



# Winning words: Individual differences in linguistic style among U.S. presidential and vice presidential candidates <sup>☆</sup>

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## Abstract

The present study examines the personalities and psychological states of the 2004 candidates for U.S. president and vice president through their use of words. The transcripts of 271 televised interviews, press conferences, and campaign debates of John Kerry, John Edwards, George W. Bush, and Dick Cheney between January 4 and November 3, 2004 were analyzed using a computerized text analysis program. Distinct linguistic styles were found among these four political candidates, as well as differences between political parties and candidate types. Drawing on previous research linking word use and personality characteristics, the results suggest that the candidates had unique linguistic styles variously associated with cognitive complexity, femininity, depression, aging, presidentiality, and honesty.

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## 1. Introduction

During the 2004 U.S. presidential election campaign, John Kerry was portrayed as flip-flopper. George W. Bush was portrayed as a cowboy—brash and aggressive but also, by

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some accounts, likeable. In deciding for whom to cast their ballots, voters likely took into account numerous factors. They may have voted based on which candidate they liked the most, which candidate had the values they shared, which candidate they trusted the most, and so on. In particular, impressions of candidates' personalities have been shown to be robust and powerful predictors of vote choice (Klein, 1996; Pillai & Williams, 1998; Pillai, Williams, Lowe, & Jung, 2003). This is true even after traditional predictors of voting, such as party identification, are held constant (Klein, 1996).

Many of the impressions made by voters are based at least in part on the words the candidates themselves say. For example, in saying "I actually did vote for the \$87 billion before I voted against it," John Kerry helped to cement the public's perception of him as an indecisive leader. Further, George Bush's image as a swaggering Texas cowboy was clear when he said that Osama Bin Laden must be taken "dead or alive," and, in offering strategies for capturing members of the Taliban in Afghanistan, that he was going to "smoke 'em out." The words that political candidates use serve as guides to the ways they think, act and feel.

Personality psychologists and political psychologists increasingly have been interested in assessing personality characteristics and other individual differences among politicians (e.g., Greenstein & Lerner, 1971; Rubenzer & Faschingbauer, 2004; Simonton, 1990). A central issue has been that collecting self-reports from politicians and other historical or well-known figures is usually not possible. To get around this issue, biographers and historians have been commissioned to examine presidential biographies and encyclopedic entries. These experts provide ratings on various personality measures, and code texts for markers of personality, performance, and success (Kowert, 1996; Rubenzer, Faschingbauer, & Ones, 2000; Simonton, 1986, 1988, 2001).

A more direct approach to assessing individual differences between political candidates is to examine the linguistic residue of their lives—their books, letters, speeches or interviews—using content analytic strategies (Hart, 1984; Lee & Patterson, 1997). Researchers have had judges evaluate the phrases, sentences, paragraphs or even entire texts spoken or written by past presidents along specific dimensions, such as achievement, affiliation, and power motives (McClelland, 1985; Winter, 1987; Winter & Stewart, 1977), and integrative complexity (Suedfield, 1994; Tetlock & Suedfeld, 1988). Although the final drafts of verbal texts yield useful knowledge about a person, more accurate indicators of people's individual differences are spontaneous speech samples across varied social contexts. Among politicians, examples of available speech samples include press conferences, public interviews, and debates.

Several researchers have applied a content-analytic approach to electoral politics (e.g., Hart, 1984; Seligman, 1990; Zullow, Oettingen, Peterson, & Seligman, 1988). For example, Zullow et al. (1988) were able to predict (after the fact) senatorial and presidential electoral outcomes—even upsets—with remarkable accuracy by comparing candidates' levels of optimism in their speeches. Candidates who spoke more optimistically were more likely to win their elections. Such findings illustrate the utility of content analysis in describing the individual differences between political candidates.

One content-analytic approach is simply to categorize and count the words that people use. This strategy assumes that the words that people select when they are naturally speaking reveal certain features of their personality. While computerized word count programs are generally blind to context and to linguistic devices such as irony and sarcasm, they are objective, reliable, fast, and have yielded promising results in personality and social

psychological research (Danner, Snowdon, & Friesen, 2001; Holtgraves, 2002; Pennebaker & King, 1999). Markers of linguistic style have been found to correlate with a number of interesting and important psychological factors. For example, depressed individuals and those who are low in self-acceptance tend to use more 1st-person singular pronouns (e.g., “I,” “me,” “my”) compared to non-depressed individuals and those higher in self-acceptance (Rude, Gortner, & Pennebaker, 2004; Weintraub, 1981). Use of 1st-person singular has also been shown to be related to honesty. In a series of linguistic lie detector studies, when people were being honest they were more likely to use words such as “I,” “me,” and “my,” more references to other people, more exclusion words (e.g., “except,” “without,” “but”), and fewer negative emotion words (Newman, Pennebaker, Berry, & Richards, 2003).

Linguistic style can also yield clues to a person’s thinking style, such as complexity of thought. For example, the use of insightful (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) and higher levels of Openness to Experience (Pennebaker & King, 1999). Indeed, analyses of causal words and statements have proved to be powerful predictors of people’s traits and behaviors (Zullo et al., 1988).

Word use can also reflect age, sex, and other demographic variables. For example, with increasing age, individuals tend to use more positive emotion words, fewer negative emotion words, more future tense and fewer past tense verbs (Pennebaker & Stone, 2003). Additionally, compared to men, women tend to use more references to others, more positive feeling words, fewer articles, and fewer swear words (Lakoff, 1975; Mulac, Bradac, & Gibbons, 2001).

Given previous findings linking language use and individual differences, what might we learn about politicians from the words that they use? A recent study (Pennebaker & Lay, 2002) that analyzed the language use of former New York mayor Rudolph Giuliani in his press conferences may be instructive. During the first 4 years of his administration, Giuliani used a very high rate of “we” words and negative emotion words, along with a 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. He became warmer, more sensitive to others, and more genuine. Giuliani’s apparent personality shift was associated with large increases in “I,” drops in “we,” and modest increases in positive emotion words. After 9/11, his language shifted again, with an increase in “we,” and increases in both positive emotion and negative emotion words.

Despite the fact that previous research investigating individual differences in discrete linguistic cues has yielded interesting results, such results can sometimes be difficult to interpret. Whereas previous work has examined the link between specific linguistic cues and certain personality factors, an alternative strategy is to group multiple linguistic cues together into more interpretable indices. For example, recall that when people are being honest they are more likely to use more self-references, more references to others, more exclusion words, and fewer negative emotion words. By constructing an algorithm based on regression analyses from the earlier deception studies, we can create an overall index of “honest” language:  $honesty = self\ references + references\ to\ others + exclusion\ words - negative\ emotion\ words$ . This index could be used, for example, to compare George W. Bush and John Kerry in their use of honest language during the 2004 campaign. Similarly, recall that compared to men, women tend to use more references to others, more positive feeling words, fewer articles, and fewer swear words. By adding together these linguistic markers to create

an overall index of feminine language, we can thus examine the extent to which Dick Cheney or John Edwards had more feminine vs. masculine speaking styles. This approach has been used increasingly in psychological research (e.g., Breckenridge, 2000; Henry, Tolan, & Gorman-Smith, 2005), and it is the approach that we take with the present study.<sup>1</sup>

This study compares the linguistic styles of the two U.S. presidential candidates—George W. Bush and John Kerry—and the two vice presidential candidates—Dick Cheney and John Edwards—from the 2004 election campaign. By using a text analysis program, we sought to determine how these four candidates differed across six linguistic style categories: cognitive complexity, femininity, depression, age, presidentiality, and honesty. These categories were chosen primarily because they have been extensively examined in previous language research, but also because of their potential links to voting behaviors and personality characteristics typically studied in the political psychology literature. Instead of standard stump speeches, we focused only on the candidates' language within more spontaneous settings including televised interviews, press conferences, town hall meetings, and debates.

## 2. Method

### 2.1. Speech samples

Transcripts of televised interviews, press conferences, town hall meetings, and debates of the two presidential candidates and the two vice presidential candidates were collected from Lexis–Nexis and the [whitehouse.gov](http://whitehouse.gov) website. All speech samples were taken from public appearances between January 4 and November 3, 2004. Overall, 271 speech samples were collected from television interviews by news programs represented by ABC ( $n = 17$  interviews), CBS ( $n = 27$ ), CNN ( $n = 33$ ), Fox ( $n = 13$ ), NBC ( $n = 23$ ) and other smaller networks ( $n = 11$ ). The remaining speech samples from each candidate were taken from press conferences ( $n = 78$ ), town hall meetings ( $n = 61$ ), and televised debates ( $n = 8$ ). Of the 271 language samples, 103 were from Bush, 68 from Kerry, 33 from Cheney, and 67 from Edwards. Across the various samples, the candidates spoke approximately 1890 words per interview.

### 2.2. Analytic strategy

Each of the speech samples was analyzed using a computerized text analysis program called the Linguistic Inquiry and Word Count, or LIWC (Pennebaker, Francis, & Booth, 2001). LIWC uses a word count strategy whereby it searches for over 2000 words or word stems within any given text file. The search words have previously been categorized by independent judges into over 70 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., time, verb tense, motion,

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<sup>1</sup> These data also were analyzed using algorithms that integrated beta weights and factor loadings from the previous studies of interest. These algorithms correlated between .85 and .97 with the unit-weighted algorithms used in the final analyses presented in this article. This latter approach was chosen due to the greater ease with which it can be interpreted and applied.

space), and traditional content dimensions (e.g., sex, death, home, occupation). After counting the number of words within any given text for each of these categories, these raw counts are converted to a percentage of total words to produce the final output.

Once the text files were processed using LIWC, six linguistic measures were created for further analysis based on linguistic dimensions that have been validated in previous studies: *cognitive complexity*, *femininity*, *depression*, *age*, *presidentiality*, and *honesty*. To construct each linguistic measure, LIWC output from each relevant LIWC category was converted to *z* scores (across speakers) and then summed. The specific algorithms used to construct each particular measure are described in detail below.

### 2.2.1. Cognitive complexity

Pennebaker and King (1999) detailed a factor-analytically derived linguistic measure of “making distinctions” or, as we call it here, *cognitive complexity*. Cognitive complexity has been found to positively correlate with self-reported Openness to Experience, as well as academic performance and classroom participation in university samples. It is conceptually similar to Simonton’s (1986) personality factor of Intellectual Brilliance in political leaders, and also resembles Tetlock and Suedfeld’s (1988) concept of Integrative Complexity. Individuals whose language is cognitively complex use higher levels of exclusive words (e.g., “but,” “except”), tentative words (e.g., “maybe,” “perhaps”), negations (e.g., “no,” “never”), and discrepancies (e.g., “should,” “would”), combined with low levels of inclusive words (e.g., “with,” “and”). Therefore, a linguistic measure of cognitive complexity can be computed by summing *z*-scores for the categories of exclusive (*excl*), tentative (*tentat*), negation (*negate*), and discrepancy (*discrep*) and subtracting inclusive (*incl*) as follows:  $Cognitive\ complexity = \underline{z}excl + \underline{z}tentat + \underline{z}negate + \underline{z}discrep - \underline{z}incl$ . In the present sample, the  $\alpha$  reliability for this measure was .52 and the Guttman split-half reliability was .90.

### 2.2.2. Femininity

Analyzing sex differences in a large corpus of essays (14,324 essays from 70 different studies), Newman, Groom Stone and Pennebaker (2006) uncovered robust gender differences in the ways in which individuals use language. In comparison with men, women reliably use more references to others (*other*) and more positive feeling words (*posfeel*). They also use fewer big words (*sixltr*; six-letter and larger words), negations (*negate*), articles (*article*), prepositions (*preps*), swear words (*swear*), references to money (*money*), and numbers (*number*). Thus, the following measures the extent to which a person uses feminine language:  $Femininity = \underline{z}other + \underline{z}posfeel - \underline{z}sixltr - \underline{z}negate - \underline{z}article - \underline{z}preps - \underline{z}swear - \underline{z}money - \underline{z}numbers$ . In the present sample, the  $\alpha$  reliability for this measure was .89 and the Guttman split-half reliability was .87.

### 2.2.3. Depression

Derivation of this measure was based on two sources. First, Rude et al. (2004) analyzed the language of 124 currently-, formerly-, and never-depressed students to explore linguistic markers of depression. Second, Stirman and Pennebaker (2001) examined the poems of 9 poets who committed suicide and 9 matched poets who did not commit suicide to uncover linguistic indicators of suicidality. Depressive language was marked by high levels of 1st-person singular words (*I*; e.g., “I,” “me,” “my”), physical words (*physcal*; e.g., “ache,” “sleep”), negative emotion words (*negemo*; e.g., “hate,” “worthless”), and low levels of

positive emotion words (*posemo*; e.g., “happy,” “pretty”). Therefore, this measure can be calculated as follows:  $Depression = \underline{z}I + \underline{z}physcal + \underline{z}negemo - \underline{z}posemo$ . The  $\alpha$  and split-half reliabilities were .96 and .98, respectively, in the present sample.

#### 2.2.4. Age

An analysis of text samples from 3280 participants (ages 8–85) in 45 studies conducted by Pennebaker and Stone (2003) showed age-related shifts in both written and spoken language. As people age, they use increasing numbers of positive emotion words (*posemo*), big words (*sixltr*), cognitive processing words (*cogmech*; e.g., “cause,” “know,” “ought”) and future tense words (*future*). They also show a decline in the use of 1st-person singular (*I*), references to the past (*past*), time-related words (*time*), negative emotion words (*negemo*), and social words (*social*). Thus, the following algorithm measures the extent to which a person’s language is similar to that of an older person:  $Age = \underline{z}posemo + \underline{z}sixltr + \underline{z}cog + \underline{z}sixltr + \underline{z}cogmech + \underline{z}future - \underline{z}I - \underline{z}past - \underline{z}time - \underline{z}negemo - \underline{z}social$ . In the present sample, alpha and split-half reliabilities were .69 and .67, respectively.

#### 2.2.5. Presidentiality

Beginning with the first inaugural speech of Franklin D. Roosevelt through the second inaugural speech of Bill Clinton (but excluding George H. W. Bush), 16 presidential inaugural speeches were analyzed and compared to a corpus of 7,534 text files from previous language studies conducted in this laboratory. Presidential language was marked by high levels of articles (*article*), prepositions (*preps*), positive emotions (*posemo*) and big words (*sixltr*).<sup>2</sup> The resulting measure was calculated as follows:  $Presidentiality = \underline{z}article + \underline{z}preps + \underline{z}posemo + \underline{z}sixltr$ .  $\alpha$  and split-half reliabilities were .93 and .97, respectively, in the present sample.

#### 2.2.6. Honesty

In a study designed to predict deception from linguistic styles (Newman et al., 2003), LIWC was used to analyze five independent samples of truthful and deceptive language (both spoken and written). Compared to liars, truth-tellers used more self-references (*self*), references to others (*other*), and exclusive words (*excl*), fewer negative emotion words (*negemo*) and fewer motion words (*motion*; e.g., “walk,” “move,” “go”). A linguistic measure of honesty can be computed using the following algorithm:  $Honesty = \underline{z}self + \underline{z}other + \underline{z}excl - \underline{z}negemo - \underline{z}motion$ . For this measure,  $\alpha$  and split-half reliabilities were .85 and .93, respectively.

### 3. Results

#### 3.1. Speech source effects

Because the speech samples in this study were derived from a number of different sources—interviews, press conferences, town hall meetings, and debates—it was important to

<sup>2</sup> No mean differences were found between the Republican and Democratic presidents in this sample for any of the linguistic variables examined.

Table 1  
Mean standardized scores for linguistic measures by speech source type

Linguistic measure	Interviews	Press Conferences	Town Hall Meetings	Debates	<i>F</i>	$\eta_p^2$
Cognitive Complexity	.05 <sub>a</sub>	-.28 <sub>a</sub>	.22 <sub>a</sub>	.37 <sub>a</sub>	.48	.00
Femininity	.28 <sub>a</sub>	-.12 <sub>a</sub>	-.24 <sub>a</sub>	-1.39 <sub>a</sub>	1.50	.02
Depression	.93 <sub>b</sub>	-.64 <sub>a</sub>	-1.13 <sub>a</sub>	.54 <sub>a,b</sub>	24.76*	.22
Age	-1.04 <sub>a</sub>	1.49 <sub>b</sub>	.49 <sub>b</sub>	-2.13 <sub>a</sub>	13.59*	.13
Presidentiality	-.91 <sub>a</sub>	1.01 <sub>b</sub>	.52 <sub>b</sub>	.34 <sub>a,b</sub>	20.32*	.19
Honesty	.24 <sub>a</sub>	-.22 <sub>a</sub>	-.08 <sub>a</sub>	-.94 <sub>a</sub>	1.82	.02

*Note.* Means for each measure are means of scores that have been standardized across the entire sample ( $N = 271$ ). Because of unequal sample sizes of speech samples for each of the four speech source types, the average of the means for each respective measure does not equal zero. Means with different subscript levels are significantly different from one another at  $p < .05$  using Bonferroni post-hoc comparison tests.  $\eta_p^2$ 's are conservative estimates of effect sizes for the overall differences among speech source types for each linguistic measure.  
\*  $p < .05$ .

first determine whether any of the six linguistic measures varied across the different speech sources. One-way ANOVAs were conducted for each of the measures.

As shown in Table 1, the linguistic measures of depression, age, and presidentiality all varied across source type. Candidates used language more like that of a depressed person in interviews compared to press conferences ( $d = .92$ ) and town hall meetings ( $d = 1.19$ ); they used language more like that of an older person in press conferences compared to interviews ( $d = .84$ ) and debates ( $d = 1.30$ ) and in town hall meetings compared to interviews ( $d = .56$ ) and debates ( $d = 1.12$ ); their language was less presidential in interviews compared to press conferences ( $d = 1.01$ ) and town hall meetings ( $d = .83$ ). In all subsequent analyses we included speech source type as a control for the depressed, aging, and presidential measures. No significant differences were found within any of the specific source types (e.g., differences between different networks or between locations of town hall meetings), nor were there any interactions between speaker and source type.

### 3.2. Differences in linguistic style between Bush, Cheney, Kerry, and Edwards

A series of one-way ANOVAs was conducted on the six linguistic measures to examine differences between the four candidates (Bush, Kerry, Cheney, and Edwards), differences between political parties (Republicans vs. Democrats), and differences between candidate types (presidential vs. vice presidential). As shown in Table 2, there were significant differences in language use among the candidates on all six of the measures. Bonferroni post hoc comparisons were computed to determine which means were significantly different from the others. The six measures are discussed separately below.

#### 3.2.1. Cognitive complexity

In looking at Table 2, Cheney's language was the most cognitively complex of the four candidates. Edwards and Bush were the least cognitively complex in their language use, with Edwards significantly less so than Cheney ( $d = .54$ ). This finding suggests that Cheney approached his message in the most concrete, complex and detached manner. Cognitive complexity did not differ between party or candidate type.

Table 2  
Mean standardized scores for linguistic measures by speaker

Linguistic measure	Bush	Cheney	Kerry	Edwards	<i>F</i>	$\eta_p^2$
Cognitive Complexity	-.19 <sub>a,b</sub>	1.16 <sub>b</sub>	.05 <sub>a,b</sub>	-.32 <sub>a</sub>	2.60*	.03
Femininity	.45 <sub>b</sub>	-1.54 <sub>a</sub>	-.70 <sub>a</sub>	.78 <sub>b</sub>	17.93*	.10
Depression	-.85 <sub>a</sub>	-.98 <sub>a</sub>	1.19 <sub>b</sub>	.58 <sub>b</sub>	7.73*	.08
Age	1.34 <sub>b</sub>	-.59 <sub>a</sub>	-1.02 <sub>a</sub>	-.73 <sub>a</sub>	3.15*	.04
Presidentiality	.66 <sub>c</sub>	.87 <sub>c</sub>	.01 <sub>b</sub>	-1.47 <sub>a</sub>	6.79*	.07
Honesty	-.23 <sub>b</sub>	.90 <sub>c</sub>	-.80 <sub>a</sub>	.72 <sub>c</sub>	8.88*	.12

*Note.* Means for each measure are means of scores that have been standardized across the entire sample ( $N = 271$ ). Because of unequal sample sizes of speech samples for each of the four speakers, the average of the means for each respective measure does not equal zero. Means with different subscript levels are significantly different from one another at  $p < .05$  using Bonferroni post hoc comparison tests.  $\eta_p^2$ 's are conservative estimates of effect sizes for the overall differences among speakers for each linguistic measure, controlling for the effects of speech source type.

\*  $p < .05$ .

### 3.2.2. Femininity

Of the four candidates, Edwards' language use was the most feminine. Cheney's language was the least feminine in style, significantly less so than both Edwards ( $d = 1.06$ ) and Bush ( $d = .99$ ); Kerry's language was less feminine than Edwards ( $d = .55$ ) and Bush ( $d = .45$ ). Cheney and Kerry did not differ significantly from each other on this dimension, nor did Edwards and Bush. Femininity did not vary as a function of candidate type or political party.

### 3.2.3. Depression

Kerry's language was most similar to that of a depressed person, significantly more so than either Bush ( $d = 1.11$ ) or Cheney ( $d = 1.53$ ); Edwards used more depressive language than Bush ( $d = .80$ ) or Cheney ( $d = 1.16$ ). Kerry and Edwards did not differ from each other on this dimension, nor did Bush and Cheney. In general, Democrats used significantly more depressive language than Republicans ( $d = 1.02$ ). Depressive language did not vary as a function of candidate type.

### 3.2.4. Age

Of all of the candidates, Bush's language was the most similar to that of an older person. He differed significantly from Kerry ( $d = .76$ ), Edwards ( $d = .66$ ), and Cheney ( $d = .65$ ), while the others did not significantly differ from each other. Neither candidate type nor party had an effect on language use for this measure.

### 3.2.5. Presidentiality

Cheney's language was the most presidential of the four candidates, significantly more so than both Kerry ( $d = .55$ ) and Edwards ( $d = 1.56$ ). Cheney and Bush were equally presidential in their word use, while Edwards was the least presidential. Presidential word use did not vary as a function of candidate type, but Republicans were significantly more presidential in their word use than Democrats ( $d = .77$ ).

### 3.2.6. Honesty

Given how much they differed on the other linguistic measures, it may be somewhat surprising that Cheney and Edwards were very similar in how honest their language was. Cheney's use of words suggested greater honesty than either Bush's ( $d = .79$ ) or Kerry's ( $d = 1.18$ ); Edwards' language was also more honest than that of Bush or Kerry (with  $d$ s of .50 and .80, respectively). Overall, vice presidential candidates were significantly more honest in their language use than presidential candidates ( $d = .69$ ). Honest language use did not vary as a function of party.

### 3.3. Do polls affect the way candidates talk?

Politicians are often accused of altering their behaviors and attitudes as a function of changing tides in the electorate. But can polls actually affect the fundamental ways in which politicians speak? We tested this by correlating candidates' language use with their standing in the polls in a nationwide tracking poll (PollingReport.com, 2004) taken between July 6—the day that John Edwards was picked to be John Kerry's running mate—and November 2, 2004. We correlated candidates' language use on each of the six linguistic measures with the percentage of voters likely to vote for Bush/Cheney and the percentage of voters likely to vote for Kerry/Edwards. The only candidate whose language use significantly correlated with fluctuations in polling figures was John Edwards. The number of voters likely to vote for Kerry/Edwards was positively correlated with Edwards' linguistic honesty ( $r = .46$ ) and cognitively complexity ( $r = .37$ ). The better the Kerry/Edwards ticket was doing in the polls, the more honest and cognitively complex Edwards's language was.

## 4. Discussion

George W. Bush, Dick Cheney, John Kerry, and John Edwards projected very different public personas during the 2004 presidential campaign. Analyses of their natural language use during the campaign indicate that their linguistic styles differed as well. In person or on television, many would say that John Kerry had a serious, somber, inhibited speaking style, while George W. Bush's style was more loose, informal, and open. Dick Cheney was seen as reserved and serious, but also as highly intelligent and competent. John Edwards was seen as warm, friendly, likeable, and candid, but also inexperienced. The linguistic styles of these four candidates paint similar pictures. Across all six measures—cognitive complexity, femininity, depression, age, presidentiality, and honesty—significant linguistic differences among the candidates were found.

Dick Cheney's language was the most cognitively complex. This finding is in line with the public's perception of Cheney as a capable leader of high intellectual capacity and complex thought (Gallup, 2004a)—not one whose language is particularly amenable to short, pithy sound bites. The language of Edwards and Bush was the least cognitively complex, reflective of the plain-spoken, simple, and accessible way in which both spoke during the campaign. This finding supports previous research indicating that Bush has the lowest score on Openness to Experience—a trait positively correlated with linguistic cognitive complexity as well as general cognitive ability—relative to judges' ratings of past presidents (Rubenzer & Faschingbauer, 2004).

Edwards' language was the most feminine of the four candidates. In general, women tend to use greater numbers of references to others, fewer references to money, fewer swear words, fewer negations, and more words that express positive feelings. In short, their language is often more warm and personal compared to that of men. It thus may not be particularly surprising that Edwards had the most feminine and Cheney the least feminine speaking style of the four candidates. Whereas Edwards was viewed by many as warm, social and personal (Gallup, 2004a), Cheney was seen as being rather gruff and detached (Braiker, 2004). Cheney's speaking style may actually have benefited his party's presidential image. In a previous study, when asked to describe "a good president" using the Bem Sex Role Inventory, 61% of participants characterized the role as masculine, 0% as feminine, and the remaining percent as undifferentiated or androgynous (Butterfield & Powell, 1981).

One of the more intriguing findings was that compared to the two Republicans, the two Democrats—Kerry in particular—used language most similar to that of a depressed person. Previous research indicates politicians' displays of emotion can have a powerful effect on vote choice (Glaser & Salovey, 1998). Voters are most favorable toward those candidates who are the most optimistic (Zullow et al., 1988) and highest in positive affect (Ottati, Terkildsen, & Hubbard, 1997), especially when candidates' affect is expressed verbally (Krauss, Apple, Morency, Wenzel, & Winton, 1981). At the extreme case, consider the withdrawal of Thomas Eagleton—George McGovern's vice presidential running mate in the 1972 election—after facts about his history of depression became public. Results from a subsequent study showed that McGovern's chances of winning the presidency were adversely affected by the Eagleton affair, and that voters thought it too risky to vote for someone with a psychiatric history (Tolor, 1973). The depressive language that Kerry and Edwards used during the campaign may have contributed negatively to the way in which they were perceived by the public.

Bush's language during the campaign was most similar to that of an older person. As people get older, they tend to use fewer 1st-person singular words, more positive emotion words, have a greater focus on the future and lesser focus on the past (Pennebaker & Stone, 2003). Previous research suggests that older-looking candidates are judged to be more competent and fare better than more baby-faced opponents (Montepare & Zebrowitz, 1998; Zebrowitz & Montepare, 2005). Our finding suggests that older-sounding candidates may fare better as well.

Cheney's language was the most presidential, followed by Bush. Both Bush and Cheney used language that was significantly more presidential than Kerry and Edwards. More generally, the words that the Republicans used were more presidential than those used by the Democrats. This is a telling finding given the eventual success of the Bush/Cheney campaign. It suggests that the public's perception of Bush as a stronger leader than Kerry (Gallup, 2004b), and its perception of Cheney as more qualified to be president than Edwards (Strategic Vision, 2004) may have been due at least in part to the words that the candidates themselves used.

Cheney and Edwards used more honest language—marked by more self-references, references to others, exclusive words, and fewer negative emotion words—compared to Bush and Kerry. This may be a function of inherent differences in the roles of running for vice president versus running for president. Because vice presidential candidates often are charged with being more openly critical of the other party's candidates—portrayed as the "attack dog" of their respective ticket—they are able to be more open and candid

in what they say in public (Hess, 1995). Presidential candidates, on the other hand, may feel more compelled to monitor what they say and thus use language that is somewhat less honest.

A common belief is that politicians often tailor their behavior in response to their standing in the polls. During the 2004 presidential campaign, only John Edwards' linguistic style was related to polling figures. The more likely that voters were to vote for the Kerry/Edwards ticket, the more honest and cognitively complex Edwards' language became. Previous research indicates that the language politicians use is sometimes a function of personal events going on in their lives (Pennebaker & Lay, 2002). Our finding suggests that—at least for some—language use may also be a function of how one is faring in the polls.

It is important to note that the way that these candidates used words during the 2004 campaign varied somewhat depending on the forum in which they were speaking. For example, candidates' language was more depressive, younger and less presidential in interviews compared to other forums. Because of the more personal nature of interviews, they may allow candidates to be more self-focused, less formal and more open than they might be in, say, the more formal setting of press conferences and debates.

There are some potential limitations of this study. First, the small number of people in our sample precludes direct, quantitative comparisons with earlier findings relating to presidential personality. A more exhaustive study of several candidates could examine the links between linguistic style and other personality variables more commonly studied among political candidates and office holders. Second, future studies incorporating a variety of outcome variables and a larger sample would allow a more extensive validation of our measures. The present study has shown that these measures are both reliable and face-valid—an important first step.

Whether or not they should matter, voters' perceptions of candidates' personalities do matter in predicting the outcomes of elections (Klein, 1996; Pillai et al., 2003; Zullo et al., 1988). It is useful to determine how candidates' personalities manifest themselves on the campaign trail. One way to accomplish this is through the analysis of natural language use. The ways in which political candidates use words on the campaign trail give us glimpses into who they are—much in the way that facial expressions, haircuts, and non-verbal gestures do. Because it is difficult for people to control their linguistic styles, the analyses of subtle word use can help one gain insights into the ways candidates think and relate to their conversational topics, their friends, their audiences, and perhaps to themselves.

The technique used to assess individual differences among presidential and vice presidential candidates in this study is itself novel. As illustrated by our results, language use can provide a unique psychological picture of political candidates. In this nascent stage of language and personality research, it is still unclear which features of language are the most predictive of electoral success. But the findings from this study illustrate that significant and meaningful differences in candidates' natural language use do indeed exist.

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