

The Strategy of Campaigning

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Abstract

We prove an abstract theorem which shows that under certain circumstances, a candidate running for political office should be as explicit as possible in order to improve her impression among the voters. But this result conflicts with the perceived reality that candidates are often cagey and reluctant to take stances except when absolutely necessary. Why this hesitation on the part of the candidates? We offer some explanations.

1 Introduction

In [3] Dean and Parikh considered a political candidate campaigning to be elected. The candidate's chances of being elected depends on how various groups of voters perceive her, and how they perceive her depends on what she has said. Different groups of voters may have different preferences and a statement preferred by one group of voters may be disliked by another.

They consider three types of voters: Optimistic (those who are willing to think the best of the candidate), pessimistic (those who are inclined to expect the worse), and expected value voters, who average over various possibilities which may come about if the candidate is elected. They show that if the voters are expected value voters, then the candidate is best off being as explicit as possible.

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While interesting, this result is counter intuitive in that politicians are often cagey and avoid committing themselves on issues. What explains this?

In this paper, we extend the previous work by Dean and Parikh in two ways.

We use the Fubini theorem to provide a very general, abstract version of their (*best to be explicit*) result which applies to the case where we consider a single candidate who merely wants to improve her status among the voters.

Later we introduce a belief set for the candidate and impose the condition that she would not make any statements against her honest beliefs. We also take into account the scenarios where there may be optimistic voters, or where other problems, like voters staying at home, enter. Such scenarios offer a possible explanation for the cageyness of some candidates.

2 A General Theorem

This section presumes that the candidate has made some statements in the past and as a consequence the voters can assume that if she is elected then the state of the world (or nation) will belong to a certain set Z of (possible) states, those which agree with the statements she has made.¹

A voter may have different views about the different states in Z finding some good and others not so good. Also, different voters may have different views about the same state.

If the candidate reveals more of her views on some issues, then the set of states compatible with her views will shrink. Some voters may be displeased, finding that their favorite states are no longer compatible with her new stance. Other voters may be pleased seeing that some states they feared are no longer in the running.

How should the candidate speak so as to improve her overall position given these forces pulling in different directions?

Let V denote the set of voters, and Ω the set of the states of the world.²

¹If the statements which she has already made constitute a set T , then Z is the set of those states ω which satisfy T .

²Note that we are not making assumptions like single peak preference. The model we use allows for a candidate who is a social conservative and an economic liberal (e.g. Carter), or a socially liberal candidate who is hawkish on foreign policy (Johnson).

Both V, Ω are assumed to be compact subsets of some Euclidean space. Let the satisfaction function $s : V \times \Omega \mapsto \mathbb{R}$ represent the extent to which voter $v \in V$ *likes* the state $\omega \in \Omega$. What is the candidate's current average degree of satisfaction among all voters? It is

$$\alpha = \frac{\int_{\omega \in Z} \int_{v \in V} s(v, \omega) dv d\omega}{\mu(Z)} \quad (1)$$

namely the average value of $s(v, \omega)$ over all voters v and all states ω in Z . We assume that the measure of the set of voters is normalized to be 1. Here $\int_{v \in V} s(v, \omega) dv$ is the extent to which a particular world ω is liked by the average voter. α is the average of such averages over all worlds in Z .

The candidate is now wondering whether she should make a statement A or its negation $\neg A$. At the moment we are assuming that she has no restrictions as to what she can say with popularity being her only concern so she is free to say A or its negation. Later on we will consider *restrictions* on what she can say.

Let X and Y be the two disjoint subsets of Z where X is the set of states where A is true and Y the set where A is false, i. e. where $\neg A$ is true. Z is $X \cup Y$.

Then the average satisfaction on $X \cup Y$ could be rewritten as

$$\alpha = \frac{\int_{\omega \in X \cup Y} \int_{v \in V} s(v, \omega) dv d\omega}{\mu(X \cup Y)} \quad (2)$$

where $\mu(X \cup Y)$ is the probability that the event $X \cup Y$ occurs.

Note: Here an *event* is simply a set of states.

We could rewrite (1) as

$$\alpha = \frac{\beta_x + \beta_y}{\mu_x + \mu_y} \quad (3)$$

where

$$\beta_x = \int_{\omega \in X} \int_{v \in V} s(v, \omega) dv d\omega,$$

$$\beta_y = \int_{\omega \in Y} \int_{v \in V} s(v, \omega) dv d\omega,$$

μ_x is the probability that X obtains, and

μ_y is the probability that Y obtains.

Then either $\frac{\beta_x}{\mu_x} = \frac{\beta_y}{\mu_y} = \frac{\beta_x + \beta_y}{\mu_x + \mu_y}$, or one of $\frac{\beta_x}{\mu_x}$ and $\frac{\beta_y}{\mu_y}$ is greater than $\frac{\beta_x + \beta_y}{\mu_x + \mu_y}$.

To see this, note that

$$\frac{\beta_x + \beta_y}{\mu_x + \mu_y} = \alpha \quad (4)$$

Now suppose that

$$\frac{\beta_x}{\mu_x} = \alpha_1 \leq \alpha \quad (5)$$

$$\frac{\beta_y}{\mu_y} = \alpha_2 < \alpha \quad (6)$$

Then, $\beta_x + \beta_y = \alpha * \mu_x + \alpha * \mu_y$ by (4), and $\beta_x + \beta_y = \alpha_1 * \mu_x + \alpha_2 * \mu_y$ by (5) and (6),

but $\alpha_1 \leq \alpha$ and $\alpha_2 < \alpha$, so we have a contradiction. So at least one of the ratios is greater than or equal to α , her current level of satisfaction.

Say $\alpha_1 = \frac{\beta_x}{\mu_x}$ is greater than α . then by uttering the statement A she will move from α to α_1 and benefit overall. Some voters may dislike A but they will be outweighed by those who like it.

Thus at least one of the statements A and $\neg A$ will either benefit her (raise her level of satisfaction) or at least leave her level the same. $\square$

Corollary: A candidate is best off being as explicit as she can.

Proof: For consider all possible theories (sets of statements) which she could utter. And let T be the best theory she could utter. If T is not complete, i.e. leaves some question A open, then there is an extension of T which includes either A or its negation and is no worse than T . $\square$.

3 Ambiguity and Pessimism

Pessimistic voters are voters who assume the worst of all the states which are currently possible. Thus if Z is the current set of possible states of the world then a pessimistic voter will value Z as $v(Z) = \min\{s(v, \omega) : \omega \in Z\}$.

It is obvious that being more explicit with pessimistic voters can only help a candidate for it might well eliminate states which the voter dislikes and at worst it will leave things the same way.

What if the voters are a mixture of expected value voters and pessimistic voters? Then given the choice of saying A and $\neg A$, at least one of the two, say A will help her with the expected value voters and can do no harm with the pessimists. Now it could be that saying $\neg A$ will help her more with the pessimists than it hurts with the expected value voters, but at least one of A and $\neg A$ is safe for her to say.

Thus *one* possible reason for a candidate to be cagey is the presence of a large number of optimists. Optimistic voters will put $v(Z) = \max\{s(v, \omega) : \omega \in Z\}$. If a voter strongly prefers ω and another strongly prefers ω' and both are optimists then the candidate may prefer to remain ambiguous between ω and ω' .

A second reason may be that a strong candidate who expects to win may refrain from committing herself on issues in order to leave freedom of action open if and when she takes office.

Yet another reason could be that the candidate does not want to say something contrary to her beliefs even if that would help her with voters.

Later, we consider another reason - stay at home voters - why a candidate may prefer to be cagey.

4 The Logical Formalism of Dean and Parikh

The last section gave an abstract presentation of the scenario without saying what the states of the world were and where the satisfaction function s came from. Now we will proceed to be more explicit.

- The candidate's views are formulated in a propositional language L containing finitely many atomic propositions $At = \{P_1, \dots, P_n\}$
- Propositional valuations and worlds are conflated. $\omega \in 2^{At}$
- Propositional valuations are defined as follows in order to make the arithmetic simpler: $\omega[i] = 1$ if $\omega \models P_i$, and $\omega[i] = -1$ if $\omega \not\models P_i$

- Voters are characterized by their preference for a set of ideal worlds. This is formalized via two functions p_v and x_v .
 - $p_v(i) = 1$ if v would prefer P_i to be true,
 $p_v(i) = 0$ if v is neutral about P_i ,
 $p_v(i) = -1$ if v would prefer P_i to be false.
 - $x_v(i) : At \rightarrow [0, 1]$ the weight which voter v assigns to P_i such that $\sum x_v(i) \leq 1$
- The utility of a world ω for voter v is defined as

$$s(v, \omega) = \sum_{1 \leq i \leq n} p_v(i) \times x_v(i) \times \omega[i]$$

- We will first consider expected value voters. Their utility for a given (current) theory T of a candidate is calculated as follows:

$$ut_v(T) = \frac{\sum_{\omega \models T} s(v, \omega)}{|\{\omega : \omega \models T\}|}$$

- The value of a statement A for a given theory T is

$$val(A, T) = ut(T + A) - ut(T)$$

where $ut(T + A)$ is the utility when a candidate's theory T is updated by statement A .

- In Dean and Parikh, a candidate chooses what to say next by calculating the *best statement* for a given theory T (this is what she has said so far) as follows:

$$best(T, X) = argmax_{A \in X} val(A, T)$$

where X is the set of formulas from which the candidate chooses what to say. X could be defined differently depending on the type of the candidate. (i.e. depending on the restrictions that are imposed on the candidate as to what she can say.)

5 Extension of the Framework

Dean and Parikh showed that (given expected value voters) it is always to a candidate's benefit to say something on a certain issue than to remain silent and we gave a generalization of their result in Section 2. We find that this is not the case in practical cases. Here is a well known quote from the satirical newspaper *The Onion*.

NEW YORK After Sen. Barack Obama's comments last week about what he typically eats for dinner were criticized by Sen. Hillary Clinton as being offensive to both herself and the American voters, the number of acceptable phrases presidential candidates can now say are officially down to four. At the beginning of 2007 there were 38 things candidates could mention in public that wouldn't be considered damaging to their campaigns, but now they are mostly limited to 'Thank you all for coming,' and 'God bless America,' ABC News chief Washington correspondent George Stephanopoulos said on Sunday's episode of This Week.

The Onion, May 8, 2008

For a more scholarly source consider [5]

Modern U.S. candidates have proven just as willing to use ambiguity as a campaign strategy. Jimmy Carter and George H.W. Bush were renowned for taking fuzzy positions at crucial points during their successful runs for the presidency (Bartels 1988, 101), and Barack Obama captured the White House in 2008 while remaining vague on key issues.

5.1 Candidate Beliefs

We extend the framework of Dean and Parikh by considering a belief set B for the candidate to represent her honest beliefs (this set need not be complete, allowing the candidate to form her opinions on certain issues later on), and a theory T to represent the statements she has uttered so far. We will impose the requirement that the candidate will not make statements

that are against her beliefs. This requires B and T to be consistent with each other, and every possible statement A to be consistent with $B \cup T$. We could call this type of candidate *tactically honest*. In this case it is easy to see that sometimes such a candidate might want to remain silent.

5.1.1 Remaining Silent

Example 5.1 We consider a single candidate c whose belief set B_c and theory T_c are given below:

$$B_c = \{\neg P, Q, \neg R\}$$

$$T_c = \{\neg R\}$$

There are four assignments satisfying T_c that the voters will take into account. The assignments are given in the form of $\langle p_v(P), p_v(Q), p_v(R) \rangle$

$$\omega_1 = \langle -1, -1, -1 \rangle, \omega_2 = \langle -1, 1, -1 \rangle, \omega_3 = \langle 1, -1, -1 \rangle, \text{ and } \omega_4 = \langle 1, 1, -1 \rangle$$

We will consider two groups of voters v_1 and v_2 of the same size:

v_1 's preferences:

$$p_1(P) = 1, p_1(Q) = 1, p_1(R) = -1$$

$$x_1(P) = 0.4, x_1(Q) = 0.2, x_1(R) = 0.2$$

v_2 's preferences:

$$p_2(P) = 1, p_2(Q) = -1, p_2(R) = -1$$

$$x_2(P) = 0.3, x_2(Q) = 0.1, x_2(R) = 0.4$$

What should c say about P ?

In this initial situation, v_1 has 0.2 points for c and v_2 has 0.4 points. $v_1(T_c) = 0.2$ and $v_2(T_c) = 0.4$. c would like to say $\neg P$ since it is in her belief set. However the popular opinion among the voters is P , so if she were to say $\neg P$ her points would go down among both groups of voters. $v_1(T_c + \neg P) = -0.2$ and $v_2(T_c + \neg P) = 0.1$. She also cannot say P as it contradicts her opinions i.e. her belief set. So she might choose to remain silent in regard to P .

5.1.2 Revealing Partial Truths

Example 5.2 In Example 5.1 we have shown that remaining silent about P would be a reasonable option for the candidate if she doesn't want to lie about

her honest beliefs. Another option is that she could say $(P \vee Q)$ which allows her not to directly contradict her belief set, but also to increase her points at the same time by revealing only a partial truth. In this case the voters will remove the possible world $\omega_1 = \langle -1, -1, -1 \rangle$ from their calculations, and her points will go up among both groups of voters. $v_1(T_c + (P \vee Q)) = 0.4$ and $v_2(T_c + (P \vee Q)) = 0.47$.

This example shows that a candidate who does not want her statements and her beliefs to conflict can achieve more by remaining silent on a certain issue than by voicing her opinion. However she may occasionally achieve even more by making a vague statement (i.e. by revealing partial truth (and not lying)) than by remaining silent.

5.1.3 Dishonest Candidates

If we allow a candidate to be dishonest (i.e. to make statements that can contradict her belief set), then we can ignore the candidate's belief set altogether. This candidate will choose to be as explicit as possible given that the voters are expected-value voters as per Dean and Parikh's result. It is easily seen then the candidate will have more leeway against the candidates who choose to be honest. Moreover, even a candidate who is honest, but has some leeway is better off by being less explicit at the start of a campaign. For let T_1 and T_2 be two positions to which she could commit at the start of the campaign. Assume moreover that $T_1 \subset T_2$. Then the number of permissible extensions of T_2 is less than the number of permissible extensions of T_1 . So the best she could gain by starting only with T_1 is higher than the best she could gain by starting with T_2 .

One could ask, but if T_2 was something she was going to say anyway, then why not say it at the start of the campaign? The answer is that the function $s(v, \omega)$, the extent to which voter v likes the world ω is not constant and may vary as time passes. The tastes and preferences of voters do change. So it may be wiser to wait. But when further changes in s are unlikely then being explicit can be helpful.

5.2 Stay-at-home Voters

For another explanation as to why a candidate might want to remain silent, we will introduce a threshold value t for voters. We will stipulate that a voter's utility for a candidate c must be greater than t for that voter to vote for c .

Example 5.3 Consider a candidate c with the following belief set and theory.

$$B_c = \{P, \neg Q, \neg R\}$$

$$T_c = \{(P \vee Q), \neg R\}$$

Assume two groups of voters v_1 and v_2 of the same size with the following preferences.

v_1 's preferences:

$$p_1(P) = 1, p_1(Q) = -1, p_1(R) = -1$$

$$x_1(P) = 0.4, x_1(Q) = 0.1, x_1(R) = 0.4$$

v_2 's preferences:

$$p_2(P) = -1, p_2(Q) = 1, p_2(R) = -1$$

$$x_2(P) = 0.1, x_2(Q) = 0.4, x_2(R) = 0.5$$

If we assume a threshold value of $t = 0.5$, in this initial situation both groups of voters would vote for c as shown in the left column of Table 1.

Table 1

	Initial scores	Updated scores if c says P
v_1	0.5	0.8
v_2	0.6	0.4

If c wanted to say P , which is in her belief set, the sum of her points would go up (from 1.1 to 1.2). However in this case v_2 becomes a stay-at-home voter and c is actually hurt by saying P . Considering this, she might want to remain silent regarding P .

Note that even if the candidate was dishonest and wanted to say $\neg P$, this time she would lose v_1 's votes as shown in Table 2.

Table 2

	Initial scores	Updated scores if c says $\neg P$
v_1	0.5	-0.1
v_2	0.6	1

6 Conclusions and Future Work

We have developed a model which explains why a candidate might wish to become explicit about issues, as well as situations where a candidate may prefer to remain silent on some issues. Our model differs in significant ways from the models developed by [1, 4, 5] in that we are including a semantics for the language in which candidates speak and raising questions about when they would speak and when they would remain quiet.

References

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