

Strategies of Ambiguity: Modeling Rhetoric in Primary Election Campaigns¹

Tom Hayes, Chad Murphy, Martin Johnson, and Shaun Bowler
Department of Political Science
University of California, Riverside

Abstract

When politicians do not state clear policy positions, key steps in the process of democratic representation – accountability, responsibility and the idea of a mandate – are drawn into question. The strategic incentives for candidates to adopt ambiguous positions are, therefore, of wide normative importance. However, the limited empirical research in this area focuses on voter perceptions rather than the actual messages of the candidates. We test expectations that candidates’ semantic ambiguity will vary with their chance of winning the nomination, ideological extremity, and the campaign calendar. We test these hypotheses using a measure of ambiguity derived from a high-dimensional computational model of concept representation, the Hyperspace Analogue to Language (Lund & Burgess, 1996a). We collected textual data from presidential candidate websites in four waves between June 2007 and February 2008. We find little support for expectations informed by the current theoretical literature, but do find that Democratic presidential candidates discuss policy with more ambiguity than the Republican field. Investigating the roots of this difference, we find that Democratic voters are both more risk-acceptant and more ideologically diverse than Republican voters. Consequently, candidates in the major parties appear to be responding strategically to the characteristics of their voters during the primary season.

¹ Paper prepared for presentation at the Southwestern Political Science Association annual meeting, Las Vegas, Nevada, March 12-15, 2008, and Western Political Science Association annual meeting, San Diego, California, March 20-22, 2008. The authors thank Curt Burgess for continued collaboration and advice and Bob Hinh for assistance with data collection. Please direct correspondence to Martin Johnson, Department of Political Science, University of California, Riverside, CA 92521, (951) 827-4612, martin.johnson@ucr.edu.

Strategies of Ambiguity: Modeling Rhetoric in Primary Election Campaigns

The willingness of candidates to adopt ambiguous policy positions has long been recognized as a feature of political campaigns. Downs was among the first to state the underlying insight: “Ambiguity thus increases the number of voters to whom a party may appeal. This fact encourages parties in a two party system to be as equivocal as possible about their stands on each controversial issue. And since both parties find it rational to be ambiguous, neither is forced by the other’s clarity to take a more precise stand” (Downs, 1957). Around the same time, Key shared this view, noting that politicians were addicted to “equivocation and ambiguity” (Key, 1959). Even prior to Downs and Key, the American Political Science Association was concerned with precision in candidate position-taking: “By and large, alternatives between the parties are defined so badly that it is often difficult to determine what the election has decided even in broadest terms” (APSA, 1950, p. 30).

A series of studies since the 1950’s have examined incentives for candidates to adopt ambiguous platforms. Equating ambiguity with equivocation, Shepsle’s (1972) rigorous treatment of ambiguity has become foundational for subsequent formal models. This extensive formal theoretic literature anticipates widespread candidate ambiguity, but also expects types of constituencies and elections to invite variation in the ambiguity of pronouncements (Aragones & Postlewaite, 2002; Berger, Munger, & Potthoff, 2000; Chappell, 1994; Kroszner & Stratmann, 2005). Candidate or party ambiguity may also vary by issue (e.g., Page, 1976), status as incumbent or challenger (e.g., Alesina & Cukierman, 1990), whether the campaign is for a primary or general election (Meirowitz, 2005), among other factors.

Despite the attention paid to ambiguity by formal theorists, little empirical research investigates candidate ambiguity or attempts to test the propositions theorists derive. While some

scholars have fruitfully investigated public reaction to candidates and parties, operationalizing politician ambiguity through voter perceptions (e.g., Bowler, 1990), this does not directly view politicians being ambiguous or clear. This would require an investigation of the combinations of words politicians use in the contexts they make these expressions. Political scientists who model candidate position-taking using words as data have fruitfully located political actors and parties in a policy or ideological space (Bertelli & Grose, 2006; Budge, Robertson, & Hearl, 1987; Gabel & Huber, 2000; Hill, Hanna, & Shafqat, 1997; Laver, Benoit, & Garry, 2003; Martin & Vanberg, 2007; Monroe & Maeda, 2004; Slapin & Proksch, 2007; Volkens, 2007). However, these researchers have not addressed semantic ambiguity in politicians' statements, other than as a potential threat to categorization and measurement (e.g., De Vries, Giannetti, & Mansergh, 2001; Hopkins & King, 2007; Ray, 2001).

We ask under what conditions do candidates adopt a strategy of ambiguity in their campaign rhetoric and directly observe their language use? We review expectations from the formal theoretic literature on candidate ambiguity, propose a measure of ambiguity applying a high-dimensional cognitive model of concept acquisition and representation and test the hypotheses we identify. Most of these expectations are not supported by the evidence. However, we do find a difference between the major party candidates: Republicans are less ambiguous than Democrats. Asking why that might be, we propose two potential non-competing explanations for this and find both that Democratic voters are more risk seeking and more ideologically diverse than Republican voters, using data from American National Election Studies.

Formal models of candidate ambiguity

Shepsle's (1972) foundational paper on candidate ambiguity was motivated in part by Downs' discussion of incentives for parties to "becloud their policies in a cloud of ambiguity" (1957 p.135). He assumes voters make decisions employing a single policy dimension, have symmetric, single-peaked preferences, sincerely seek to maximize their utility with their candidate choice, universally vote, and that politicians are office-seeking, rather than policy-seeking. With the additional assumption that a majority of voters are risk-acceptant, he finds that the winning strategy for a candidate is to use language that suggests a she is offering a lottery over a range of potential policy positions including the position of the median voter. This will defeat a candidate offering the median position with certainty (Shepsle, 1972 p. 564). However, if a majority of voters are risk-averse, a candidate offering the median voter's preferred position with certainty will defeat an ambiguous opponent.

Subsequent work has considered other factors that lead to ambiguity in campaign platforms. However, the general conclusion of the formal literature to date follows Shepsle's initial insight: under many circumstances, candidates have incentives to develop ambiguous policy positions in order to gain votes. The plurality of formal theorists models a scenario that most closely resembles a two-candidate, majoritarian, general election. Few theorists anticipate a multi-dimensional policy space, more than two candidates (but see Aragonés & Postlewaite, 2002; Osborne, 1995), or a sequential process of primaries followed by general elections (but see Meirowitz, 2005a, 2005b).

A recurrent element in candidate ambiguity theory is the status of a given candidate as an incumbent or challenger. Many, including Shepsle (1972) anticipate that incumbent positions are already known (see Berger, Munger, & Potthoff, 2000; Downs, 1957 p.135), limiting the

ability of office holders to take ambiguous positions. In some scenarios, conditional on the risk profile of voters, this perceived fixity of incumbents could advantage them. If voters are risk averse, knowledge of incumbents' positions with certainty would advantage them in comparison to any perceived variance of the challenger. If voters are risk acceptant, knowing the incumbent's policy position advantages challengers, who are free to be more ambiguous. However, an incumbent politician might not be so constrained in these situations and might use his office and devise institutional procedures to "fuzz his true positions" (Alesina & Cukierman, 1990 p. 841).

What candidates know about the position of the median voter and how it relates to their own ideal point are also concerns for formal models of ambiguity. Candidate who are uncertain about the location of the median voter are expected to remain ambiguous (Aragones & Neeman, 2000; Glazer, 1990). Candidates are unwilling to commit themselves for fear of choosing a vote-losing point in the policy space. Glazer further anticipates that candidates in multiple rounds of communication may experience incentives to make their positions ambiguous if they are able to learn something about the electorate's positions from reactions to positions taken by an opponent. Informed candidates who know the location of the median voter may choose ambiguous statements if their sincere position is far from the vote maximizing point in the policy space (Alesina & Cukierman, 1990 p. 841).

Finally, there is a small literature on ambiguity in primary versus general elections. Meirowitz, in particular, develops multi-round competitive models (2005a; 2005b). He predicts all candidates in primary elections adopt ambiguous platforms to avoid being pinned to the wrong position in the general election. For Meirowitz, this finding is conditioned on uncertainty about where voters stand: an uncertainty the primary election helps resolve. While candidates in

general elections may become clearer about their positions than they were in the primary, a somewhat counter-intuitive result anticipates general election opponents may collude on pronouncing divergent platforms in order to enable them to do so ambiguously (Aragones & Postlewaite, 2002).

With many variations, these models tend to anticipate that candidates will prefer a strategy of ambiguity to certainty under many different conditions. There are, nevertheless, some conditions under which candidates avoid ambiguity. Because risk-averse constituents are thought to prefer certain positions, to a lottery over potential policy positions, candidates with risk-averse constituents should choose to be less ambiguous (Bernhardt & Ingberman, 1985; Shepsle, 1972). Chappell (1994) predicts that candidates who learn the position of the median voter might be willing to reveal a position close to the median. This seems intuitive: candidates who know where the median voter is positioned and have their own preferences close to the median should advertise that fact loudly and clearly.

Empirical investigations of candidate ambiguity

Formal models of candidate ambiguity yield multiple hypotheses, with occasionally contradictory expectations. In spite of the rich theoretical literature on the topic, there are few systematic empirical studies of ambiguity in campaigns. To the extent that political scientists approach ambiguity empirically, they attempt to measure the concept via the shadow candidate policy statements cast in the minds of voters (Bowler, 1990; Franklin, 1991; Husted, Kenny, & Morton, 1995). For example, Campbell (1983a; 1983b) uses evidence from public opinion surveys to test predictions about the dispersion of voter opinions of presidential candidate's positions on issues. He represents the ambiguity of a candidate's position taking by examining

the impressions of voters – more widely dispersed interpretations from voters should indicate a greater tendency toward ambiguity in the candidate. Campbell finds that as voter opinions are widely dispersed, candidate position taking is seen to be more ambiguous. Further, as the policy distance between candidates and the electorate lessens so, too, does ambiguity.

Despite the considerable value of this approach, a better test of the collection of hypotheses that exist on ambiguity would involve the statements of the candidates themselves. Campbell, Bowler and others conflate voter perception with candidate ambiguity itself. Following formal theorists like Shepsle, we are more interested in candidate expressions. Thus, a more direct approach to candidate ambiguity would investigate its source – the public pronouncements of candidates and parties. While political scientists are interested in campaign positions and agendas (Kahn & Kenney, 1999; Sides, 2006, 2007; Sulkin, 2005), the tone of campaign messages (Ansolabehere & Iyengar, 1995; Geer, 2006; Kahn & Kenney, 2004), and other aspects of campaign advertising content (e.g., Goldstein & Freedman, 2002), there has been little systematic empirical study of ambiguity of candidates using the candidate's own statements. Some research addresses ambiguity, but speaks past the core of the formal theoretic literature on ambiguity (Geer, 2006).

Hypotheses

Our discussion of formal theoretic models of the strategy of ambiguity informs three hypotheses about the adoption of ambiguity among major party presidential candidates. First, we build on the expectation that likely nominees try to avoid being pinned to specific positions during the primary to give themselves more latitude in the general election. However, not all candidates have a reasonable expectation of victory. Many candidates maintain their campaigns

to affect the debate in the primary and keep issues important to them in play. Office-seeking candidates should be more likely to adopt a strategy of ambiguity, front-runners in particular. Anticipating the general election, these candidates should feel pressure to obfuscate.

Our second hypothesis involves ideological extremity. We find the theoretical literature mixed on this, with some scholars anticipating extremists will be less ambiguous due to their issue commitments, while others anticipate extremists will be more ambiguous as a way to cloak their distance from the median voter. Consequently, we will remain agnostic about the slope of the coefficient, but expect some relationship between ideological extremity and semantic ambiguity.

Finally, we also expect candidates will be less ambiguous over the course of the campaign. This is consistent with models that predict candidates are ambiguous as a function of their ignorance of the location of the median voter. Presumably over the course of even a multi-stage, multiple electoral-venue context, candidates learn more about the position of the median voter as the campaign unfolds and the field narrows.

Clarifying semantic ambiguity

The concept of ambiguity is not easily operationalized in empirical work, a situation that reflects both measurement difficulties and the ambiguity of the concept itself. There are several different uses of the term *ambiguity* in political science literature. Two of these deserve particular comment before we explain our definition of **semantic ambiguity**, which emphasizes the possibility of multiple interpretations of a word, concept, or issue.

Some previous research has associated ambiguity with omission or minimization of an issue (Geer, 2006; Kahn & Kenney, 1999; Page, 1976). **Ambiguity by omission** may be

characterized more clearly (and distinguished from semantic ambiguity) by being described as **vagueness**. Vagueness obtains when language has been used in an unclear manner so that the meaning of a word, term, or concept is not interpretable from context (Engel, 1994; Russell, 1923). We do not think silence is ambiguity. In the extreme, when a candidate says nothing about an issue, he does not express multiple potential meanings of the word, term or concept, nor even a single meaning for it.

An alternative to semantic ambiguity is observed at the level of analysis of the platform. A candidate can take a variety of positions across issues, adopting a left-wing position on one, a right-wing position on another, and so on (Laslier, 2006 p.202). Norpoth and Buchanan (1992), among others, associate this with adherence to a strategy of ambiguity. Downs begins his discussion of ambiguity with a similar idea: “each party will sprinkle these moderate policies with a few extreme stands in order to please its far-out voters” (Downs, 1957 p.135). Per our operational definition, however, this is not semantic ambiguity, rather **platform ambiguity** or **issue incoherence**. Downs distinguishes platform ambiguity from semantic ambiguity: “parties are trying to be as ambiguous as possible about their actual net position. Therefore why should they not accomplish the same end by being equally ambiguous about each policy?” (Downs, 1957 p.136). Candidates may adopt semantically ambiguous positions on each issue dimension – whatever the combination of left and right positions.

We operationally define ambiguity as semantic ambiguity, or the case where a speaker expresses a concept in a manner that allows for more than one possible connotative definition to be associated with the concept. For example, a candidate could talk about *values* and simultaneously reference traditional Judeo-Christian beliefs and progressive/post-materialist beliefs. Successful politicians at the national level seem to master this rhetorical skill. The

ambiguity we focus exists within the expression of candidates at the issue- or word-level of analysis: e.g., Candidate X is ambiguous [clear] about Issue 1. With semantic ambiguity, a candidate discusses an issue but uses language to hedge commitments or qualify her position in subsequent statements.

We focus on semantic ambiguity for several reasons. First, and most importantly, this definition of ambiguity, used by psycholinguists, lends precision to a literature beclouded by multiple meaning for our core phenomenon of interest. Second, in examining the use of language in a political context, it seems especially appropriate to use a definition grounded in scholarship specifically focused on language use and meaning. It is also the definition that seems most in keeping with the main thrust of the formal political science literature on the topic. This sense of ambiguity, more closely identified with equivocation, is found in Key and is the one most closely in line with the approach of Shepsle (1972).

Finally, other types of ambiguity have drawbacks to their usefulness, one being that they ultimately run into the problem of semantic ambiguity themselves. Most importantly, the potential for platform ambiguity to overlay semantic ambiguity: a candidate could adopt a left-wing position on one issue and a right-wing position on another, and state ambiguous rather than clear positions on both. To avoid a proliferation of operational concepts, we avoid platform ambiguity entirely.

Applying a cognitive model of concept representation

Developing a plausible methodology for representing the meaning of a word is central to any serious model of memory or language and has a long history in political science (Osgood, 1952). Cognitive scientists have developed high-dimensional models of memory and language

use. The models are high-dimensional in the sense that they represent word meanings in relation to other words used in a particular text or corpus of texts (Burgess & Lund, 2000; Landauer & Dumais, 1997; Lund & Burgess, 1996). The intuition behind these high-dimensional models is that the meaning of a word is learned from the contexts in which it is used. The particular high-dimensional model we use is the Hyperspace Analogue to Language (HAL) developed by Lund and Burgess (1996b). The model learns the relationship of a word to other words as a function of the words' co-occurrence patterns. A benefit of using a model like HAL is that it provides an objective and transparent metric for measuring word similarity and therefore means our results will be replicable.

The concept acquisition process in HAL is a computationally simple. This computational model *reads* language samples (speeches, party platforms, etc.) and *learns* what a word means by virtue of the linguistic contexts in which they occur (Burgess & Lund, 2000). This model of meaning representation embodies several basic assumptions.

1. Human language can be expressed as a corpus of text;
2. Individuals express and represent meaning as a function of word use in context.
3. Humans encode meaning as a function of seeing words used near each other in a moving window of cognition, analogous to a working memory span.
4. The window is relatively small;
5. The distances expressing word relationships in this window are weighted; (We assume stronger relationships among words that appear closer together, but are attentive to relationships among words farther apart in the working memory window.)
6. A matrix of word-to-word relations is based on a lexicon of all unique words used in the text corpus: these words serve as the row and column headers for the matrix;
7. The number of items in the lexicon determines the dimensionality of the model (e.g., 500 words = 500 dimensions of contextuality);
8. The co-occurrence values in each cell are normalized for word frequency.

For the analyses here, we use a window width of 10 words: We assume that a person cognizes the word they are currently reading, along with the word appearing immediately before it and the nine that precede them. In this sense, we allow words to co-occur with a given target word in a window of attention that moves through the text one word at a time, calculating co-occurrences at each step and storing the co-occurrence values in the memory matrix.² As a particular word in the window is left further behind by the reader, its association in memory with the current word fades. Consequently, we assign values inversely related to the distance between two words in the window. For example, if two words were next to each other in a sentence they would be assigned a value of 10 (since a 10-word window is used), while a pair that is separated by nine words would only be assigned a value of 1. The product of this procedure applied to the text and each word in it is an N-by-N matrix, where N represents the number of unique words in the vocabulary list. This high-dimensional context or memory space is the word co-occurrence matrix. Once the matrix has been learned, similarity measurements can be applied to the meaning vectors to compute the semantic distance among words. However, we can also use the co-occurrence matrix to study semantic ambiguity.

Measuring semantic ambiguity using HAL: Context density

The more ambiguous a word is the more diverse the history of the word is with other words. The word *Ray*, for example, could refer to a person or to a stream of light. What makes high-dimensional memory models excellent candidates for ambiguity research is that the learning process creates a vector of the word that is a history of the contexts in which it was used

² Here we only use row values (co-occurrences that occur prior to the target). This rarely makes a difference and when it does it is relevant to grammatical-syntactic constraints (Burgess & Lund, 1997).

(Burgess, 2001b; Landauer, 2001). This is critical because context sensitivity should enhance the sensitivity of the metrics to ambiguity detection.

One of the many uses of HAL is the calculation of context density, a metric of semantic ambiguity. The vector representation for a word is the set of weighted co-occurrences of that word with all other words that it co-occurred with in the moving window. These vectors tend to be sparse, that is, a large proportion of words do not co-occur with other words in the moving window. Context density is the percentage of the cells that have a recorded co-occurrence relative to the number of words in the lexicon. In a high-dimensional model such as HAL, each non-zero cell represents one linguistic context in the learning history of the word.

Per our operational definition of semantic ambiguity, an empirical characteristic of an ambiguous word is that, by virtue of its multiple meanings, it will have experienced more contexts than a less ambiguous word. The higher the proportion of non-zero cells in a vector, the more likely that word is to be ambiguous. The definition of ambiguity as the density of the co-occurrence values in a word's vector which contribute to determining the co-occurrence "features" of the word as well as their weight in representing the word's meaning and determining the relative dominance of the meaning. This is influential in predicting the cognitive processing time of semantic ambiguity (Atchley, Burgess, Audet, & Arambel, 1996; Burgess, Tanenhaus, & Seidenberg, 1989; Burgess, Trueswell, Tanenhaus, & Garnsey, 1990; Simpson & Burgess, 1988). Context density is thus a reliable and valid measure of semantic ambiguity.

Websites as data

Our primary sources of data for this investigation are campaign websites. Websites are an increasingly important vehicle for campaigns in generally, but they are an especially important and relevant source of information in this study for several reasons – both theoretical and practical. We are not interested in studying campaign websites, per se, but rather using the content of campaign websites as an indicator for candidate expressions on policy issues. We could theoretically follow candidates and record their stump speeches, conduct lengthy interviews with candidates and record the content of these interviews as a text source for the computational study of candidate expressions. We adopt websites as a less expensive and more readily accessible indicator of candidate expressions.

Websites provide an unmediated statement of candidate campaigns: The Internet provides “a new form of direct communication, which permits candidates to communicate messages to citizens without intervention, editorship, or control of other organizations, businesses, or individuals” (Bimber & Davis, 2003, p. 46). The material on websites (for example, transcripts of speeches) is presented as the candidate, or the campaign as an extension of the candidate, intends. It is not shaped by such mediating factors as reporter bias or time constraints. Candidate websites provide a rich source of much text. In the 2000 and 2004 presidential election cycles, websites of most primary competitors contained issue position documents and campaign news, and all but one content analyzed by Schneider and Foot (2006) contained biographical statements and the text of speeches. Candidates are expanding both the likelihood and extent of their Internet use to communicate messages (Benoit & Benoit, 2005; Druckman, Kifer, & Parkin, 2007; Gibson & Ward, 2000; Gulati & Williams, 2007).

Findings

The main dependent variable of interest, context density, assesses the semantic ambiguity of key policy words candidates have used over the course of the campaign.³ The HAL computational model allows us to develop – for each word – a measure of just how many contexts in which the individual word is used for each speaker, candidates here. To make the measure more intuitive, we provide a necessarily reductive “overview,” displaying the average level of ambiguity (context density) across the use of these policy words for each candidate. That is, on average, just how ambiguous is a candidate? Do they consistently use the same words in the same ways? Or, with each use of a term, do they qualify, elaborate and amend by using it in slightly different ways? Figure 1 displays average semantic by candidate. As can be seen, Former Gov. Mike Huckabee (R-AR) was least ambiguous, by our definition, in his use of language of all the candidates we examined. U.S. Senator Chris Dodd (D-CT), on the other hand, was the most ambiguous in his discussion of these policy words.

[Figure 1 about here]

Figure 1 displays the average results for these 16 words as used by each candidate. While Figure 1 gives something of a feel for the data and the measure, it does lump together all words. What we are interested in, however, are the ways in which policy words are used rather than just all words. After all, a candidate can be clear on the issues even as s/he waffles on in other areas of campaign talk. We can, then, unpack the highly aggregated measure presented in Figure 1 to look at ambiguity measures for key policy words use by each candidate. This allows us to develop more nuanced tests of the way in which ambiguity may be strategically motivated

³ The 16 policy words we focus on here are discussed in the appendix.

with specific reference to policy terms by candidate. Furthermore, we can express and then test specific hypotheses relating to these ambiguity measures.

For example, as we noted above it may be the case that frontrunners moderate the clarity of their message in order to keep as frontrunners by appearing to be all things to all voters (H1). While it is possible to argue that current political leaders have shown the value of being a “straight talker,” or a leader who can tell voters they “know where he stands,” it is possible to object to the hypothesis H1 on the grounds that this does not, for example, explain the self-adopted image of George Bush as a “straight-talking” model of moral and ideological clarity. But H1 is a hypothesis that reflects the conventional wisdom of the discipline. The main thrust of the formal political science literature, for example, is a demonstration of the advantages of ambiguity. Indeed a central idea of this literature is that ambiguity is a dominant strategy under a wide range of conditions. H1, then, may be said to represent a place where the real and academic worlds of politics collide.⁴

Our second hypothesis may also be found in the literature, but it is one that would also seem to conform with intuition: more extreme candidates may be ‘clearer’ (less ambiguous) than centrist ones (H2). Of course the question here is how to place candidates on an ideological spectrum in order to be able to test this conjecture. Average candidate ideological position is inferred from polling data on the candidates. We obtained voter ratings of candidates from the Rasmussen poll and subtracted the proportion of respondents who viewed the candidate as liberal

⁴ Of course, one major difference between George Bush post-2000 is that – as the formal literature argues – as an incumbent he is anchored by his record. Incumbents are necessarily, therefore, less ambiguous than challengers. But the general point remains: there is an informal sense or intuition that candidates may gain from being seen as “straight talkers” and clear. In which case, we are talking about the advantages claimed by candidate Bush rather than President Bush. In the set of candidates we examine, however, all are challengers.

from the proportion viewing the candidate as conservative. These average ratings are listed in order in Table 1.

[Table 1 about here]

Our third hypothesis is controls for a potential flaw in our measure of ambiguity: the impact of time. If a speaker keeps talking about a topic it is likely that s/he will use a given word in more contexts simply as a consequence of talking more. As time goes on, then, we should expect the ambiguity of every speaker (and indeed every word) to increase. It is important then to control for the time trend. Indeed our measure of context ambiguity may simply be, at best, heavily time dependent and, at worse, a proxy for it.(H3). In order to assess this we include two measures of control: first, the time of the web site “scrape” (i.e., the collection of text data from the website, as discussed in the appendix) and, second, the number of words found.

[Table 2 about here]

Table 2 is somewhat surprising. We find no support for any of these three hypotheses. While this is somewhat comforting for the case of H3 (our ambiguity measures do not simply tap time trends or size), this is much more troubling for the case of H1 and H2 which, after all, reflect conventional wisdom within the discipline. Even measures of interaction do little to recover the main hypotheses of interest. While the slope for Democrats’ ideological extremity is positive (the coefficient represents the association between ideological position and ambiguity when the interaction with the Republican indicator set to zero), it fails to reach conventional levels of statistical significance. While the interaction term is negative, it does not flip the sign of the ideology indicator and the also fails to reach conventional levels of statistical significance.

What, then, is going on? We plainly see a strong and durable party difference: Democrats use more ambiguous policy language than Republicans. The average predicted

context density for Democratic candidates with all other variables set to their mean value is 3.57, meaning that on average these policy words have co-occurrence values with 3.6 percent of the words in each corpus. The average predicted context density for Republicans use of these policy words is 2.49. The difference in these estimated values, computed using Clarify (Tomz, Wittenberg, & King, 2001), is statistically significant ($p < .05$). This sets up a puzzle: Why is there such a difference between Democratic and Republican candidates and how – if at all – does this difference relate to the literature on ambiguity?

Explaining partisan differences

The literature on ambiguity may be consistent with strong differences between parties provided there are also differences between party electorates in terms of some key attributes. The formal models of ambiguity tend to rely on assumptions about the nature of voters.

One central assumption concerns the risk aversion of voters. If, then, the risk profile of Democrats and Republicans differ we may see, in line with formal results, that candidates of each party should adopt different strategies of ambiguity. In particular, if Democratic voters are more risk acceptant than would be consistent with the expectation of Democratic candidates being more ambiguous.

A second, but more contentious, possibility is that candidates may be less sure of the location of the median voter in some electorates rather than others. In these days of constant polling, it may seem somewhat hard to believe that any candidate is uncertain of where the median of her electorate is located. While candidates may not think in terms of medians in a spatial sense, opinion polling means they should be able to identify ‘their’ voters. When candidates are sure of voter policy locations, they will be clearer in staking out positions. Of

course, that is easier in some settings rather than others. If, for example, independents may vote in a primary that could unsettle candidate expectations of where voters are situated because independents may or may not turn out or may or may not have known policy preferences.

Alternatively if voters have preferences over candidates that may change at the last minute, then candidates may not have a clear sense of where voters lie, even with regular polling. While these may be plausible arguments, they are also arguments that do skate quite close to thinly disguised accounts of the current primary season. After all, we know that the Democrats tended to let Independents vote in their primaries more frequently than did Republicans, and we know that Democratic votes often changed at the last minute (e.g. New Hampshire and Texas). What we would like, then, is something that can represent a measure that may suggest how candidates could be uncertain of voter positions that is not closely tied to current events. One such measure would be the range of policy preferences within a given party. If the electorate has a wider range of policy preferences, we might expect greater ambiguity in candidate statements.

That is, the bigger the tent, the harder it is for candidates to figure out where voters stand, and hence the more ambiguous the candidate stance. It is – from this primary season – not obvious from the outset whether the GOP mix of social and fiscal conservatives is necessarily more or less diverse than the Democratic mix of different groups. The ideological diversity of voters is, then, one factor that may help push candidates towards ambiguity.

In short, we may still be able to reconcile the established political science literature on ambiguity and the finding of a strong party effect provided the parties have distinct electorates. In particular, if party electorates have distinct risk profiles and/or differing in their ideological variance, then we can reconcile the partisan reality with political science theory. As a practical matter, what we need to be able to show that Democratic voters are more risk acceptant than

Republicans and/or show that the ideology of the Democratic electorate has a larger variance than that of the GOP electorate. If these patterns hold then we may be said to have provided evidence that the party effect shown in Table 2 is consistent with extant theories of ambiguity.

Risk acceptance among Democrats.

To examine differences in risk acceptance between parties, we use data from the 2006 ANES Pilot Study (American National Election Studies, 2007). The 2006 ANES Pilot Study includes a series of values oriented questions which appear to overlap conceptually with risk orientations. These basic values include measures of the importance respondents assign to personal security, stimulation, tradition, and conformity. Here, we focus on the items used from the Schwartz Portrait Values Questionnaire (PVQ) (Schwartz, 2007) rather than the alternative wordings for these items tested on an alternative ballot in the NES. The PVQ items have been recommended for inclusion or expansion in subsequent NES administrations and are preferred to test items (Hitlin & Kramer, 2007).

These items are coded so that smaller numbers, on a scale of 1-6, represent that the respondent thinks a person described with a given characteristic is more like them. The battery begins with the general instruction, “Next, I will describe some people. Please tell me how much each person is or is not like you. Very much like you, like you, somewhat like you, a little like you, not like you, or not like you at all?” Then respondents were given a brief description of a person and asked to assess their similarity or difference for each. For example, for the stimulation item, the description was “[He/She] looks for adventures and likes to take risks. [He/She] wants to have an exciting life. Is this person very much like you, like you, somewhat like you, a little like you, not like you, or not like you at all?” Consequently, for the stimulation item, smaller numbers mean that the respondent has a stronger preference for risk over a less

exciting life. On this item, Democrats score on average, 3.21, compared to 3.47 for Republicans, suggesting Democrats had a greater preference for risk during the 2006 mid-term elections. On the other hand, Republicans had a greater affinity for people described as an adherent to tradition, and a person who values following the rules at all times, as described in Table 3.

[Table 3 about here]

Ideological diversity among Democrats

Similarly to the previous analysis, we attempt to find empirical support for the idea that the Democratic Party is more ideologically diverse than their Republican counterparts. For this we use data from the 2004 ANES (American National Election Studies, 2005) asking respondents to place themselves on a seven-point scale, where 1 is most liberal and 7 is most conservative. The Democratic average is 3.42 (on the moderate side of slightly liberal), while the Republican average is 5.16 (very close to slightly conservative). However, to get at the distribution of these scores we compute the absolute value of each partisan's deviation from her party mean ideology. On average, Democrats have larger deviations from their partisan mean than Republicans ($t=3.20$, $p<.01$, two-tailed test).

Democrats are not only a more ideologically diverse electorate than Republicans, they are also a more risk acceptant bunch. Because of this, we can say that the partisan finding of Table 2 does not necessarily contradict the arguments of the formal literature on ambiguity, even as a number of other arguments relating to ambiguity do not seem to be borne out.

Conclusion

When politicians do not state clear policy positions for voters to evaluate, key steps in the process of democratic representation – accountability, responsibility and the idea of a mandate –

are drawn into question. The strategic incentives for candidates to adopt ambiguous positions are of wide normative importance to democratic theorists. However, scholarship on campaign ambiguity has been just that, theoretical rather than empirical. Research that does engage candidate equivocation empirically tends to focus on the consequences of hypothetical ambiguity: the uncertainty of voters. We apply a theoretical model of cognition and concept representation to the question of candidate ambiguity.

Our high-dimensional model of cognition, HAL, informs a measure of ambiguity that allows the first systematic tests of many explicit and implicit hypotheses informed by the rich theoretical literature on ambiguity. What we find is a strong partisan effect. This, on the face of it, is something of a surprise. From Key onwards the academic literature has not led us to expect that one party would be more (or less) ambiguous than another. The question we sought to address in the latter half of the paper was whether the partisan finding undermined ideas of ambiguity. Our answer was “not necessarily”. The different electorates of the two parties have properties that are consistent with the properties of electorates in formal models: Republicans more risk averse and Democrats are more ideologically diverse. Replacing the proper nouns of party names with variable labels like “risk aversion” and “ideological diversity” allows us to reconcile our findings with established models.

Further research might usefully focus on other expectations from the rich theoretical literature we address here. In particular, investigation of Congressional races would shed light on the role of incumbency and provide greater variation on constituent risk orientations to examine the conditions under which politicians choose the strategy of ambiguity.

Appendix

For each website, we collected, or “scraped,” all website text and aggregated these pages into a single corpus for each candidate. We collected text from the parent domain (press releases, issue positions, speeches, web-log posts, events, biographies, etc.), but we excluded text linked on the page from other sources (e.g., newspaper articles, opinion pieces appearing in newspapers and magazines). In each wave of text collection, we gathered only new text rather than archived press releases, and material collected in previous scrapes.. The time frame for each text collection is shown in Table A.1, which lists the days that each candidate’s website was archived. The first scrape occurred in fall 2007 and collected text posted to the website between February 2007 and the date of text collection. The second scrape was taken just before the Iowa Caucuses, the third scrape was taken just after the New Hampshire primary, and the fourth scrape was collected after the Super Tuesday primaries. For some candidates, we collected text shortly after they had dropped out of the race. In such cases, this accounted for their final collection of their website text.

The policy words were derived from Washington Post/ABC News Polls (conducted throughout 2007 and 2008) that asked a random sample of U.S. adults, “Thinking ahead to the November presidential election, what is the single most important issue in your choice for president?” The 16 words used for this analysis represent issues the respondents emphasized, taken from poll responses: *economy, jobs, Iraq, war, health, terrorism, ethics, corruption, immigration, education, environment, social, security, taxes, abortion, and foreign.*

Table A.1 Text collection dates

Candidate Name	1st scrape	2nd scrape	3rd scrape	4th scrape
Joseph Biden	9/27/07	12/28/07	1/12/08	
Hillary Clinton	9/6/07	12/23/07	1/10/08	2/10/08
Christopher Dodd	9/26/07	12/24/07	1/10/08	
John Edwards	9/30/07	12/26/07	1/10/08	2/9/08
Mike Gravel	9/25/07	12/30/07	1/13/08	
Dennis Kucinich	9/27/07	1/3/08	1/12/08	
Barack Obama	9/29/07	12/27/07	1/13/08	2/10/08
Bill Richardson	9/28/07	12/26/07	1/11/08	
Rudolph Giuliani	10/31/07	12/30/07	1/13/08	2/09/08
Mike Huckabee	11/2/07	12/31/07	1/14/08	2/10/08
Duncan Hunter	11/1/07	1/3/08	1/14/08	
John McCain	11/2/07	1/1/08	1/14/08	
Ron Paul	11/1/07	1/3/08	1/14/08	
Mitt Romney	11/4/07	1/1/08	1/14/08	2/10/08
Tom Tancredo	10/31/07			
Fred Thompson	11/2/07	1/2/08	1/14/08	2/09/08

References

- Alesina, A., & Cukierman, A. (1990). The politics of ambiguity. *The Quarterly Journal of Economics*, 105(4), 829-850.
- American National Election Studies. (2005). 2004 National Election Study. Retrieved February 29, 2007, from University of Michigan, Center for Political Studies [producer and distributor]: www.electionstudies.org
- American National Election Studies. (2007). 2006 ANES pilot study full release. Retrieved February 27, 2008, from Stanford University and the University of Michigan [producers and distributors]: www.electionstudies.org
- Ansolabehere, S., & Iyengar, S. (1995). *Going negative: How political advertisements shrink & polarize the electorate*. New York: Free Press.
- APSA. (1950). Part i. The need for greater party responsibility. *The American Political Science Review*, 44(3), 15-36.
- Aragones, E., & Postlewaite, A. (2002). Ambiguity in election games. *Review of Economic Design*, 7, 233-255.
- Benoit, P. J., & Benoit, W. L. (2005). Criteria for evaluating political campaign webpages. *Southern Communication Journal*, 70(3), 230-247.
- Bernhardt, M. D., & Ingberman, D. E. (1985). Candidate reputations and the incumbency effect. *Journal of Public Economics*, 27(1), 47-67.
- Bimber, B. A., & Davis, R. (2003). *Campaigning online: The internet in U.S. Elections*. New York: Oxford University Press.
- Bowler, S. (1990). Voter perceptions and party strategies: An empirical approach. *Comparative Politics*, 23(1), 61-83.
- Burgess, C., & Lund, K. (1997). Modeling parsing constraints with high-dimensional context space. *Language and Cognitive Processes*, 12(2-3), 177-210.
- Burgess, C., & Lund, K. (2000). The dynamics of meaning in memory. In E. Deitrich & A. B. Markman (Eds.), *Cognitive dynamics* (pp. 117-156). Mahwah, NJ: LEA Publishers.
- Campbell, J. E. (1983a). Ambiguity in the issue positions of presidential candidates: A causal analysis. *American Journal of Political Science*, 27(2), 284-293.
- Campbell, J. E. (1983b). The electoral consequences of issue ambiguity: An examination of the presidential candidates' issue positions from 1968 to 1980. *Political Behavior*, 5(3), 277-291.
- Chappell, H. W. (1994). Campaign advertising and political ambiguity. *Public Choice*, 79(3-4), 281-303.
- Downs, A. (1957). *An economic theory of democracy*. Boston, MA: Addison-Wesley Publishing.
- Druckman, J. N., Kifer, M. J., & Parkin, M. (2007). The technological development of congressional candidate web sites: How and why candidates use web innovations. *Social Science Computer Review*, 25(4), 425-442.

- Engel, S. M. (1994). *With good reason : An introduction to informal fallacies* (5th ed.). New York: St. Martin's Press.
- Franklin, C. H. (1991). Eschewing obfuscation - campaigns and the perception of United States-senate incumbents. *American Political Science Review*, 85(4), 1193-1214.
- Geer, J. G. (2006). *In defense of negativity: Attack ads in presidential campaigns*. Chicago, IL: University of Chicago Press.
- Gibson, R., & Ward, S. (2000). A proposed methodology for studying the function and effectiveness of party and candidate web sites. *Social Science Computer Review*, 18(3), 301-319.
- Goldstein, K., & Freedman, P. (2002). Lessons learned: Campaign advertising in the 2000 elections. *Political Communication*, 19(1), 5-28.
- Gulati, G. J., & Williams, C. B. (2007). Closing the gap, raising the bar: Candidate web site communication in the 2006 campaigns for congress. *Social Science Computer Review*, 25(4), 443-465.
- Hitlin, S., & Kramer, K. (2007). *Value dimensions in America*. Ann Arbor, MI, and Palo Alto, CA: Report to the National Election Studies Board. Based on the 2006 Pilot Study.
- Husted, T. A., Kenny, L. W., & Morton, R. B. (1995). Constituent errors in assessing their senators. *Public Choice*, 83(3-4), 251-271.
- Kahn, K. F., & Kenney, P. J. (1999). *The spectacle of U.S. Senate campaigns*. Princeton, NJ: Princeton University Press.
- Kahn, K. F., & Kenney, P. J. (2004). *No holds barred: Negativity in U.S. Senate campaigns*. Upper Saddle River, NJ: Pearson/Prentice Hall.
- Key, V. O., Jr. (1959). Secular realignment and the party system. *The Journal of Politics*, 21(2), 198-210.
- Laslier, J.-F. (2006). Ambiguity in electoral competition. *Economics of Governance*, 7, 195-210.
- Lund, K., & Burgess, C. (1996a). Hyperspace analogue to language (hal): A general model semantic representation. *Brain and Cognition*, 30(3), 5-5.
- Lund, K., & Burgess, C. (1996b). Producing high-dimensional semantic spaces from lexical co-occurrence. *Behavior Research Methods Instruments & Computers*, 28(2), 203-208.
- Meirowitz, A. (2005). Informational party primaries and strategic ambiguity. *Journal of Theoretical Politics*, 17(1), 107-136.
- Norpoth, H., & Buchanan, B. (1992). Wanted: The education president: Issue trespassing by political candidates. *Public Opinion Quarterly*, 56(1), 87-99.
- Osgood, C. E. (1952). The nature and measurement of meaning. *Psychological Bulletin*, 49, 197-237.
- Page, B. I. (1976). The theory of political ambiguity. *The American Political Science Review*, 70(3), 742-752.
- Russell, B. (1923). Vagueness. *The Australasian Journal of Psychology and Philosophy*, 1, 84--92.

- Schneider, S. M., & Foot, K. A. (2006). Web campaigning by U.S. Presidential primary candidates in 2000 and 2004. In A. P. Williams & J. C. Tedesco (Eds.), *The internet election: Perspectives on the web in campaign 2004*. Lanham, MD: Rowman & Littlefield.
- Schwartz, S. H. (2007). *Basic personal values*. Ann Arbor, MI, and Palo Alto, CA: Report to the National Election Studies Board. Based on the 2006 Pilot Study.
- Shepsle, K. A. (1972). The strategy of ambiguity: Uncertainty and electoral competition. *The American Political Science Review*, 66(2), 555-568.
- Sides, J. (2006). The origins of campaign agendas. *British Journal of Political Science*, 36(03), 407-436.
- Sides, J. (2007). The consequences of campaign agendas. *American Politics Research*, 35(4), 465-488.
- Sulkin, T. (2005). *Issue politics in congress*. New York: Cambridge University Press.
- Tomz, M., Wittenberg, J., & King, G. (2001). CLARIFY: Software for interpreting and presenting statistical results. (Version 2.0). Cambridge, MA: Harvard University.

Table 1. Perceived ideological positions of Presidential candidates

<u>Candidate</u>	<u>Perceived ideological position</u>
Clinton	-0.41
Obama	-0.39
Edwards	-0.33
Kucinich	-0.30
Biden	-0.22
Richardson	-0.10
Paul	0.08
Giuliani	0.12
Huckabee	0.18
Romney	0.22
McCain	0.28
Thompson	0.36

Source: Rasmussen poll data.

Table 2. Modeling candidate semantic ambiguity (OLS)

Variable	β (robust s.e.)
Frontrunner	-.060 (.152)
Average Candidate Ideology	.825 (.790)
Republican	-1.038* (.439)
Average Candidate Ideology * Republican	-.494 (1.491)
Time 2	.111 (.130)
Time 3	.047 (.187)
Time 4	.036 (.171)
Unique words in corpus (natural log)	.310 (.187)
Constant	.668 (1.743)

N = 680
 $F_{8,11} = 26.94^{***}$
 $R^2 = .02$

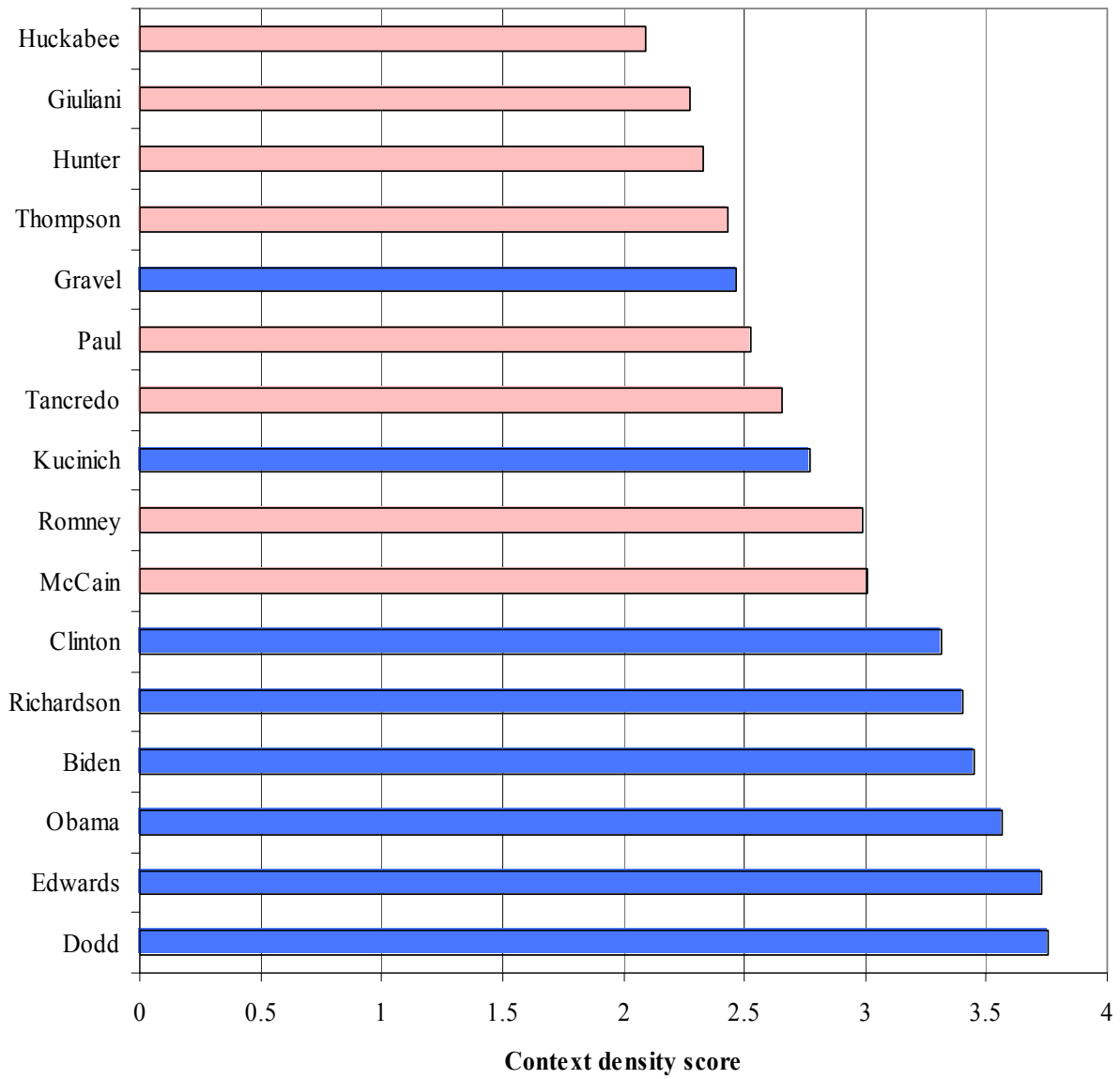
*** $p < .001$, ** $p < .01$, * $p < .05$. Word observations clustered by candidate

Table 3. Comparing values of Democrats and Republicans

Concept	Wording	Democrats	Republicans	t-test, one-tailed
Stimulation	[He/She] looks for adventures and likes to take risks. [He/She] wants to have an exciting life.	3.21 (175)	3.47 (138)	t=1.57, p<.06
Tradition	Tradition is important to [him/her]. [He/She] tries to follow the customs handed down by [his/her] religion or [his/her] family.	2.67 (175)	2.20 (138)	t=2.89, p<.01
Conformity	[He/She] believes that people should do what they're told. [He/She] thinks people should follow rules at all times, even when no one is watching.	2.63 (175)	2.35 (138)	t=1.79, p<.05

Source: (American National Election Studies, 2007)

Figure 1. Average candidate ambiguity



Source: Candidate campaign website text, as described in the appendix.