Analysis of Leaders’ Language and Discourse

Vasile Rus¹, Lubna Shala¹, Arthur C. Graesser¹, Zhiqiang Cai¹, and John Kaltner²
¹The University of Memphis, ²Rhodes College
Memphis, TN 38152
USA

We focus in this paper on analyzing leaders’ language and discourse over time. Our plan is to analyze leaders’ language along many language and discourse dimensions such as text cohesion, concreteness, and syntax. Specifically, we analyzed Egyptian President Hosni Mubarak’s speeches over several decades since he has been in power starting in 1981. President Mubarak’s long-lasting presidency allows us to analyze how a leader’s language and discourse changes over time. The choice of President Mubarak fits well with our more ambitious goal of studying leaders’ language and discourse across languages and cultures. It should be noted that leaders’ speech analysis has been done in the past, for instance, to examine personalities and psychological states of the 2004 candidates for U.S. president and vice president (Slatcher et al., 2007). The distribution of speech acts in discourse as a means to predict speakers’ status (leader vs. follower) has been reported recently (Shala, Rus, & Graesser, in press).

We hypothesized that leaders’ language and discourse significantly changes along many dimensions over his tenure. We anticipated that several dimensions of language change can be used to predict a leader’s number of years in power.

Method

Speech Sample

President Mubarak’s speeches were collected from Egypt State Information Service site (http://www.sis.gov.eg/), where speeches are archived by month and year since Mubarak became a president in October 1981 to present day. Each speech is given a title explaining when and where it is given and stamped with an exact date. The types of speeches vary and include statements on major issues, addresses to the Federal Assembly, meetings with representatives of other countries, speeches on official or ceremonial occasions and memorable dates or events, and a few press conferences. Even though the collection of speeches on the site may not be comprehensive of all speeches given by President Mubarak, it is a very good sample and it is updated monthly. The site also offers an English translation to some of Mubarak speeches. The collection of English speeches is considerably smaller than those in Arabic and is only archived since 1996. Our corpus was created in March 2009 and include 884 speeches in Arabic for the period of October 1981-March 2009 and 289 speeches in English for the period of January 1996-March 2009. We report here results on the English speeches.

Analytic Strategy

Each of the speech samples was analyzed using two computerized text analysis programs: Coh-Metrix and LIWC. Coh-Metrix (Graesser et al., 2004) is a software package that calculates the coherence of texts in terms of coreference, temporal cohesion, spatial cohesion, structural cohesion, and causal/intentional cohesion. Linguistic Inquiry and Word Count (LIWC;
Pennebaker, Francis, & Booth, 2001) 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, 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.

The primitive linguistic dimensions produced by Coh-Metrix and LIWC can be used to derive higher-level constructs such as cognitive complexity (Slatcher et al., 2007) or referential cohesion (ZRef) and word concreteness (ZConc). High cohesion text contains words and ideas that overlap across sentences and the entire text, forming threads that connect the explicit text together for the reader (referential cohesion). Abstract words represent concepts that cannot be visually represented. By contrast, concrete words evoke mental images and are more meaningful to the reader than abstract words (ZConc). Text that contains more abstract words is more challenging to understand.

**Results**

Mubarak’s speeches (N=289; English version of speeches since 1996) correlate significantly with a timeline variable (encoding the year and month in which the speech was given) along the dimensions of referential cohesion (r=.217, p=0) and word concreteness (r=.368, p=0). That is, as Mubarak grew older and stayed longer in power he delivered more cohesive speeches by repeating words and ideas across sentences and the entire text (referential cohesion). Furthermore, he used more concrete words as opposed to more abstract words. We also found the following interesting correlations based on LIWC dimensions: the use of the first person singular pronoun (“I”) increases over time (r=.396, p=0) while the use of third person plural pronoun (“they”) decreases (r=-.279, p=0). Mubarak’s use of negations significantly decreases over time (r=-.425, p=0) together with the expression of negative emotions (r=-.423, p=0) and words indicating certainty (r=-.455, p=0). Self-references (“I”, “me”, “my”) and fewer negative emotion words have been linked to honesty (Newman et al., 2003). Interestingly, the use of cognitive processes words such as *cause, know, ought*, also drops with time (r=-.127, p=.031).

A linear regression model emerged using the above variables as predictors and timeline (years in power) as the dependent variables. The model explains .388 of the variance. The coefficients for most of the predictors were significant except for “they”, negative emotions, and ZConc. The largest positive coefficients were found for referential cohesion (ZRef), “I”, and cognitive processes. The largest (absolute-value-wise) negative coefficients were for certainty and negate dimensions.

**Discussion**

This research suggests that Mubarak’s language during the last decade or so (1996-2009) of his presidency, which is still going, shows a more honest leader, less angry, willing to repeat ideas and words to make his speeches more cohesive, thus willing to make his speeches palatable by a larger percent of the population. It would be interesting to extend this line of research to
Mubarak’s entire presidency to see if these conclusions hold true. We will do just that once speeches before 1996 become available in English or, alternatively, once Coh-Metrix and LIWC are available for Arabic language, the language of speeches before 1996.

**References**


