

By Lew Goldberg

What are the best ways to describe an individual's personality? One might list all of the things that individuals do all day every day of their lives, but that would take too long and be far too detailed to be of much use. Alternatively, one might use more abstract attributes as a way of summarizing the major ways that individuals differ from each other. Every language on the face of the earth includes hundreds, if not thousands, of words that refer to the ways that individuals differ; English, for example, includes at least 20,000 words of that sort (for example, talkative, agreeable, hard-working, nervous, intelligent). Perhaps those terms that make it into a language and then stay there for centuries are those that people have found to be most useful for describing themselves and others. This "lexical hypothesis" is the basis of much modern research on the structure of human personality traits (Goldberg, 1981).

Personality-descriptive terms, when extracted from a dictionary, can be used by individuals to assess themselves and others. And, this same thing can be done in many different languages throughout the world. In any language, many of the terms will be very similar in their meanings (for example, synonyms like shy and bashful) whereas some terms may mean much the opposite of other terms (for example, antonyms like talkative and silent). In general, one can measure the extent of similarity between pairs of personality terms with a statistic called the "correlation coefficient." Based on the intercorrelations among all pairs of personality terms, one can then group the terms into categories or clusters using a statistical procedure called "factor analysis." The result of

research using those statistical techniques is a tentative answer to the important scientific question: "How many different relatively independent kinds of terms are there in that specific language?"

Are there hundreds? Dozens? Probably not. In many languages, it has turned out that the magical number is something like five or six. In English and other northern European languages like German and Dutch, there has seemed to be five major dimensions or "factors" to represent the majority of personality-descriptive terms in that language. This "Big-Five" factor structure has become a scientifically useful taxonomy to understand individual differences in personality traits (Goldberg, 1990, 1992, 1993). What are the Big-Five factors? The first is Extraversion versus Introversion, which includes traits such as Active, Assertive, Energetic, Gregarious, and Talkative versus their opposites. A second factor is called Agreeableness, which includes traits such as Amiable, Helpful, Kind, Sympathetic, and Trusting versus their opposites. A third factor has been labeled Conscientiousness, which includes such traits as Dependable, Hard-working, Responsible, Systematic, and Well-organized versus their opposites. A fourth factor contrasts traits related to Emotional Stability, such as Calm, Relaxed, and Stable, with opposite traits such as Afraid, Nervous, Moody, and Temperamental. And, finally, there is a constellation of traits related to Intellect and Imagination, such as Artistic, Creative, Gifted, Intellectual, and Scholarly versus their opposites.

Is that all there is? Certainly not, but this is a good starting point. Most personality-related words in many modern languages can be classified by their locations in the five-dimensional space provided by the Big-Five factors. Terms are scattered throughout this five-dimensional space, with most terms being blends of two or three of the Big-Five factors. As a consequence, this five-factor model provides a rich framework for classifying personality traits, and measures of those five broad dimensions have proven to be extremely useful for describing individual persons. Indeed, measures of the Big-Five factors have proven to predict educational and occupational attainment, marital success, good health habits and medical outcomes, and even longevity versus mortality (e.g., Roberts, et al., 2008).

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A Scientific Problem

Exploratory factor analyses (EFA) of descriptions of oneself or others using subsets of the indigenous personality-related terms in many languages have not always provided the same set of factors. Factors resembling the Big Five have been found most easily in the languages of northern Europe (e.g., German, Dutch, English), but as we move south and east the factors seem to differ more or less from the classic Germanic pattern. As a consequence,

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we need to understand more clearly why this has occurred. Specifically, it is now time to understand more deeply the reasons why the varimax-rotated factors in EFA analyses are located differentially in the analyses of different personality lexicons. For future studies in the lexical tradition, it is necessary to open the cover of the EFA box, peer into each lexicon to learn what is there, and thereby be able to predict what the varimax factors should look like in empirical studies of that language, without actually having to conduct such analyses.

Why is this now so necessary? The first reason is theoretical and substantive: There must be *some* characteristics of the lexicon that determine those factor positions, and it is time that we understood the nature of the links between the lexical inputs and the factor outputs. To abdicate a deeper analysis of the lexical hypothesis by merely describing the content of each varimax factor hides any true scientific understanding of the nature of those factors, and the reasons for any crosscultural similarities and differences among them.

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A second reason is more practical: It

News from the GSC, Continued

(Continued from page 34) the SPSP community? Then run for office? The GSC is accepting nominations and campaign statements for the 2009-2010 Graduate Student Committee. If you think you or someone you know should be the next GSC President or Member-At-Large, now's the chance. Undergraduates who wish to become more involved are also eligible for election. The election period will start in November 2008, and the new Graduate Student Committee will take office on March 1, 2009. Please help us assemble a new amazing group of leaders by referring

Our Appreciation Goes To...

Finally, the GSC would like to acknowledge the efforts of certain individuals who have contributed greatly to our functioning.

students who might be interested!

In particular, we give special thanks to past officers whose devotion to the GSC mission is truly unwavering. They generously continue to volunteer their time in support of our endeavors.

Dr. Darin Challacombe (GSC President '05-'06) of Fort Hays State

University became the moderator of the GSC student listserve during his presidency and continues to offer his services to this conduit for student-tostudent exchanges.

Dr. Camille Johnson (GSC President '02-'03) of San Jose State University established our quarterly e-newsletter, The FORUM, during her presidency and has formatted each issue ever since. The FORUM covers topics relevant and useful to graduate students, and both past and current issues can be found online at www.spsp.org/student.

SPSP Webmaster Dr. Yoel Inbar of the Kennedy School at Harvard recently re-vamped the FORUM archives on the SPSP website. Past issues with particularly pertinent articles are featured under Editor's Picks, and all issues are now listed with descriptor keywords so that readers can quickly locate the article they are seeking.

If you have questions about the GSC news or events, don't hesitate to contact us at <code>spspgsc@yahoo.com</code>. The GSC President, Helen Lee Lin, can be reached at <code>hlin@uh.edu</code>. We love to hear from you!

will never be possible to carry out empirical studies in all of the languages of the world, and so any search for lexical universals must rest on analyses of their personality lexicons alone. Indeed, one might argue that some of the most interesting comparisons among sets of personality factors might stem from languages of the past (e.g., classical Greek, Chinese, or Hebrew) and from languages used by tribes of non-literate and/or highly isolated speakers where empirical lexical studies are not feasible.

Why are the varimax factors here, rather than there?
One possible determinant of the size and location of a varimax factor may be the relative frequency of terms related to a particular kind of content, and

therefore our first goal must be to figure out ways to characterize personality lexicons by content categories. Any systematic attempt to accomplish this task, such as the Abridged Big-5-dimensional Circumplex (AB5C) model of Hofstee, de Raad, and Goldberg (1992) must be scrutinized carefully to find its liabilities, and it must be expanded to include individual differences that are not typically viewed as personality traits (e.g., social effects, highly evaluative terms).

After we have found some way to classify and organize content categories, we can then apply this classification system to the sets of terms that have been used in past

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lexical studies, so as to be able to relate the relative frequencies of various content categories to the factors that have emerged from each study. In addition, we can use simulation techniques to add additional data with particular content of various kinds, and to omit terms relating to certain kinds of content categories, and then to refactor the data and ascertain the locations of the resulting new factors. This should be an exciting enterprise: Can we pull out of one empirical lexicon enough terms of the right kind so as to transform the resulting factor solution from its original structure to the structure that was found in another language? For example, using the data from an English study can we add or delete data-points so as to come up with factors that now look like those from a Croatian analysis, and vice versa? When we can transform any lexicon to that of all others, we will know that we understand the causes of factor locations, and we will no longer have to rely on blind EFA analyses to understand the nature of personality factors.

Simulating different kinds of subject samples

The samples of subjects that have been used in past lexical studies have doubtless differed in characteristics that might affect the size and location of the factors that have been found in those studies. As just one of many possible examples, let us assume that past samples have differed in the percentage of their subjects who responded carelessly or in some kind of quasi-random fashion. What is the effect of such differences on the nature of the resulting factors? One can simulate such differences by starting with carefully selected subject samples, then adding subsamples of quasi-random responders, and refactoring the resulting data after each addition to the simulated subject pool. One might add such simulated subjects

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one at a time until one finds a difference in the resulting factor structure.

One obvious application of such sampling simulations would be to understand more fully the nature of the "Negative Valence" and "Positive Valence" factors that have supposedly been discovered in some previous seven-factor structures. It is possible that those factors may turn out to be an artifact of data based on samples that mix many content-appropriate subjects with a small subsample of quasirandom responders. Subject simulation studies should help provide the answer to this question.



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Answers (puzzle on p. 14)

53. Cohen	
52. Массору	56. Kelley
48. Brewer	55. Brown
46. Rotter	54. Eagly
44. Murray	52. McClelland
43. Ekman	51. Steele
42. Campbell	50. Bandura
38. Barker	49. Big Ten
37. Atkinson	47. McGuire
35. Guilford	45. Bruner
33. Harvard	41. Mischel
31. Michigan	40. Rozin
28. Berscheid	39. Hovland
boogsO.72	36. Zajonc
25. Yale	34. Helson
24. Arid	33. Heider
22. Abelson	32. Festinger
sinst .02	oliM .1 &
19. Allport	30. Jones
17. Sherif	29. Rap
15. Ктесћ	26. Newcomb
14. Nisbett	23. Taylor
YVI .EI	21. Thibaut
 Fallacy 	18. Cronbach
8. Markus	16. Lazarus
6. APA	12. Seligman
5. Schachter	11. Asch
3. Aronson	9. Deutsch
2. Recycles	7. Cacioppo
I. Chad	4. Higgins

Down

Across