Voters' Perceptions of Candidate Viability: Uncertainty and the Prospects for Momentum

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Abstract

Candidates' viability and momentum are important features of the presidential nomination process in the United States, and much work has examined how both influence the outcome of the nomination campaign (e.g. Aldrich 1980*a*; Aldrich 1980*b*; Bartels 1988; Brady and Johnston 1987). Previous treatments, however, have focused upon candidates' expectations of winning or losing the nomination. A critical feature that has been mentioned (e.g. Aldrich 1980*a*, 116), but not addressed directly is the element of certainty. In this paper, I outline a view of viability and momentum that considers both expectations and certainty and allows us to understand candidates' *potential momentum*. While the empirical analysis in the paper focuses upon voters' perceptions of viability, the underlying ideas in the paper can contribute to a broader understanding of the behavior of other important actors in the nomination process, such as the media and financial contributors. The findings can also illuminate other areas, such as candidate strategies (Gurian 1986) and the underlying causes of "sophisticated voting" (Abramson, Aldrich, Paolino and Rohde 1992) in the primaries.

Candidates seeking the presidency try to win a majority of delegates to their party's nominating convention. Gurian (1986) proposes two general strategies for achieving this: a delegate-maximizing strategy and a momentum-maximizing strategy. Candidate viability is a major part of deciding which strategy to use, with more established candidates using the former strategy and long-shots trying "to develop sufficient momentum to survive the winnowing process, broaden the resource base, and emerge as a credible contender" (Gurian 1986, 807).

Gurian's (1986) focus upon viability as influencing candidates' strategies is not unique. There is widespread agreement that viability influences candidates' behavior and ability to win the presidential nomination (e.g. Aldrich 1980*a*; Bartels 1988; Brady and Johnston 1987). Candidates who are ahead in the polls, are more likely to attract votes (e.g. Abramson et al. 1992), financial contributions (e.g. Wilcox 1991), and media attention (e.g. Patterson 1980; Robinson and Sheehan 1983). Previous work (e.g. Aldrich 1980*a*; Aldrich 1980*b*; Bartels 1988; Brady and Johnston 1987; Brady 1993) on viability and momentum has focused upon changes in candidates' expectations of winning the nomination; in other words, changes in candidates' viability.

I believe, however, that there are two dimensions of candidates' viability: *expectations* and *certainty*. The focus of this paper is the factors that influence the public's perceptions of and certainty about candidates' viability and how these perceptions influence momentum and, consequently, the outcomes of the nomination campaign. In the first part of this paper, I develop a conception of viability that includes both the public's expectations of and certainty about candidates' viability. Next, I briefly review the literature concerning the factors that affect the public's expectations of candidates' viability and argue that these factors are also relevant to the certainty with which the public perceives candidates' viability. Third, I present empirical results showing the effect of various factors on both the expectation and the certainty of the public's perceptions of candidate viability. Finally, I discuss how the

these findings aid our understanding of viability and momentum in presidential nomination campaigns.

Viability, Certainty, and Momentum

What I refer to as expectations has been treated previously (e.g. Bartels 1988) as synonymous with viability, a candidate's probability of winning the nomination. The first thing to understand about the public's perceptions of candidates' expectations, however, is that these are subjective, not objective, probabilities. Bartels's (1988) model of expectations, for example, includes subjective factors, such as the voter's preferences, in addition to a candidate's "objective" probability of winning the nomination (336).

This is important because, otherwise, we could view expectations and certainty as two sides of the same coin. With objective probabilities, the only uncertainty revolves around the outcome of an event, not the probability of the outcome. In the case where only two outcomes are possible, such as winning or not winning the presidential nomination, certainty is a direct function of expectations. Statistically, one can treat a candidate's viability as following a Bernoulli distribution, with the probability, p, equal to the expectation and the variance, $p(1-p)$, inversely proportional to the certainty. At $p = .5$, the variance is maximized. As p moves further away from .5, the certainty of the candidate winning or losing the nomination increases, until p reaches either 0 or 1, when the variance is 0 and the outcome is certain. If voters had objective probabilities of a candidate winning or losing the nomination, then certainty can be obtained from the expectations.

Obviously, no one has information about objective probabilities during the nomination campaign until a candidate wins or withdraws. Consequently, the public can be uncertain about both about the outcome of the campaign and each candidate's probability of winning the nomination. Because uncertainty about probabilities is not a direct function of expectations (although, the two may be related) we need to examine both aspects of

viability.

To illustrate how the combination of expectations and certainty may affect voters, consider that a voter may have believed that Richard Lugar or Pat Buchanan had the same (small) chance of winning the 1996 Republican nomination. A better-than-expected performance in a primary by Buchanan, however, probably produced less change in that voter's expectations of Buchanan's viability than a similar performance by Lugar because the voter was more certain of Buchanan's low probability of winning the nomination. With less certainty about Lugar's low expectations, information to the contrary should have more effect upon the voter's beliefs.

The certainty with which an individual perceives a candidate's expectations, then, influences beliefs about the candidate's probability of winning the nomination. Imagine two individuals whose perception of a candidate's expectation is each .2. If one individual is certain that a candidate's probability of winning the nomination is .2, then that individual's certainty about the outcome of the nomination contest (for that candidate) equals some scaling factor times the variance, .16.[1] If the other individual thinks that the candidate's probability of winning the nomination ranges from .1 to .3, then the individual's uncertainty about the outcome ranges from .09 to .21 times some scaling factor. In the context of a multicandidate nomination campaign, the former voter might be more likely to defect from the candidate, who the voter is pretty certain will lose, than the latter voter. At the higher end of the expectations scale, a voter might be more willing to defect from a candidate about whom the voter has lower certainty about the candidate's expectations to a candidate with similar expectations and higher certainty (cf. Kahneman and Tversky 1979).

This conception of certainty is important for understanding momentum in the nomination process because while expectations provide a yardstick for assessing momentum after

[1] The expectation can be thought of as the expected value and the certainty as a measure of variation around the central tendency. Bartels (1986) and Franklin (1991) have used a similar approach for examining people's own attitudes and their perceptions about candidates' beliefs. Bartels (1988, 69) uses a similar framework for candidate preferences, but not for candidate viability.

the fact, certainty provides a means of understanding candidates' *potential* momentum. Momentum only occurs while there is some uncertainty about who will win the nomination; when the outcome has been determined, there is no reason to change expectations. Momentum, after all, is a product of changing expectations. Similarly, expectations are most malleable when uncertainty is greatest — specifically at the beginning of the primary season (Aldrich 1980*a*, 116). In the Buchanan-Lugar example above, Lugar has greater potential to gain momentum from a primary win than Buchanan because Lugar's expectations are more volatile. For a candidate like Buchanan, a single win is more likely to be viewed as an aberration that changes little about that candidate's chances of winning the nomination, but for one like Lugar, such a victory might be, as was true with Hart, the victory that attracts enormous media attention and makes that candidate either a front-runner or the primary challenger to the front-runner.

Certainty, therefore, informs our understanding of momentum because, at the beginning of the primary season, there are often many candidates pursuing the nomination, but people may have only vague ideas about which candidates will survive the early contests. Candidates who the public perceives with great certainty as having little chance of winning the nomination will have a difficult time generating momentum, while dark-horses about whom the public has less certainty are the prime candidates to gain momentum. Similarly, candidates that the public perceives with great certainty as having an excellent chance of winning the nomination should be less vulnerable to other candidates' momentum. While expectations influence voters' decision-making, the certainty of the public's perceptions, in addition to possibly influencing voters, tells us about the change in expectations we might expect given future results in the primaries.

Certainty has not been ignored in the literature on the nomination process. Aldrich (1980*a*, 116) talks about the uncertainty that candidates have as they test their strategies, and Brady's (1993, 29) discussion of the stability of equilibria implies varying effects of

certainty. Similarly, Bartels's (1985, 810-11) argument that "bandwagon effects" — voters moving to support more viable candidates — are much smaller toward the end of the nomination campaign as the objective uncertainty about the winning candidates is smaller is also relevant. Finally, Bartels (1988) examines voters' uncertainty about the candidates, especially the lesser-known candidates, but this uncertainty refers to information about the candidates, not necessarily about their expectations. "As a well-known front-runner, Mondale simply did not have the potential to benefit from momentum that the relatively unheralded Bush had had in early 1980. The candidate who did have that potential in 1984 was Gary Hart" (Bartels 1988, 128). Uncertainty about a candidate's issue positions and qualifications and uncertainty about a candidate's expectations are probably related, but the two are not the same. The uncertainty about Jack Kemp's viability in 1988 was probably greater than about his general issue positions, whereas voters' uncertainty about Pierre DuPont was almost certainly greater about his positions than his expectations. Because certainty about candidates' viability can tell us something about candidates' potential momentum, we need to examine the factors affecting voters' uncertainty in order to understand fully how candidates develop momentum during the nomination process.

Because certainty is tied to momentum, the strategies that candidates follow can also be framed in terms of certainty. Gurian (1986) argues that front-runners pursue a delegate-maximizing strategy. Effectively, a candidate trying to maximize the number of delegates won is trying to secure a majority rapidly. Once the candidate obtains a majority, there is little uncertainty about the nomination. A delegate-maximizing strategy, therefore, is also a strategy of minimizing uncertainty.

The relationship between momentum and certainty varies dark-horses. Candidates following a momentum-maximizing strategy are not necessarily pursuing an uncertainty-maximizing strategy. In the early stages of the primary season, some dark-horses attempt to maximize certainty that they are among the contenders for the nomination; that is,

increase the certainty that their expectations are increasing. Other dark-horses, however, pursue a momentum-maximizing strategy to reduce the certainty that they will not survive the winnowing period. Both kinds of dark-horses also want to gain momentum in order to increase uncertainty about the front-runner's chances as one component of generating momentum for themselves.

For both kinds of candidates, incorporating certainty into the concept of viability and momentum suggests that candidates follow a path during the nomination campaign that involves both expectations and certainty. Figure 1 provides a schematic view of candidates' goals with respect to expectations and certainty during the nomination campaign. As I said above, candidates want to maximize their expectations and minimize their uncertainty about winning the nomination (Box A). Similarly, candidates want to avoid minimizing their expectations and maximizing certainty (Box E).[2]

[Figure 1 about here]

Using this schematic model, we can think of candidates beginning the nomination campaign in boxes A or B as corresponding roughly to Robinson and Sheehan's (1983) "likely" candidates; those starting in Box C as "plausibles"; and those in boxes D and E as the "hopeless" candidates.[3] In most competitive races, the relevant candidates will start in categories B, C, and D. The only candidates with low expectations and high certainty are likely to be the candidates with neither the background nor resources to make a competitive run for the nomination.[4] Likewise, the only candidates likely to have high expectations and high certainty are incumbents who face little serious challenge, such as Bill Clinton in 1996.

[2]Obviously, these categories are based upon two continuous components of the public's perceptions about candidates' viability, but the categories might provide some rough was of classifying candidates that, as I will show below, may be useful for other classification schemes that have been used to investigate the nomination process (e.g. Robinson and Sheehan 1983; Gurian 1986).

[3]Box C is divided into three sections to reflect that these are continuous categories and for better distinguishing the candidates below.

[4]A recent example of such a candidate is former Irvine Mayor Larry Agran in 1992.

"Likely" candidates in competitive races correspond to the candidates most likely to use Gurian's (1986) delegate-maximizing strategy. The goal is to so overwhelm the opposition that voters (and other political actors) will view that candidate's nomination as inevitable. In Figure 1, this means moving from Box B at the beginning of the campaign to Box A as soon as possible after the beginning of the campaign.

Candidates using a momentum-maximizing strategy fit into Boxes C, D, and E at the beginning of the campaign. For the "hopeless" candidates (Boxes D and E), the immediate goal is to reduce certainty and increase expectations (moving to boxes D and C, respectively). As noted earlier, momentum does not occur when there is absolute certainty that a candidate cannot win. Candidates who can, at a minimum, reduce the certainty that they do not have any chance of winning the nomination, might be able to attract support or put themselves into position to obtain the support from a faltering competitor, such as Gary Hart was able to do in 1984 when John Glenn's campaign failed to take off. The "plausible" candidates begin the nomination campaign with middling expectations and moderate or low certainty (Box C) and seek to at least increase expectations (Box B) and then reduce uncertainty (Box A) as other candidates are winnowed from the field. Generating momentum is another way of saying that these candidates increase both their expectations and the certainty that they will remain competitive candidates.

If we can determine the factors that affect uncertainty about candidates' probabilities of winning the nomination, then we can understand the relative importance of the media, the early contests, and even the strength of candidates' support upon the outcomes of the nomination process. We will also have a means for predicting which candidates are most likely to gain momentum because, among candidates with low expectations, those whose prospects are perceived by voters with more uncertainty are more likely to break out of the pack. Similarly, front-runners whose prospects are viewed with greater uncertainty should be more vulnerable to challengers early in the primary season.

Voters' Perceptions of Candidate Viability

Previous work on voters' perceptions of candidate viability has focused upon four factors: voters' preferences, the media, results from the primaries, and voters' political information. I will argue that these factors may also influence voters' certainty about candidates' probabilities of winning the nomination, present hypotheses about these factors' effect upon certainty, and discuss the implications of these factors for how we view momentum in the nomination process.

Bartels (1985) found very strong evidence that voters' preferences for candidates in the 1980 nomination campaigns influenced their estimates of candidates' chances of winning the nomination. Supporters of Carter, Reagan, and Bush were more likely to believe that they would win their parties' nominations than respondents not supporting these candidates — what he calls a "projection" effect. Bartels finds that projection effects are pretty constant across the primary period, and he writes that these findings underscore "the resilience of projection as a psychological mechanism, even in situations where objective cues about the shape of political reality are quite powerful" (811).

Such resilience may also affect voters' certainty about candidates' chances of winning the nomination. If so, we may find that certain kinds of candidates, such as the front-runners, have greater staying power in a race because their supporters, more certain that their preferred candidate can win the nomination, have little reason to strategically defect to other candidates. A second hypothesis is that, as some candidates win contests and others lose, the supporters of the winning candidates become more certain about their candidate's viability while the losers' supporters become less certain. On the one hand, the latter want to believe that their candidate has a chance to win, but, on the other, the early evidence suggests that these candidates may have difficulty winning the nomination. If so, supporters of losing candidates may be more willing to defect to other candidates. One goal of a momentum-maximizing strategy, therefore, is providing their supporters with

evidence of their viability in order to increase their supporters' certainty about the chances of surviving the initial contests and, thereby, reducing the likelihood that their supporters will defect to other candidates.

This argument about the effect of certainty among a candidate's supporters upon viability and momentum is compatible with the view of momentum expressed by Mutz (1997), who argues that candidates gain momentum as information from public opinion polls "induces people to think of arguments that might explain those others' positions" (105). Supporters of a failing candidate, according to this argument, produce elaborations to explain why their candidate is not succeeding. That contradictory elaborations lead supporters of a failing candidate to become less certain of their candidate's viability is consistent with Alvarez and Brehm's (1995) findings concerning ambivalent attitudes toward abortion.

The effect of the news media upon candidates' viability has received the most attention of the factors that I examine in this paper. The literature concerning the role of the news media in the presidential nomination process (e.g. Arterton 1984; Robinson and Sheehan 1983) shows clearly that the media's treatment of candidates is not equal, but varies directly with the media's perceptions of the candidates' viability. Robinson and Sheehan (1983) argue that the media divide the nomination field into three tiers, the likely, the plausible, and the hopeless candidates (from most to least viable), and allocate coverage based accordingly. By providing information about the candidates in this manner, the media may implicitly influence voters' perceptions of candidate viability.

The media's coverage undoubtedly reflects their own expectations and certainty about candidates' viability. Buell (1991) finds that media coverage in the 1988 primaries closely followed the polls, reflecting their expectations that George Bush was the front-runner for the Republican nomination. Buell (1991) also finds that Bush received substantially more coverage than his opponents, but that "no Democrat consistently surpassed his rivals in all five newspapers" that Buell examined (154). The variability across newspapers in

the amount of coverage given to the Democrats, compared with the consistency for Bush, probably reflects the greater uncertainty the media had about the viability of the candidates in the relatively unknown Democratic field.

There is reason to believe that the decisions made by journalists covering the campaign provide cues to voters about candidates' expectations. Patterson (1980, 121) argues that his Erie and Los Angeles data show a relationship between the media and respondents' accurate perceptions of candidates' viability in the 1976 nomination campaign at both the individual and aggregate level. Brady and Johnston (1987, 178) replicate Patterson's (1980) aggregate-level results by showing that average viability scores varied with the coverage that candidates received in the 1984 Democratic race, and Ross (1992, 69), uses aggregated measures of television news content to examine the effect of the media upon aggregated measures of the public's perceptions of candidates' viability from the 1984 Continuous Monitoring survey and finds "support for the existence of candidate-specific attention, horse race, and tone effects on. . . judgments about a candidate's likelihood of garnering the nomination."

Finally, Bartels (1988, 50) shows that high users of the media recognized Hart's improving chances more quickly than low media users in the 1984 campaign; specifically, during the period right before the New Hampshire primary. Bartels (1988) points out, however, that media usage does not explain the bulk of respondents' perceptions, and his results in Table A.8 show that media usage does not have a statistically significant effect upon voters' evaluations of Hart's chances of winning the nomination.

The literature on the media, however, does not examine the degree to which the media influence respondents' certainty about the candidates' viability. The media can have a potent effect if the signals they send are clear. If voters see the relative certainty that journalists have about the "likely" and "hopeless" candidates, especially during the pre-primary period, then voters' likelihood of defecting to or away from some candidates may make the media's handicapping of the race self-fulfilling, and the media's coverage may

reduce the potential success of a momentum-maximizing strategy. By contrast, if the media's signals are not strong or the public ignores these signals, then candidates following a momentum-maximizing strategy should have better prospects for winning the nomination.

A number of the media studies suffer from not controlling for the independent effect of election results upon voters' assessments of candidate viability. Bartels's (1988, 337) model of voters' assessments of candidates' expectations includes objective probabilities, which has election results as a component, but does not include voters' knowledge of who won the particular races. To understand the media's influence upon the public's perceptions of candidates' viability, we need to disentangle the effect of knowing who won the major contests, which is certainly related to media exposure, from the media's interpretations of those results. Clearly, people looking only at the results of the 1984 Iowa caucuses may have reached a different conclusion of Hart and Mondale's performances than people exposed to the media's interpretation of those results.

By examining the effect of voters' knowledge of the results of the early contests upon certainty about the candidates' prospects, we can see to what extent these results are critical for winnowing the field, apart from the influence of the media covering those races. Substantively, this is important because of the primary season's sequential structure. Winning and losing should influence who gets the nomination, not just by increasing expectations, but also by defining the field. If so, then success in the individual contests should not only affect expectations but also certainty. A "plausible" candidate (starting in Box C2 in Figure 1, for example) who wins a contest and gets higher expectations without any reduction in uncertainty has not done as well as a similar candidate who also reduces uncertainty. The former candidate may still have to worry about a single setback and, therefore, may be more selective choosing states in which to compete actively, while the latter can concentrate more on accumulating delegates and eliminating opponents.

The final factor that should influence the public's perceptions of candidates' viability is

political information. Keeter and Zukin (1983) depict a public that is largely uninterested in the nomination campaign, but whose opinion shifts in concert with candidates' success in the primaries. The politically attentive public, however, may be less strongly influenced by the results of individual contests. Among the more informed voters, momentum swings may be moderated when the front-runner loses because the informed public recognizes that other factors that dark-horses might not possess, such as organization and financial resources, are necessary for winning the nomination.

This paper fills in these gaps in order to get a better sense of how the viability shapes momentum and the nomination process. To summarize, the paper's primary hypotheses are as follows:

1. During the pre-primary period, supporters of the "likely" candidates will be relatively more certain of their candidate's expectations, there will be no relation between certainty and support for the "plausible" candidates, and the supporters of the "hopeless" candidates will be relatively less certain of their candidate's expectations.
2. After the beginning of the primary season, the supporters of successful candidates will become more certain of their expectations, while supporters of less successful candidates will become less certain of their expectations.
3. Respondents with greater media exposure will be more certain of the "likely" (and successful) and "hopeless" (and unsuccessful) candidates' expectations.
4. Respondents who know which candidates won the early contests will have greater certainty about the viability of the candidates who won and clearly lost the early contests.
5. Respondents with more political knowledge will be more certain about the expectations of the "likely" (and successful) and "hopeless" (and unsuccessful) candidates.

Estimating Viability Perceptions

The focus of this paper is the 1988 Democratic and Republican nomination campaigns. 1988 is a good year to examine the nomination process because both parties had competitive races. Beyond that, 1988 is also a good year because the two races represent the most typical

kinds of nomination campaigns — one, the Democratic, where no established candidate starts the race as a well-known front-runner and the other, where a single well-known candidate, in this case, then Vice President Bush, begins the race as the clear front-runner. As Bartels (1988) has argued, the number of well-known candidates in a field affects the dynamics of the race. Finally, the 1988 races are good cases because the structure of the nomination process has changed little since. The hypotheses listed above should apply more strongly to the 1988 Republican race (because the field was more clearly defined), but, if the hypotheses are generalizable to the nomination process, there should also be support for these hypotheses in the 1988 Democratic race.

In order to examine the factors influencing the public's perceptions of candidates' viability, I use data from the 1988 NES Super Tuesday study that asked respondents about the viability of candidates in both parties. Specifically, the question asks:

> Now, thinking about these nominating conventions, who do you think is likely to win the Democratic nomination for President. We will be using a scale which runs from 0 to 100, where 0 represents no chance for the nomination, 50 represents an even chance, and 100 represents certain victory. You may use any number between one and one hundred. What do you think ALBERT GORE's chances are?

There are, of course, similar questions for all 13 candidates in the Democratic and Republican fields.

The dependent variables for all analyses are the raw scores from this question. Some might argue that the raw scores do not reflect probabilities because they do not sum to one across candidates for each respondent and that a more appropriate measure would be a "normalized" score that takes each score as the proportion of the sum of all scores across all candidates for each respondent. While appealing theoretically, such an approach is not recommended empirically. First, there is an inverse relationship between the number of

candidates placed and the normalized score.[5] Second, normalized scores can distort the perceptions of respondents who rate only one or two candidates. In 1988, for example, a respondent who could rate only Jesse Jackson and Gary Hart might not believe that either candidate had much chance of winning the nomination, giving Hart a score of 10 and Jackson 30, for example, but did not know enough about the other candidates to feel comfortable evaluating their chances. Normalizing that respondent's score, however, would make it seem like that respondent thought that both candidates had better expectations of winning than the respondent believed.

To estimate the effects of media exposure upon the expectation and certainty of the public's perceptions of viability, the standard approach is using maximum likelihood estimation, by making an assumption about the probability distribution, and then specifying the expected value and variance of the distribution as the function of two sets of independent variables (King 1989). In this case, the dependent variable, respondents' perceptions of candidates' viability, is bounded by 0 and 1 (by adding 1 and dividing by 102), so it makes sense to assume that the beta distribution is appropriate:

$$f(y|\alpha,\beta) \quad = \quad \frac{,(\alpha+\beta)}{,(\alpha),(\beta)} y^{\alpha-1}(1-y)^{\beta-1} \tag{1}$$

for $0 < y < 1$ and $\alpha, \beta > 0$ (DeGroot 1986).

The beta distribution is well-suited to estimating probabilities. First, because probabilities are bounded by 0 and 1, using an unbounded distribution, like the normal, makes less sense theoretically.[6] Second, the mean and the variance of the beta distribution, unlike the normal, are not completely independent of one another. Unlike the normal distribution, the parameters of the beta distribution, α and β, do not correspond directly to the mean and

[5] For example, a respondent who thought that 1 candidate was all-but-certain to win (scored 99) and could only place one other, who was thought to be all-but-certain to lose (scored 1) would have a higher score for the top candidate than another respondent who thought that same candidate was also all-but-certain to win, but could place 5 other candidates who were all-but-certain to lose.

[6] Estimation of the models using OLS allowed me to reject the null hypothesis of normal errors for most candidates using the Jarque-Bera test (Judge, Hill, Griffiths, Lutkepohl and Lee 1988). The results are available from the author upon request.

variance of y. Instead,

$$E(y) = \frac{\alpha}{\alpha + \beta} \tag{2}$$

$$Var(y) = \frac{\alpha\beta}{(\alpha + \beta)^2(\alpha + \beta + 1)}. \tag{3}$$

As with the Bernoulli distribution and objective probabilities, one can see that as the expected value of a beta distributed variable approaches 0 or 1 (that is, as α approaches 0 or β approaches 0, respectively), the variance approaches 0. Similarly, the variance of the beta distribution is maximized for $\alpha = \beta$; when the expected value is .5. Unlike the Bernoulli distribution, the variance of the beta distribution is not a direct function of the expected value. For example, if $\alpha = \beta = 1$, the expected value is .5 and the variance is 1/12, but if $\alpha = \beta = 2$, the expected value is still .5, but the variance is now 1/20.[7] So, two respondents with the same subjective expectations about a candidate's probability of winning the nomination can still have different levels of certainty about their assessment.

Although two individuals can have the same assessment of a candidate's expectations with differing degrees of certainty, an individual's certainty about a candidate's expectations are probably not independent of those expectations. Clearly, it is hard to imagine an individual thinking that a candidate is very likely to win the nomination, but at the same time feeling very uncertain about that expectation. Likewise, there are probably few voters who are very certain that a candidate has a 50-50 chance of winning. The beta distribution provides a good representation of the relationship between expectations and certainty because it captures a relationship between expectations and certainty without requiring all individuals with the same subjective expectation to hold that expectation with the same level of certainty.

In order to estimate the model, we need to specify α and β. Since α and β must be

[7] For a unimodal density of y ($\alpha > 1$, $\beta > 1$), $Var(y) < 1/12$ (Johnson, Kotz and Balakrishnan 1995, 217).

positive, an obvious specification is

$$\alpha = \exp(\mathbf{X\Gamma}) \tag{4}$$

and

$$\beta = \exp(\mathbf{X\Phi}) \tag{5}$$

where $\mathbf{X}$ is an nxk data matrix of explanatory variables and $\mathbf{\Gamma}$ and $\mathbf{\Phi}$ are kx1 parameter vectors. Note that the same set of explanatory variables are used in both expressions even if a variable is thought to affect only the mean or variance because both the mean and variance are functions of both α and β.[8] From here, one takes the log of equation 1 and obtains the log-likelihood function for the beta distribution.

$$\log L = \sum_{i=1}^{N} \ln\,,\,(\alpha+\beta) - [\ln\,,\,(\alpha) + \ln\,,\,(\beta)] + (\alpha-1)\ln(y) + (\beta-1)\ln(1-y) \tag{6}$$

where α and β are specified by equations 4 and 5, respectively.

The drawback to this method is that the parameters cannot be interpreted directly as having a statistically significant effect upon either the mean or the variance.[9] At a minimum, the effects of the independent variables upon the mean and the variance can be examined only with respect to substantive effects using the method of first differences (King 1989). One way of assessing statistical significance, however, is to run simulations using the estimated parameters and variance-covariance matrix.[10] In this procedure, one randomly samples from a multivariate normal distribution with μ equal to the estimated parameter vector and Σ equal to the estimated variance-covariance matrix. With this "simulated" parameter vector, one computes values for α and β, as specified by equations 4 and 5, and calculates first differences for the mean and variance with one variable set to two

[8] It is possible to derive expressions for α and β that allow one to specify certain variables as affecting only the mean or the variance, but these expressions require one to make certain restrictive assumptions about the variance. I estimated the models below under both procedures, and the results from each were generally similar.

[9] This is the advantage of estimating a model that directly specifies the mean and the variance.

[10] My thanks to Gary King for conversations that led me onto this method. I take full responsibility, however, for the use of this method.

different values, one standard deviation above and below the variable's sample mean, for instance, while holding the other explanatory variables at their means. This procedure is repeated 1000 times for each variable. The mean first differences for the mean and variance from these 1000 simulations are taken as a predicted effect of the variable upon the mean and variance, and the standard deviation provides a measure akin to a standard error. Mean first differences that are roughly twice the standard deviations are then interpreted as having a statistically significant effect upon the mean or variance.

The above equations provide the likelihood function, but one still needs to specify $\mathbf{X}$. The model for respondents interviewed before the Iowa caucuses is:

$$\begin{aligned}\mathbf{X\Gamma} &= \gamma_0 + \gamma_1 \widehat{\text{Preference}}_{i,j} + \gamma_2 \text{Party} + \gamma_3 \text{Pref/Party Interaction} + \\ &\quad \gamma_4 \text{Best in State}_{i,j} + \gamma_5 \text{Political Information}_i + \gamma_6 \text{Television Use}_i + \\ &\quad \gamma_7 \text{Newspaper Use}_i + \gamma_8 \text{Number of Candidates}_i + \gamma_9 \text{Viability Difference}_i. \quad (7)\end{aligned}$$

with a similar specification for $\mathbf{X\Phi}$. For respondents interviewed after the Iowa caucuses and, again, after Super Tuesday, other variables are added that control for respondents' information about which candidates won certain contests.

"Preference," as denoted by the hat, is the predicted feeling thermometer score for each candidate. Using the predicted values of preference from instrumental variables addresses the simultaneity problem (Bartels 1985).[11] "Party" is a dummy variable for respondents who do not identify with the relevant candidate's party. Introducing the dummy and interaction ("Pref/Party Interaction") variable is necessary for isolating the effects of preference upon the respondent's perception of a candidate's viability for only respondents who are likely to vote for the candidate in question because we would expect less of a relationship between expectations and preferences for out-partisans, while the effect of certainty

[11] The estimates generated for each candidates from instrumental variable models are available from the author upon request. For the analysis after Super Tuesday, a new measure of candidate viability was obtained from respondents. In this part of the analysis, the raw feeling thermometer from the pre-Super Tuesday portion of the survey is used instead of the predicted score because simultaneity is no longer problematic and, using the raw score minimizes selection out of the relevant sample.

and preferences for out-partisans may vary across candidates. Because a concern of this variable is a candidate's ability to retain support, grouping in- and out-partisans is not appropriate.

"Best in State" is a dichotomous variable indicating whether or not the respondent felt that candidate$_j$ was the candidate most likely to win his party's contest in the respondent's state.[12] For this and the remaining variables, it is not necessary to include partisan interactions because there is little reason to believe that the effects of these variables should vary by partisanship.

"Political Information" is a 5-point index of each respondent's ability to place Ronald Reagan, George Bush, Gary Hart, and Jesse Jackson on ideological scales accurately with respect to one another (cf. Luskin 1987). A major problem with the 1988 Super Tuesday survey is a total absence of variables for measuring respondents' political information. The only objective measures of political information are whether or not the respondent can correctly identify each party's winners in the Iowa and New Hampshire contests. Unfortunately, these direct measures of information are available for only respondents interviewed after the beginning of the primary season and are domain specific to the hypotheses being investigated. The scale that I have chosen to use is not without problems because three of the four political figures are candidates in the 1988 race – and, so this measure may not be totally free of domain specificity – but, this problem is minimized to the extent that all three candidates were familiar to most voters going into the 1988 race. As such, information about these candidates is more likely to reflect a general level of political information than any other measure available in the survey.

"Number of Candidates" measures the number of candidates in the relevant party for whom the respondent assess the chances of winning the nomination. This variable is another measure of political information. Following Bartels (1988), respondents will only evaluate a

[12]This variable was replaced in the post-Super Tuesday analysis by a variable indicating whether or not the respondent knew which candidate won the primary in the respondent's state.

candidate's viability if their knowledge of the candidate surpasses a threshold. This measure of political information should tell us the degree to which respondents more familiar with the field of candidates can assess each candidate's viability accurately.

"Television Use" and "Newspaper Use" are 7-point scales of a respondent's self-reported attention and frequency of exposure to politics through the television and print media. The "Viability Difference" variable is simply the difference between the scores for the candidates who the respondent thinks is the most and least likely to win in the party opposite of the candidate whose viability is the dependent variable. This variable is included to account for inter-respondent scaling differences, where some people may interpret "no chance" and "certain victory" quite differently. It is expected that the variance will be positively related to this difference.

Results

In order to get some basic sense of the candidates' positions in both races, Figures 2-5 show the changes in both the predicted expectations and certainty of the public's perceptions of the candidates' viability while holding all variables at their means. In these figures and all of the analysis below, results are obtained from respondents first interviewed before the Iowa caucuses, after the Iowa caucuses, but before Super Tuesday, and all of the respondents who were reinterviewed after Super Tuesday. Figure 2 provides the unsurprising information about the Republican candidates' expectations. Bush and Dole started the primary season as the candidates that the public saw as having the best chance of winning, while the other four candidates trailed far behind. There are also no surprises about the changes in the candidates' expectations moving from Iowa through the Super Tuesday primaries. Bush's expectations dropped after going 1 for 2 in Iowa and New Hampshire, but then rose dramatically after sweeping the South on Super Tuesday. Dole's movement is the opposite of Bush's.

[Figures 2-5 about here]

The results for certainty are also largely as expected. Bush's and Dole's certainty is relatively low prior to Super Tuesday, but then diverge. If we take .3 and .7 as reasonable, if arbitrary, cut-points for low, medium, and high expectations, and .025 and .055 as the same for certainty (represented by horizontal dotted lines in Figures 2-5), and categorize the candidates in accordance with Figure 1, we can see Bush's path to wrapping up the nomination. Bush would be placed in Box B as a "likely" candidate before Iowa, while Dole would be in C1 as a "plausible" candidate. The middling results in the first two contests left the public less confident of Bush's standing, reflected both by his lower expectations and the slightly lower level of certainty with which the public held those expectations, but there were no large changes in the status of either Bush or Dole. After Super Tuesday, however, Bush successfully carried out the strategy of a front-runner — he moved from Box B to A as his expectations increased dramatically, along with the certainty about those expectations. By contrast, Bob Dole's expectations dropped by a magnitude similar to Bush's increase, and the public became quite uncertain about Dole's viability — in other words dropping from C1 to C2. Dole certainly was not seen by the public as out of the race, but it is clear that Bush achieved his goal of increasing expectations and certainty, while Dole did not meet the challenger's goal of reducing Bush's position while improving his own.

Among the other candidates, DuPont represents the typical "hopeless" candidate, starting the primary with low expectations and medium certainty about those expectations (Box D) that only became lower and more certain after two weak finishes in Iowa and New Hampshire (Box E). Haig shows some similarities with DuPont, with the exception that people were less certain about Haig's low expectations, perhaps owing to their greater level of familiarity with Haig. Similarly, Robertson had fairly low expectations, with a medium level of certainty, but both components of his viability moved in directions opposite of DuPont and Haig after his better-than-expected performance in Iowa.

Finally, Jack Kemp's expectations followed a fairly straight downward trend over the 1988 campaign, as one might expect given his poor showing in the primaries. Yet, in Figure 1 we can see that, in contrast to DuPont and Haig, the public's uncertainty about Kemp's prospects *increased* as Bush's early campaign was not a clear success. Methodologically, this shows how the certainty of a candidate's viability does not have to be tied to the expectations. Substantively, this suggests that Kemp might have emerged as a contender for the nomination *if* Bush had faltered going into Super Tuesday — the hope of a momentum-maximizing candidate that the front-runner's expectations and certainty will decrease — and *if* he had the resources to take advantage of Bush's fall. Below, there will be more discussion about the role of campaign resources given the public's perceptions of candidates' viability.

As expected, the Democratic race provides a contrast to the Republican race, but also shares some similarities. Without any well-known candidate in the race, the Democratic campaign started without any clear front-runner. In fact, all of the candidates, including Babbitt who is left off Figures 4 and 5 for the sake of clarity, started the primary season in Box C as plausible contenders; albeit in varying degrees.[13] Consistent with this and unlike the Republican race, there was a moderately low level of certainty about the standing of all of the candidates prior to the primary season.

There are, however, some similarities. The eventual nominee, Michael Dukakis, finished Super Tuesday in the best shape of the candidates in the Democratic field. His expectations were clearly higher than those of any of his competitors, and the public had the most certainty about those expectations among the remaining active candidates. There is, however, one major difference between Bush and Dukakis. While the public was quite certain that Bush led the Republican field after Super Tuesday, Dukakis's increased expectations were also accompanied by moderately higher uncertainty about his leading position in the race.

[13] Babbitt's pre-Iowa mean expectation was .36 and the mean predicted variance was .041.

Dukakis had done well on Super Tuesday (moving from C1 to B), but he had not delivered a knockout punch. Given a competitor with sufficient resources or a favorable primary schedule, Dukakis was vulnerable — a vulnerability that was apparent in Michigan, where he lost to Jesse Jackson. Still, starting as a plausible candidate, Dukakis, by focusing only upon those Southern states where he could win (Norrander 1992, 193), had successfully executed a momentum-maximizing strategy.

Fortunately for Dukakis, none of the other Democrats emerged from Super Tuesday in any position of strength. Gephardt's win in Iowa helped create higher expectations, but, with his loss in New Hampshire, there was also a moderately higher level of uncertainty about Gephardt's prospects, and this uncertainty only increased while his expectations decreased following Super Tuesday. Similarly, Simon became a hopeless candidate, with low expectations and moderate, but increasing, certainty. Gore's momentum-maximizing strategy partially succeeded as his expectations increased along with his potential for generating momentum (with a decrease in certainty), but Gore still needed a win outside of his native South in order to convert potential momentum into actual momentum. Finally, Figures 4 and 5 show how Hart, who may have been viewed by some people as plausible because of his success in 1984, rapidly moved down the ladder of Figure 1, from C3 into Box D after Iowa to Box E after Super Tuesday.

The predicted expectations and certainty provide a valuable picture of the dynamics of the public's perceptions of candidates' viability during the primary season, but a more complete understanding of the factors that influence these perceptions requires an examination of the effects of the variables upon the components of candidate viability. The results for variables affecting the public's perceptions of candidates' expectations largely corroborate past research.[14] Consistent with Bartels's (1985) findings, candidate preference has a strong and statistically significant effect upon respondents' evaluations of a candidate's expecta-

[14]Specific results are available from the author.

tions; although, the magnitude of the effect is not constant across the periods for many of the candidates (cf. Bartels 1985). Similarly, there is strong evidence that the public pays attention to the results of the early contests in forming their assessments of candidates' expectations. Together with the results that media exposure does not have a direct effect upon the candidate's expectations, these results suggest that the media may influence voters by focusing upon the horse-race, but that voters are more influenced by actual results, not the media's interpretation of those results. For instance, people who knew that Bob Dole won the Iowa caucuses saw Dole's expectations as significantly higher than those who didn't know, but these same people, who must have also known that Robertson finished better than he was expected to, did not see Robertson's expectations as any higher. Finally, there is inconclusive evidence for the hypothesis that respondents with more political information more accurately perceive the candidate's "objective" expectations. To the extent that political information has a strong influence, it is for candidates who had failed to win a contest by the end of Super Tuesday: Robertson, Simon, and to a lesser extent, Kemp.

For the purposes of this paper, the important question is which factors influence the certainty with which the public perceives the candidates' viability. Tables 1 and 2 show the effects of the explanatory variables upon the certainty of the public's perceptions of candidate viability. First, exposure to the media had little direct influence upon respondents' certainty.[15] This finding, however, makes sense considering that the media, and individual journalists in particular, do not have incentives to make definite pronouncements about candidates' viability. To do so might expose them to charges of a lack of objectivity. A more important factor, however, may be a certain aversion to the risk of being wrong. A journalist's credibility might be damaged by reporting that a candidate was fatally wounded by the outcome of a contest only to see that candidate rebound the following week — espe-

[15] To save space, I have not included these null findings in the tables.

cially in a race with as much uncertainty as the 1988 Democratic race.[16] That the media do not reduce voters' uncertainty about the candidates' expectations does mean, however, that a dark-horse's chances of successfully using a momentum-generating strategy are much greater than if the media were able to definitely winnow many candidates out before the first primaries.

[Tables 1 and 2 about here]

General political information, as with expectations, appears to have its strongest effect upon certainty after the Super Tuesday race, and mainly upon the candidates being eliminated from the race. Combined with the findings for expectations, it is apparent that respondents with more political information were less optimistic and more certain of the assessment that Robertson, Kemp, and Simon were much less likely to win the nomination after Super Tuesday than respondents with less information. And if the viability difference measure reflects an effect of political information upon expectations, then respondents with more political information were more certain of Bush's chances in the period prior to Super Tuesday.[17]

These findings for the effect of political information upon certainty, though important, are not terribly surprising, and the same is true with respondents who could correctly identify the winners of the early contests. For the Republicans, the strongest result comes from the effect of the Super Tuesday races upon George Bush's viability. Consistent with the goals of a candidate pursuing a delegate-maximizing strategy, Bush's victory on Super Tuesday led respondents with knowledge of that victory to view Bush as the presumptive nominee

[16] One exception to this is Paul Simon after Super Tuesday whose viability was viewed as lower and with more certainty by respondents with greater exposure to the campaign through newspapers. This is consistent with Robinson and Sheehan's (1983) argument about the "death-watch."

[17] There is evidence that respondents more willing to place candidates further apart also have more political information, perhaps, because those respondents are more aware of the competition and, as a result, are more willing to make relatively more extreme assessments of the candidates' viability.

with much more certainty than respondents not aware of the Super Tuesday results.[18] By contrast, the Super Tuesday results left Dole with lower expectations and much greater uncertainty about his status in the race; exactly the opposite of what a momentum-maximizing candidate seeks.

The Democratic race offers a little more definitive demonstration of the effects of the primary outcomes upon certainty, as there was much less certainty than in the Republican race. First, Table 2 shows that the effects of the Super Tuesday races upon respondents' certainty about the outcome were very strong for Dukakis, Gephardt, and Simon — and most dramatically so for Dukakis. Dukakis was also able to increase the certainty of his chances among respondents who knew that he won the New Hampshire primary. In comparison with Gephardt, this finding is significant. Gephardt's expectations increased among respondents who knew he won in Iowa, but the victory did not have a statistically significant effect upon the certainty with which respondents held that belief. By contrast, respondents who knew of Dukakis's victory in New Hampshire were more certain about his higher expectations. This indicates that Dukakis's victory "winnowed him in" to a much greater degree than Gephardt's. Prior to Super Tuesday, Dukakis had passed one hurdle in voters' minds. Gephardt had not. One should also note that the Super Tuesday results barely had a significant effect ($p < .1$) upon either Gore's expectations or certainty. Given that Gore did not dominate in his home region, it makes sense that voters would still be uncertain of his viability until he demonstrated the ability to win outside of the South.

The findings that relate the outcomes of contests to certainty are interesting because they provide a means of assessing the potential for volatility of expectations going into later races, but the most interesting finding related to certainty comes from candidate affect

[18] The Super Tuesday study only asks respondents if they knew who won the primary in *their* state, so this variable is actually a conservative measure of the respondents' knowledge of the day's contests because respondents with this information should be more likely to know the results from other states than respondents without this information. For the Republicans, this should not pose much problem as Bush won everywhere. For the Democratic candidates, it is more likely that someone who knew the winning candidate in their state might not know how the candidates fared elsewhere.

because this provides a means of assessing the potential for momentum *before* any contest has been run. In this, the results are very informative. The results confirmed Bartels's (1985) findings that a candidate's supporters were more likely to evaluate that candidate's chances of being nominated as significantly higher than people who did not support that candidate. A hypothesis that I posed above, however, was that if a candidate's supporters were more certain of a candidate's viability, they would be less likely to defect to other candidates. Alternatively, these candidates would be more likely benefit from defections from voters who are less certain of a more-preferred candidate's chances.

Tables 1 and 2 show that supporters of Bush, Dukakis, and Gephardt were more certain that these candidates were viable prior to Iowa than people who had less affect for these candidates. By contrast, the supporters of Dole, Simon, Kemp, Robertson, and Gore were not more certain than others — and supporters of the last two were significantly less certain for the last two.[19] Consistent with this interpretation, Abramson et al. (1992, 61) show that Bush, Dukakis, and Gephardt received the highest proportion of "apparently sophisticated" votes, while Robertson and Gore were more reliant on "apparently sincere" votes.[20] We can also see how the magnitude of these effects vary with candidate success. After not winning in either Iowa or New Hampshire, supporters of Simon and Kemp became much more uncertain about their candidates' chances of winning their parties' nominations. Because people who did not support these candidates became more certain that these candidates would not win the nomination than their supporters, these candidates were quite unlikely to pick up the sophisticated or bandwagon votes that would help their campaigns gain momentum, as their supporters might become more likely to defect. The results for Kemp and Simon are consistent with this interpretations and Norrander's (1992, 153) finding that after New Hampshire "the largest proportion of switchers moved away from failing candidacies" such

[19] There is a similarly significant lack of certainty for supporters of DuPont, Haig, and Jackson.

[20] For Robertson, many of these sincere votes were probably "cause" voters who were willing to support him no matter what his chances of winning were.

as Simon, Kemp, Hart, and Robertson.[21]

Finally, one should note the changes in the certainty of Dukakis's, Gore's, Gephardt's, and Robertson's supporters across the three periods. Dukakis's supporters started confident of his chances prior to Iowa, but became slightly less certain prior to Super Tuesday, perhaps reflecting anxiety about his chances outside of the rust belt. With Dukakis achieving his goals on Super Tuesday and no other candidate emerging as dominant, the effect of support for Dukakis upon certainty increased greatly, putting Dukakis in a position where he might be less vulnerable to defection than the other candidates. By contrast, Gore's supporters were initially very uncertain about his chances prior to Iowa and New Hampshire, but because more certain once it became apparent that Gore could contest Super Tuesday without having to face a clear front-runner. For Gephardt, the relative change from greater certainty among his supporters prior to Iowa to the null effect of affect after Iowa might reflect the beginning of the end to his chances after not following up on his Iowa victory with a New Hampshire upset of Dukakis. In other words, Gephardt's supporters appear to have reacted to his increasing momentum going into Iowa and his loss of momentum coming out of New Hampshire. Finally, Robertson's supporters are the reflection of Dukakis's. Robertson's supporters started as quite uncertain about their candidate's viability prior to Iowa, but, with the surprising result in Iowa and heading to a region where Robertson's fundamentalist appeal might help him, became more confident in his chances. Following Bush's sweep in the South, however, that brief increase in confidence was reversed. In all four cases, the importance of the early contests is apparent because of their relationship with certainty and candidate's momentum and their effect upon the willingness of a candidate's supporters to stick with or defect from a candidate's campaign.

[21] My findings for Hart are also consistent with this, although they do not suggest this for Robertson in the period between New Hampshire and Super Tuesday.

Discussion

Overall, the results demonstrate how the incorporation of certainty into our conception of viability can deepen our understanding of the nomination process, especially if we want a basis for predicting which candidates are likely to generate momentum. In this section, I will discuss three areas where these findings help us better understand what happens during the nomination process. These areas are: candidates' strategies, the effects of candidates' resource utilization and acquisition, and the effect of front-loading on the nomination process.

As others (e.g. Aldrich 1980*a*; Gurian 1986) have noted, candidates' strategies depend upon their position going into the nomination campaign and their situation once the primary season has begun. We have a pretty good understanding about which strategies abstract candidates should use during the nomination campaign, but we may not be able to classify candidates before the fact. Aldrich (1980*a*, 143) notes " momentum is affected only in states where both candidates are active competitors," and if we examine Table 6.4, we can see that Reagan did not compete actively in any of the 5 states that Aldrich classifies as pro-Ford, including 4 states with large delegate totals. Ford, on the other hand, competed in 3 of the 8 states that Aldrich classifies as pro-Reagan, all of which had a large number of delegates at stake, but only one of which with proportional allocation. By contrast, California was the only large pro-Reagan state that Ford bypassed in 1976. Although Gurian (1986) and Gurian and Haynes (1993) do not analyze the 1976 Republican race, it might be reasonable to argue that Ford's behavior looks like that of a delegate-maximizer, while Reagan was a momentum-maximizer. This is also a reasonable hypothesis, given Ford was the incumbent President trying to silence doubts about his party's support, while Reagan was trying to avoid races that might help Ford strengthen his claim to the nomination.

In terms of predicting which strategy a candidate will pursue, looking at how candidates behaved after the fact is not useful, while classification schemes not derived from theory

may produce questionable decisions. For example, Gurian and Haynes (1993, 339) classify Bush, Dole, Robertson, Hart, and Jackson as "big-shots," who should emphasize a delegate-maximizing strategy. The analysis above suggests that only Bush clearly had the level of expectations and certainty that would merit such a classification. If the others chose a delegate-maximizing strategy, my analysis (as well as the outcome of the actual contest) suggests that their decisions were unwise.

Obviously, we can ask campaign managers what strategy they intend to pursue, but if we are to understand whether or not our theories about candidate strategies in the primaries are accurate, we need to specify what candidates did and what our theories predict they should have done in order to know whether or not our theories accurately predict outcomes given behavior. The theory and analysis above offer a credible means of predicting which general strategies candidates should utilize.

Candidates' strategies are also affected by the resources that candidates have at the beginning of the primary season. A starting point of Gurian's (1986, 807) argument is that "candidates who are well-known and well-financed can afford to run in states with many delegates and, if they lose some contests, can usually survive long enough to run in, and perhaps win, others." In the past, however, many candidates, such as John Connally and Phil Gramm, who have been projected to do well based upon their level of media attention and financial resources have been tremendous failures — not even surviving "long enough to run in" and win later contests. I have argued elsewhere that there is a big difference between well-financed candidates who are likely to survive the early contests and those who are not, and this difference revolves around certainty. Certainty provides, first, a basis for distinguishing the candidates who are credible apart from their resources from those who use their resources to gain credibility. It also allows us to see which candidates can deploy their resources early in order to gain an advantage in the later primary states and those who must use their resources to gain momentum, but without the certainty that their resource

advantage will become a factor in the race.

Certainty also influences the acquisition of resources during the pre-primary period. Financial contributors and journalists may have their own ideas about candidates' expectations, but rational elites who are trying to figure out which candidates can win need also pay attention to the public's certainty about candidates' expectations. Some candidates become credible because they can raise money or receive media coverage, but candidates also are better able to raise money and receive media coverage if they are credible. Expectations certainly play a role in whether or not candidates are perceived as credible, but certainty affects the behavior of journalists and contributors trying to best allocate their limited resources. Given two candidates with low expectations at the beginning of the primary season, it would be reasonable for an editor to allocate more space to a candidate about whom there is less certainty of those expectations than a candidate who is perceived as a certain loser. Likewise, a contributor should be more willing to give money to a candidate with high expectations if he has high certainty about those expectations than another candidate with similar expectations, but about which he is much less certain. One may be unable, therefore, to distinguish a truly "hopeless" candidate from a "plausible" one or a "plausible" from a "likely" candidate without using certainty to provide additional information when expectations are similar.

Finally, incorporating a component of certainty into viability allows us to better assess the influence of a front-loaded nomination calendar upon the presidential selection process. The 1988 calendar was arranged so that over 50% of each party's delegates would be selected by March 15, with most of those going on March 8 (Norrander 1992, 35). In the period prior to Super Tuesday, the results showed that Dole was able to increase his own and reduce Bush's expectations among people who knew that he had won the Iowa caucuses. Iowa, however, did not significantly reduce voters' certainty about his expectations or increase their uncertainty about Bush's standing. Without a follow-up win for Dole in

New Hampshire, Bush used the organizational advantages of a Vice President to steam-roll Dole in the South.

Similarly, the results presented above support Norrander's (1992, 193) evaluation of the effect of Super Tuesday upon Gore. Gore emerged from Super Tuesday in better shape than before. A momentum-maximizing candidate who is not competitive in either Iowa or New Hampshire, however, probably will not have sufficient resources to defeat his opponents across 10-15 states, even if they are all in the same region. Consequently, a front-loaded schedule, rather than reducing the influence of the Iowa and New Hampshire races, magnifies them because a candidate not competing in either race will be viewed with very uncertain expectations and will probably have to run against at least one candidate with higher and more certain expectations because of the results in Iowa and New Hampshire. If that candidate also has the resources to build an organization and buy advertising in some of the states following Iowa and New Hampshire, there is a reasonably good chance that that candidate can win enough races to maintain some momentum against the candidate getting a later start, even in races without a clear front-runner at the beginning of the primary season.

The lesson to candidates dependent upon a momentum-generating strategy, particularly against a well-known candidate, in a front-loaded primary season is that they must act quickly to raise doubts about the front-runner's viability. If dark horses are not able to reduce the certainty that a well-known front-runner's nomination is inevitable in the first two contests, then the front-runner will be able to use superior resources to win enough races to maintain the certainty about his expectations, while preventing the challenger from reducing the public's uncertainty about his own expectations. One can argue that this lesson was replayed in the 1996 Republican race.

These findings also suggest normative implications for the front-loading of the primary season. Other authors (e.g. Keeter and Zukin 1983) have argued that the current process

raises the prospect of some candidate running away with the nomination before the public has much information about that candidate. I am more persuaded by the argument (e.g. Mayer 1996) that the current nomination process favors candidate with whom the public is quite familiar, at least in races where there is a well-known front-runner. As Cox (1997, 9) points out, "Consumers are unaware of a spiffy new product that is cheaper and better than a well-advertised alternative that everyone currently uses; it takes some time before word of mouth moves market demand toward the new product." In a front-loaded primary calendar, there might not be enough time for the "spiffy new product." A greater concern, therefore, is that candidates are winnowed from the field, even while the public maintains a moderate level of uncertainty about both the candidates' qualities and chances of winning the nomination.

Candidates generally drop out of nomination contests when they can no longer pay their staffs, buy advertising, etc. (Aldrich 1980*a*, 71). Front-loading places such a high premium on having resources in place before any votes are cast that candidates who lose one or two early races may not be able to recover before a significant proportion of the delegates have been selected. In the meantime, voters may be uncertain both about their preferences toward these candidates *and* their beliefs about these candidates' ability to win the nomination. Yet, the media's treatment of some of these candidates has been described as a "death-watch" (Robinson and Sheehan 1983). If the media write these candidates off before the public is ready to and the candidates themselves do not have the resources to take their cases directly to the voters, this means that the political elites, such as party elites, the media and financial contributors, providing resources to candidates during the pre-primary period may have more influence than anyone else in a nomination process that was reformed to increase popular influence over the selection of the parties' nominees (Polsby 1983).

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Figure 1: Candidate Strategy for Expectations and Certainty

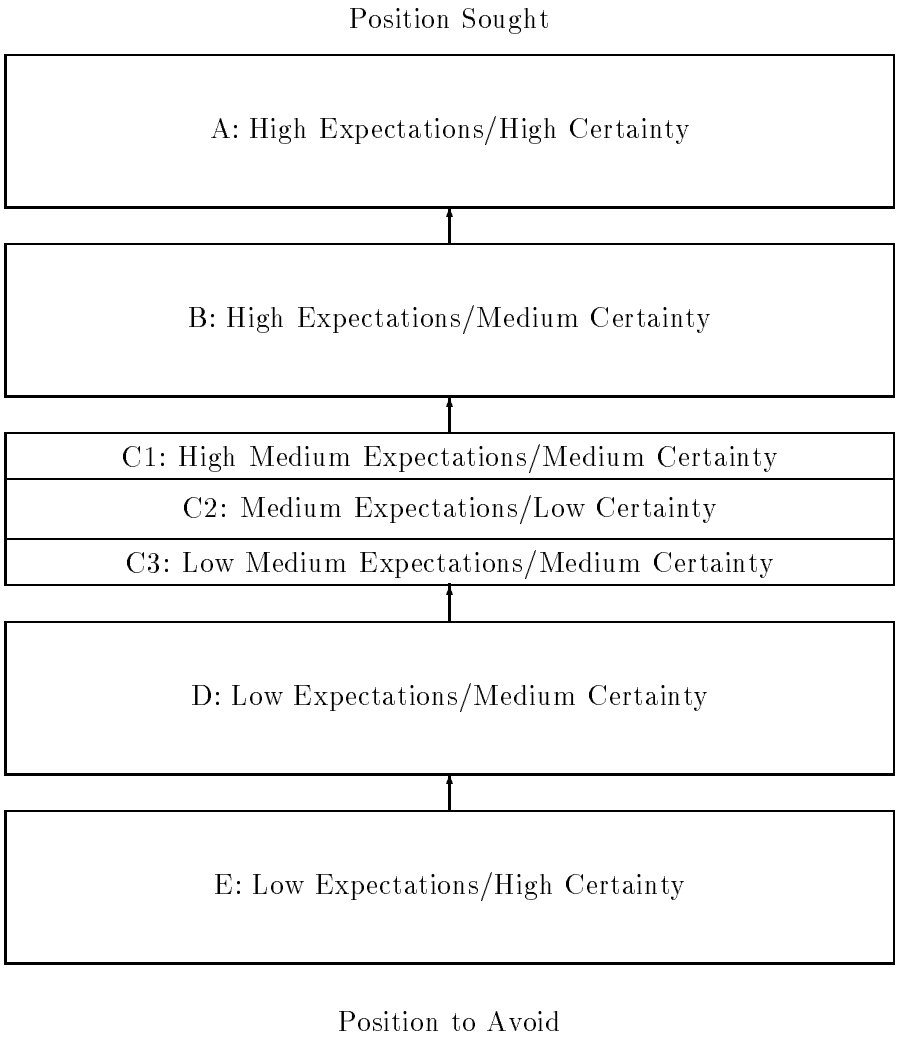

Figure 2: Republican Candidates' Mean Expectations

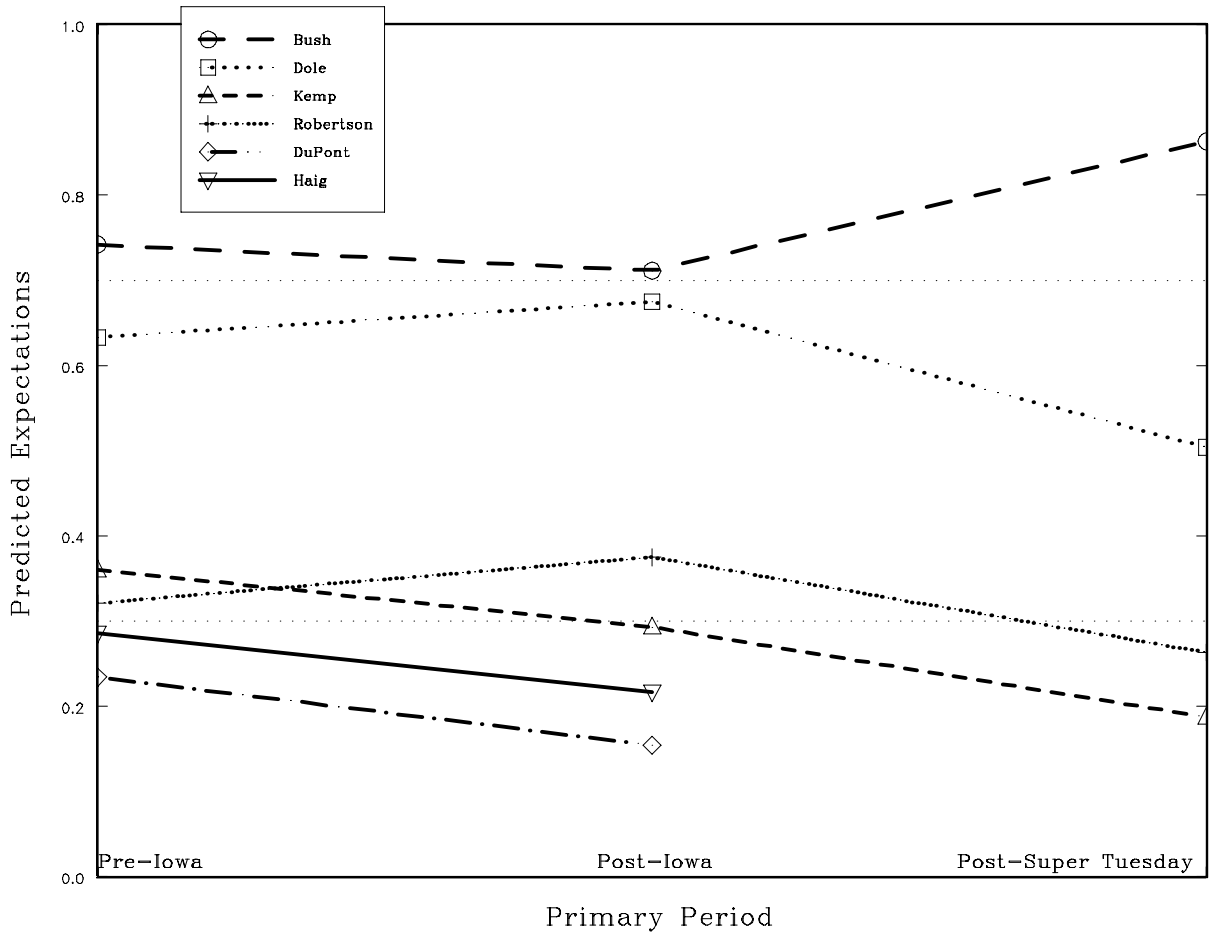

Figure 3: Republican Candidates' Mean Certainty

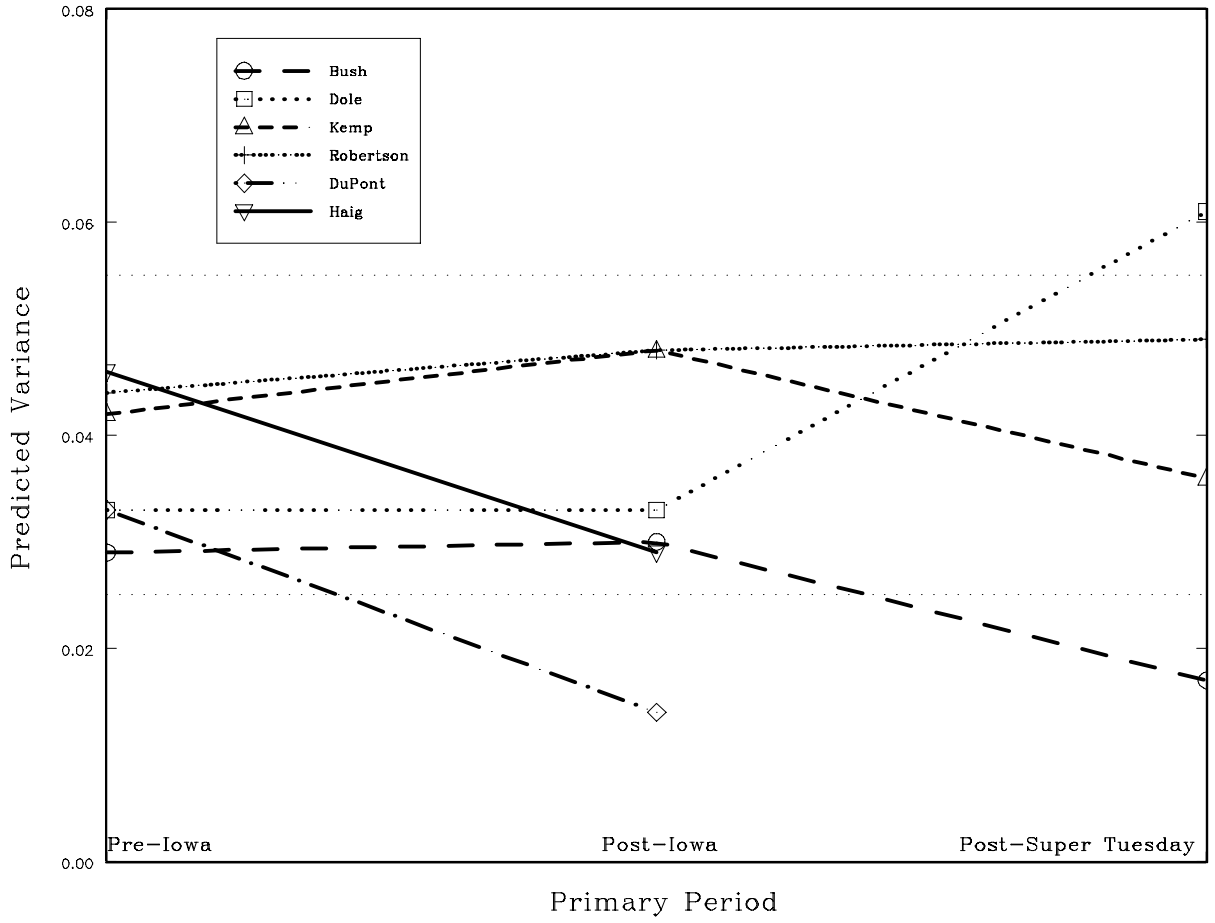

Figure 4: Democratic Candidates' Mean Expectations

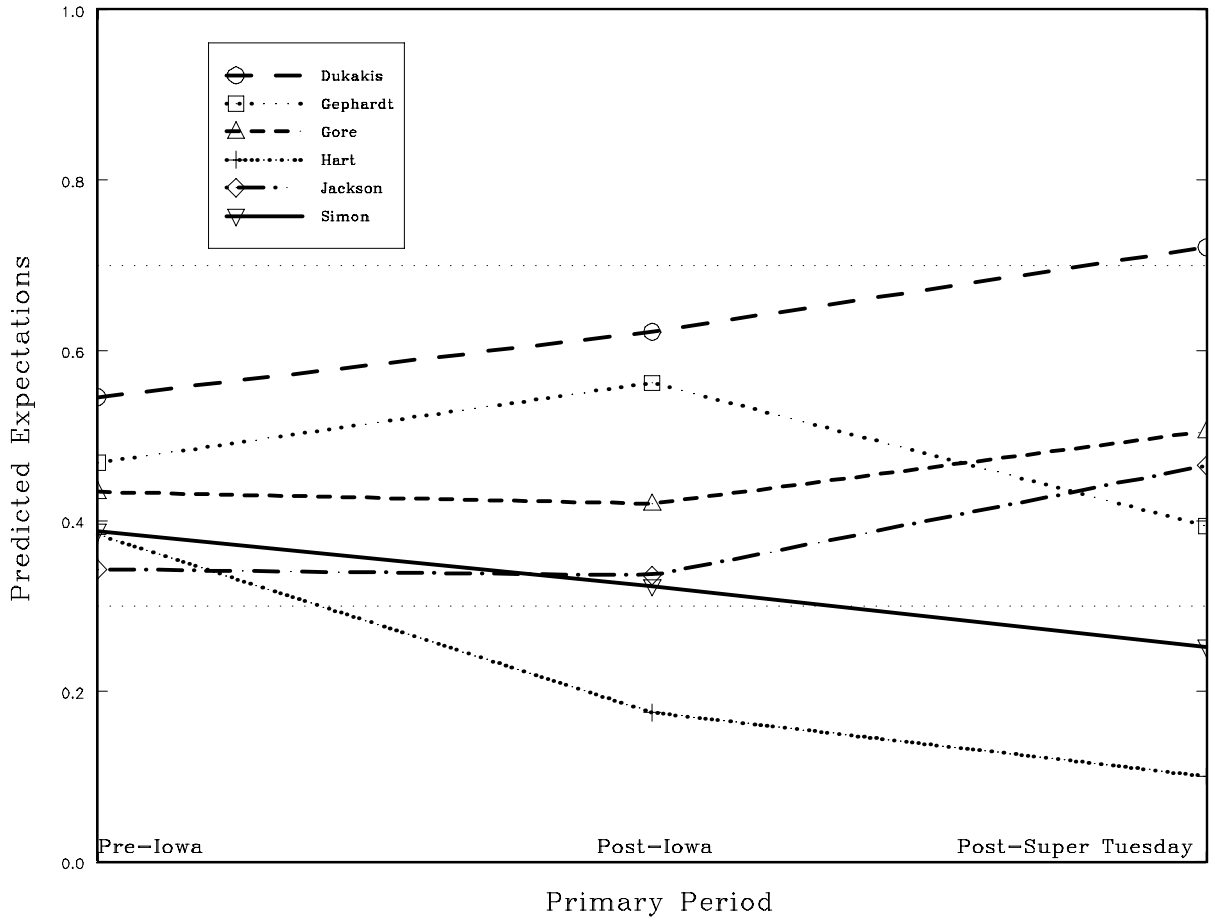

Figure 5: Democratic Candidates' Mean Certainty

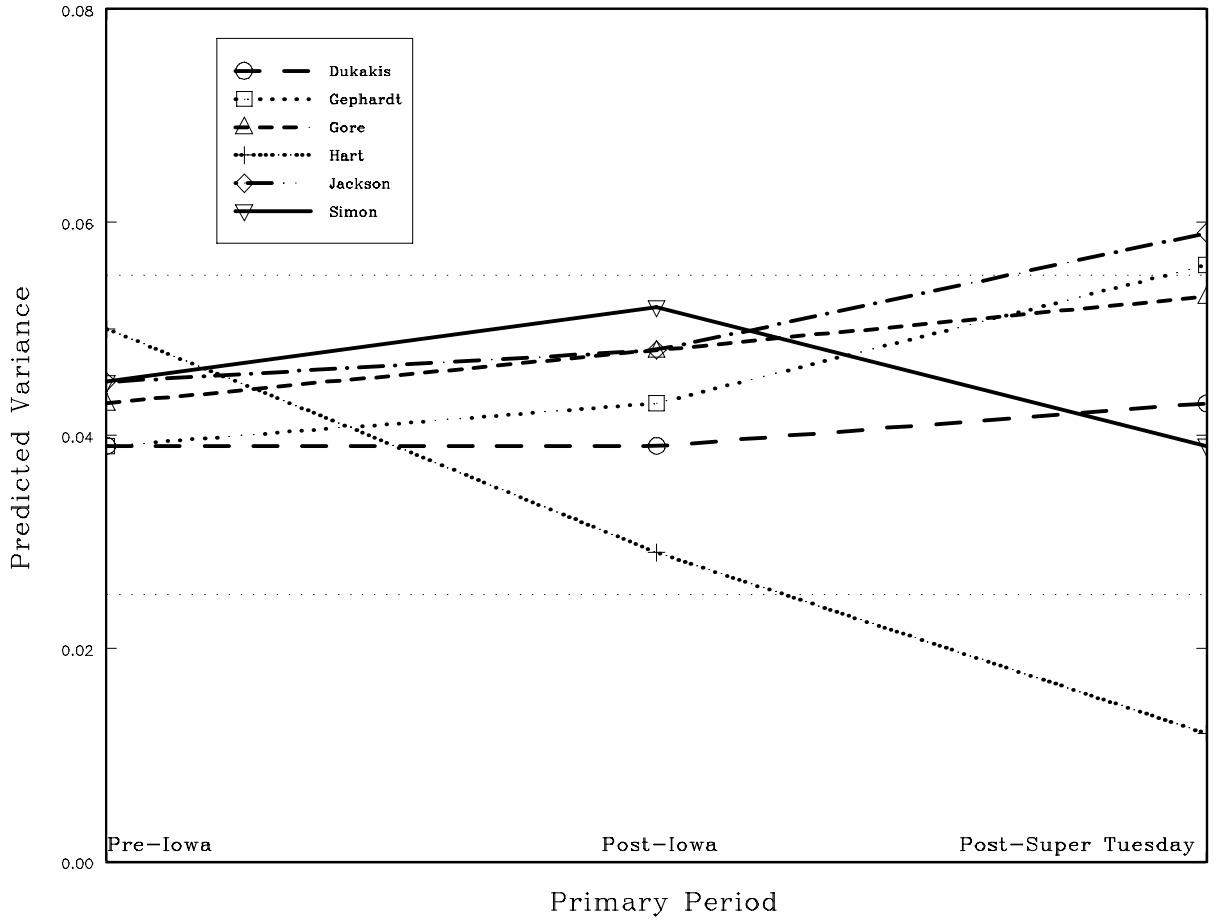

Table 1: Changes in Factors Influencing Certainty — Republican Candidates

	Bush			Dole		
	Pre-IA	Post-IA	Post-ST†	Pre-IA	Post-IA	Post-ST
Candidate Thermometer						
mean $\mathcal{D}$	-.192*	-.193*	-.207*	-.083	.039	-.026
stdev $\mathcal{D}$	.048	.097	.033	.075	.069	.072
Knows Iowa/Super Tuesday Winner						
mean $\mathcal{D}$	NA	-.008	-.192*	NA	-.098	.134
stdev $\mathcal{D}$		.046	.055		.058	.082
Knows New Hampshire Winner						
mean $\mathcal{D}$	NA	-.088	NA	NA	-.021	NA
stdev $\mathcal{D}$		.045			.057	
General Political Information						
mean $\mathcal{D}$	-.036	-.086*	-.051*	.011	.019	.048
stdev $\mathcal{D}$	.043	.032	.017	.063	.044	.061
Democratic Viability Difference						
mean $\mathcal{D}$	.016	-.032	-.150*	.163*	.062	.217*
stdev $\mathcal{D}$	.039	.029	.023	.076	.050	.051
	Kemp			Robertson		
	Pre-IA	Post-IA	Post-ST	Pre-IA	Post-IA	Post-ST†
Candidate Thermometer						
mean $\mathcal{D}$	-.018	.175*	-.169	.209*	-.050	.307*
stdev $\mathcal{D}$	.053	.065	.126	.074	.075	.038
Knows Iowa/Super Tuesday Winner						
mean $\mathcal{D}$	NA	NA‡	-.327	NA	.010	-.059
stdev $\mathcal{D}$			.245		.028	.050
Knows New Hampshire Winner						
mean $\mathcal{D}$	NA	-.093	NA	NA	-.012	NA
stdev $\mathcal{D}$		.051			.042	
General Political Information						
mean $\mathcal{D}$	.018	-.037	-.144	-.023	-.055	-.076*
stdev $\mathcal{D}$	.083	.058	.080	.053	.044	.029
Democratic Viability Difference						
mean $\mathcal{D}$	.153*	.047	-.088	.242*	.172*	-.095*
stdev $\mathcal{D}$	.069	.047	.115	.063	.044	.032

Source: 1988 NES Super Tuesday Survey. $\mathcal{D}$ is the first difference in the predicted variance multiplied by 10. For knowledge of winning candidates, the first difference is between knowing the winner and not knowing the winner, holding all other variables at their means. Otherwise, the first difference is between the variable valued one standard deviation above and below its mean. †Models estimated without a non-significant variable for number of Republicans placed. ‡Kemp model estimated with a non-significant variable for Republican winning Iowa.

Table 2: Changes in Factors Influencing Certainty — Democratic Candidates

	Dukakis			Gephardt		
	Pre-IA	Post-IA	Post-ST	Pre-IA	Post-IA	Post-ST
Candidate Thermometer						
mean $\mathcal{D}$	-.321*	-.162*	-.312*	-.362*	-.002	-.067
stdev $\mathcal{D}$	.109	.070	.063	.124	.076	.074
Knows Iowa/Super Tuesday Winner						
mean $\mathcal{D}$	NA	-.052	-.267*	NA	-.100	-.160*
stdev $\mathcal{D}$		.057	.076		.072	.054
Knows New Hampshire Winner						
mean $\mathcal{D}$	NA	-.171*	NA	NA	.066	NA
stdev $\mathcal{D}$		.051			.071	
General Political Information						
mean $\mathcal{D}$	-.110	.008	-.143*	-.232*	-.207*	-.035
stdev $\mathcal{D}$	.087	.058	.051	.077	.066	.051
Republican Viability Difference						
mean $\mathcal{D}$	.208*	.114*	.200*	.333*	.214*	.212*
stdev $\mathcal{D}$	.071	.051	.058	.095	.065	.054
	Gore			Simon		
	Pre-IA	Post-IA	Post-ST	Pre-IA	Post-IA	Post-ST
Candidate Thermometer						
mean $\mathcal{D}$	.334*	-.147	-.108	-.036	.040	.111
stdev $\mathcal{D}$	.124	.107	.066	.141	.078	.082
Knows Iowa/Super Tuesday Winner						
mean $\mathcal{D}$	NA	-.086	-.127	NA	.107*	-.213*
stdev $\mathcal{D}$		.073	.077		.048	.058
Knows New Hampshire Winner						
mean $\mathcal{D}$	NA	.136*	NA	NA	-.054	NA
stdev $\mathcal{D}$		.062			.046	
General Political Information						
mean $\mathcal{D}$	-.010	-.026	-.160*	-.121	-.096*	-.084
stdev $\mathcal{D}$	.067	.076	.061	.080	.048	.059
Republican Viability Difference						
mean $\mathcal{D}$	.361*	.295*	.346*	.229*	.127*	.014
stdev $\mathcal{D}$	.063	.074	.078	.084	.049	.050

Source: 1988 NES Super Tuesday Survey. $\mathcal{D}$ is the first difference in the predicted variance multiplied by 10. For knowledge of winning candidates, the first difference is between knowing the winner and not knowing the winner, holding all other variables at their means. Otherwise, the first difference is between the variable valued one standard deviation above and below its mean.