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Leader Language and Survival Strategies in the Arab Spring

Leader Language and Political Survival Strategies

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Abstract

Authoritarian leaders' language provides clues to their survival strategies for remaining in office. This line of inquiry fits within an emerging literature that refocuses attention from state-level features to the dynamic role that individual heads of state and government play in international relations, especially in authoritarian regimes. The burgeoning text-as-data field can be used to deepen our understanding of the nuances of leader survival and political choices; for example, language can serve as a leading indicator of leader approval, which itself is a good predictor of leader survival. In this paper, we apply computational linguistics tools to an authoritarian leader corpus consisting of 102 speeches from nine leaders of countries across the Middle East and North Africa between 2009-2012. We find systematic differences in the language of these leaders, which help advance a more broadly applicable theory of authoritarian leader language and tenure.

Keywords: discourse, Arab Spring, leader survival

Authoritarian leaders' language provides clues to their survival strategies for remaining in office. This line of inquiry fits within an emerging literature that refocuses attention from state-level features to the dynamic role that individual heads of state and government play in international relations, especially in authoritarian regimes (Jervis, 2013). The burgeoning text-as-data field can be used to deepen our understanding of the nuances of leader survival and political choices; for example, language can serve as a leading indicator of leader approval, which itself is a good predictor of leader survival (Love & Windsor, 2015). In this paper, we apply computational linguistics tools to an authoritarian leader corpus consisting of 102 speeches from nine leaders of countries across the Middle East and North Africa between 2009-2012. We find systematic differences in the language of these leaders, which help advance a more broadly applicable theory of authoritarian leader language and tenure.

Authoritarian leadership transitions are particularly fascinating because they are unpredictable and do not occur at regular intervals like democracies. Many factors help to explain leadership survival in authoritarian regimes during time of crisis, including the role of domestic audiences, the economy, conflict, and other sources of instability like natural disasters (Windsor, Dowell, & Graesser, 2014). However, a major trend in this body of research is the use of state-level features to explain outcomes that are also influenced by individual attributes, like political rhetoric and the way that leaders use language to influence public opinion (Love & Windsor, 2015). To better understand this process, we evaluate individual-level traits, using authoritarian leaders' own words, to explore why some remain in office and others lose power during times of political crisis.

Brownlee, Masoud, & Reynolds (2015) provide a comprehensive structural explanation for the survival and removal of leaders across the Middle East and North Africa, namely that regimes with ample oil revenues and an established history of hereditary succession remained intact following the wave of Arab Spring protests. Oil rents and authoritarian lineage are perfect predictors of regime stability. Davenport (2007) identifies a chasm between state- and individual-level attributes, and language: “At present, an unwritten division of labor appears to exist: Scholars concerned with civil liberties, protest policing, human rights violations, and genocide/politicide focus on repression, while scholars interested in rhetoric, communication, and propaganda focus on persuasion... (Davenport, 2007: p9).” We seek to merge these two tracks, investigating whether a leader loses or retains power by examining how leaders talk about the political processes unfolding in their countries. Aggregate, state-level indicators like regime type, leader tenure, and economic success generate parsimonious predictions of leaders who remained in office following social disturbances, and leaders who were removed. Adding language to the evaluation may yield stronger predictive power in future cases where regimes exhibit identical higher-order traits. Moreover, language variables remain available during periods of crisis when many aggregate state level indicators are unavailable. The content and tone of leaders’ speeches is therefore much more widely applicable beyond the specific case of the Arab Spring.

Context and Audience

As domestic discontent grows, should autocrats inspire loyalty, invoke fear, cultivate a friendly dialogue, or convey authority through their public addresses? These decisions about linguistic maneuvering can help – or hurt – leaders as they navigate the rough

waters of public opinion. For example, populist leaders, like the Perons in Argentina, Chavez in Venezuela, or Gaddafi in Libya, utilize more emotional language to curry favor with the masses and needle the opposition (Love & Windsor, 2015). New evidence from the Arab Spring demonstrates that political discourse can shape a leader's legacy. We show that variables derived from leaders' language serve as good predictors of leader survival, and they augment state level indicators.

Leaders' speeches have a specific aim, namely to persuade their supporters and citizens to keep them in power. Interestingly, leaders pursue different linguistic strategies in their speeches when faced with political crises, which is the central question addressed in this paper: What makes a particular rhetorical style effective in keeping authoritarian leaders in power, especially during times of political upheaval? To help manage uncertainty in times of crisis, authoritarian leaders lean on their control of the state media apparatus to disseminate messages and reach their intended audience. This includes the domestic public very broadly, their close group of supporters (the winning coalition (Mesquita, Smith, & Morrow, 2003)), and a foreign audience of leaders and institutions. As Petty, Cacioppo, Strathman, & Priester (2005) identified, formal language signifies that the speaker is using a central route to persuasion that signals a deliberate distancing strategy to convey a more authoritative and commanding presence, whereas speakers using informal language choose a more friendly, familiar peripheral route indicating common ground between speakers and listeners (Clark & Brennan, 1991). Informal language is also characterized by the use of emotionally-laden terminology. Authoritarian leaders generally use informal language during non-crisis times to foster rapport with their audiences, and more formal language during crises to influence close domestic and

international supporters, and to demonstrate their authoritative command of leadership (Windsor et al., 2014).

Whether or not a state is democratic or authoritarian broadly characterizes the language used by its leader, namely authoritarian leaders generally use more formal language in public venues than their democratic peers, potentially because they share less common ground with their audiences and must overcompensate linguistically for that fact (Windsor, 2016). However, among authoritarian regime types (including party-based, personalist, and monarchic), there is little variation in their use of formal language, indicating that they relate both to their democratic peers, and to each other, in the international system in similar ways.¹

This poses an interesting puzzle: if most authoritarian regimes broadly speak in similar ways, what if anything differentiates their language during times of crisis? Understanding this can help to distinguish between leaders who are likely to retain power, and those vulnerable to removal. To understand this, we examine particular features of language beyond formality, used in existing leadership studies (Slatcher, Chung, Pennebaker, & Stone, 2007; Windsor, 2016). These include linguistic measures that capture leaders' risk acceptance, certitude, emotionality, and references to in- and out-groups. Understanding how and when leaders use these strategies can shed light on the audience they are trying to reach, and may help explain why some leaders remain in power and others are removed.

¹ Windsor (2016) does find that military regimes are even more informal than most democratic regimes. However, the sample size of military regimes was comparatively small. This point is moot in the present study, however, since there are no military regimes evaluated empirically.

The individual element – each person’s linguistic fingerprint – bears mentioning. While all leaders are constrained by their own language particularities and are bound by their previous rhetorical styles, there are also broad discernible, generalizable features that characterize authoritarian and democratic leaders’ language (Windsor, 2016). In short, regime level features appear to override leader-specific linguistic features. In line with this, previous research on authoritarian leaders has demonstrated that authoritarian leaders’ public rhetoric differs from democratic leaders’ language, suggesting that there are regime-level features that influence lexical, syntactic, and semantic choices. This work corroborates previous findings that during crises, successful authoritarian leaders tend to take the central, more erudite, and formal route, to connect with their audiences. In other words, they deliberately try to appear more authoritative, likeable, and credible, and these efforts manifest in their language patterns.

Language and Leader Survival in Authoritarian Regimes

Crises make leaders work harder to hold on to power, and language does much of the heavy lifting alongside the state security apparatus in authoritarian regimes. Exogenous shocks as well as endogenous stressors require leaders to be more persuasive and appealing to their supporters. They can choose tropes of optimism or anger, depending on the depth of discontent amongst citizens and the potential for collective mobilization. They can choose a more erudite, direct approach, or choose to use a more conversational, emotional tone (Petty et al., 2005).

Sentiment

Leaders literally set the political tone through their speeches, and citizens are receptive to these messages (Love & Windsor, 2015). When leaders use more positively valenced words, citizens in turn experience more positive emotions themselves and also reward leaders with higher approval ratings (Bono & Ilies, 2006; Love & Windsor, 2015). This initiates a feedback loop whereby the people in turn feel more positively about their leaders, resulting in higher leader approval ratings and a longer time in power. Conversely, leaders using more negative emotion risk evoking negative sentiments in their citizenry, exacerbating discontent and potentially hastening removal from office. Expressing negative sentiment does not endear leaders to their people. This discussion leads to our first set of expectations:

Authoritarian leaders who survive political crises use more positive language.

Authoritarian leaders who are removed from office use more negative language.

Analytic Thinking

Leaders that demonstrate analytical thinking tend to use more formal, As previously mentioned, governance, like whether the country is a democracy or autocracy, contributes to the ways that leaders communicate (Windsor, 2016). In public forums, leaders of democracies tend to use informal language whereas leaders of autocracies use formal language. Formal language is characterized by stilted, and cognitively cumbersome phrasing, and it indicates distance between the speaker and listener(s). Authoritarian leaders who have been in power longer tend to use the less cognitively demanding peripheral route as they have an established rapport and share more common ground with their audience, except during times of crisis where they tend to use the central route

(Dowell, Windsor, & Graesser, 2015). As such, the leaders who have been in power the longest should have to put forth the least amount of effort to communicate their messages (Petty et al., 2005).

This is a curious problem for leaders in the Arab Spring, as those with a longer time in office were removed from power. In this case, it makes sense to take a broader perspective on the question of common ground between leaders and their supporters and constituents. Leaders who lost power during the Arab Spring held office for an average of 32 years, whereas leaders who survived in office have been in power for half that time (14.6 years). The average age of the leaders removed from office was 74.5 years, whereas the average age of the leaders who remained in office was 59.2 years. Given that many of the leaders who lost power were elderly, spending too much time in office may have caused them to lose touch with their constituents and overestimate the amount of common ground they shared. In essence, they were out of touch and out of step, and their language reflects that. Yet even when leaders have established common ground, during crises they are likely to resort to more cognitively demanding and formal language, indicative of the central route to persuasion. In this case, the speaker is likely to use big words, conveying command and credibility. When they use this rhetorical style, they appear more authoritative in times of crisis and demonstrate they can steer the ship of state through rough waters. Given that the Arab Spring presented a significant threat to regime stability, we generate the following expectation:

Authoritarian leaders who survive crises use the central route to persuasion.

Risk, Reward, In- and Out-Groups

Do citizens respond better to linguistic carrots or sticks, and to inclusive or exclusive language? Language should mirror other tactics that authoritarians use to remain in power, including implementing social repression using the power of the state military and security apparatus. Using heavy-handed language associated with risks should signal the death knell of an authoritarian regime. Leaders who remain in power use language to promote solidarity. They also focus discontent on outside parties less. If a leader has lost the ability to inspire loyalty and unity and resorts to blame, it is likely that s/he will lose power.

Leaders who remain in power use more in-group language.

Leaders who remain in power use more reward and less risk language.

Arab Spring Leaders in Context

We now turn to the unique circumstances concerning nine leaders of countries experiencing some level of dissent during the Arab Spring phenomenon. Leaders' language provides an opportunity to observe their own evaluations of the upheaval across the Middle East and North Africa (MENA), and adds insight into their strategies for navigating the political uncertainty of the time. Given the absence of systematic analysis of leader language and survival in the literature, we seek to fill this gap by applying our workflow to the events of the Arab Spring. It is well established that governance and economic factors are solid predictors of a leader's persistence in or removal from office (Brownlee, Masoud, & Reynolds, 2013). Other competing approaches for leader survival include sociopolitical vulnerabilities like natural disasters and leaders' ability to make credible concessions (Flores & Smith, 2013; Windsor et al., 2014). The process of governance includes communication with constituents, and in authoritarian regimes, the

leaders likely control the media as well as the narrative. Qualities like cognitive processing and emotional language are detectable in speech patterns, which we evaluate using computational linguistics tools.

The political changes across the Middle East and North Africa beginning in 2010 present some challenging misconceptions (Mansfield & Snyder, 2012). Language should reflect leaders' strategies for remaining in office through politically contentious times. Leaders' language should be characterized by the histories they share with their constituents, and also with the strategies they employ to retain power. We take the approach advocated by Davenport and Moore, disaggregating the phenomena by leader and evaluating the unique contexts of each regime alongside the language used by leaders (Davenport & Moore, 2012).

Our analysis evaluates the fate of each leader and the language he used during the most active years of the Arab Spring uprising. Table 1 provides summary statistics for the leaders in our sample. The number of speeches varies between the leaders, indicating that some leaders took fewer opportunities to address the public. The following section provides background information on the regimes, as well as excerpts from speeches given during the Arab Spring.

Operationalizing Authoritarian Leader Language

For this research we gathered all available speeches given by leaders in nine countries experiencing social and political unrest as a part of the broadly defined Arab Spring phenomenon as previously described in Table 1.² All available public speeches were retrieved from English-language sources, and any translation of original texts occurred prior to our analysis. Some leaders gave more public addresses than others, yielding an unbalanced data set during our time of observation. We analyzed the documents in their unedited translated format; any syntax or semantic errors are original to the translator's work. We acknowledge that both automated and human translations of Arabic language documents can present variations from the original source text. To help compensate for this we use measures that are calculated only from the words present in the document and that ignore syntax. The speeches were processed using Text Cleaner and analyzed with a computational linguistics tool, LIWC, described below. We provide summary statistics and also use logistic regression to evaluate the differences between leaders who lost power versus those who remain in power. We use Stata 13 software from StataCorp.

Computational Tool

Linguistic Inquiry Word Count (LIWC)

We use *Linguistic Inquiry and Word Count* to evaluate the language of leaders across the Middle East and North Africa. LIWC is an increasingly popular automated word analysis tool used in the social sciences (Pennebaker, Booth, & Francis, 2007; Pennebaker, Boyd,

² This corpus may not represent the population of speeches given by the leaders in our study; however we gathered as many as were publicly available.

Jordan, & Blackburn, 2015; Tausczik & Pennebaker, 2010). LIWC analyzes texts files on a word-by-word basis using an internal dictionary of almost 6,400 of the most common words and word stems, and then categorizes them into over 80 linguistic dimensions. These dimensions are organized into language categories including the following: standard language like articles, prepositions, pronouns; psychological processes like positive and negative emotion words, cognitive processes; and content categories like sex, death, home, occupation. The standardized values are expressed as a percentage of the total words in the text sample. For example, if the number for the category “pronouns” is 9.22, this means that 9.22% of the total words in the text were pronouns. The only categories that do not reflect percentages are word count, words per sentence and words found by dictionary.

Because LIWC takes a “bag of words” approach, there is little reason for concern regarding the preservation of the original syntactic structure of the text. Furthermore, since LIWC utilizes category-based dictionaries, if a translator misses the exact word the speaker intended, it is likely that its nearest neighbor is included in the dictionary and as such the content word would be counted in the analysis. Any measurement error in the data as a result of Arabic to English translation transpired prior to the analysis with LIWC.³

³ LIWC can analyze text in several original languages: English, Chinese, Arabic, Spanish, Dutch, French, German, Italian, Russian and Turkish

Competing Hypotheses

Recent scholarship by Brownlee et al. (2013) on the Arab Spring highlights several key factors that succinctly explain why some leaders remain in power while others were ousted. These include oil wealth, and the regime type. They write, “Where dictators had inherited rule...or commanded vast oil rents, their repressive forces remained sufficiently loyal and cohesive to conduct brutal crackdowns, often reaching the level of outright warfare (Brownlee et al., 2013: 30).” Including regime type in our empirical analysis yields a perfect prediction of which leaders survive and which are removed. Given the previous findings (Windsor, 2016) on linguistic features of authoritarian discourse, we do not include a measure of government type since we anticipate that, *ceteris paribus*, the authoritarian regime types analyzed here (party, personalist, and monarchy/hereditary autocracy) use similar language.

Analysis

Using computational linguistic tools, we evaluate the whether authoritarian leaders lost or retained power following the Arab Spring social movements. Our dependent variables are linguistic variables generated by LIWC. Our independent variable is dichotomous, indicating whether a leader survived in office or not. Our corpus is analyzed in blocks of 20 words (N=9438).

Language Variables

Our language measures come directly from LIWC variables, as shown in Table 2. In LIWC 2015 dictionaries there are 620 positive emotion words/word stems/emoticons, and 744 negative emotion words/word stems/emoticons. With only nine leaders we cannot hope to firmly establish any causal relationships. For this reason, our analysis

should be considered exploratory. Moreover, this limitation means that we cannot use data-driven variable selection methods but must rely on theoretical considerations to guide our choice of variables. We focus on eleven primary LIWC variables for our analysis, which have clear theoretical justification and for which we can hypothesize a direction.

In our analysis, we should give higher weight to longer speeches. We do this via a simple expedient of breaking speeches into “segments” of 20 words (we ignore partial fragments in fitting our model but not when giving summary statistics). We compute our mean difference using linear regression of the “continuous” linguistic variable against a binary indicator variable that indicates whether a leader remained in office. The constant term then reflects the predicted value of the variable for a leader that loses power and the coefficient on the indicator variable is the difference between the predicted value of the variable for a leader who retained power and the predicted value of the variable for a leader who lost power. If errors are not clustered, then this is exactly equivalent to a t-test. We cluster standard errors by country, the most conservative possible approach, which considerably increases our p-values. Unfortunately, the relative paucity of data makes more advanced panel analyses infeasible as well as precludes survival type models.

We present the p-values from this process for each of our eleven primary focus variables. This shows four of the eleven significant at the 0.05 level: She/He; Anxious; Negative Emotion; and Certain. Finally, we consider those that would remain significant after a Holm-Šídák correction for multiple comparisons to control the family-wise error rate. Even after such a correction two of the eleven variables show statistically significant differences.

The pronoun variables We, She/He, and They indicate whether a leader is focusing on inclusivity or whether they are trying to focus discontent on outside parties. We posit that leaders who remain in power use the first person plural pronoun We, used to promote solidarity, more and the third person pronouns She/He and They, used to focus discontent on outside parties, less. The first person singular pronoun is often associated with personalist authoritarian leaders but its role in retaining power is far from clear. It is possible that the role of the second person pronoun also serves to distinguish in from out groups and generate a ‘blame frame’. Ultimately the blame frame is an unsuccessful strategy for remaining in power; to quote the familiar phrase: those who sling mud lose ground.

Affective words, which seek to sway a listener’s emotions, are obviously important to a leader trying to remain in office. We posit that leaders who remain in power use more positive emotion words, and fewer words associated with negative emotion, anxiety, and anger. The role of sadness is unclear. The cognitive process variables tentative and certain give insight into the leaders view of their own security. We suggest that leaders who remain in power use more certain words and less tentative words. The drives variables reward and risk indicating whether the leader is extolling the positive benefits of their remaining in power or the expounding on the negative consequences of removing them from power. It is possible that leaders who remain in power use more words indicating rewards and fewer words indicating risks.

We will examine two additional individual LIWC variables after the main analysis. The following table shows the means of our focus variables by leader.

Since the actual usage of categories was different between leaders that lost power and leaders that retained power we present a column indicating the relative use of within the category.

Interestingly we see that though only two variables show statistical significance, almost all follow our posited theoretical directions. Though the percentage of We words declined so did the entire pronoun category. We see that within our pronoun domain the proportional use of We was on average higher for leaders that survived, and the proportional use of She/He, and They was lower. Among the affective domain we see that all the variables behaved as predicted both as absolute percentages and proportionally. That is, leaders that retained power used on average more positive emotion words, and fewer negative emotion, anxious, and angry words. For the tentative and certain variables, we see that while both the percentage of tentative and certain words increase for leaders that retain power, proportionally leaders that retain power used more certain words and fewer tentative words than did leaders that lost power. The risk and reward variables behaved as predicted both as absolute percentages and proportionally. That is, leaders that retained power on average used more reward words and fewer risk words. It is interesting to note that the Pronoun and Affective domains were used less frequently by leaders that retained power while the domains of Cognitive Processes and Drives were used more frequently. The changes in the She/He ad Anxious variables are statistically significant even after controlling for multiple comparisons.

Additional explanatory measures

We also include five other variables in Table 4 that reached statistical significance but did not fit within the scope of our theoretical framework for this paper. These include adjectives, male, comparisons, biological and health-related terms. For some of these variables, we have no theoretical expectations explaining their statistical significance. However, we do find most fascinating that leaders who lost power referenced male terminology more frequently than did those who retained power. This finding fits nicely with the statistically significant variable She/He from our main model, and adds depth to the dimension of political opposition. One possible explanation for this is the youth bulge argument and the threat posed to political stability by young, unemployed, and disaffected young men (Nordås & Davenport, 2013; Urdal, 2006). The youth-driven social movements and the armed anti-government factions were comprised largely of young men, although in some cases young women participated in sizeable numbers as well. Given the importance of – and threat posed by – young men during times of political upheaval, leaders' increased use of language related to males merits further exploration in future work.

Leader Specific Language Differences

Broadly speaking, regime characteristics influence leaders' language more than individual linguistic quirks. However, in our sample of leaders there are outliers whose words are distinctly different from their peers: Gaddafi and Assad. Figure 1 shows the variables death and anger that leaders used from the speeches contained within our corpus. We note two important issues: first, Gaddafi uses the most extreme language of the leaders in this set. His use of death- and anger-related language stands apart from the

others. Second, in many ways, Assad's language behaves similarly to leaders who lost power. From a linguistic perspective, Assad's persistence in office represents an anomaly given his dissimilarity to those who remained in power. From a geopolitical perspective, Assad's persistence in office can largely be attributed to the foreign support and lack of international consensus that has benefited his tenure.

Conclusions

Through an examination of leader speeches during the Arab Spring, we have provided evidence that leaders' language during times of crisis may help explain which leaders will remain in office and which leaders will not. Leaders who remained in power following the political movements across the Middle East and North Africa used language that reflects solidarity and positivity, and minimizes blame and anxiety. Leaders that convey strong leadership through their words remained in office, whereas those who resorted to emotionally laden populist strategies lost power. Given that other recent work has established that most authoritarian regimes (party-based, personalist, and monarchies) have very similar speaking styles, we feel it is premature to make the claim that these language features are exclusive to hereditary regimes. Rather, we propose that leaders who survived the Arab Spring relied on the central route to persuasion, echoing the findings of previous work (Dowell et al., 2015). Some higher order, regime-specific features are perfect predictors of survival, like the level of repression and the number of years in office. On the other hand, language provides considerable variation within and between leaders that adds nuance to the potential wider application of these findings.

This work suggests that language variables may provide useful insight into political phenomena and possibly provide information beyond traditional state level

indicators for predicting regime instability. These findings are encouraging and indicative of the promise of using leader-specific language data to better understand complex political phenomena, like contagious social movements and political instability, and assist in political forecasting. This is especially true in the case of non-democratic systems where leaders have an “advantage” in implementing policies which would be otherwise moderated in more democratic societies (Huntington, 1968).

We hope that this type of analysis will bear fruit in future examinations of non-democratic regimes. In future research we would like to further investigate the ways in which leaders’ language deviates from their longitudinal baseline during political crises. We believe that leader language, especially in authoritarian regimes, can add value to our current understanding of international phenomena beyond the case of the Arab Spring. This type of discourse analysis can be applied to regimes in Iran or North Korea, for example, to help demystify internal dynamics and external posturing presently not covered by state-level variables. Further, we can apply this workflow of leader-level linguistic variables to other pressing areas of international relations and comparative politics, like why leaders bluff or make credible threats, and why countries engage in interstate war.

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Table 1: Authoritarian leaders in the Arab Spring

Leader	Country	Speeches Count	Years in Power	Lost Power	Date Lost Power	Governmen t Type
Zine al-Abidine Ben Ali	Tunisia	4	4/2/1989 – 1/14/2011 (22 years)	Yes	1/14/2011	Party-based
Muammar Gaddafi	Libya	11	9/1/1969 – 8/23/2011 (42 years)	Yes	8/23/2011	Personal
Ali Abdullah Saleh	Yemen	7	7/18/1978- 2/27/2012 (34 years)	Yes	2/27/2012	Personal
President Hosni Mubarak	Egypt	18	10/14/1981 – 2/11/2011 (30 years)	Yes	2/1/2012	Party-Military-Personal
King Mohammed VI	Morocco	33	7/23/1999 – present (16 years)	No		Monarchy
Bashar al-Assad	Syria	9	7/17/2000 – present (15 years)	No		Party-Military-Personal
King Abdullah II	Jordan	14	2/7/1999 – present (16 years)	No		Monarchy
King Hamad bin Isa Al Khalifa	Bahrain	6	3/2/1999 – present (16 years)	No		Monarchy
Abdullah bin Abdulaziz Al Saud	Saudi Arabia	2	8/1/2005 – 1/23/2015 (10 years)	No		Monarchy

Table 2. Means of LIWC Focus Variables by Leader

Leader	Country	We	She/ He	The y	Posit ive Emot ion	Nega tive Emot ion	Anxi ous	Ang er	Tenta tive	Cert ain	Ris k	Rew ard
Abdullah	Jordan	2.8 3%	0.12 %	1.0 6%	5.58 %	1.41 %	0.29 %	0.4 8%	1.59 %	2.22 %	1.0 4%	1.76 %
Abdullah	Saudi Arabia	2.9 7%	0.16 %	0.7 0%	4.15 %	1.37 %	0.41 %	0.4 8%	0.90 %	1.66 %	1.0 4%	1.58 %
Assad	Syria	2.8 4%	0.30 %	1.3 8%	3.03 %	1.54 %	0.22 %	0.5 1%	2.25 %	1.80 %	0.9 9%	1.03 %
Hamad	Bahrain	4.4 9%	0.40 %	1.0 8%	5.65 %	1.41 %	0.21 %	0.4 5%	0.91 %	1.92 %	1.0 2%	1.27 %
Mohammed	Morocco	1.4 0%	0.23 %	0.5 2%	4.65 %	0.64 %	0.19 %	0.1 7%	0.82 %	1.80 %	0.5 3%	1.71 %
Ben Ali	Tunisia	3.1 5%	0.13 %	1.6 3%	4.27 %	1.36 %	0.41 %	0.3 1%	0.99 %	1.98 %	1.1 1%	1.48 %
Gaddafi	Libya	1.8 5%	0.57 %	1.3 6%	2.71 %	2.71 %	0.36 %	1.5 7%	1.77 %	1.30 %	1.1 2%	0.64 %
Mubarak	Egypt	2.9 8%	0.47 %	0.9 5%	4.36 %	1.59 %	0.41 %	0.3 6%	0.93 %	1.56 %	1.0 4%	1.28 %
Saleh	Yemen	2.3 2%	0.42 %	1.3 9%	5.91 %	2.33 %	0.53 %	0.8 1%	1.21 %	1.89 %	1.4 9%	1.62 %

Table 3. Linguistic Variable Means by Leader Survival

Variable	Lose Power		Retain Power		Mean	P. Value	Reject
	Freq.	Rel. Freq	Freq.	Rel. Freq			
We	2.40%	58%	2.29%	67%	-0.11%	0.8645	0
She/He	0.48%	12%	0.24%	7%	-0.24%	0.0047	1
They	1.26%	30%	0.90%	26%	-0.36%	0.2209	0
Positive Emotion	3.77%	52%	4.32%	72%	0.55%	0.5007	0
Negative Emotion	2.18%	30%	1.09%	18%	-1.09%	0.0342	0
Anxious	0.40%	5%	0.22%	4%	-0.18%	0.0014	1a
Anger	0.96%	13%	0.34%	6%	-0.62%	0.1392	0
Tentative	1.34%	47%	1.36%	42%	0.02%	0.9686	0
Certain	1.52%	53%	1.86%	58%	0.35%	0.0389	0
Risk	1.15%	53%	0.79%	35%	-0.36%	0.0571	0
Reward	1.04%	47%	1.47%	65%	0.43%	0.2006	0

Table 4. Additional Explanatory Measures

Variable	Lose Power	Retain Power	Diff. of Means	P. Value
Adjectives	3.81%	4.47%	0.66%	0.017
Comparisons	1.50%	2.01%	0.51%	0.000
Male	0.85%	0.51%	-0.34%	0.016
Bio	0.94%	0.67%	-0.26%	0.037
Health	0.46%	0.28%	-0.17%	0.006

Figure 1. Anxiety, She/He, Negative Emotion, and Certainty by Country (LIWC 2015)

