

SCIENCE BRIEFS

What Our Words Can Say About Us: Toward A Broader Language Psychology

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In trying to describe the same event, people express themselves in remarkably diverse ways. "Excuse me, but could you please pass the salt?" and "Hey you, gimme the salt," are speech acts that accomplish the same goal. In this example, however, the words the speakers use tell us far more than their needs for sodium chloride. Language and word use can reflect people's personality, mood, social situation, social class, and a variety of other aspects about them.

That the words people use are diagnostic of mental and even physical health is not a new concept. Freud provided several compelling examples in his discussion of parapraxes, or slips of the tongue. He pointed out that common errors in speech betray people's deeper motives or fears. Comparable assumptions about language, the self, and personality have surfaced occasionally in the last 50 years from some rather unexpected quarters. Personality psychologists such as David McClelland focused on words or phrases that reflected people's needs for achievement, affiliation, and power. By simply counting words related to these motives in a given speech or text sample, a researcher could presumably measure people's need states. Social psychologists and physicians have published sporadic articles indicating that the words people choose could be used to reliably discriminate groups of patients who had been diagnosed with somatization disorder, bipolar disorder, schizophrenia, and advanced medical problems.

Although computer technology was beginning to develop, studies of language use in social and clinical settings virtually stopped in the late 1980s and 1990s. Because no computer programs that could analyze general language were available for desktop computers during this time, we eventually wrote a broad-based computer program, called



James W. Pennebaker is a professor of psychology at the University of Texas at Austin, where he received his PhD in 1977. He has been on the faculty at the University of Virginia, Southern Methodist University, and, since 1997, the University of Texas. Beginning in the mid-1980s, his research has focused on the power of writing about emotional topics and its effects on physical and mental health. He is now exploring how natural language reflects personality and social situations.

Linguistic Inquiry and Word Count (LIWC). LIWC uses a number of judge-defined dictionaries that categorize words into each of over 70 linguistic or psychologically-relevant categories. Any text sample, then, can be defined by the percentage of words in it that contain negative and positive emotion words, articles, prepositions, pronouns, cognitive words, etc. The beauty of the program is that it can analyze thousands of text files at a time and provide a linguistic snapshot of each file.

In our work with LIWC, we initially fell into the same trap as other text analysis experts. That is, we focused on traditional content dimensions such as classes of emotion words, references to

death, sex, religion, and money. Much to our disappointment, these word classes were not strongly related to many important outcome measures of interest. However, over the years, it gradually became apparent that it was far more important to see how people talked about a given topic rather than what they were talking about. People's linguistic styles provided far richer psychological information than their linguistic content.

The types of words that define linguistic styles are generally high usage words variously referred to as particles, function words, or even junk words. Most linguists would include articles, pronouns, prepositions, conjunctions, and, perhaps, auxiliary verbs in these categories. In English, there are fewer than 160 common particle words that account for 50-55% of all spoken or written words. Particles are interesting because they are the glue that hold content-heavy words such as nouns and verbs together.

Although we are finding a number of intriguing patterns with articles, prepositions, and conjunctions, the particle category that is yielding the most remarkable links to mental and physical health is pronouns. The ways that people refer to themselves and others is highly diagnostic of their mental state. The use of 1st person singular (I, me, my) versus 1st person plural (we, us, our) provides insight into people's social identity and "ownership" of their speaking or writing topic. By the same token, references to other people suggest an awareness and, often, integration with others. Some of the recent findings on pronoun use include:

- Currently depressed students use far more 1st person singular words than those who have never been depressed when writing about their college experience. Interestingly, these elevations are only apparent for use of the word "I" – not me or my.

- Poets who commit suicide tend to use more 1st person singular in their poetry across their careers than non-suicidal poets. They also make fewer references to other people, suggesting they are more socially isolated. Of particular interest is that the suicidal poets don't differ from non-suicidal poets in their use of either negative or positive emotion words.
- Immediately after a large-scale trauma, individuals drop in their use of the word "I" and increase in their use of "we." In chat groups immediately after the announcement of the death of Princess Diana, for example, use of 1st person plural increased by 135% and use of "I" dropped by 12% for approximately a week. By 10 days after the event, pronoun use returned to normal levels.
- When people are being deceptive in laboratory experiments, they drop in their use of 1st person singular. Indeed, use of "I" is one of the best predictors of honesty. Not coincidentally, when Mayor Rudolph Giuliani was diagnosed with cancer, dropped out of the senate race, and announced his divorce (all within the span of two weeks), striking and long-term increases in his use of 1st person singular were detected in his press conferences.
- When people are asked to write about traumatic experiences, their flexibility in using pronouns is one of the most powerful predictors of improvements in physical health.

Just as language use can reflect people's health, we can use language to improve it. Since the mid-1980s, dozens of studies have employed the emotional expression writing paradigm. The basic laboratory technique involves randomly assigning participants to write about either superficial topics or important personal upheavals for 3-5 days and 15-30 minutes per day. Across an impressive array of studies, this technique has been found to bring about improvements among the emotional writing group's physical and mental health. The health measures have included physician visits, lab tests for various illnesses such as AIDS, asthma, and arthritis, and various biological markers—ranging from immune measures to blood pressure. Beyond physical health measures, other studies

have found that writing about emotional topics is associated with drops in rumination and depression, as well as higher grades among students, and even faster times to employment following a layoff.

What is it about the writing paradigm that produces such impressive effects? Analyses of the writing samples themselves suggest that at least two important processes are occurring. The first is that people are constructing a coherent story or narrative over the course of the writing days. Writing is producing a transformation of the emotional event—which is leading to a new and probably simpler meaning.

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Our most recent linguistic analyses based on Latent Semantic Analysis (LSA) are suggesting something else: people's writings are showing a transformation in the ways they are thinking about themselves relative to others. That is, we are seeing a remarkable shift in the ways they use pronouns. Averaging across three previous writing studies, individuals whose health improves alternate from day to day in the ways they write in the 1st person singular to 1st person plural or even a focus towards other people's perspectives.

Particularly exciting is that these pronoun shifts in writing are likely occurring in people's daily lives in the weeks after individuals write about emotional upheavals. Using a new technology that allows us to capture snippets of participants' linguistic behavior as they go about their daily lives (with their permission), we are finding that people switch in the ways they talk with others. For example, men increase, but women decrease in their use of 1st person plural after writing about emotional upheavals. Both men and women, however, are spending more time with others, laughing more in their interactions, and using more positive emotion words.

Toward a Language Psychology

As we have immersed ourselves into the world of words, my students, colleagues, and I have been surprised by the relative inattention that language and word use has received in social, personality, clinical, and even cognitive psychology. The traditional field of psycholinguistics has been more oriented towards the understanding of language per se than the value of language in informing us about people's psychological state.

In recent years, a number of new disciplines have emerged in psychology that have brought about an occasional realignment of researchers and practitioners. Health psychology, family psychology, and media psychology have all come into being in the last two decades. Of the 50+ divisions within APA, not one is devoted to language. Experimental psychology has a few psycholinguists as members, developmental psychology includes the occasional researcher interested in language development, and even the psychoanalysis and social psychology fields have some people who study language.

It is time to consider a broad-based area of language psychology—a subdiscipline that focuses on words, stories, and language in general. Language, as we are learning, is rather important. It is the basis of most human communication and is the filter through which we understand and learn about ourselves and others—whether as researchers, clinicians, or human beings. With the advances in computer technology, we now stand at the threshold of truly linking the words we use to our daily thoughts, emotions, and behaviors.

Suggested Further Readings

- Lepore, S.J., & Smyth, J.M. (Eds.) (in press). *The writing cure*. APA: Washington, DC.
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