	0.12
edepsiz	insolent	-0.07	-0.27	-0.15	0.00	0.34*	0.28	-0.07
yapmacik	pretentious	-0.06	-0.03	-0.10	-0.03	0.34*	-0.08	-0.02
zararli	harmful	-0.03	-0.06	-0.32	0.08	0.33*	0.02	-0.06
utanmaz	shameless	0.05	-0.27	-0.21	0.04	0.33*	0.14	-0.05
kaba	rude	-0.03	-0.18	-0.25	0.03	0.33*	-0.12	-0.20
enayi	foolish	-0.17	-0.18	0.07	-0.16	0.33*	-0.04	-0.11
yureksiz	cowardly	-0.21	-0.17	0.09	-0.03	0.32*	-0.16	0.01
palavraci	boastful	0.15	-0.12	-0.08	0.02	0.32*	-0.01	0.03
dalavereci	trickster	0.03	-0.08	-0.12	0.07	0.30*	-0.05	0.08
akilsiz	unreasonable	-0.20	-0.19	0.04	-0.02	0.30*	-0.12	-0.19
pinti	stingy	-0.19	0.07	-0.19	0.02	0.30*	-0.15	0.04
onurlu	self-respecting	-0.03	0.14	0.17	0.27	-0.42*	-0.09	0.03
haysiyetli	dignified	0.00	0.11	0.23	0.27	-0.38*	-0.06	0.00
gururlu	proud	0.00	0.17	0.00	0.14	-0.37*	-0.06	0.05
entellektuel	intellectual	0.14	0.12	-0.03	0.10	-0.04	0.44*	0.10
ozgurlukcu	independent	0.05	-0.11	0.08	0.16	-0.08	0.42*	-0.03
yenilikci	experimental	0.19	0.13	0.15	0.08	-0.06	0.39*	-0.07

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Table 1 continued

Turkish term	English translation	I	III	II	IV	NV	V	At
inancsiz	skeptical	-0.09	-0.25	0.00	0.09	0.19	0.39*	0.03
bagimsiz	independent	0.14	-0.02	-0.01	0.21	-0.10	0.38*	-0.14
ozgun	original	0.07	0.11	0.06	0.16	-0.10	0.37*	0.09
uygar	cultured	0.03	0.08	0.26	0.10	-0.14	0.37*	0.12
degisik	unusual	0.09	-0.09	-0.15	-0.07	-0.11	0.35*	0.09
ozgur	autonomous	0.17	-0.05	0.11	0.24	-0.04	0.35*	-0.02
acikfikirli	broad-minded	0.22	0.02	0.13	0.09	-0.13	0.35*	-0.12
okuyan	likes reading	0.01	0.17	0.26	-0.06	-0.03	0.32*	0.06
ilerici	progressive	0.13	0.04	0.04	0.12	-0.05	0.32*	0.09
ilginc	original	0.16	-0.17	-0.17	-0.02	-0.10	0.32*	0.02
yaratıcı	creative	0.22	0.01	0.03	0.18	-0.21	0.31*	0.14
cagdas	contemporary	0.06	0.16	0.15	0.14	-0.10	0.30*	0.23
sanatkar	artistic	0.13	0.01	-0.04	0.09	-0.03	0.30*	0.11
gelenekci	traditional	-0.04	0.14	0.09	0.09	-0.06	-0.53*	-0.11
geleneksel	traditional	-0.09	0.14	0.02	0.11	-0.01	-0.53*	-0.12
kaderci	fatalistic	-0.09	0.05	0.06	-0.09	-0.04	-0.45*	-0.09
dargoruslu	narrow-minded	-0.12	0.10	0.05	0.01	0.20	-0.42*	-0.08
inancli	believing	0.11	0.33	0.08	0.04	0.00	-0.39*	-0.01
klasik	old-fashioned	-0.27	0.09	0.07	-0.01	0.05	-0.36*	-0.09
onyargili	prejudiced	-0.09	0.09	-0.22	-0.24	-0.10	-0.35*	0.08
tutucu	conservative	-0.09	0.12	-0.14	0.09	0.05	-0.35*	-0.09
siradan	ordinary	-0.29	0.00	0.23	0.03	0.22	-0.34*	-0.19
ezberci	uncreative	-0.10	0.17	-0.02	-0.20	0.05	-0.31*	0.07
tatli	pleasant	0.29	-0.05	0.16	-0.08	0.00	0.02	0.49*
zarif	graceful	0.11	0.28	0.18	0.04	-0.04	0.11	0.47*
cekici	attractive	0.33	0.04	-0.13	0.08	-0.08	0.16	0.46*
alimli	eye-catching	0.20	0.11	-0.03	-0.08	-0.18	0.17	0.42*
cazibeli	charming	0.28	0.03	-0.10	-0.01	-0.23	0.15	0.41*
hos	nice	0.35	-0.10	0.05	0.03	-0.09	0.16	0.41*
etkileyici	influential	0.29	0.04	-0.13	0.10	-0.16	0.26	0.37*
cilveli	coquettish	0.22	0.04	-0.18	-0.20	-0.10	0.09	0.37*
narin	of delicate build	-0.09	0.18	0.17	-0.18	0.00	0.14	0.36*
akilli	wise	0.12	0.09	0.02	0.28	-0.14	0.17	0.36*
kibar	polite	0.05	0.26	0.26	0.04	-0.07	0.04	0.34*
kadinsi	feminine	-0.01	0.10	0.11	-0.20	-0.03	0.22	0.33*
ince	sensitive	0.01	0.15	0.25	-0.05	-0.09	0.06	0.32*
bilgili	knowledgeable	0.21	0.17	0.03	0.24	-0.11	0.23	0.31*
estetik	aesthetic	0.21	0.11	-0.04	-0.02	-0.07	0.25	0.31*
asil	noble	0.10	0.18	-0.02	0.20	-0.16	0.03	0.30*
saygin	respected	0.17	0.19	0.13	0.25	-0.11	0.03	0.30*
erkeksi	masculine	0.14	-0.12	-0.17	0.29	0.05	-0.09	-0.33*

These values are based on analyses of standard (*Z*) scored data. The highest factor loading for each variable is indicated with an asterisk (*). Loadings of 0.30 or higher are printed in bold. I, Extraversion; II, Agreeableness; III, Conscientiousness; IV, Emotional Stability; V, Intellect; NV, Negative Valence; At, Attractiveness. The 108 terms whose highest loadings were less than 0.30 have been omitted from this table.

Systematic, Self-disciplined, Methodical, Organized, Neat, and Hard-working (versus Untidy, Unsystematic, Undisciplined, Disorderly, Unorganized, and Sloppy). Factor IV (Emotional Stability) includes such terms as Calm, Strong, and Unemotional (versus Agitated, Suspicious, Anxious, Obsessive, Confused, and Emotional). The

correlations between the factor scores on these indigenous dimensions and the imported Big-Five factors were 0.93, 0.92, 0.94, and 0.84 for Factors I, II, III, and IV, respectively⁵.

The three remaining factors include the one from the Big Five—Intellect—that was the most distinctive in the analyses of Somer and Goldberg (1999). As in that previous Turkish study, Factor V here had a distinct cultural edge, blending Intellect with Modernism versus Traditionalism. In the present study, those terms most highly associated with that factor included Intellectual, Independent, Experimental, Skeptical, Independent, and Original (versus Traditional, Narrow-minded, Old-fashioned, and Conservative). The correlation between the factor scores on this dimension and the corresponding imported Big-Five factor was 0.72.

Beyond the Big Five, the two remaining factors are those that one should now expect in an item pool not restricted solely to personality traits (Saucier, 1997)—Attractiveness and Negative Valence. Attractiveness appears here as a blend of physical appeal and feminine gender; the highest loading terms on that dimension include Graceful, Attractive, Eye-catching, Charming, and Feminine (versus Masculine).

Finally, we obtained a Negative Valence (NV) factor (sometimes construed as Infrequency, Low Base-rate Attributes, Invectives, or Terms of Insult), based on highly pejorative terms which are rarely endorsed as applicable to oneself. In the present study, the terms most highly associated with this factor include Unprincipled, Cowardly, Dishonest, Styleless, Vulgar, Idiotic, and Dishonorable. In contrast to the NV factor in most previous studies, however, this one was broader, and it included a few terms at the positive pole (e.g. Self-respecting, Dignified, Proud). As such, it probably comes closer to a Self-Esteem dimension than have previous manifestations⁶.

The factor loadings displayed in Table 1 are based on varimax (orthogonal) rotations. When the factor axes were permitted to become oblique in a promax rotation, the factors were virtually identical to the orthogonal ones, and most of the intercorrelations among the oblique factors were quite low. Indeed, the algebraic mean of the 21 intercorrelations was a mere 0.01, and the mean of the absolute values of the intercorrelations was only 0.18. Only two pairs of factors correlated as high as 0.40: Factors III and IV (0.44) and Factors III and NV (−0.42).

⁵To the extent to which the indigenous and imported factors share the same terms, the factors are not in some sense experimentally independent, and thus the correlations between them might be construed as an overestimate of their true congruence. On the other hand, one could argue that the extent of overlap between the terms loading highly on the two sets of factors is a direct indication of their actual congruence, and thus that no correction for such bias is warranted. In this report, we use these correlations merely to index the relative congruence among the factors.

⁶Corresponding analyses of the original responses produced a structure that was more complex than the one based on Z-scored data, and therefore it is not as easily interpretable. The first ten eigenvalues of that data matrix, expressed as proportions of total variance, were 14.7, 6.2, 4.1, 2.9, 1.9, 1.6, 1.4, 1.2, 1.1, and 1.0, with breaks after one, two, three, four, five, six, and seven factors, and a solid unbroken scree beyond that point. A very broad factor composed primarily of highly desirable attributes (including most terms related to Intellect) appeared as the first factor at all hierarchical levels, and this dimension of Positive Valence correlated 0.77 with the first unrotated principal component. In the seven-factor solution, the factors included (in order of their size) Positive Valence (including Intellect), Negative Valence, Emotional Stability, Conscientiousness, Agreeableness, Extraversion, and Attractiveness. Only Conscientiousness in this solution was a direct counterpart of the same factor based on Z-scored data, with a correlation of 0.93 between the factor scores derived from the two types of data.

In contrast to most previous analyses of familiar person-descriptors, Factor II was virtually unrelated to all of the other factors, including Factor IV⁷.

Analyses of more strictly personality-related adjectives

Item pools that are selected largely on the basis of word familiarity may include terms that do not fall within traditional definitions of 'personality' traits, including physical attributes and social effects (Norman, 1967); examples from the present study include Attractive, Eye-catching, and Influential. In addition, such unrestricted item pools will almost inevitably include some highly pejorative attributes, which are rarely attributed to persons one likes, including oneself; examples from the present study include Immoral, Idiotic, Vulgar, Dirty, and Uncivilized. Because many previous studies restricted their item pools to less extreme personality-trait adjectives, we should be able to approximate them by excluding those terms with extremely low endorsement rates and those terms that describe one's physical appearance and/or one's effects on others.

To provide an index of extremity that was as objective as possible, we calculated the mean response to each item across the total sample of research participants, and rank ordered the 498 terms by these means⁸. Because most of the terms that were highly associated with the Negative Valence factor had mean values below 1.63 on the 1 to 7 response scale, we used that value as a cut-off, and excluded the 44 terms with lower means. In addition, we excluded those 14 terms that seemed most clearly to describe physical characteristics or social effects⁹. All of the analyses reported above were then repeated in the remaining pool of 440 familiar personality-descriptive terms.

The first ten eigenvalues of this data matrix, expressed as proportions of total variance, were 10.8, 6.1, 3.5, 2.5, 2.1, 1.5, 1.4, 1.2, 1.0, and 1.0, with breaks after one, two, three, four, and five factors, and a solid unbroken scree beyond that point. Figure 2 provides the structure of the varimax-rotated factors across five hierarchical levels; the values in the figure are the correlations of the factor scores at each level with those immediately above and below them. The factors at the lowest level can be easily identified as variants of the English/German Big-Five factors: I (Extraversion), II (Agreeableness), III (Conscientiousness), IV (Emotional Stability), and V (Intellect).

Again the information displayed in Figure 2 can be captured in words: Reading from the top down, the first unrotated principal component (FUPC), which generally differentiates desirable from undesirable terms, split into two broad factors, one combining the two most evaluatively polarized factors, Conscientiousness (III)

⁷Analyses were also carried out separately in the male and female subsamples, using the Z-scored data, and the congruence between the two sets of factors was examined at each of the seven hierarchical levels. For the first five levels (but not after that), there were one-to-one matches between the two sets of factors; the average congruence between matching factors was 0.88, 0.90, 0.79, 0.83, and 0.80 for the one, two, three, four, and five factor solutions, respectively. In the seven-factor solution, congruence was substantial for Extraversion (0.93) and Conscientiousness (0.91), moderate for Agreeableness (0.81) and Emotional Stability (0.76), and quite poor for the other three factors.

⁸The mean responses ranged from a low of 1.13 (Dishonorable) to a high of 6.31 (Honest) on the 1 to 7 rating scale. The distribution was clearly bimodal, with few terms in the neutral range from 3.5 to 4.5. There were slightly more desirable than undesirable terms in the item pool, and the median value was 4.5.

⁹The 14 excluded items included the nine with the highest loadings on the Attractiveness factor in Table 1, plus Boring, Plain, Popular, Pretty, and Successful.

Turkish 440 Personality-Trait Adjectives

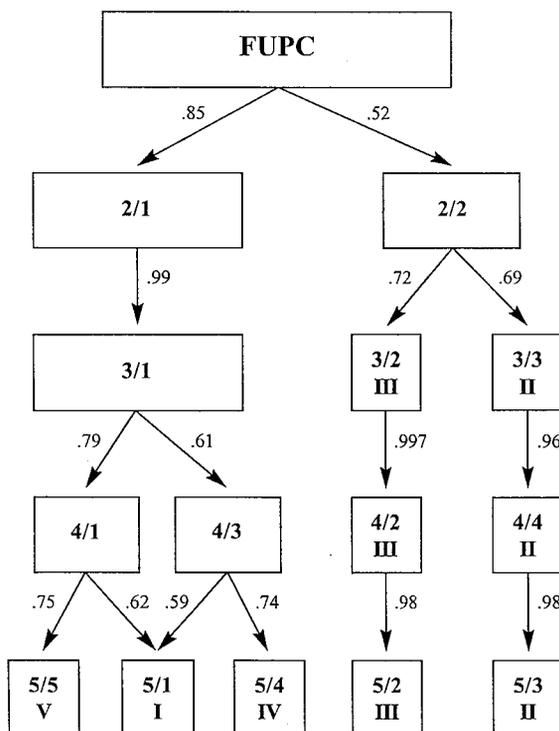


Figure 2. The five-level hierarchical factor structure of the 440 Turkish personality-descriptive adjectives: FUPC, first unrotated principal component; I, Extraversion; II, Agreeableness; III, Conscientiousness; IV, Emotional Stability; V, Intellect.

and Agreeableness (II), and the other combining the other three. The combined II/III second-level factor spawned clear Conscientiousness and Agreeableness factors in the three-factor solution. At the fourth level, the broad I/IV/V factor split into two parts (one combining aspects of Factor I with Factor IV and the second combining other aspects of Factor I with Factor V); these two factors then recombined into the 'classic' three components in the five-factor solution.

Figure 3 provides the previously unpublished hierarchical structure for those 435 English personality-trait adjectives analyzed by Saucier and Goldberg (1996a), thus permitting a direct comparison between quite similar sets of variables in the two languages. In contrast to the Turkish factor structure, the English Factor I was essentially unrelated to the other four (and thus to the FUPC) and thus emerged as an independent dimension in the two-factor solution. Indeed, in the English structure, the Big-Five factors emerged in their numeric order at each descending hierarchical level.

Returning to the Turkish factors, Table 2 presents the loadings at the five-factor level, with the factors ordered by their relative size (I, III, II, IV, and V); the 89 terms whose highest loadings were below 0.30 have been omitted. Each of these five factors can be matched with one of the English/German Big Five: Factor I (Extraversion) is

English 435 Personality-Trait Adjectives

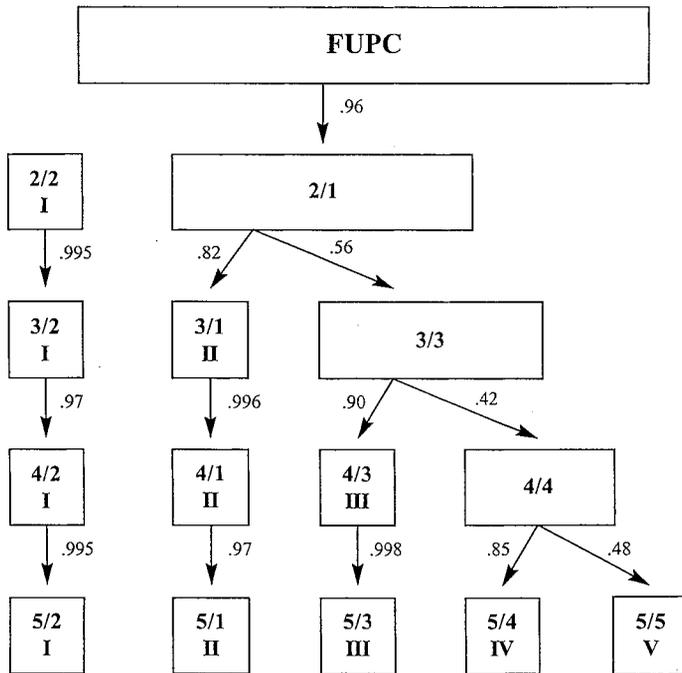


Figure 3. The five-level hierarchical factor structure of the 435 English personality-descriptive adjectives from Saucier and Goldberg (1996a): FUPC, first unrotated principal component; I, Extraversion; II, Agreeableness; III, Conscientiousness; IV, Emotional Stability; V, Intellect.

defined by such terms as Energetic, Merry, Exuberant, Vivacious, Enterprising, Cheerful, Joyful, Talkative, Dynamic, Active, and Assertive (versus Lethargic, Unenergetic, Silent, Pessimistic, and Quiet). Factor II (Agreeableness) includes such terms as Fair, Tolerant, Peace-loving, Easygoing, Understanding, Forgiving, Agreeable, Philanthropic, and Helpful (versus Brawling, Aggressive, Ruthless, Hurtful, Ill-tempered, and Quarrelsome). Factor III (Conscientiousness) is marked by such terms as Self-disciplined, Tidy, Systematic, Neat, Organized, Methodical, and Hard-working (versus Undisciplined, Untidy, Unsystematic, Disorderly, Unorganized, and Sloppy). Factor IV (Emotional Stability) includes such terms as Calm, Strong, Unemotional, and Self-assured (versus Agitated, Anxious, Suspicious, Unsettled, Worried, Apprehensive, Obsessive, and Emotional). Factor V (Intellect) is defined by such terms as Independent, Creative, Broad-minded, Intellectual, Original, Experimental, Cultured, and Autonomous (versus Boring, Ordinary, Narrow-minded, Traditional, and Old-fashioned)¹⁰. The correlations between the factor scores from

¹⁰Analyses were also carried out separately in the male and female subsamples, using the Z-scored data, and the congruence between the two sets of factors was examined at each of the five hierarchical levels. The mean congruence coefficients for best-matched factors was 0.94, 0.94, 0.90, 0.78, and 0.79 for the one, two, three, four, and five factor solutions, respectively.

Table 2. Five-factor varimax-rotated loadings of 440 Turkish personality-descriptive adjectives ($N = 631$)

Turkish term	English translation	I	III	II	IV	V
canli	energetic	0.71*	0.07	0.05	0.05	0.08
sen	merry	0.70*	-0.08	0.06	0.04	-0.06
coskulu	exuberant	0.66*	0.03	0.11	0.03	0.07
hareketli	vivacious	0.65*	0.06	-0.01	-0.05	0.18
giriskan	enterprising	0.62*	0.12	-0.04	0.08	0.23
neseli	cheerful	0.62*	-0.04	0.24	0.03	-0.03
sevincli	joyful	0.62*	0.01	0.13	0.07	-0.07
enerjik	energetic	0.61*	0.16	-0.06	0.04	0.15
konuskan	talkative	0.60*	-0.03	0.02	-0.14	0.11
dinamik	dynamic	0.59*	0.29	-0.02	0.17	0.16
keyifli	joyous	0.57*	-0.07	0.16	0.15	-0.03
disadonuk	extraverted	0.56*	-0.01	0.07	0.00	0.22
gulec	cheerful	0.56*	-0.05	0.24	-0.08	0.01
mutlu	happy	0.55*	0.12	0.14	0.26	-0.23
aktif	active	0.55*	0.17	-0.08	0.10	0.28
eglendirici	entertaining	0.54*	-0.20	0.08	-0.08	0.05
faal	active	0.54*	0.12	0.02	0.12	0.31
atilgan	assertive	0.54*	0.25	-0.11	0.08	0.23
atak	rash	0.53*	0.21	-0.08	0.10	0.19
dinc	vigorous	0.52*	0.20	0.02	0.19	0.10
atik	agile	0.52*	0.14	-0.08	0.07	0.17
guleryuzlu	merry	0.52*	0.01	0.38	-0.04	-0.07
atilimci	dashing	0.50*	0.27	-0.05	0.14	0.29
cevik	nimble	0.50*	0.19	-0.06	0.18	0.18
esprili	witty	0.50*	-0.18	0.07	0.04	0.10
delidolu	impulsive	0.49*	-0.18	-0.16	-0.17	0.22
hossohbet	conversational	0.49*	0.00	0.25	-0.03	0.19
sempatik	likable	0.48*	-0.08	0.27	-0.02	0.11
sicak	warm	0.46*	0.02	0.43	-0.03	0.11
sosyal	sociable	0.45*	0.15	0.18	0.10	0.34
sakaci	being a joker	0.45*	-0.18	0.07	0.05	0.10
renkli	colorful	0.43*	-0.18	0.07	-0.01	0.23
katilimci	participative	0.43*	0.20	-0.03	0.03	0.15
huzurlu	easygoing	0.43*	0.16	0.17	0.38	-0.19
umitli	hopeful	0.43*	0.19	0.16	0.23	0.00
iyimser	optimistic	0.42*	0.14	0.32	0.23	-0.08
yakin	warm	0.41*	0.03	0.39	0.02	0.05
olumlu	positive	0.40*	0.19	0.30	0.35	-0.07
hizli	quick	0.40*	0.28	-0.10	-0.02	0.17
cilgin	original, daring	0.39*	-0.21	-0.20	-0.11	0.34
cokyonlu	having broad interests	0.37*	-0.01	-0.05	0.12	0.35
rahat	sociable	0.37*	-0.15	-0.07	0.26	0.07
istekli	enthusiastic	0.35*	0.30	0.06	0.09	0.03
ucari	impulsive, promiscuous	0.35*	-0.31	-0.21	-0.12	0.25
cesur	brave	0.33*	0.22	-0.08	0.32	0.32
ilgili	enthusiastic	0.32*	0.26	0.24	-0.08	0.15
yapici	creative	0.30*	0.07	0.25	0.14	0.19
haberdar	aware	0.30*	0.06	0.05	0.12	0.19
uyanik	alert	0.30*	0.17	-0.16	0.14	0.25
durgun	lethargic	-0.62*	0.05	0.09	-0.03	-0.19

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Table 2 continued

Turkish term	English translation	I	III	II	IV	V
cansiz	unenergetic	-0.60*	-0.09	0.06	0.02	-0.18
nesesiz	low-spirited	-0.60*	0.07	0.01	0.04	-0.07
somurtkan	sulky	-0.60*	-0.01	-0.17	-0.01	-0.05
mutmuz	unhappy	-0.60*	-0.05	-0.10	-0.26	-0.03
suskun	silent	-0.59*	0.08	0.13	0.06	-0.28
karamsar	pessimistic	-0.59*	-0.07	-0.03	-0.40	-0.05
bezgin	disgusted	-0.57*	-0.21	0.02	-0.17	-0.16
bunalimli	emotionally troubled	-0.57*	-0.18	-0.08	-0.41	0.09
sessiz	quiet	-0.56*	0.11	0.24	0.18	-0.24
problemli	troubled	-0.55*	-0.16	-0.14	-0.36	0.08
kederli	unhappy	-0.55*	-0.04	-0.06	-0.28	-0.05
uzuntulu	sad	-0.55*	-0.04	0.01	-0.42	0.01
sikintili	easily bored	-0.53*	-0.08	0.01	-0.34	-0.01
huzursuz	uneasy	-0.53*	-0.13	-0.09	-0.34	0.01
bitkin	worn-out	-0.52*	-0.15	0.11	-0.23	-0.16
soguk	cold	-0.52*	0.03	-0.21	0.13	-0.08
huzunlu	melancholic	-0.51*	-0.06	0.04	-0.39	0.01
dertli	pained	-0.51*	-0.05	0.00	-0.37	0.01
isteksiz	unenthusiastic	-0.50*	-0.21	0.04	-0.04	-0.19
sikilgan	bashful	-0.49*	0.00	0.10	-0.17	-0.22
yalniz	lonesome	-0.49*	-0.02	-0.03	-0.18	-0.03
kotumser	pessimistic	-0.49*	-0.10	-0.17	-0.37	-0.07
hareketsiz	inactive	-0.48*	-0.13	0.11	0.06	-0.24
suratsiz	grouchy	-0.47*	-0.04	-0.26	0.00	-0.12
umitsiz	hopeless	-0.47*	-0.14	0.00	-0.32	-0.10
cekingen	timid	-0.47*	0.03	0.20	-0.08	-0.32
yorgun	tired	-0.46*	-0.14	0.12	-0.19	-0.14
gergin	tense	-0.46*	-0.03	-0.11	-0.40	-0.08
olumsuz	negative	-0.44*	-0.11	-0.11	-0.28	0.00
cekimsiz	indecisive	-0.42*	-0.01	0.15	-0.08	-0.32
sorunlu	troubled	-0.42*	-0.14	-0.07	-0.31	0.14
ters	bad-tempered	-0.42*	-0.06	-0.37	-0.10	0.04
urkek	fearful	-0.39*	-0.08	0.21	-0.36	-0.25
caresiz	helpless	-0.39*	-0.12	0.06	-0.19	-0.17
pisirik	unassertive	-0.38*	-0.14	0.09	0.00	-0.35
yavas	slow-witted	-0.38*	-0.22	0.16	0.05	-0.24
uyusuk	passive, lethargic	-0.36*	-0.33	0.05	-0.04	-0.26
guvensiz	distrustful	-0.33*	-0.30	0.03	-0.19	-0.17
karmasik	complex	-0.32*	-0.27	-0.14	-0.31	0.25
dalgin	preoccupied, distracted	-0.31*	-0.25	0.14	-0.27	-0.07
disiplinli	self-disciplined	0.05	0.69*	0.07	0.09	-0.09
duzenli	tidy	0.04	0.67*	0.11	0.03	-0.16
sistemli	systematic	0.03	0.66*	0.03	0.13	-0.05
tertipli	neat	0.01	0.64*	0.21	-0.03	-0.16
planli	organized	0.05	0.63*	0.07	0.07	-0.06
programli	methodical	0.11	0.63*	0.04	0.01	-0.06
caliskan	hard-working	0.19	0.61*	0.15	0.00	-0.04
prensipli	principled	0.03	0.57*	0.05	0.10	0.05
itinali	meticulous	0.09	0.56*	0.24	0.00	0.00
azimli	determined	0.16	0.56*	0.04	0.09	0.03
tiz	fussy	-0.06	0.53*	0.12	-0.11	-0.14

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Table 2 continued

Turkish term	English translation	I	III	II	IV	V
gayretli	zealous	0.19	0.51*	0.01	0.03	0.01
kuralci	rule-abiding	-0.09	0.50*	-0.09	-0.02	-0.11
iradeli	resolute	0.10	0.49*	0.17	0.24	0.15
ozenli	very careful	0.07	0.49*	0.24	-0.02	-0.01
dengeli	stable	0.18	0.48*	0.33	0.24	-0.03
tutumlu	thrifty	-0.01	0.48*	0.19	0.14	-0.13
istikrarli	stable	0.24	0.47*	0.18	0.20	0.13
ciddi	serious	-0.28	0.46*	0.02	0.18	-0.02
kontrollu	controlled	0.02	0.46*	0.19	0.28	0.03
hirsli	ambitious	0.21	0.46*	-0.21	0.04	0.09
dikkatli	careful	0.10	0.45*	0.09	0.25	0.14
kararli	determined	0.11	0.45*	-0.02	0.26	0.24
tedbirli	prudent	-0.03	0.44*	0.07	0.12	-0.02
mesuliyetli	responsible	0.01	0.44*	0.21	-0.04	-0.07
olculu	moderate	-0.07	0.43*	0.31	0.08	0.03
ahlakli	moral	0.04	0.42*	0.33	0.10	-0.11
hesapli	planful	-0.05	0.42*	0.15	0.13	-0.11
tutarli	steady	0.03	0.41*	0.25	0.23	0.18
edepli	well-mannered	0.00	0.40*	0.38	0.14	-0.15
mucadeleci	persevering	0.22	0.39*	-0.07	0.18	0.23
otoriter	authoritarian	0.03	0.39*	-0.32	0.11	0.06
inancli	believing, trusting	0.12	0.39*	0.08	0.02	-0.27
dakik	prompt	0.08	0.38*	0.04	0.04	0.01
verimli	deliberative	-0.07	0.37*	0.19	0.09	0.06
agirbasli	productive	0.25	0.35*	0.15	0.18	0.22
yurekli	slow, overcontrolled	-0.32	0.35*	0.28	0.18	-0.12
iddiali	brave	0.18	0.32*	0.12	0.17	0.19
efendi	pretentious	0.24	0.31*	-0.25	0.18	0.17
	gentlemanly	-0.02	0.31*	0.27	0.17	-0.16
disiplinsiz	undisciplined	-0.11	-0.67*	-0.06	0.04	-0.02
duzensiz	untidy	-0.12	-0.65*	-0.02	0.04	0.06
programsiz	unsystematic	-0.13	-0.63*	0.07	0.03	-0.02
tertipsiz	disorderly	-0.08	-0.62*	0.00	0.07	0.07
plansiz	unorganized	-0.15	-0.60*	0.04	0.06	-0.02
daginik	sloppy	-0.01	-0.60*	-0.03	0.03	0.07
pasakli	slovenly	-0.05	-0.56*	-0.07	0.13	0.03
savruk	clumsy	-0.04	-0.52*	-0.15	-0.02	0.05
sorumsuz	undependable	-0.02	-0.49*	-0.16	0.14	-0.08
ihmalkar	neglectful	-0.09	-0.48*	-0.03	-0.04	-0.20
dengesiz	unstable	-0.23	-0.48*	-0.21	-0.11	-0.04
vurdumduymaz	thick-skinned	0.03	-0.47*	-0.12	0.15	-0.01
basibos	unreliable	-0.09	-0.43*	-0.22	0.09	0.13
ihmalci	negligent	-0.22	-0.43*	0.03	0.02	-0.18
dikkatsiz	careless	-0.14	-0.42*	0.06	-0.22	-0.18
savurgan	wasteful	-0.03	-0.42*	-0.12	-0.05	0.02
usenmec	lazy	-0.22	-0.41*	0.05	-0.11	-0.18
olcusuz	immoderate	0.06	-0.41*	-0.12	-0.07	-0.08
tedbirsiz	imprudent	-0.08	-0.40*	0.04	-0.05	-0.18
tutumsuz	wasteful	-0.04	-0.39*	-0.12	-0.14	0.05
tutarsiz	inconsistent	-0.30	-0.38*	-0.07	-0.15	-0.15
serseri	rootless	0.12	-0.38*	-0.33	0.08	0.24

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Table 2 continued

Turkish term	English translation	I	III	II	IV	V
unutkan	absent-minded	-0.18	-0.37*	0.12	-0.14	-0.13
haylaz	idle	0.22	-0.35*	-0.28	-0.09	0.04
iradesiz	irresolute	0.00	-0.34*	0.04	-0.15	-0.16
miskin	lazy, indolent	-0.29	-0.34*	-0.10	-0.12	-0.22
basinabuyruk	disobedient	0.00	-0.34*	-0.24	-0.01	0.24
gayretsiz	lacking zeal	-0.31	-0.34*	0.06	0.05	-0.23
inancsiz	skeptical	-0.08	-0.33*	-0.02	0.14	0.19
ilgisiz	apathetic	-0.14	-0.33*	0.00	0.08	-0.08
ozensiz	slipshod	-0.14	-0.33*	-0.06	0.12	-0.24
dalgaci	laggard	0.15	-0.33*	-0.20	0.04	0.06
utanmaz	shameless	0.06	-0.32*	-0.26	0.13	-0.07
tuhaf	odd	-0.27	-0.32*	-0.19	-0.20	0.18
laubali	loose, insincere	0.13	-0.32*	-0.22	0.01	-0.19
acayip	odd	-0.16	-0.32*	-0.29	-0.12	0.17
garip	peculiar	-0.21	-0.31*	-0.24	-0.12	0.16
vefasiz	unfaithful	-0.01	-0.31*	-0.15	0.13	-0.17
hayirsiz	useless	0.03	-0.31*	-0.04	0.08	-0.09
muzip	mischievous	0.24	-0.31*	0.02	-0.05	0.16
vicdanli	just, fair	-0.10	0.08	0.56*	-0.01	0.04
yumusak	soft	0.00	0.08	0.54*	-0.06	-0.19
hosgorulu	tolerant	0.14	-0.01	0.53*	0.14	0.01
barisci	peace-loving	0.13	0.01	0.52*	0.04	0.06
gecimli	easygoing	0.27	0.09	0.49*	0.22	-0.08
anlayisli	understanding	0.01	0.07	0.48*	0.13	0.04
bagislayici	forgiving	0.00	-0.12	0.48*	0.03	-0.14
fedakar	devoted	-0.06	0.11	0.48*	-0.06	-0.02
yardimsever	philanthropic	-0.04	0.16	0.48*	-0.09	-0.02
degerbilir	appreciative	-0.06	0.19	0.48*	0.06	0.04
iyiliksever	helpful	-0.02	0.04	0.47*	-0.01	0.03
uyumlu	agreeable	0.25	0.11	0.46*	0.15	-0.13
insancil	humanistic	0.05	0.08	0.46*	0.11	0.04
uysal	acquiescent	-0.06	0.17	0.46*	0.11	-0.29
insafli	merciful	0.03	-0.01	0.45*	0.05	-0.17
sevkatli	affectionate	0.11	0.04	0.45*	-0.05	0.03
merhametli	merciful	-0.06	0.06	0.45*	0.01	-0.08
ilimli	temperate	0.10	-0.05	0.44*	0.16	-0.22
duygulu	sensitive	-0.13	0.06	0.43*	-0.27	0.06
hayirli	good-hearted	0.02	0.33	0.43*	0.00	0.07
uzlasici	conciliatory	0.12	-0.05	0.42*	0.12	-0.06
candan	warm	0.31	0.00	0.42*	-0.10	0.10
vefali	faithful	-0.01	0.33	0.41*	-0.03	0.12
verici	unselfish	0.03	-0.03	0.41*	-0.01	0.16
mutevazi	modest	-0.07	0.18	0.41*	0.12	-0.09
sevecen	compassionate	0.31	0.03	0.40*	-0.06	0.15
sadakatli	loyal	-0.06	0.25	0.40*	-0.04	-0.08
durust	honest	-0.07	0.23	0.40*	0.16	0.11
nazik	courteous	0.16	0.12	0.40*	-0.01	0.05
hisli	sensitive	-0.10	0.06	0.40*	-0.26	-0.01
ozverili	unselfish	0.00	0.25	0.40*	-0.05	0.05
terbiyeli	courteous	-0.05	0.32	0.39*	0.07	-0.06
hayirsever	helpful	0.04	0.14	0.39*	-0.09	-0.11

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Table 2 continued

Turkish term	English translation	I	III	II	IV	V
saygili	respectful	0.04	0.24	0.39*	0.07	-0.18
guvenilir	reliable	-0.03	0.13	0.38*	0.00	0.12
duygusal	emotional	-0.07	0.01	0.38*	-0.31	-0.05
comert	generous	0.07	0.07	0.35*	0.11	0.08
adil	just	-0.08	0.10	0.34*	0.06	0.19
gorgulu	well-mannered	0.00	0.22	0.33*	0.05	0.04
hassas	responsive	-0.18	0.01	0.33*	-0.30	0.06
kaprissiz	not capricious	0.11	0.07	0.33*	0.30	0.00
samimi	straightforward	0.18	0.01	0.33*	0.01	0.04
dogal	natural	0.03	0.11	0.32*	0.15	0.15
icten	friendly	0.19	0.01	0.32*	0.01	0.10
romantik	romantic	0.07	0.04	0.32*	-0.32	0.02
masum	innocent	-0.10	0.10	0.32*	-0.09	-0.15
kibar	polite	0.09	0.25	0.31*	0.03	0.05
ince	sensitive	0.05	0.13	0.31*	-0.06	0.06
zararsiz	harmless	-0.19	-0.01	0.30*	0.00	-0.10
hakikatli	faithful	-0.03	0.27	0.30*	0.15	0.23
inanilir	believable, credible	-0.07	0.19	0.30*	0.13	0.13
vefakar	faithful	-0.03	0.23	0.30*	0.02	0.04
kavgaci	brawling	-0.03	-0.08	-0.51*	-0.11	0.04
saldrgan	aggressive	0.01	-0.13	-0.47*	-0.08	0.10
tehlikeli	dangerous	0.01	-0.11	-0.45*	0.06	0.17
acimasiz	ruthless	-0.12	-0.07	-0.44*	0.12	-0.01
kirici	hurtful	-0.25	-0.11	-0.44*	-0.16	0.00
hircin	ill-tempered	-0.05	-0.08	-0.44*	-0.30	0.16
gecimsiz	quarrelsome	-0.29	-0.11	-0.44*	-0.05	-0.06
igneleyici	sarcastic	-0.08	-0.12	-0.43*	-0.12	0.14
kati	tough	-0.19	0.11	-0.42*	-0.02	0.04
zalim	cruel	-0.04	0.02	-0.42*	0.05	-0.11
ukala	smart-aleck	-0.05	-0.24	-0.41*	-0.05	0.06
baskici	coercive	0.02	0.10	-0.41*	0.00	-0.16
aksi	peevish	-0.27	-0.08	-0.40*	-0.19	0.03
kinci	vindictive	-0.14	0.07	-0.40*	-0.04	0.01
bencil	selfish	-0.14	-0.06	-0.38*	-0.16	-0.09
insafsiz	unmerciful	-0.01	-0.10	-0.38*	0.13	-0.05
kibirli	arrogant	-0.12	0.01	-0.38*	-0.01	-0.01
asabi	irritating	-0.24	-0.06	-0.38*	-0.25	0.07
dikbasli	conceited	-0.10	-0.15	-0.37*	-0.21	0.18
numaraci	tricky, phony	0.14	-0.23	-0.36*	0.02	-0.09
kindar	revengeful	-0.18	0.10	-0.36*	-0.10	0.03
kustah	insolent	-0.02	-0.18	-0.36*	0.03	0.07
sinsi	stealthy	0.04	-0.08	-0.35*	0.11	-0.11
hosgorusuz	intolerant	-0.10	-0.01	-0.35*	0.02	-0.17
vahsi	wild	0.07	-0.11	-0.34*	0.04	0.02
kurnaz	cunning	0.18	0.07	-0.34*	0.13	0.17
alayci	cynical	0.06	-0.27	-0.34*	-0.04	0.10
nankor	ungrateful	-0.08	-0.24	-0.33*	-0.02	-0.28
azgin	fierce	0.15	-0.22	-0.33*	0.04	0.01
huysuz	temperamental	-0.28	-0.19	-0.32*	-0.23	-0.01
kaba	rude	-0.02	-0.19	-0.32*	0.10	-0.25
anlayissiz	inconsiderate	-0.06	-0.09	-0.31*	0.02	-0.24

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Table 2 continued

Turkish term	English translation	I	III	II	IV	V
gosterisci	ostentatious	0.22	-0.03	-0.30*	-0.01	-0.11
kizgin	angry	-0.22	0.02	-0.30*	-0.27	0.03
telassiz	not agitated	-0.05	-0.15	-0.02	0.52*	0.05
sogukkanli	calm	0.06	0.02	-0.06	0.44*	0.16
serinkanli	unemotional	0.10	-0.03	-0.03	0.42*	0.17
direnci	strong	0.13	0.14	-0.01	0.42*	0.20
sakin	self-possessed, quiet	-0.22	0.16	0.37	0.41*	-0.16
emin	secure, sure, firm	0.20	0.30	0.07	0.38*	0.25
guclu	strong	0.24	0.23	-0.04	0.36*	0.22
duygusuz	tough-minded	-0.01	-0.05	-0.16	0.35*	-0.09
ozguvenli	self-assured	0.31	0.23	0.08	0.35*	0.28
cesaretli	courageous	0.28	0.28	-0.10	0.34*	0.26
sorunsuz	untroubled	0.23	0.04	0.12	0.34*	-0.07
sabirli	patient	-0.01	0.21	0.28	0.34*	-0.04
problemsiz	untroubled	0.25	0.00	0.06	0.34*	-0.10
dayanikli	tough	0.11	0.16	-0.02	0.32*	0.18
olgun	mature	-0.09	0.32	0.12	0.32*	0.06
mantikli	logical	-0.01	0.31	0.05	0.32*	0.02
erkeksi	masculine	0.08	-0.07	-0.25	0.31*	-0.02
gamsiz	lighthearted	0.13	-0.26	-0.06	0.31*	-0.04
korkusuz	fearless	0.20	0.11	-0.09	0.31*	0.22
saglikli	healthy	0.29	0.18	0.14	0.30*	-0.05
telasli	agitated	-0.05	0.04	0.03	-0.56*	-0.16
endiseli	anxious	-0.36	-0.03	-0.01	-0.49*	-0.14
evhamli	suspicious	-0.22	0.08	-0.01	-0.49*	-0.15
tedirgin	unsettled	-0.42	-0.13	0.03	-0.46*	-0.14
kaygili	worried	-0.42	-0.04	0.04	-0.44*	0.02
kuruntulu	apprehensive	-0.40	-0.11	-0.04	-0.44*	-0.09
saplantili	obsessive	-0.32	-0.15	-0.09	-0.44*	-0.05
takintili	obsessive	-0.41	-0.11	-0.07	-0.42*	-0.10
heyecanlı	emotional	0.17	0.05	0.06	-0.40*	-0.04
kararsiz	hesitant	-0.26	-0.27	0.16	-0.39*	-0.16
aceleci	impatient	0.04	-0.08	-0.11	-0.39*	-0.08
alingan	touchy	-0.26	0.03	-0.03	-0.37*	-0.11
saskin	confused	-0.23	-0.26	0.01	-0.37*	-0.06
sabirsiz	impatient	-0.08	-0.11	-0.12	-0.37*	-0.01
teredduhlu	doubtful	-0.33	-0.09	0.07	-0.37*	-0.15
kuskucu	skeptical	-0.26	0.04	-0.12	-0.37*	0.02
kaprisli	capricious	-0.16	-0.03	-0.32	-0.35*	-0.02
hayalperest	romantic	-0.01	-0.22	0.06	-0.35*	0.00
supheci	suspicious	-0.25	0.01	-0.23	-0.35*	-0.02
sinirli	nervous	-0.21	-0.02	-0.34	-0.34*	0.03
hayalci	being a dreamer	-0.02	-0.22	0.05	-0.33*	-0.01
mizmiz	fretful	-0.22	-0.13	-0.19	-0.33*	-0.17
kiskanc	jealous	-0.08	-0.01	-0.28	-0.33*	-0.13
nazli	coquettish, coy	-0.08	-0.05	-0.07	-0.32*	-0.16
cocuksu	childish	0.15	-0.22	0.12	-0.31*	0.05
ozgurlukcu	independent	0.01	-0.15	0.08	0.13	0.41*
bagimsiz	independent	0.09	-0.04	-0.04	0.18	0.41*

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Table 2 continued

Turkish term	English translation	I	III	II	IV	V
yaratici	creative	0.19	0.01	0.06	0.14	0.40*
acikfikirli	broad-minded	0.18	-0.01	0.12	0.05	0.39*
entellektuel	intellectual	0.12	0.05	-0.02	0.09	0.39*
ozgun	original	0.04	0.07	0.09	0.12	0.38*
yenilikci	experimental	0.16	0.07	0.13	0.07	0.37*
uygar	cultured	0.03	0.04	0.29	0.07	0.36*
ozgur	autonomous	0.14	-0.08	0.10	0.22	0.36*
etkili	effective	0.33	0.15	0.04	0.14	0.36*
asi	rebellious	-0.10	-0.24	-0.32*	-0.14	0.35*
hazircevap	quick-witted	0.25	-0.01	-0.21	0.06	0.35*
orijinal	original	0.15	-0.05	-0.11	0.10	0.35*
degisik	unusual	0.07	-0.14	-0.12	-0.08	0.35*
akilci	rational	0.05	0.28	0.10	0.22	0.34*
ilginc	original	0.13	-0.20	-0.16	-0.03	0.33*
enteresan	interesting	0.18	-0.16	-0.16	-0.05	0.33*
zeki	intelligent	0.21	0.09	0.10	0.24	0.32*
serbest	free	0.13	-0.11	0.02	0.12	0.32*
sasirtici	surprising, amazing	0.20	-0.09	-0.14	-0.11	0.32*
medeni	cultured	0.07	0.06	0.30	0.11	0.31*
uretken	productive	0.24	0.19	-0.02	0.23	0.31*
gizemli	mysterious	-0.04	0.03	-0.08	-0.03	0.31*
pratik	practical	0.25	0.21	0.01	0.22	0.30*
ilerici	progressive	0.12	0.01	0.05	0.12	0.30*
maceraci	adventurous	0.29	-0.10	-0.07	0.00	0.30*
nitelikli	well-qualified	0.15	0.16	0.24	0.14	0.30*
arastirici	analytical	0.22	0.23	0.00	0.18	0.30*
bilgili	knowledgeable	0.21	0.16	0.08	0.21	0.30*
monoton	boring	-0.40*	0.06	0.03	0.02	-0.45*
siradan	ordinary	-0.26	0.01	0.16	0.09	-0.44*
dargoruslu	narrow-minded	-0.09	0.13	0.01	0.04	-0.43*
geleneksel	traditional	-0.09	0.24	0.00	0.09	-0.39*
gelenekci	traditional	-0.05	0.25	0.08	0.06	-0.37*
yapay	artificial	-0.02	0.05	-0.06	0.09	-0.36*
korkak	fearful	-0.28	-0.17	0.12	-0.23	-0.35*
klasik	old-fashioned	-0.25	0.14	0.05	0.00	-0.35*
gucsuz	weak	-0.30	-0.12	0.09	-0.28	-0.35*
kaderci	fatalistic	-0.08	0.13	0.06	-0.10	-0.35*
yureksiz	faint-hearted	-0.16	-0.20	0.05	0.06	-0.35*
zayif	weak	-0.21	-0.11	0.06	-0.16	-0.35*
taklitci	imitating	0.02	-0.12	-0.09	0.01	-0.35*
dayaniksiz	weak, frail	-0.30	-0.16	0.10	-0.26	-0.34*
yeteneksiz	clumsy	-0.15	-0.14	0.08	0.01	-0.33*
nezaketsiz	impolite	-0.05	-0.21	-0.28	0.15	-0.32*
ezberci	uncreative	-0.05	0.19	-0.01	-0.19	-0.32*
basit	simple	-0.09	-0.07	0.00	0.12	-0.32*
pinti	stingy	-0.14	0.04	-0.22	0.09	-0.30*
bosbogaz	indiscreet	0.02	-0.28	-0.12	-0.12	-0.30*
cikarci	selfish	0.02	-0.04	-0.28	0.11	-0.30*

These values are based on analyses of standard (*Z*) scored data. The highest factor loading for each variable is indicated with an asterisk (*). Loadings of 0.30 or higher are printed in bold. I, Extraversion; II, Agreeableness; III, Conscientiousness; IV, Emotional Stability; V, Intellect. The 89 terms whose highest loadings were less than 0.30 have been omitted from this table.

these indigenous Turkish factors and those from the imported Big-Five factor markers were 0.91, 0.90, 0.91, 0.89, and 0.83 for Factors I to V, respectively¹¹.

In an oblique (promax) rotation of these 440 terms the factors were virtually identical to the orthogonal ones, and all of the intercorrelations among the oblique factors were below 0.40. The algebraic mean of the ten intercorrelations was 0.21, and the mean of the absolute values of the intercorrelations was 0.22. Only one factor pair correlated above 0.32: Factors III and IV ($r = 0.39$).

Analyses of intellect-related terms

The major difference between the Big-Five factors derived from the seven-factor solution in the unrestricted item pool (the person-descriptors) and those derived from the five-factor solution in the restricted pool (the personality-trait descriptors) was the nature of Factor V (Intellect). In the larger set of 498 person-descriptors, Intellect-related content was scattered across the seven factors, and only a particular type of Intellect term loaded most highly on the relatively small Intellect factor. In contrast, in the subset of 440 personality descriptors, most of the Intellect terms had their highest loadings on a much larger and broader general Intellect factor. Because Factor V has proven to be the most fragile in previous across-language comparisons, it should be instructive to examine the Turkish Intellect-related adjectives in a more fine-grained manner.

Fortunately, the set of 498 adjectives includes a reasonable number of terms that might relate to one or more of the major facets of Intellect, as found in previous replications of the Big Five (e.g. Saucier and Goldberg, 1996a; Somer and Goldberg, 1999): (a) Intelligence and knowledge; (b) Imagination and creativity; (c) Cultural sophistication; (d) Intellectual independence and autonomy; and (e) Progressivism versus Traditionalism. Using a broad inclusion criterion, the authors were able to identify 100 terms that might qualify under one of the above rubrics. In our analyses of these terms, we examined the first unrotated principal component, plus varimax and promax rotations of two, three, four, five, and six factors.

The correlations among the factor scores at each of these levels were used to provide their hierarchical structure¹². At the top of the hierarchy was a general Intellect factor which differentiated the desirable terms from the undesirable ones; at the positive pole were terms like Effective, Broad, Intelligent, Creative, Knowledgeable, Analytical, Cultured, and Intellectual, whereas at the negative end were terms like Boring, Weak, Ordinary, Uncultured, Clumsy, Empty-headed, and Slow-witted. At the five-factor level, the facets included: (a) *Intellectual Independence*

¹¹In analyses of the original responses, as we found in the unrestricted item pool, the factor structure was more complex than the one based on Z-scored data, and therefore it is not as easily interpretable. The first ten eigenvalues of this data matrix, expressed as proportions of total variance, were 15.1, 6.3, 4.5, 3.0, 1.9, 1.7, 1.3, 1.2, 1.1, and 1.0, with breaks after one, two, three, four, and six factors, and a solid unbroken scree beyond that point. In both the five- and six-factor solutions, there was a broad Positive Valence dimension, which included virtually all of the desirable terms normally associated with Extraversion and Intellect. The five-factor solution also included Agreeableness, Conscientiousness, and Emotional Stability factors, along with a small unipolar emotional expressiveness dimension (Agitated, Merry, Cheerful, Romantic, Emotional, Soft, Entertaining, and Sensitive). Again, as in the unrestricted item pool, the relatively clear structures obtained with Z-scored data were not replicated in analyses of the original responses.

¹²A figure displaying the hierarchical structure of these 100 Intellect-related terms is available from the first author.

(Autonomous, Independent, Free, Experimental, Contemporary, Modern, Progressive, and Broad versus Traditional, Conservative, and Narrow); (b) *Intellectual Vigor* (Alert, Quick-witted, Aware, Effective, and Witty versus Weak, Frail, Slow-witted, and Gullible); (c) *Intellectual Charisma* (Interesting, Unusual, Original, Mysterious, Gifted, Complex, and Charismatic versus Ordinary, Dull, and Simple); (d) *Creativity* (Resourceful, Talented, Skilled, Artistic, and Creative versus Clumsy); and (e) *Cultural Sophistication* (Cultured, Enlightened, Wise, Knowledgeable, Rational, Logical, Intellectual, Intelligent, Thoughtful, and Analytical versus Unaware).

When related to the imported Big-Five factor scores, Intellectual Vigor correlated 0.58 with Factor I (Extraversion) and 0.33 with Factor IV (Emotional Stability). Cultural Sophistication correlated 0.38 with Factor III (Conscientiousness). The highest correlates of Big-Five Factor V were Intellectual Independence ($r = 0.61$), Intellectual Charisma ($r = 0.45$), and Cultural Sophistication ($r = 0.34$). When the five Intellect factors were rotated obliquely by promax, all of the factor inter-correlations were positive, ranging from 0.10 (Intellectual Independence and Cultural Sophistication) to 0.40 (Intellectual Vigor and Creativity), with a mean of 0.27. Given these findings, it should now be instructive to compare them with those from similar analyses in other languages.

DISCUSSION

The present findings provide an interesting comparison with those of Saucier (1997), which was based on 500 highly familiar English adjectives. In the total item pools in both studies, the Big-Five factors were evident, along with a broad Attractiveness factor and another factor composed of items of extremely low endorsement rates. Moreover, when the item pools were restricted to terms that are less pejorative and more clearly related to personality traits, in both studies variants of the Big-Five factors were recovered. In addition, the present findings provide a replication of those from Somer and Goldberg (1999), who analyzed Turkish synonym clusters rather than single person-descriptive adjectives.

An important similarity between the present study and that of Saucier (1997) is that both sets of adjectives were selected on the basis of ratings by research participants of their familiarity or commonness of use, and therefore neither item pool can be easily considered to have been 'prestructured' (Block, 1995) in such a way as to find what the investigators had set out to find. An important difference between the two studies is one of language, English versus Turkish, the former an Indo-European language and the latter a member of the Altaic family. Given the considerable differences between the languages, cultures, and histories of the Western Germanic and the Eastern Altaic worlds, one might have expected far more substantial differences in their personality factors than we actually found.

What are we to make, then, of studies such as those in Italian by Di Blas and Forzi (1999) where a somewhat different set of factors are found? We will discuss each of the following three kinds of pitfalls in inter-language comparisons: (a) methodological considerations; (b) vertical (hierarchical) versus horizontal (multidimensional) perspectives; and (c) the selection of variables. For a more extensive discussion of these and related issues, see Saucier, Hampson and Goldberg (2000).

Methodological considerations

The fact that variants of the English/German Big-Five factors were found in Turkish may serve to create the impression that we believe that their recovery should be easy in any language. However, in the present study a clear seven-factor structure for person descriptors and a clear Big-Five structure for personality-trait descriptors was obtained only in the total sample of research participants, not in the subsamples of men and women. Moreover, these factors were obtained only in analyses of ipsatized (*Z*-scored) data, and not in analyses of the original responses. In Somer and Goldberg (1999), there were virtually no differences between the factors found with the two types of data, but their analyses were based on *balanced* sets of variables (i.e. for every variable there was a corresponding antonym variable in the set). In such balanced sets, the ipsatization process is built directly into the stimulus materials. In non-balanced item pools, however, individual differences in participants' use of the rating scale serve to introduce a source of bias that can distort the resulting factors, and thus (as here) this can result in different factor structures in the two types of data. Because it is possible that the most scientifically interesting factor structures may occur with ipsative data, we strongly recommend that all inter-language comparisons include some analyses of ipsatized responses or an equivalent procedure, such as that proposed by Ten Berge (1999).

Vertical and horizontal perspectives

There are at least two views on the status of factors in exploratory factor analysis—as true or real causal structures or as convenient summaries or abstractions of the relations among variables (Goldberg and Digman, 1994). The first is a 'realistic' and the second a 'pragmatic' understanding of factor status. As strong supporters of the pragmatic viewpoint, we do not expect that the factors derived from analyses of different variable sets within any one language, much less analyses of variables in different languages, should automatically be the same. This point of view has important consequences for our understanding of different factor structures reported in the scientific literature.

One can think of any single person-descriptive term as a mixture or blend of elements of meaning (McCormick and Goldberg, 1997), and therefore any such term can best be understood in relation to its location in multidimensional meaning space. Although it is convenient to adopt a vertical (hierarchical) perspective on the location of variables in factor space, as we did in the 'Results' section of this article, it is also necessary to adopt a horizontal (multidimensional) perspective when we try to understand the differences between alternative factor representations (Goldberg, 1993a).

In contrast to the vertical viewpoint, in which each variable is associated with one and only one factor, the horizontal perspective locates variables in multidimensional space, often as blends of two or more factors. The locations of the factor axes in any one analysis result from regions of variable densities (or meaning redundancies) in the factor space. Because these regions of high versus low densities will almost inevitably differ with different selections of variables, factor locations can be expected to differ from study to study. As a consequence, even if the underlying factorial space was identical in two studies, the resulting best simple structure (e.g. varimax) factors may involve *rotations* into different factor positions. If we restrict ourselves to

Table 3. Multiple correlations when predicting each of the indigenous factors from the imported ones, and vice versa ($N = 631$)

Item pool	I	II	III	IV	V	Mean	NV	At
<i>498 person-descriptors</i>								
Predicting the Turkish factors from the English ones	0.95	0.92	0.94	0.88	0.72	0.88	0.46	0.15
Predicting the English factors from the Turkish ones	0.94	0.92	0.94	0.89	0.86	0.91		
<i>440 personality descriptors</i>								
Predicting the Turkish factors from the English ones	0.92	0.92	0.91	0.90	0.85	0.90		
Predicting the English factors from the Turkish ones	0.93	0.92	0.92	0.90	0.84	0.90		

These values are based on analyses of standard (Z) scored data: I, Extraversion; II, Agreeableness; III, Conscientiousness; IV, Emotional Stability; V, Intellect; NV, Negative Valence; At, Attractiveness.

two-dimensional representations of each variable, then we can index such differences in factor location with the Abridged Big Five-dimensional Circumplex (AB5C) model of Hofstee, De Raad, and Goldberg (1992), and think of differences between the factor locations from different studies as rotations of the same Big-Five factors in one or more of the ten planes formed from all pairs of these factors (e.g. I and II, I and III, IV and V).

Are such rotations in factor position of genuine scientific importance? In cross-language studies, are they the result of true cultural differences? We doubt it. If others share our viewpoint, then cross-language studies should include at least one analysis in which the indigenous and imported structures are compared after one of them is rotated as closely as possible into the other position (see De Raad, Di Blas and Perugini, 1997; De Raad, Perugini, Hřebíčková and Szarota, 1998; De Raad, Perugini and Szirmak, 1997; Hofstee, Kiers, De Raad, Goldberg and Ostendorf, 1997). At the very least, investigators should report the multiple correlations when each indigenous factor is predicted from all of the imported factors, and vice versa. When these multiple correlations are high, it suggests that the differences between the factor structures are primarily a result of rotations in the factor axes.

Table 3 provides these values from the present study, for predictions from English to Turkish and from Turkish to English in each of the two types of item pool (person-descriptors and personality traits). For the first four of the Big-Five factors, the multiple correlations range from 0.88 to 0.95, and average 0.92. For Factor V, the values are somewhat lower, averaging 0.85, except for the Turkish version of that factor in the set of 498 person descriptors, where the multiple correlation is 0.72.

The most obvious rotation from the imported Big-Five position occurs in the Factor I/IV plane, where the two factor axes in the Turkish analyses are rotated such that a number of anxiety-related terms (e.g. Tense, Fearful) have salient loadings on the negative poles of both factors (see Tables 1 and 2), whereas these terms tend to have more univocal loadings on Factor IV (Emotional Stability) in English analyses (e.g. Saucier and Goldberg, 1996a). Figure 4 shows the two-dimensional locations of those terms from the Turkish 440-item pool whose highest factor loadings were on either Factor I or Factor IV. To provide a direct comparison, Figure 5 provides the analogous (previously unpublished) locations for the Factor I and IV terms from the set of 435

English adjectives analyzed by Saucier and Goldberg (1996a). In both figures, the location of each term is provided twice, once within the circle as in a conventional scatter-plot and once projected onto the circular representation. In both figures, Factor I is used as the horizontal dimension and Factor IV is used as the vertical one.

The major difference between the two representations is that the English terms are more evenly distributed around the circle, whereas the Turkish terms are more heavily concentrated in the evaluatively consistent (I + /IV + and I - /IV -) regions of the space. In both figures, a dashed line has been inserted to indicate the location of the traditional Emotional Stability (IV+) versus Neuroticism (IV-) dimension. Note that the English Factor IV is more nearly orthogonal to Factor I than is the Turkish equivalent¹³.

Selection of variables

In classical scale construction, it is traditional to exclude items with extreme endorsement rates, on the grounds that such items do not provide much power to differentiate among test respondents. That is, extreme items do not provide much information about individual differences, and therefore they are typically discarded. The exclusion of such terms may be particularly important in variable sets that are to be used for factor analysis, because of the ease with which one can obtain factors that include only extreme items. As noted earlier, item pools that are selected on the basis of familiarity or commonness of usage will contain a number of highly pejorative terms that may be used to describe one's enemies but only rarely are used to describe oneself or one's friends. We expect that one major difference between the factors derived from different item pools may be a function of the degree of evaluative restriction on the terms included in them. As a consequence, it may be helpful in future studies for investigators to compare the factor structures before and after trimming the item pool of terms with extreme response rates.

Another crucial difference between item pools stems from the procedures used to distill those pools from the thousands of terms initially culled from dictionaries down to the 400 to 500 terms typically studied in some depth. In Saucier (1997), terms were classified by their descriptive function (e.g. stable traits, temporary states, social effects, pure evaluations), but they were selected exclusively by their rated familiarity. In contrast, in the present study, some (but not all) of the clearly non-personality-trait terms were excluded prior to the familiarity ratings, with the result that their relative familiarity is still unknown.

Even the instructions for the familiarity ratings in different studies may serve to create differences between the resulting item pools. The use of the term 'personality' in the instructions of this and other studies might serve to exclude some familiar descriptors of aptitudes, skills, and talents which may fall outside the boundaries of some people's definition of true personality traits. Moreover, studies differ in the ways that synonyms are treated: in Di Blas and Forzi (1999), the investigators excluded all but one member of each synonym cluster, whereas in the present study no terms were excluded on that basis. In both of those studies, as in Saucier and Goldberg (1996a)

¹³In English, differences in factor locations between studies often involve a rotation of the factor axes in the II/IV plane, rather than as here in the I/IV plane. Because there are far more English terms that reflect desirable aspects of Agreeableness and Emotional Stability (e.g. Easygoing) and undesirable aspects of those factors (e.g. Irritable) than terms that involve evaluatively mixed blends of those factors (e.g. Emotional versus Unemotional), it is not uncommon to obtain factors that blend these two dimensions.

and Saucier (1997), single terms were analyzed. In contrast, in Somer and Goldberg (1999), the complex variables that were rated included sets of two, three, or four synonyms. At this point we sorely need some rigorous studies, within one language, comparing the factors derived from different procedures for selecting item pools.

Ultimately, we must develop a standard set of procedures that can be used in any language—one that will provide a far more analytic evaluation of the personality-related lexicon than is possible using exploratory factor analysis alone. Some previous investigators (e.g. Church, Katigbak and Reyes, 1996; Di Blas and Forzi, 1999) have classified their indigenous person-descriptors into the imported Big-Five categories, thereby ascertaining the proportion of terms that could be so classified overall, and testing whether there are specific domains not well covered in the indigenous lexicon. In addition, such semantic analyses permit the emergence of new domains that might be independent of the Big Five. This combination of emic and etic strategies should ultimately provide far better resolution of the characteristics of each particular personality lexicon than has been possible in the past.

SOME CONCLUSIONS AND IMPLICATIONS

Do the Big-Five factors provide a universally applicable framework for organizing personality-trait descriptors? Clearly, it is far too early to tell. First of all, only a tiny fraction of the world's languages has been studied in this context, and most of those languages are in the Indo-European family. Moreover, of the languages studied to date only a few have undergone particularly intense scrutiny. Most studies have used somewhat different procedures for selecting initial sets of personality-descriptive terms, and most studies have culled their initial large pools in different ways (De Raad *et al.*, 1998; Saucier *et al.*, 2000). As a consequence, we have no good way to ensure that we are comparing the same types of personality item pools.

Vagaries of item selection will effect taxonomic findings differently for small semantic domains than for large ones. In the case of the Big Five, there seem to be far more terms associated with each of the first three factors than with each of the last two, and across-language concordance has been substantially higher for these three larger domains. This is a significant finding in its own right, but it should not be overblown: it is far too early to focus exclusively on the First Three, to the exclusion of the Last Two, as suggested by Di Blas and Forzi (1999).

Each of the first three of the Big-Five factors differs from each of the last two not only in its size but also in its balance between the relative frequencies of terms at each of its two poles. In English, and perhaps other Indo-European languages, there are considerably more adjectives associated with the negative pole of Factor IV (e.g. Anxious, Apprehensive, Edgy, Fearful, Fretful, Nervous, Temperamental, Tense) than with its positive pole (e.g. Calm, Relaxed, Stable). Conversely, for Factor V there are more adjectives (but not type nouns) associated with its positive pole (e.g. Alert, Bright, Creative, Imaginative, Innovative, Intellectual, Intelligent, Knowledgeable, Smart, Wise) than with its negative pole, where most such terms are negations of the positive roots (e.g. Uncreative, Unintelligent).

Like many things in life, the process of ipsatization is more successful the less that one needs it. In completely balanced item pools, such as those used in Somer and Goldberg (1999), ipsatization removes individual differences in people's use of the

rating scale and nothing much more than that. On the other hand, in unbalanced item pools ipsatization can take out too much, removing both response bias and true personality differences. In the present study, there was a reasonable balance between the relative frequencies of terms associated with each of the two poles for the first four of the Big-Five factors, but not for Factor V. As a consequence, it is possible that the relative fragility of the Intellect factor compared to the other four in this and other studies may be a function of its unbalanced nature.

In summary, then, we doubt that there are many cultures that do not encode emotion-related and/or intellect-related content in their personality lexicons, in spite of the difficulties that have been encountered in finding unambiguous versions of Factors IV and V in this and other studies. We hope that the present discovery of variants of all of the Big-Five factors in an Altaic language may now provoke more intense scrutiny of those languages in which one or more of these five factors have been difficult to find.

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