Incumbency effects in U.S. presidential campaigns: Language patterns matter

CrossMark

Christian Leuprecht [a, *], David B. Skillicorn [b]

[a] Department of Political Science and Economics, Royal Military College of Canada, P.O. Box 17,000, Station Forces, Kingston, Ontario, K7K 7B4, Canada
[b] School of Computing, Queen's University, Kingston, Ontario, K7L 3N6, Canada

ARTICLE INFO

ABSTRACT

Incumbent U.S. presidential candidates have been overwhelmingly successful over the past 150 years. Attempts to explain this success rate have examined both structural advantages enjoyed by incumbents and differences in rhetorical and linguistic style in campaigning, although it is less clear why incumbency conveys an advantage here. This article finds that the language used by U.S. presidential candidates over the past twenty years has an underlying structure associated with electoral success: 1. speech patterns of incumbents differ notably from those they used in their first-term campaign; and 2. speech patterns of winners are different from those of losers. Both differences are consistent, and can therefore be postulated to indicate strength of influence. The resulting inductive model of influential language is characterized by: increased positivity, complete absence of negativity, increased abstraction, and lack of reference to the opposing candidate(s). The greatest intensity of model language is used by incumbents in their second campaign and the least by losers in a first-cycle open campaign. Language improvement by incumbents occurs rapidly, suggesting that it is the result of changing self-perception rather than a conventional learning process. This finding has broader implications, suggesting that both success, and the presence of competing groups trying to make similar arguments, improve the quality of the influencing language used.

1. Introduction

U.S. presidential election campaigns are the best-funded, most-studied, and highly-motivated attempts to influence strategic behavior of a wide-spectrum audience. Yet, surprisingly little is understood about the determinants of incumbency success: from 1868 to 2012, over two-thirds of the 23 Presidential candidates seeking re-election won. Incumbents evidently have an advantage. Even when the incumbent is lagging in the polls at the start of the campaign, he is not typically as far behind the frontrunner as comparable challengers and, therefore, has a much better chance of closing the gap. Incumbents who win, win by larger margins; if they lose, they lose by narrower margins. In recent times, every president with an approval rating of 50% has gone on to win a second term; even those with approval ratings of only 40% can still reasonably expect to win (all presidents with this margin except

Ford have won). Presidential campaigns thus provide insights into our understanding of influence and, because the outcomes are apparent, its effectiveness (Benoit, 2007; Hacker et al., 2000).

This article examines language patterns in U.S. presidential elections from 1992 to 2012. All three incumbent candidates during this period, Bill Clinton, George W. Bush and Barack Obama, use language in their second campaign that differs systematically from that of their first campaign and from the candidates who campaigned against them. Furthermore, this difference is also visible, in a weaker form, between their language in their initial campaigns and that of their competitors whom they defeated. In other words, there is an underlying pattern of language which, when deployed well in an open, first-cycle election leads to electoral success, and which becomes stronger in a campaigning incumbent.

The article shows that, behind the language used by challengers and incumbents, and successful and unsuccessful candidates, there is a linear scale of language that wins elections. In any given campaign, the candidate whose language use is higher on the scale wins; presidents campaigning for re-election use better influential language in their re-election campaign than they did in their first

* Corresponding author.
E-mail addresses: christian.leuprecht@rmc.ca (C. Leuprecht), skill@cs.queensu.ca (D.B. Skillicorn).

campaign; and the gap between winner and loser tends to remain roughly constant, suggesting that a challenger to an incumbent is drawn into using better influential language than a losing candidate in an open race. The increase in strength of influence happens quite quickly, either at the beginning of the first term or at the beginning of the second campaign, suggesting that it is driven by changes in self-perception rather than deliberate strategy or increasing experience. Success breeds success for winning candidates, but also raises the game of challengers.

An obvious explanation is the presence of a feedback loop in which campaigns, and especially speechwriters, detect increasing success and modify their language use to strengthen it. However, two factors suggest that this explanation cannot be correct. First, the rapid change in language does not support a conventional learning mechanism. Second, if the change were the result of conscious learning, other campaigns should be able to detect and utilize it. In fact, every individual's first campaign appears to begin with similar, low levels of influential language. Broadly, this implies that those trying to convince others to act are on a learning curve, but not so much because of endogenous drivers, such as experience. Rather exogenous drivers of two kinds appear significant: success itself, which increases self-perceived significance, playing back into more influential language; and competition in the influence marketplace, which raises the quality of all participants.

The article proceeds as follows. We are not the first to observe the advantage enjoyed by incumbents; so, initially we situate the article in the context of that literature. Although there is a literature that deals with language and incumbency, it is quite different from our approach in both substance and method. The subsequent section explains the experimental method we deploy to analyze a semi-structured dataset of that scope. In the next section we take up the observations by word frequency, modelling the difference between candidates, and content. The penultimate section takes up the issue of robustness: how might the results – which are highly robust in themselves – fare over an even longer period of time? This is a bit of a counter-factual problem because data on election speeches from earlier campaigns is so hard to come by, and, as we explain in that section, there are problems with the data. Nonetheless, there are some data and we compare the results of those samples to the observations in the proceeding section. Finally, we identify and summarize six properties that emerge as associated with success in terms of language of influence and point out just how remarkable the results in this article are.

2. Background

Incumbents have significant advantages across the electoral spectrum. Explanations for the success of incumbents have focused on two major areas: structural advantages held by incumbents, broadly speaking the greater control they have of the playing field by virtue of their incumbency; and communication advantages, their greater experience and skill in using argument, language, and recognition to their advantage.

A number of structural hypotheses have been suggested for the advantage held by incumbents. Campbell (2000) posits these: 1) political inertia (those who voted for the incumbent the first time are unlikely to change their vote), 2) experience (incumbents already know how to run a successful presidential campaign), 3) a unified party base (the incumbent will not be damaged by intra-party fighting from the primaries), 4) control of events and agenda (the candidate can take steps in office to increase the likelihood of their re-election), 5) access to the Rose Garden Strategy – named for Lyndon B Johnson – the ability of the candidate to appeal to voters as a world/national leader rather than as a candidate, and so above politics, and 6) the ability to campaign

on continuity *or* change (when times are good, the incumbent can campaign on stability, when times are bad, on change; whereas the challenger only has the option to campaign on change). Jacobson (1981) proposes that incumbents enjoy a distinct advantage not just because of their experience with the voters, but because of the voters' experience with them.

Incumbents often enjoy a campaign financing advantage over challengers, both because they have a constituency indebted to them, and because their profile often makes fund-raising easier. However, once candidates face off against one another repeatedly Levitt (1994) found that campaign spending is no longer a factor.

Abramowitz and Pomper (1996) develop a model to predict the outcome of U.S. presidential elections based on three structural properties (and so independent of the particular party nominee): the current president's approval rating, the performance of the economy, and the length of time that the current party has held the presidency. A linear regression model based on these three properties is reasonably predictive.

A second strand has examined the way in which presidential candidates convince voters to elect them. There are two widely-held views of channels of influence: rational choice (the best argument has the most influence); and rhetoric (the best interpretation of reality has the most influence) (Condor et al., 2013). Rational argument founders when the audience collectively holds divergent world-views (general election campaigns) but may be more significant for a homogeneous audience (primary campaigns). However, rhetoric is generally thought to be the more significant channel. For example, rhetorical skill enables a candidate to present himself with a stronger and better persona than his real character, and to deal with the (modern) problem of multiple audiences, the proximate and the universal, who must be influenced simultaneously. This leads naturally to strategic ambiguity as a way to expand appeal (Shepsle, 1972).

Windt (1986) suggested that studies of presidential language fall into four categories: single-speech rhetoric, constituency building, genre, and miscellaneous. The present article falls within the genre studies category.

Benoit et al. (2000) examine the frequency with which candidates acclaim, attack or defend their respective parties in nominating convention keynote speeches from 1960 to 1991. They found that Republicans and keynoters from the incumbent party are more likely to acclaim the benefits of their party, while Democrats and keynoters from the challenging party are more likely to attack. Looking specifically at rhetoric, incumbent parties campaign with 58% more praise in their speeches, unlike challenger parties with only 38% praise in their speeches. This is consistent with the observations in the present article. Incumbent keynoters rarely defended their party (2%) and challengers never did. Benoit et al. find Democrats more positive when they are the incumbent party and less positive when they are challengers. They hypothesize that incumbency will have an even greater effect on campaign discourse than party rhetoric. In other words, they provide support for this article's hypothesis that incumbency matters. Benoit et al. (2000) also observe that in TV spots and in acceptance addresses, incumbent party candidates are more likely to acclaim their party than attack the challenger's party—which has a greater proclivity in these instances to attack. This article finds similar effects.

Examining 143 Senate elections from 1988 to 1998 in which an incumbent was running for re-election, Lau and Pomper (2002) found that attacking the challenger was a particularly ineffectual strategy: for every 6% of the incumbent's campaign pronouncements that featured attacks, the incumbent did 1% worse at the polls. Incumbents in competitive races who focused on their gains and accomplishments during office did significantly better than those that attacked their opponents. The data in the present

article support an analogous conclusion, as well as Lau and Pomper's claim that incumbents do, in fact, campaign differently.

In sum, neither the observation that incumbents enjoy an advantage nor that certain language patterns are associated with that advantage is new. However, this article departs from this literature in two important ways. First, no one has previously harvested as large a sample of speeches as we do below systematically over as long a period of time. Second, no one has previously applied advanced clustering techniques, at least not to as comprehensive a dataset, to language effects associated with incumbency.

3. Experimental method

The scope of data covers campaign speeches for six U.S. presidential election cycles with three incumbent re-elections between 1992 and 2012 for the candidates shown in Table 1. This makes it possible to control for party affiliation, personality and changing endogenous as well as exogenous effects. In each case only speeches in the campaign year (that is, from January until November) were included; a total of 864 speeches, with about equal numbers for each candidate (almost all speeches available online for the candidates from longer ago, a random selection distributed across months for the more recent candidates). Most candidates, Obama being a notable exception, do not give many public speeches while governing. To measure the timing of changes in language, the State of the Union speeches and a few examples of other speeches given by each successful candidate were used.

The frequencies of each word used in each speech were extracted using a parts-of-speech aware tool (so that identical words that are used as different parts of speech are counted separately). This resulted in a matrix with one row per speech, one column per word (with its associated part-of-speech tag), and entries that are the frequencies of each word in each document. The entries in each row were divided by the row sum to normalize for different speech lengths, turning word frequencies into word rates. For technical reasons, the entries in each column were then normalized to z-scores, that is, the column mean was subtracted from each entry and the entry divided by the column standard deviation. The effect of z-scoring is to center the data in each column around zero, and make the spreads of the values in different columns roughly comparable.

Each row of this matrix can be interpreted as a location in a vector space spanned by the columns, which correspond to the words. In this space, two documents that are similar, in the sense that they contain approximately the same words with approximately the same frequencies, will be placed at locations that are close. The dimensionality of this space is determined by the number of distinct words, which is large; but most words appear in only a few documents and so play little role in determining document-document similarity. There is little loss of accuracy, and much gain in clarity, by projecting this space into one of much lower dimensionality. In what follows, the space is projected into only two dimensions, making it possible to render it for inspection. The best choice for the axes depends on the structure of the data. This can be

Table 1
Presidential election contenders 1992–2012.

Year	Winner	Loser
1992	Clinton	(GHW) Bush
1996	Clinton	Dole
2000	(GW) Bush	Gore
2004	(GW) Bush	Kerry
2008	Obama	McCain
2012	Obama	Romney

determined by using a Singular Value Decomposition (SVD) (Golub and van Loan, 1996) which transforms the data into coordinates with respect to axes along which the uncorrelated variation is greatest. The SVD was calculated using Matlab.

Several matrices were extracted from the speech data, using different subsets of possible markers: the 5000 most frequent words overall, nouns, verbs, adjectives, adverbs, pronouns, and determiners. For each of these categories, two-dimensional plots of the speeches were examined. For information retrieval applications ("find me a document containing …") it is conventional to remove short words (so-called stop words) which do not differentiate the content of documents well. In this application, these short words (so-called function words) tend to reflect both authorship and emotional or mental state, and so we retain them.

Also, for each word in each of the categories, we calculated the change in its rate of use from first to second campaigns. We did this by hand; it is difficult to automate because the observed frequencies are a mixture of functional (but almost certainly subconscious) choices and simple linguistic habits. For example, the word "great" was used at moderate levels by (GW) Bush in both campaigns, but shows a marked increase in use in second campaigns for the other candidates. Therefore, we consider it to have increased.

4. Observations

We project the data matrix corresponding to all speeches and a particular set of words into two dimensions and show the positions corresponding to each speech as a point. By labelling the points with properties of the corresponding speeches (cycle, party, outcome and so on), we can ascertain higher-level patterns. We concentrate on frequent words, but the discovered structure is similar for all other word classes except verbs, which have a much more disparate structure.

4.1. Frequent words

Fig. 1 shows the variation among speeches over all campaigns based on the 5000 overall most frequent words. It is evident that winning candidates give speeches towards the upper left end of the figure, and tend to move further towards that style or pattern with time. Losing candidates give speeches towards the lower right end of the figure. Thus the spectrum from lower right to upper left defines the scale of influential language. The mean language used in all four settings is shown in Fig. 2 on the same scale as Fig. 1. The points represent the average position of the speeches corresponding to the four different categories: winners of second terms, losers against an incumbent, winners of first terms, and losers in a first-term contest. There is a linear progression from lower right to upper left, with incumbent winners at the top and open-contest losers at the lower right. Interestingly, the mean positions for Bush and Gore in their 2000 campaigns (not shown) are almost exactly the same, reinforcing the closeness of that election. The gap between winners and losers increases somewhat in the second campaign cycle.

A further illustration of the change between first and second campaign for successful candidates is shown in Fig. 3. There are systematic variations in the choice of words from among the 500 most frequent, and this discrepancy continues further down the ranking. Second campaigns use common words at lower rates than first campaign; as a result, they tend to use a wider range of words.

In Fig. 1 there is also considerable variation from lower left to upper right. This variation turns out to reflect an unusual property of political speeches. In most ordinary documents, the number of distinct words does not increase proportionally with the length of
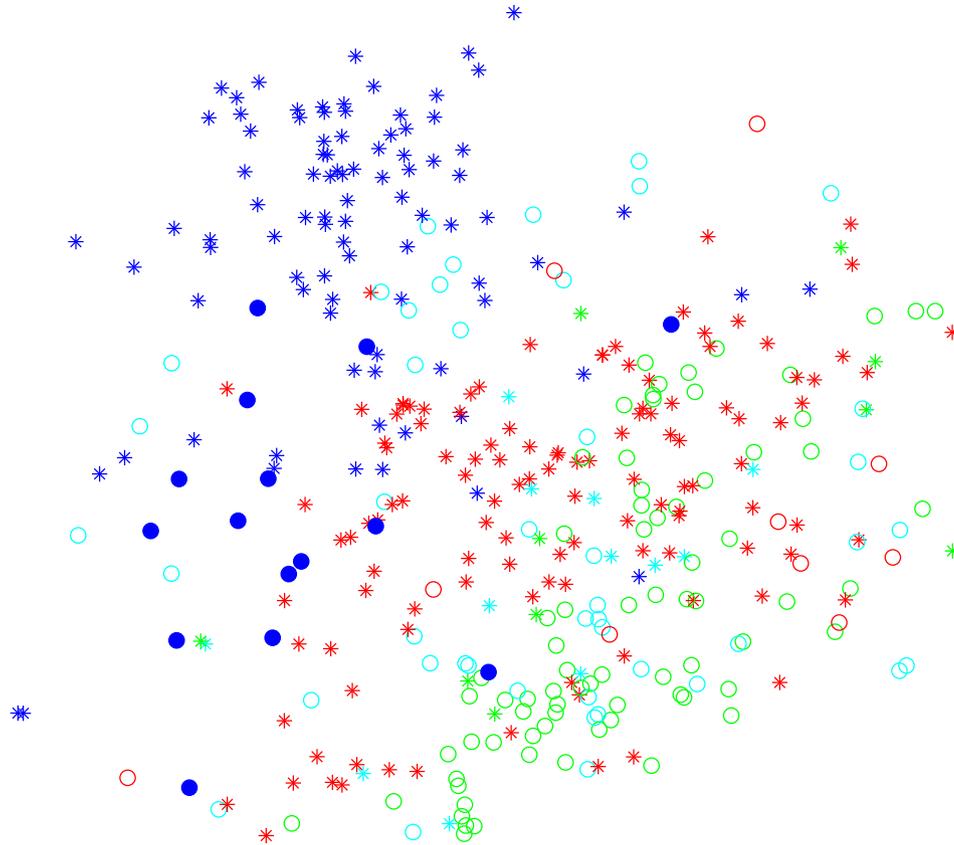
Fig. 1. Clustering of campaign speeches based on variations in the use of the 5000 most-frequent words. Blue: incumbent winners; red: first-term winners; cyan: losers against an incumbent; green: first-term losers; stars: Democrats; circles: Republicans (Axes are right singular vectors which represent linear combinations of all word frequencies and so have no direct accessible interpretation − but proximity does represent similarity).

Fig. 2. Average position of campaign speeches by candidates in each category, on the same scale as Fig. 1, illustrating the linear structure of the influential language model. The loser in a campaign against an incumbent would almost have won in a first-cycle campaign.

the document − increased length tends to reflect an increased level of detail about the same set of topics. In contrast, the number of distinct words in a campaign speech depends almost exactly on how long the speech is. In other words, a longer campaign speech tends strongly to cover a wider range of topics at about the same level of detail rather than going into greater detail on a few topics. The orthogonal variation from lower left to upper right reflects the variation in the number of distinct words used in each speech, which is closely correlated to its length. Campaign speeches tend to

take one of only a few forms − fundraisers, stump speeches, extended televised speeches − which occur in many different orders, so the patterns of speeches from day to day is quite variable in this direction.

4.2. Modelling the difference

There is clearly a systematic difference between first and second campaign cycle speeches. We now examine the language patterns that drive this systematic difference, which is also connected to the difference between success and failure.

In almost every case, the same speechwriting team was involved in both campaigns, so the observed changes are not the result of changes in personnel leading to changes in style. (It is, in any case, unlikely that personnel variations over twenty years would produce such consistent language changes.)

Table 2 shows the high-frequency words in several categories that increase or decrease between first and second campaigns for successful candidates. Observing the words in each category suggests a higher-level view of how language patterns are changing. Overall, the differences of second-campaign language are characterized by:

- An increase in words with positive connotations;
- The complete absence of words with negative connotations, even to the extent of reduced use of contractions with an implicit negative such as "don't";
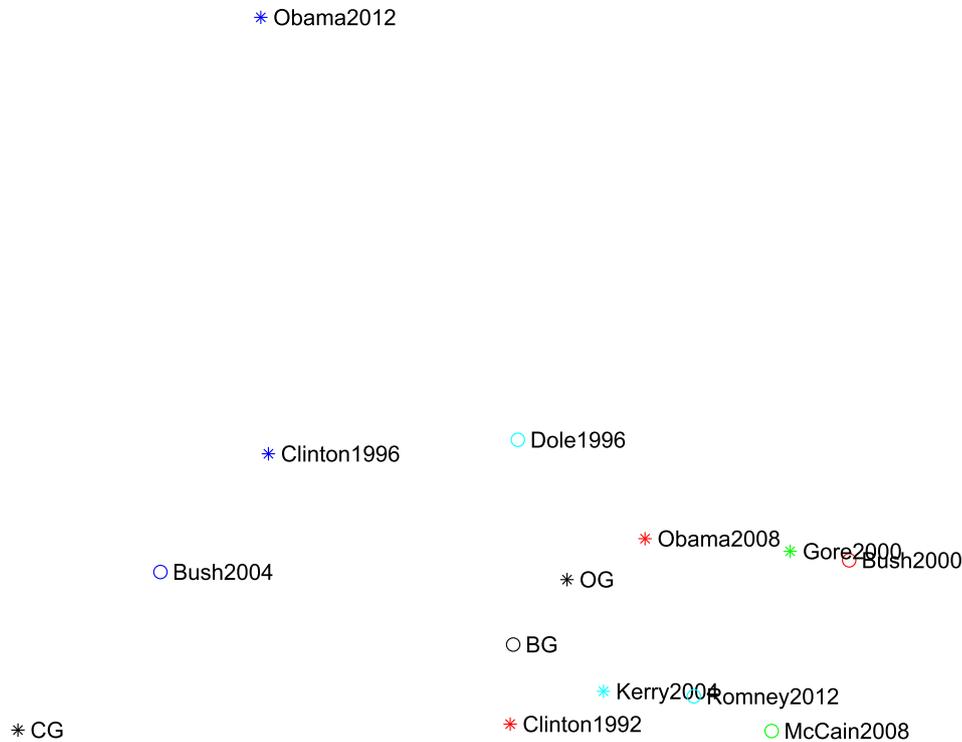
Fig. 3. Mean position of the speeches by each candidate in each election cycle. In every case except one, the winner uses language further up and to the left of the loser. The exception is Gore and Bush in 2000. Black symbols represent the language of speeches given by presidents during their first term in office (CG: Clinton, BG: Bush, OG: Obama). In every case, the level of influence of language from their first term as president lies between the level of their first-campaign and second-campaign language.
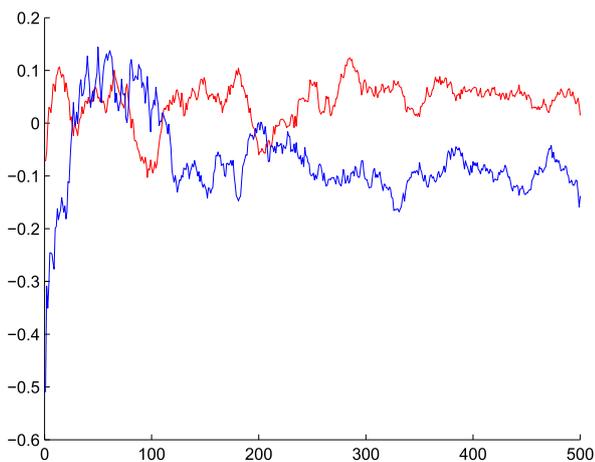

Fig. 4. The rates of the 500 most frequent words show consistent differences between first (red) and second (blue) campaigns. Second campaigns use common words are lower rates and so tend to use a wider variety of words (x axis: word ranks, y axis: z-scored word rates). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

- An increase in abstract words and a decrease in concrete words, both in the domain of nouns ("life" rather than "policies") and determiners ("some" rather than "this");

A decrease in the rate of use of "he" suggests a reduced focus on opponents (who were all male in these election cycles). Overall, second campaign language is more variable than first campaign language.

These differences do not seem to have been deliberately exploited by speechwriters. First, if these changes had been made consciously, we would expect to see a steady progression *across* election cycles; instead, what we observe is a fresh start for each new candidate. Second, changes in language are rapid. This can be seen in Fig. 3. For example, Bush and Clinton both show changes in language between their first campaign and government, and between government and their second campaigns. All of these changes happen rapidly, in the month after inauguration and at the beginning of their second campaigns. Obama's language remains approximately the same for his first campaign and government, but it changes rapidly to much higher levels of influential language within the space of a few months in late 2011 and early 2012. Thus it seems unlikely that speechwriting teams become incrementally better at their craft or grope towards this dimly-perceived influential language.

This suggests that the changes we describe happen because of a change in self-perception by the candidate and campaign, the most obvious change being a track record of election (and so influence) success. From this perspective, the increase in positive language results from increased confidence; and the increase in abstract language from a sense of being above the fray, and a qualitatively different kind of contender from the opponent.

The differences in Table 2 match a generally agreed view of influence — that positive qualities are more apt to attract than either to paint opponents negatively or attempt to influence by reasoning (Druckman et al., 2009; Stevens, 2013). Yet, it seems surprisingly difficult to convince potential influencers that this strategy is the right one; or perhaps it shows how strong the forces that pull towards negativity and argument, even rational argument, are. Nevertheless, Table 2 is a recipe for effective influence. Not all of the differences are easy to exploit: changing function word usage is difficult, because so much of their use is subconscious. Speechwriters can tell a candidate not to say "don't" and leave it off the teleprompter, but this will not necessarily prevent its appearance.

Table 2
Words that change frequency between first and second successful campaigns.

Freq words	Increase	to, government, good, way, great, thank, security, which, any, as, congress, well, its, life, am, best, most, percent, right (adj.), better, important, power, better, freedom, free, find, growth, friends, raise, progress, wants
	Decrease	that, this, what, or, that's, if, because, up, it's, so, go, like, give, why, others, together, can't, down, same, over, Washington, you're, companies, four, election, change, we'll, about, right, college, class, folks, another, young, won't, I'll, everybody, stand, change, few, policies, billion, while, means, invest, how, provide, less, end, fighting, finally, start, months, willing, giving, old, once, no, hard
Nouns	Increase	world, government, security, life, state, power, freedom, growth, friends, progress, ways, success, others, strength, choices
	Decrease	time, future, Washington, thing, millions, reason, peace, medicare, months, challenge
Verbs	Increase	is, are, be, do, doing, lost
	Decrease	don't, didn't, doesn't, giving, wants, isn't, breaks, struggling, investing, began
Adjectives	Increase	good, great, best, right, better, important, free, greater, personal, corporate, such, outstanding, low, individual
	Decrease	military, willing, old, common, main, dangerous, bankrupt, ordinary, immediate
Adverbs	Increase	even, well, only, always, better, often
	Decrease	now, up, down, still, about, instead, finally, actually, maybe, harder, far
Pronouns	Increase	them, its
	Decrease	it's, we'll, everybody, I'll, you'd
Determiners	Increase	some, many, other, any
	Decrease	this, that, that's, last, same, few, less

4.3. Content

Few content words top the frequent word list, and those that are present are quite generic. Of course, different election cycles focus on different topics, but here we examine the use of nouns as surrogates for content.

Fig. 5 shows the spectrum of variation among nouns. They form a rough triangle with national life nouns at the upper right, economic nouns at the lower right, and more-generic nouns at the left. This suggests that most topics are actually perennials that are talked about in most election cycles. There are differences: the economic pole of this triangle was much less in play in the 2012 election cycle than in the 2008 one, for example Nouns associated with the three poles can be seen in Fig. 6.

Overall, usage of nouns aligns with the language of influence, but only in the sense that influential language is associated with the left end of the triangle − the more generic words. In other words,

focusing on content, even patriotic content, tends to reduce influence.

Another way to consider content is to see the extent to which campaigns use language considered as "conservative" or "liberal." We use language models extracted from (Lakoff, 2002). Fig. 7 shows the variation across campaign speeches using liberal language. The variation from left to right is almost entirely driven by the use of "health" and "care," which are associated with Obama's 2008 campaign, but not much with others. The vertical dimension shows that variation in intensity of liberal language, from top to bottom. There is little differentiation between Republican and Democratic presidential campaigns; both Bush and Obama actually reduce their use of liberal language in their second campaigns.

The Lakoff model for conservative language contains many words with negative connotations. While they might appear in content-filled policy discussions, they are hardly present in campaign speeches (with the exception of "freedom" and "strong")
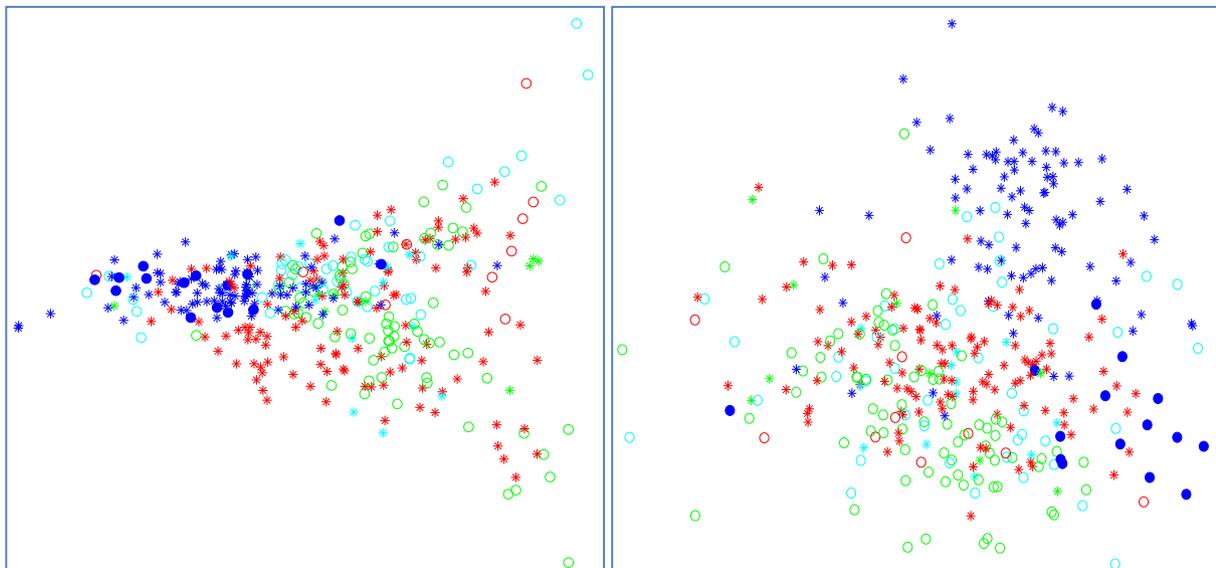

Fig. 5. Trends can be clearly seen based on particular parts of speech (nouns: left; adverbs: right). For nouns, electoral success is greater towards the left (and note especially how variability of nouns decreases with electoral success). For adverbs, electoral success is greater towards the upper right.
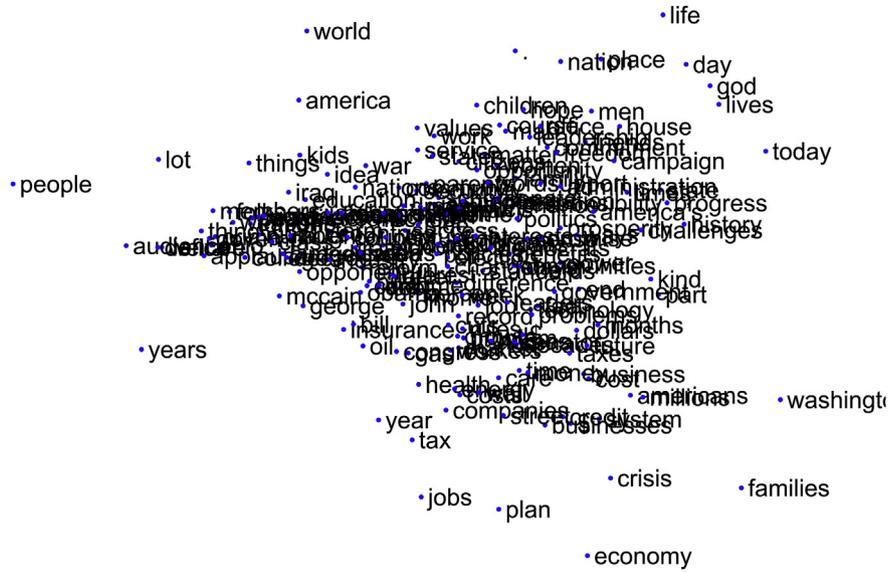
Fig. 6. Variation in nouns (aligned with variation in speeches shown in Fig. 4, left panel). Three kinds of nouns form the three corners of this triangle: national life at the upper right, economic issues at the lower right, and generic nouns at the left.
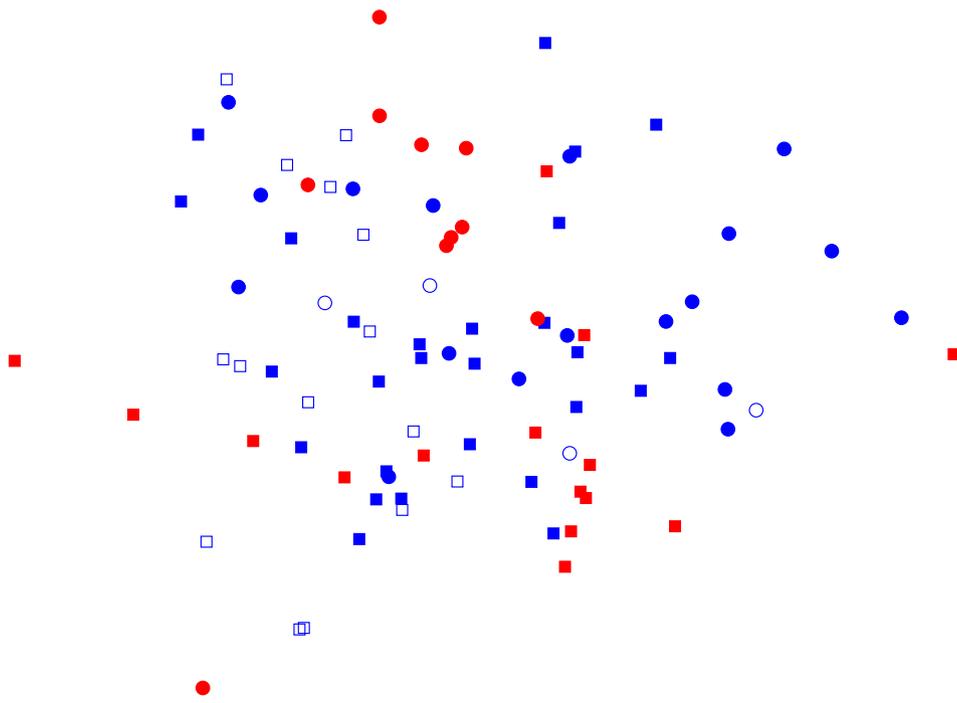

Fig. 7. Campaign speeches by variation in liberal language (red — Bush, solid blue — Obama, open blue — Clinton, circles: first campaign, squares: second campaign).

and there is little differentiation between speeches. In a Single Member Plurality electoral system candidates who hope to get elected need to have broad appeal. On the campaign trail, therefore, conservatives instinctively tend to shy away from the negativity that is associated with conservative language (which does not bode well for the electoral prospects of presidential candidates who are beholden to the Tea Party).

5. Robustness over time

It would be interesting and useful to see whether these results continue to be valid going further into the past. The main factor that

limits experimental investigation of this issue in the availability of campaign speeches before 1996. Not until recording technology became cheap and portable were routine campaign speeches preserved, and those that remain from the years before 1996 are most often those delivered under special circumstances, either covered by the media, or in venues such as universities that had access to audio-visual tools. Much of the accessible content comes from the debates, which are both late in the campaign, and muddled by the effects of verbal mimicry.

The scripts from which such speeches were delivered would also be useful for analysis. However, even this is severely limited since speeches are often not delivered as written, and the discrepancies,
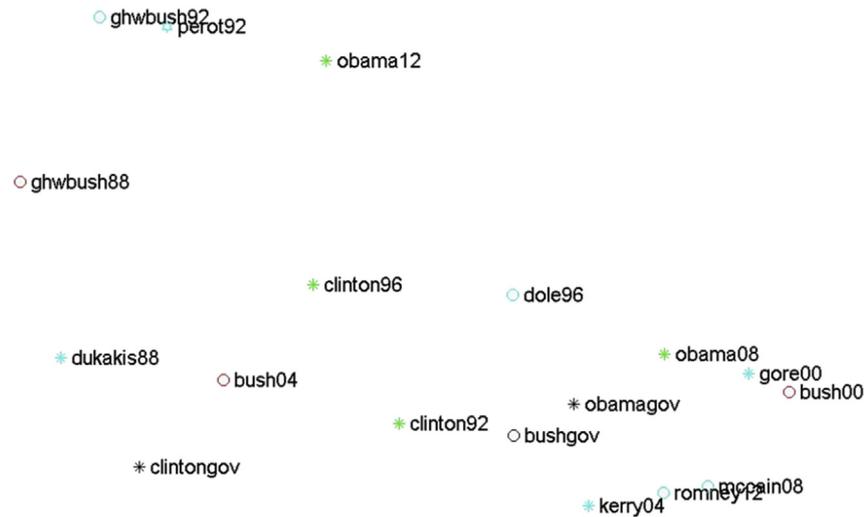
Fig. 8. Average campaign speech language, including 1988 and 1992.

typically in aspects such as function word use, are potentially important for the model. Furthermore, many stump speeches were not scripted at all — Bill Clinton was well known for delivering his campaign speeches without using notes.

We can add to the above model 14 speeches by GHW Bush in 1992, 3 speeches by Ross Perot in 1992, 2 speeches by GHW Bush in 1988, and 2 speeches by Dukakis in 1998. The resulting average positions are shown in Fig. 8. Results for 1988 are consistent with our model: the difference between GHW Bush's and Dukakis's language are as expected (although for very few speeches).

For 1992, the results are not as clear. On the one hand, GHW Bush, as an incumbent, exhibits the high levels of influence language that our model would predict. However, in this case this did not lead to election success, as Bush was defeated by Clinton. There are several possible explanations that do not necessarily invalidate the model. First, the problems of omission and selection bias: compared to subsequent campaigns, the speech sample is not only quite limited but biased in favour of speeches that are not necessarily characteristic of the campaign and its evolution. Second, Clinton is widely acknowledged to be an excellent — possibly superior – campaigner, even by the standards of presidential elections. Third, this election was transformational in the sense that one candidate had links to the shared military experience of many men of the time while the other, for the first time, did not. Fourth, the campaign involved a third-party candidate, Perot, who was successful enough to lead the polls in the early part of 1992.

Indeed, as the figure shows, Perot's language scores highly on influence. This is unsurprising for two reasons: a non-politician does not bring the same assumptions about normative behavior to a campaign; and Perot had already been an extremely successful person. Donald Trump's language in the early part of the 2016 campaign shows similar high levels of influence language, probably for the same reasons. (Furthermore, Ralph Nader played a significant role in the early stages of the 1992 campaign as a not-quite fourth candidate.) Overall, then, the 1992 campaign was exceptional.

6. Discussion and conclusion

There are, empirically, differences between the language patterns associated with "successful" and "unsuccessful" U.S. presidential campaigns. We characterize the "successful" language as

the language of influence. It is summarized by the following properties:

- It does not depend on changes in content words; so, it is not a function of improved arguments or even of improved rhetoric as usually understood. Winners do not have better ideas or present them more cleverly.
- The greatest variation is always caused by variations in small words: not only function words, but also, for nouns, short nouns; for verbs, short and auxiliary verbs; and for adverbs, short and common adverbs.
- Words with negative connotations decrease precipitously: not only explicitly negative adjectives and adverbs, but also less obvious negative words such as contractions containing "not" ("didn't"), some nouns ("challenge"), and some adverbs ("harder").
- Words with positive connotations are used at high rates, especially positive adjectives ("good", "great").
- Less attention is paid to competitors, reflected in reductions in the rate of third-person pronouns.
- There is greater variation in word choices overall. Nouns vary the least of all parts of speech, presumably because the same issues (re)surface and must be addressed in all election campaigns. There tends to be a decrease in the use of economic nouns in second campaigns.

These differentiating factors are psychologically plausible, and agree with many of the more qualitative observations made by others. Temporal aspects of the observed variations suggest that, although this model of using language for influence is not unexpected, campaigns do not deploy it consciously from the beginning, do not learn it directly, but rather grow into it as the result of success. It does appear, however, that some form of imitation occurs, as challengers to incumbents deploy greater influence language than losers in an open campaign.

To be sure, this article's observations are based on a limited sample. More needs to be known about the extent to which such language properties obtain for incumbents more broadly, and whether the effects observed are endogenously contingent. Still, that so strong a language model can be inferred inductively from the speeches given by presidential candidates is remarkable. That incumbents seem to adopt the model intuitively is even more

remarkable.

References

Abramowitz, A.I., Pomper, G.M., 1996. Bill and Al's excellent adventure: forecasting the 1996 presidential election. Am. Polit. Res. 24 (4), 434–442.

Benoit, W.L., 2007. Communication in Political Campaigns. Peter Lang, New York.

Benoit, W.L., Blaney, J.R., Pier, P.M., 2000. Acclaiming, attacking and defending: a functional analysis of U.S. Nominating convention keynote speeches. Polit. Commun. 17 (1), 61–84.

Campbell, J.E., 2000. The American Campaign: U.S. Presidential Campaigns and the National Vote. College Station: Texas A&M University Press.

Condor, S., Tileaga, C., Billig, M., 2013. Political rhetoric. In: Huddy, L., Sears, D.O., Levy, J.S. (Eds.), Oxford Handbook of Political Psychology. Oxford University Press, New York (chapter 9).

Druckman, J.N., Kifer, M.J., Parkin, M., 2009. Campaign communications in U.S. congressional elections. Am. Political Sci. Rev. 103 (3), 343–366.

Golub, G.H., van Loan, C.F., 1996. Matrix Computations, third ed. Johns Hopkins University Press, Baltimore.

Hacker, K.L., Zakahi, W.R., Giles, M.J., McQuitty, S., 2000. Components of candidate images: statistical analysis of the issue-persona dichotomy in the presidential campaign of 1996. Commun. Monogr. 67 (3), 227–238.

Jacobson, G.C., 1981. Incumbents' advantages in the 1978 U.S. Congressional elections. Legis. Stud. Q. 6 (2), 183–200.

Lakoff, G., 2002. Moral Politics: How Liberals and Conservatives Think, second ed. University of Chicago Press, Chicago.

Lau, R.R., Pomper, G.M., 2002. Effectiveness of negative campaigning in US senate elections. Am. J. Political Sci. 464 (1), 47–66.

Levitt, S.D., 1994. Using repeat challengers to estimate the effect of campaign spending on election outcomes in the US house. J. Political Econ. 102 (4), 777–798.

Shepsle, K.A., 1972. The strategy of ambiguity: uncertainty and electoral competition. Am. Political Sci. Rev. 66 (2), 555–568.

Stevens, D., 2013. Tone versus information: explaining the impact of negative political advertising. J. Political Mark. 11 (4), 322–352.

Windt Jr., T.O., 1986. Presidential rhetoric: definition of a field of study. Pres. Stud. Q. 16 (1), 102–116.