

## **Linguistic Markers of Psychological State through Media Interviews: John Kerry and John Edwards in 2004, Al Gore in 2000**

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*What can we learn about presidential candidates by examining their speech in natural conversation? In the present study, the television interviews from the 2004 Democratic presidential primary campaign of John Kerry (N = 29) and John Edwards (N = 34) were examined using linguistic analyses. Results indicate that Kerry and Edwards were similar in their use of positive emotion words, but that Kerry used significantly higher rates of negative emotion words than did Edwards. Comparisons with televised interviews of Al Gore from the 2000 presidential campaign (N = 17) revealed striking similarities in the linguistic styles of Gore and Kerry. Gore's linguistic style overlapped considerably with that of Kerry on pronoun usage and many cognitive domains. This study points to how linguistic analyses can give us a clearer picture of how political candidates think, act, and feel.*

In a February 9, 2004 article in the *Washington Post*, reporter Mark Leibovich noted that John Kerry had been criticized for using the word “I” too much. Apparently, his advisors felt that his use of first-person singular was a sign of being too self-involved. Kerry’s advisors, who were clearly not pronoun aficionados, may have succumbed to the false stereotypic belief that the use of “I” reflects selfishness and the use of “we” reflects inclusiveness.

The ways in which people use pronouns and language in general reflect their personalities and psychological states. Particularly revealing is the way individuals express their thoughts using function words. Function words include pronouns, prepositions, articles, conjunctions, and auxiliary verbs. Whereas nouns

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and regular verbs reflect the content of speech, function words signal how ideas are conveyed. Indeed, function words can subtly mark the relationship between the speakers' topics, their audience, and how they view themselves (Grice, 1975; Miller, 1996).

In recent years, an increasing number of studies have begun to point to the role of function words in telling us about people's social and psychological states (e.g., Holtgraves, 2002; Pennebaker, Mehl, & Niederhoffer, 2003). For example, first-person singular pronouns (e.g., "I", "me", "my") indicate a certain degree of self-focus. Across multiple studies, we have found that first-person singular, or "I" words, are used at higher rates among people who are depressed (Rude, Gortner, & Pennebaker, 2004), suicide prone (Stirman & Pennebaker, 2001), honest (Newman, Pennebaker, Berry, & Richards, 2003), or lower in dominance (Pennebaker et al., 2003).

First-person plural pronouns, or "we" words, are more difficult to disentangle. To the degree that the speaker is referring to a specific group of people, "we" words generally signal the person's bonds with the group. After 9/11, for example, multiple studies found that Americans increased in their use of "we" in everyday speech (e.g., Cohn, Mehl, & Pennebaker, 2004; Mehl & Pennebaker, 2003). Similar patterns have occurred after both community and other national tragedies (e.g., Gortner & Pennebaker, 2003). Note that the use of "we" in the aftermath of an emotional upheaval often reflects speakers' references to themselves and their spouses, close friends, or neighbors.

The reason "we" words are somewhat challenging to interpret is that they also are a distancing tool. That is, people often use the royal "we" to psychologically distance themselves from their topic. For example, "We need to take out the trash" really means that someone other than the speaker will be taking a hike to the disposal bin. It is common for insecure speakers, including politicians, to use the royal "we" at disproportionately high rates.

The analysis of language in political speech can occur at multiple levels. Analyses of function and emotion words in the language of New York's Mayor Rudolph Giuliani in his press conferences is instructive (Pennebaker & Lay, 2002). During the first four years of his administration, Giuliani used a very high rate of "we" words, negative emotions (especially anger-related words), articles, and prepositions and a correspondingly low level of "I" words and positive emotion words. Soon after his diagnosis of prostate cancer and the breakup of his marriage, his personality was widely reported as changing. His apparent personality shift was associated with large increases in "I", drops in "we", and modest increases in positive emotions. After 9/11, his language shifted again, with an increase in personal (as opposed to royal) "we", and increases in both positive emotion and negative emotion (but not anger) words. In short, function words have been shown to consistently vary as a function of psychological states.

The current study extends this linguistic approach to examine individual differences between the Democratic candidates of the 2004 U.S. election. By using a text analysis program, we sought to determine how John Kerry and John Edwards differed in their use of pronouns, other function and emotion words, and a select group of cognitive words during the period in which they were campaigning for the Democratic nomination. Although approximately eight candidates were serious early contenders for the nomination, by mid-January, 2004 (after Howard Dean's surprising loss in the Iowa caucuses and his now-infamous "scream" speech that followed), only Kerry and Edwards were considered to be the likely nominee. Not until early March, 2004, was it clear that Kerry would triumph. The interviews that were analyzed, then, were collected when the race between Edwards and Kerry was still in contention. Finally, as a comparison, the two sets of interviews were compared with media interviews of Al Gore during the 2000 presidential campaign.

Rather than analyze their standard stump speeches, we focused only on their language within more spontaneous interviews that were conducted by leading television news organizations. Although candidates may be coached on the content and overall tone of their messages, it is unlikely that they could be strategic in their use of function words in spontaneous interviews. Strictly attending to such naturally occurring parts of speech would render talking in a normal way impossible. Accordingly, our analyses focused on those words that cannot readily be manipulated in spontaneous speech, yet demonstrate high reliability within individuals, and are related to psychological variables in meaningful ways (Pennebaker & King, 1999; Pennebaker et al., 2003).

## Method

### *Speech Samples*

Transcripts of televised interviews were collected from Lexis-Nexis. All interviews were conducted between January 4 and February 23, 2004 by hosts of news programs representing ABC (8 interviews), CBS ( $N = 15$ ), CNN ( $N = 24$ ), Fox ( $N = 5$ ), and NBC ( $N = 11$ ). Of the 63 interviews, 29 were with Kerry and 34 were with Edwards. Across the various interviews, both candidates spoke approximately 850 words—with neither speaker using significantly more words than the other. For comparison, 17 interviews with Al Gore that took place between March 9, 1999 and October 5, 2000 were analyzed. Of these, 12 were television interviews (6 CNN, 5 PBS, 1 NBC), and the remaining 5 were print interviews (e.g., *New York Times*, *Washington Post*).

For all three candidates, natural language use in interviews was the source of our data rather than pre-prepared written speeches. While each news organization

may have used slightly different transcription standards, all texts were verbatim transcripts including hesitations, nonfluencies, repetitions, and grammatical errors. Importantly, the candidates were interviewed at equal rates by each of the news organizations.

### *Text Analysis Procedure*

Each of the speech samples was analyzed using a computerized text analysis program called Linguistic Inquiry and Word Count, or LIWC (Pennebaker, Francis, & Booth, 2001). LIWC uses a word count strategy, searching for over 2,000 words or word stems within any given text file. The search words have previously been categorized by independent judges into 74 linguistic dimensions. These dimensions include standard language categories (e.g., articles, prepositions, pronouns), psychological processes (e.g., positive and negative emotion word categories, cognitive processes such as the use of causal words and insight words), relativity-related words (e.g., verb tense, motion, space), and traditional content dimensions (e.g., sex, death, occupation). After counting the number of words within any given text for each of these categories, the output converts the raw counts to a percentage of total words.

## **Results and Discussion**

One-way ANOVAs were performed on each of the linguistic categories. Bonferroni post hoc comparisons revealed which candidates were significantly different from one another on the linguistic categories. The results of these analyses are presented in Table 1.

### *Linguistic Style Differences between John Kerry and John Edwards in 2004*

Kerry and Edwards had strikingly different public personas. In person or on television, most would agree that Kerry was more serious, less animated, and more inhibited than Edwards. Although most of their policies were quite similar, the ways in which they translated their platforms into words were quite different. The statistical analyses of their linguistic styles paint similar pictures. Three important differences emerged.

*Identity differences: The secret life of pronouns.* Contrary to expectations, Kerry did not overuse first person singular. Indeed, Edwards used “I” words at significantly higher rates than Kerry. Use of “I” words signal a more personal approach to topics. It can also reflect lower dominance, greater honesty, and a generally more feminine speech style (Newman, Groom, Stone & Pennebaker, 2005).

Interestingly, Kerry and Edwards used first person plural at virtually identical levels. Compared to other studies with both Mayor Giuliani and President George

**Table 1.** Comparisons Between Kerry and Edwards in the 2004 campaign and Al Gore in the 2000 Campaign

Linguistic Dimension	Kerry 2004	Edwards 2004	Gore 2000	<i>F</i>	<i>p</i>	$\eta_p^2$
<b>Social/Identity domains</b>						
First person singular pronouns	5.36a	6.49b	4.51a	8.91	< .001	.19
First person plural pronouns	1.88a	1.96a	2.01a	.15	.86	.00
Second and third person pronouns	5.30a	5.10a	4.59a	1.64	.20	.04
<b>Emotions</b>						
Overall positive emotions	2.80a	2.95a	3.09a	.50	.61	.01
Overall negative emotions	1.21b	0.46a	0.67a	26.79	< .001	.41
Anger	0.71b	0.20a	0.24a	21.04	< .001	.35
Anxiety	0.18b	0.05a	0.08a	6.24	.003	.14
<b>Cognitive markers</b>						
Articles (a, an, the)	7.41b	6.23c	8.38a	19.10	< .001	.33
Prepositions	14.5a	13.4b	14.0ab	5.63	.005	.13
Overall cognitive mechanisms	6.53a	7.92b	6.73a	8.58	< .001	.18
Insight words (understand, realize)	2.43a	3.14b	2.40a	7.74	< .001	.17
Exclusives (except, but)	4.04b	3.99b	4.61a	2.69	.05	.07

*Note.* All numbers in the first three columns reflect percentages of total words in interviews for each of the three speakers. Means with different subscripts are significantly different from one another at  $p < .05$  level using Bonferroni post hoc comparisons. For example, for first person singular pronouns, Gore and Kerry are not different but Gore is different from Edwards and Kerry is different from Edwards. The fourth and fifth columns indicate overall results from univariate ANOVAs. Presented in the final column are partial eta-squared statistics, which are conservative estimates of effect sizes for the overall differences among speakers for each linguistic index.

W. Bush, both candidates used “we” words at relatively low levels. The meaning of this is not completely clear. Perhaps the candidates were actively avoiding the royal “we” syndrome. Because distinctions between the uses of the royal “we” and personal “we” are beyond the current capabilities of LIWC, it is impossible to tell whether differences in these two different uses of “we” existed between Kerry and Edwards.

*Emotional tone.* Most analysts believed that Edwards was the more optimistic, upbeat candidate. The analyses of positive emotion words fail to support this impression. Kerry and Edwards were equivalent in expressing positive emotions. The difference between them was actually in negative emotion words. Kerry tended to use almost three times the number of negatively toned words in his interviews compared with Edwards. Much of this effect is attributable to a significantly higher rate of words that connote anger or hostility.

*Cognitive style.* The various cognitive word categories provide a glimpse into the ways these two men think. Previous studies have found that males use articles and prepositions at higher rates than do females (Mulac, Bradac, & Gibbons, 2001; Newman et al., 2005). Articles indicate that people are using concrete nouns in a more impersonal way (e.g., *the* table vs. *my* table). Prepositions are generally

associated with increasingly complex sentences. It is interesting that Kerry used both articles and prepositions at significantly higher rates than did Edwards.

Cognitive mechanism words are further indications of how a person is thinking. For example, the use of insight words (e.g., “think,” “understand,” “realize”) and causal words (e.g., “because,” “cause,” “effect”) has been linked to higher grades among college students (Pennebaker & Francis, 1996). Indeed, analyses of causal words and statements have proved to be powerful predictors of people’s moods and behaviors (Klein & Boals, 2001; Zullow, Oettingen, Peterson, & Seligman, 1988). One particular category of cognitive mechanism words—insight words—often suggests that the speaker is more self-reflective or focused on the underlying meaning of a topic. Interestingly, Edwards was higher on both overall cognitive mechanism words and insight words. It should also be emphasized that the two candidates were similar on most other cognitive categories. For example, exclusive words (e.g., except, without, but, excluding) are often powerful markers of complex thinking in that they tell us that the speaker is making a distinction between what is and is not in a given category. The two candidates did not differ on this category.

Taken together, the cognitive analyses indicate that Kerry approached his message in a more detached, concrete, and complex way. Edwards, on the other hand, approached topics in a more reflective manner.

### *Comparisons with Al Gore in 2000*

How did the speaking styles of Kerry and Edwards compare with Gore’s word usage in the 2000 presidential campaign? Again, the platforms of the three candidates were similar. All three were acknowledged to be quite thoughtful. Gore, like Edwards, was viewed as a highly energetic campaigner from the South. Gore, like Kerry, was often considered to be a more serious—even stiff—politician with a patrician background.

As is apparent from the numbers in Table 1, Gore’s linguistic style overlapped considerably with that of Kerry on pronoun usage and many of the cognitive domains. Like Kerry, Gore tended to avoid first person singular and used a high rate of articles and prepositions. Their use of cognitive mechanisms and insight words were also similar. Interestingly, the only consistent similarity with Edwards was in emotional tone. Gore and Edwards were both lower in their use of overall negative emotions as well as in words reflecting anger and anxiety.

The central language categories listed in the tables are only a small proportion of the total dimensions that are analyzed by the LIWC computer program. The current version of the program is able to analyze 74 separate word categories. For each one, we were able to assess where Kerry or Edwards was more similar to Gore. Of the 74 categories, Kerry was closest to Gore’s language style for 49 dimensions compared to only 25 for Edwards. For two-thirds of the

dimensions, then, John Kerry's language use was more similar to Gore than was Edwards.

The similarity in linguistic styles between Kerry and Gore can be interpreted in many ways. One would be hard pressed to proclaim that their use of pronouns and prepositions cost them their respective presidential elections. But the ways in which people use function words in interviews with the media gives us a glimpse into who they are—much the ways that facial expression, haircuts, and nonverbal gestures do. Because it is difficult for people to control their linguistic styles, the analyses of subtle word use is helpful in gaining insights into the ways candidates think and relate to their conversational topics, their friends, their audiences, and perhaps to themselves.

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