Policies or Values?
The Choice of Rhetoric In Electoral Competitions

(**Job Market Paper**)

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Abstract: I develop a model of electoral competition in which candidates have two types of costly messages to send to voters: policy announcements and statements about their values. The key difference between the messages is that a candidate who lies about his intended policies experiences a cost only if elected but bears no cost otherwise, while a candidate who misstates his values bears a cost regardless of the outcome of the election. At equilibrium, the more extreme candidates run on values while the centrists announce policies. A stronger set of values improves the payoff to all candidates in a party, but gives that party no electoral advantage in fully separating equilibria. In hybrid equilibria, the stronger-values party also has an advantage at the polls. Supplementing the set of electoral messages with value statements is a Pareto improvement for society over policies-only elections in fully separating equilibria, but this is not necessarily true in hybrid equilibria. In that case, the centrist candidates and the median voter may lose while the more extreme candidates are better off than in policies-only elections.

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1 Introduction

Politicians' rhetorical style on the campaign trail often differ as much as do their positions on various issues. Some candidates tend to run on "policies," announcing what they would do for the voters if elected to the office, while others tend to run on their "values," telling voters about their beliefs. In the most recent electoral campaign, for example, the candidates running for the Republican Party's nomination almost completely specialized in one type of electoral messages. John McCain's remarks for the 2008 Conservative Political Action Conference (CPAC) contained a few policy announcements like: "I will cut corporate tax rates from 35 to 25% [...] I will end the Alternate Minimum Tax." For the same audience, Mike Huckabee had no concrete policy proposals. He instead provided a vivid picture of his values, with statements like: "It is right for us to believe in a government that gives to us lower taxes [...] and controls spending," and "I am a strong supporter of the FAIR tax."

While policy announcements have been studied extensively in the literature, statements about personal views have received little attention, despite their widespread use.[1] In this paper, I extend the standard framework of electoral competition to incorporate values statements as electoral messages, and I examine how politicians choose their rhetoric during elections. Recent research by Gentzkow and Shapiro (forthcoming) shows that politicians are very thorough in choosing their words, carefully selecting, for example, among notionally-equivalent synonyms those who resonate the most with their constituency. It is therefore essential, both as researchers and as voters, to understand the choice of electoral messages by candidates.

The main question addressed in this paper is: Which candidates would choose to talk about their policies while campaigning and which about their values? I develop a model of electoral competition under incomplete information in which politicians are office-motivated and the voters care only about a candidates' intended policies. The candidates can either announce a policy or make a statement about their values, which are correlated with their policies. These statements differ in their verifiability which affects the candidates' "announcement cost." The main prediction is that the most extreme candidates will run on values, announcing relatively extreme views, while the centrist candidates will run on relatively more moderate policy announcements.

The analysis is based on a key assumption: unlike policy announcements, values statements are unverifiable. For example, had Huckabee been elected to the office, the electorate would not have been able to tell if he truly believes in the FAIR tax. Imagine a world in which, in the absence of any electoral considerations, the policies pursued in the office are a function of a candidate's values and a state of the political environment which is unobserved by the voters. Any tax policy pursued in office would have been consistent with his stated values. Had a candidate promised he *would* introduce the FAIR tax, however,

[1] The literature provides a few ways to think about values statements, but they are not entirely satisfying. Following Shepsle (1972), Aragones and Neeman (2000), and Alesina and Cukierman (1990), values statements could be seen as noise, keeping voters informed about one's candidacy without informing the electorate about one's policies. Alternatively, one could regard values statements as pure cheap-talk in the spirit of Crawford and Sobel (1982) and Austen-Smith and Banks (2000) and (2002). One could also see values as part of a candidate's valence, as in Glasgow and Alvarez (2000). Voters seem to care about characteristics loosely termed "values," such as character, integrity, and honesty, but the values I examine in this paper are views that influence a candidate's intended policy. As such, they are likely neither random noise, nor cheap-talk.

the voters would have assumed that given the political environment and his unstated values, the candidate intends to implement such a tax policy. Any deviation in implementation from his stated policy would be visible to voters. It is standard to assume that the candidate who wins the election bears a cost when deviating in implementation from his announced policies.

A candidate who runs on values may also bear a cost if he lies. One could imagine situations in which candidates are able to convey their positions through entirely costless cheap-talk messages. But the kind of electoral messages candidates use in practice are not merely dadaistic noise. Candidates tend to talk about things that seem important to them: religious beliefs, philosophical views, or ideological stances. Even though the voters would not be able to tell if a candidate is lying, the candidate himself would know. Everything else equal, a candidate who would prefer to win by telling the truth about his values is a candidate who bears a cost if he lies about his values. Unlike lying about policies, the candidate bears this cost regardless of the outcome of the election.

There are two main results. First, in any election there will always be some types of candidates running on values. These are the candidates who have the most extreme policies and who therefore have the smallest chance of being elected. Policy announcements are costly only for the winner, so the more extreme candidates would benefit by choosing the relatively more costly values statements as signals. Second, if any candidates run on policies, they are the relatively centrist candidates. The fraction of candidates using policy announcements in every election is directly proportional with the cost of lying about policies and inversely related with the cost of misstating values.

Additional results are obtained by relaxing the assumption of symmetry between the political parties by allowing one party to have stronger values that are more costly to misrepresent. Stronger values reduce the amount of misrepresentation of the candidates' true position, both for candidates running on values and for those running on policies, thereby increasing the candidates' payoff. But as long as the candidates fully separate, the party with the stronger values has no electoral advantage. Allowing candidates to run on values is a Pareto improvement for the whole society over policies-only elections. The most extreme candidates benefit when they have access to a costlier signal, while the candidates who continue to run on policies misrepresent their positions less in order to distinguish themselves from the more extreme candidates who are using values statements.

Full separation of politicians implies that, while all politicians lie about their type, no voters are fooled. Arguably, the more interesting and realistic situations imply some types of candidates being able to hide their intentions during the election. Relaxing some of the stronger assumptions in the model leads to hybrid equilibria in which the most centrist candidates pool by announcing the position of the median voter, either through a policy announcement or via a values statement. In such equilibria, the party with the stronger values will also enjoy an advantage at the polls. Also, if the candidates pool by submitting the same values statement at equilibrium, the most extremist candidates continue to benefit from being allowed to use values statements in electoral campaigns, but the more centrist candidates are worse off and the median voter receives less information about what the candidates intend to do in the office than in policy-only elections.

Although the results are derived in the context of electoral competition, they could apply to other areas of interest for economists. Many situations involve an informed sender who may try to manipulate uninformed receivers. In a slightly different situation, a sender may be willing to "burn money" in order to successfully convey its desirability to a receiver. For example, Austen-Smith and Banks (2002) analyze a situation in which a sender could use both a costless signal and a costly one. They show that "burning money" could improve the precision of "cheap talk" communication and introduce new informative cheap talk equilibria. One can think of values statements as dollars already burned, while policy statements are promises to burn dollars contingent on an action taken by the receiver. The overall lesson is that when multiple types of costly messages are available to the sender, the choice of the type of message also conveys some information to the receiver which should be incorporated in his optimal decision.

2 The Model

The paper contributes to the electoral competition literature pioneered by Downs (1957) application of Hotelling (1929)'s model of spatial location. The paper most closely related is Banks (1990). His paper represents the first attempt to add realism to the models of electoral competition by not binding candidates to keep their electoral promises. Banks' work has been recently extended by Callander and Wilkie (2007) who assume that some candidates might be better equipped for lying than others and therefore could adopt any political position without any cost. Similarly, Kartik and McAfee (2007) construct a model in which some candidates have character and are committed to the policy positions they advertise, while others can lie about their intentions. I extend Banks's work in a different direction. I keep the politician's type space uni-dimensional but I enlarge the space of messages the candidates can send to the voters to include statements about values.

There is a single dimensional policy space normalized at $[-1, 1]$ with voters and politicians distributed along it. A voter of type $p_i \in [-1, 1]$ has preferences over policies with a single peak at p_i: she gets a payoff of $u_i(p, p_i) = -(p-p_i)^2$ from policy p being implemented. The median voter has policy preference 0. The voters' behavior can be succinctly characterized by the behavior of the median voter. For simplicity, I ignore the rest of the voters throughout the paper and focus on the median voter's decision. There are two candidates, whose type represents their private information. A candidate's type is given by his values, v_i, and a policy p_i he would implement if he were elected to the office. I restrict the values to be perfectly correlated with a candidate's policy to be implemented; without loss of generality: $v_i = p_i$. I also assume that the candidates are identified with a political party. The Democratic candidate has values and policies in $[-1, 0]$, while the Republican candidate's values and policies belong to $[0, 1]$. Before the election starts, the median voter has therefore some information on each candidate's type. Without loss of generality I assume that the distributions of candidates' types in each party are uniform.

The timing of the game is as follows. First, the candidates simultaneously and independently transmit their electoral message to the median voter. Then the median voter updates his beliefs about each candidate's expected policies and chooses one of them for the office. The candidates can choose either

to make statements about their policies, or to make statements about their values. The action space for both candidates is therefore $A = \{p, v\} \times R$. I do not initially restrict the candidates' positions to the policy space $[-1, 1]$ or the the part of the political spectrum shared by their party. The candidates could "cross party lines" by announcing policies or values not shared by the party members, or they could make very extreme announcements. The consequences of relaxing this assumption are examined in the section discussing the results.

Candidates are not bound by their electoral promises so they might engage in strategically misrepresenting their positions. Research by Gneezy (2005) and Lundquist et al. (2009) shows that the cost of lying increases with the size of the lie and with the damage done by lying to other people. I assume that for both electoral messages, the cost of lying is directly related to the deviation from the truth. The difference in the verifiability of the electoral messages leads to the dissimilar treatment of the costs of lying. I follow the psychology literature and the distinction between private and public emotions found in Kandel and Lazear (1992), Elster (1998), and Loewenstein (2000), to assume that lying about policies generates public shame, while lying about values causes private guilt.

If a candidate of type p_i runs on policies and chooses action (p, a_p), he will experience a cost of lying only if he wins the election, when the public observes his actions and learns that he lied about his policies while campaigning. If he loses the election, the public never learns that he would have broken his promise, and therefore his cost of shame is zero. The payoff from announcing a policy (p, a_p) is therefore

$$U((p, a_p), p_i) = \begin{cases} 1 - k_s \cdot (p_i - a_p)^2 & \text{if he wins} \\ 0 & \text{if he loses,} \end{cases}$$

where the value of the office is parameterized without the loss of generality at 1 and k_s represents the cost of shame. Shame needs not to be the only source for the "announcement cost.." Retrospective voting in which politicians who deviate from their announced policy are punished by candidates in future elections as in Austen-Smith and Banks (1989) could be another source of the cost of running on policy announcements.

In contrast, untrue values statements impose costs that are independent of the electoral outcomes. The payoff from announcing a policy (v, a_v) is therefore

$$U((v, a_v), v_i) = \begin{cases} 1 - k_g \cdot (v_i - a_v)^2 & \text{if he wins} \\ -k_g \cdot (v_i - a_v)^2 & \text{if he loses,} \end{cases}$$

where k_g represents the cost of guilt. Misrepresenting what one stands for is not observed by the voters, but it is privately observed by the candidates. For brevity I call this cost guilt throughout the paper, but this is neither a commitment-based guilt nor an expectation-based guilt (see Vanberg (2008) for a discussion), because the politician does not commit to a policy when announcing values statements and the voters' expectations are never violated. The deeply personal nature of the values statements would suggest that

these costs are best understood as identity-related in the spirit of Akerlof and Kranton (2000).

The game may seem too simple and too abstract for the complex reality of campaigning. Two assumptions may seem particularly troublesome. I assume that the candidate who wins has already determined the policy to be implemented in the office, and therefore his choice of strategies in the election would not influence his choice of policy in the office. If the candidate uses values statements, the cost of guilt is already sunk when the candidate implements his policy, so it should not affect his decision. But if the candidate uses policy announcements, the cost of shame is to be experienced by the winning candidate only if he deviates from the announced policy. The winner might find it optimal to implement a different policy than the one he prefers to avoid the cost of shame. While this may be true, the assumption I use causes little loss of generality. One could imagine the winner deciding what policy to implement, p_I, by maximizing a function such as: $1 - k_s \cdot (p_I - a_p)^2 - k_p(p_I - p)^2$, where a_p is the policy announced in the campaign, p is the politician's ideal policy, k_s is the cost of shame, and k_p is a private cost of deviating from the one's ideal policy in implementation. If $k_p = 0$, one would in fact commit to a policy during the election; this is rarely observed in practice. With strictly positive k_p the indirect payoff to the winner is $1 - \frac{k_s \cdot k_p}{k_s + k_p} \cdot (p - a_p)^2$, so the only direct effect of more realism is to modify the definition and the magnitude of the parameter k_s to $\frac{k_s \cdot k_p}{k_s + k_p}$. The other effect is that full separation can now never take place, but situations in which only hybrid equilibria can take place are already part of the analysis.

The second seemingly troublesome assumption also turns out to be innocuous: I assume that policies and values are the same. The results could be replicated in a model in which policies are in fact a function of values and a state of the political environment. Adding more realism to the model in this particular way would force a comparison of the median voter's preferences for uncertainty over policies (when values statements are used) or over states of the world (when policy announcements are used.) I found this to complicate the analysis without adding anything to the results.

The solution concept employed throughout the paper is the universally divine sequential equilibrium. In some cases imposing universal divinity on the beliefs after observing out-of-equilibrium announcements generate a unique equilibrium. When the universally divine equilibrium is not unique, all universally divine equilibria belong to a family of equilibria that share common characteristics. The usual equilibrium selection strategy is to choose the most informative equilibrium, but for the most of the paper all the equilibria in this family provide the same informational content to the median voter. For comparative statics, I choose the equilibrium that gives all the types of candidates the highest payoff.

A strategy for the candidate in each party is a mapping of each type to an announcement in A. A strategy for the median voter is probability of voting for the Democratic candidate as a function of the announcements made by both candidates. The strategies for candidates and the median voter must be optimal with respect to each other. Additionally, the median voter forms beliefs about the type of each candidate, which must be sequentially rational. If the median voter observes an announcement that at equilibrium has zero probability of being submitted by a candidate, the median voter's beliefs assign positive probability only to the type of candidate that is the most likely to make that out-of-equilibrium announcement.

Definition: An electoral equilibrium of the model is a symmetric sequential equilibrium with out of equilibrium beliefs restricted by universal divinity. It consists of strategies for the candidate in each party $s_D^*(p_D) : [-1, 0] \to A$, $s_R^*(p_R) : [0, 1] \to A$, and for the median voter $r : A \times A \to \{0, \frac{1}{2}, 1\}$ such that:

1. For all $p_D \in [-1, 0]$, $s_D^*(p_D)$ maximizes $\int_0^1 U_D(p_D, s_D^*(p_D), s_R^*(p_R), r^*(s_D^*(p_D), s_R^*(p_R))\, dp_R$, and similarly for all $p_R \in [0, 1]$.

2. For all pairs of announcements $(a_D, a_R) \in A \times A$, $r^*(a_D, a_R) = 1$ if $\int_{-1}^0 U_V(p_D) \cdot \mu(p_D|a_D)\, dp_D > \int_0^1 U_V(p_R) \cdot \mu(p_R|a_R)\, dp_R$, and similarly for 0 and $\frac{1}{2}$.

3. If $s_D^{*-1}(a_D) \neq \emptyset$ then $\mu^*(p_D|a_D)$ is the conditional probability relative to prior $f_D(p_D)$ that the candidate who submitted a_D is of type p_D, and similarly for the Republicans.

4. $s_D^{*-1}(a_D) = \emptyset$ then let $\theta(a_D, p_D)$ be the probability of winning the election that would make type p_D indifferent between submitting the out of equilibrium a_D or submitting his equilibrium announcement. Then $\mu^*(p_D|a_D) > 0$ only if $p_D = \operatorname{argmin}_{p_D} \theta(a_D, p_D)$, and similarly for the Republicans.

The assumption that the probability distribution functions for types in each party are symmetric about the origin implies that the equilibrium strategies of candidates are symmetric: $s_D^*(p_D) = -s_R^*(-p_D)$. That is, a candidate would behave in the same manner if instead of facing a candidate from the opposite parties he would have a counter-candidate from his own party. To simplify the exposition I describe only the equilibrium behavior of the Republican candidate.

3 Equilibrium In Simplified Environments

It is instructive to examine and compare first the equilibrium in situations in which candidates can communicate to the voters either via policy announcements or through statements about their values. These simpler elections could be seen as building blocks for the equilibrium of the more complex situation in which candidates can use both policy and values statements. At the same time one could see them as stand-alone models of elections in which politicians are segregated in parties whose ideologies do not overlap and in which politicians are not restricted to making announcements that fit the positions associated with their party.

3.1 Equilibrium In Policy-Only Elections

I restrict the action space to $A = \{p\} \times R$. This section is an extension of the work in Banks (1990) to the case where candidates are identified by parties and therefore the median voter has distinct prior beliefs about each candidates type before the policy announcements are made. Callander and Wilkie (2007) use this assumption as well, but they restrict the space of messages to be used by a politician to fit a party's ideology space, which results in multiple equilibria. I consider that restriction in one of the extensions of the model in Section 5.

Banks shows that when the candidates experience a cost from implementing a different policy than the one they announced in the campaign, the equilibrium probability of winning the election is weakly decreasing in the absolute value of the candidate's type and the equilibrium policy announcement is weakly increasing with the candidate's type. These propositions do not depend on assuming a symmetric and identical distributions of types of candidates, so they hold in the case where the candidates are segregated in different parties. The segregation of candidates in parties in fact strengthens these results. The weak monotonicity in strategies and probability of winning is caused by the possibility of candidates around the center of the political spectrum pooling together and submitting the same policy announcement. When the candidates are segregated in distinct parties and the voter is aware of the distinction in the distribution of types within each party, the candidates to the left and to the right of the median voter cannot pool by submitting the same policy. Therefore at equilibrium all the types of candidates separate, submitting policy announcements that are strictly increasing in the candidate's type and having a probability of winning the election that is strictly decreasing in the type.

Proposition 1: The unique electoral equilibrium is separating. A candidate of type p_R submits the announcement $s_p^*(p_R)$ that is the solution to the initial values problem defined by the differential equation $\frac{\partial s_p^*}{\partial p_R} = \frac{1-k_s\cdot(p_R-s_p^*(p_R))^2}{2\cdot k_s\cdot(p_R-s_p^*(p_R))\cdot(1-p_R)}$ and initial condition $s_p^*(1) = 1 - \frac{1}{\sqrt{k_s}}$, and wins the election with probability $1 - p_R$. The median voter equilibrium strategy is: $r^*(a_D, a_R) = 1$ if $a_D > -a_R$ and $r^*(a_D, a_R) = 0$ if $a_D < -a_R$ and $r^*(a_D, a_R) = 0.5$ if $a_D = -a_R$.

Proof: In the Appendix.

Figure 1 shows the equilibrium in policy announcements-only (left) and values statements-only elections (right) for politicians in both parties. The equilibrium strategy profiles for Democrats is shown in blue dashed lines, and for Republicans in red dotted lines. Unlike in Banks (1990), the equilibrium is separating. This is an artifact of the assumption that candidates are segregated into political parties whose ideologies do not overlap. Since the median voter is aware of the ideology of each party, the candidates no longer have to pool at the policy preferred by the median voter and can continue to separate by reaching across the aisle and announcing policies that are in the domain of the opposite party. The assumptions generating this result are admittedly strong. I maintain them to simplify the derivation of results in the next sections. I later discuss situations in which full separations is not feasible and the consequences of hybrid equilibria.

3.2 Equilibrium In Values-Only Elections

In this section the message space is restricted to $A = \{v\} \times R$. The difference between policy announcements and values statements is in the nature of the cost to the politician when the politician misstates his true type. With policy statements the politician experiences shame only if he wins, but has no cost if he loses. The candidate who lies about his values feels guilt regardless of the outcome of the election. The equilibrium with value announcements differs from the one in which candidates announce policies only in

the functional form of the separating strategy profile.

Proposition 2: The unique electoral equilibrium is separating. A candidate of type $v_R = p_R$ submits the announcement $s_v^*(p_R) = -\frac{LambertW(-e^{-2\cdot k_g+2\cdot k_g\cdot p_R-1})-2\cdot k_g\cdot p_R+1}{2\cdot k_g}$, where $LambertW(x)$ function is the inverse of $x \cdot e^x$. A candidate of type p_R wins the election with probability $1 - p_R$. The median voter equilibrium strategy is: $r^*(a_D, a_R) = 1$ if $a_D > -a_R$, $r^*(a_D, a_R) = 0$ if $a_D < -a_R$, and $r^*(a_D, a_R) = 0.5$ if $a_D = -a_R$.

Proof: In the Appendix.

The right panel of Figure 1 shows the equilibrium strategy profiles when the candidates campaign on values. The starkest difference between policy announcements-only campaigns and values-statements only campaigns is the domain of the equilibrium strategy profile functions. When candidates campaign on values, each values statement, no matter how extremist, has a positive probability to be observed at equilibrium; when candidates campaign on policies, they avoid running on policy proposals that are too extreme.

Figure 2 compares the payoff to each type of Republican candidate in policy-only elections (solid green) to the payoff in values-only elections (dotted purple) for various values of the cost parameters. Comparing the top-left panel (in which the cost of shame and of guilt are both equal to 3) to the bottom-left panel (in which the cost of shame is 1) and also to the top-right panel (in which the cost of guilt is 1) shows the familiar result that one benefits from using more costly signals. One implication is that if the politicians could collectively choose the kind of values about which to talk in the electoral campaign they would prefer the ones that cause the most guilt when misstated. This would explain why the candidates are more likely to talk about their religious or constitutional views on the campaign trail than about their favorite sports team or favorite color. According to this result, they would continue to do so even if the latter had the same predictive power about a candidate's preferred policy as the former.

The top-left and the bottom-right panels of Figure 2 suggest that for the same costs of lying, politicians would get a larger payoff in values-only elections than in policy-only elections. This result is even stronger for types that are very close to the most extreme politician. The following Lemma is useful for deriving the rest of the results in the paper:

Lemma: If the cost of guilt is strictly positive and the cost of shame is finite there exists $\epsilon > 0$ such that the payoff to candidates of type $p_R > 1 - \epsilon$ is greater in values-only elections than in policy-only elections.

Proof: In the Appendix.

That the candidates would get different payoffs with identical costs of lying may appear surprising for the following reason. One could think about elections as auctions. The candidate's closeness to the median voter is similar to his valuation for the auctioned object. His cost of shame or guilt from misstating his true type is similar to his "bid." At equilibrium, candidates who bid more win the object. The candidates who "value" the object the least (the most extremist candidates) win the object with probability 0, and pay

0 at equilibrium. The candidates who "value" the auctioned object more are more likely to win it than those who "value" it less and at equilibrium pay more. A campaign in which politicians run on policies could be then seen as an all-pay auction, while the campaign in which politicians run on values is similar to a first-price auction, and according to the Payoff Equivalence Theorem, all types should get the same expected equilibrium payoff from both kinds of auctions. However, that result requires quasi linear bidder payoffs, which is not the case here: one cannot write the politician's payoff as a separate sum of a function dependent on the object's valuation and an expected payment because of the quadratic functional form of the cost of lying.

4 Equilibrium With Both Policy and Values Announcements

The discussion in the previous section suggests that for the same unit cost of deviating from the truth, values statements are more costly to the politicians than policy announcements. When politicians can campaign on both policies and values, statements about a candidate's values would therefore be a better means to signal one's position to the median voter, so one should expect to observe all candidates running on values. If shame is more costly than guilt, some types of candidates would be better off in a policy-only election than in a values-only one, so perhaps these types of candidates would choose to run on policies rather than on values. The equilibrium in the game confirms the intuition.

I first show that there cannot be any equilibrium in which the more extreme candidates choose policies and the less extreme candidates choose to run on values. This follows from the Lemma in the previous section and from the restriction of universally divine beliefs. If the more extreme candidates run on policies, the continuity of payoff condition guarantees that some values statements close to 1 should not be observed at equilibrium. The universally divine beliefs restriction leads the median voter to assume that the candidate who made such a near extreme values statement is less extreme than the candidate who would have made that statement in a values-only election. Then very extreme candidates should deviate from policy announcements and announce the values statements. Doing so would give them a larger payoff due to larger probability of winning compared to the winning probability in values-only elections, which in turn, by Lemma, is a larger payoff than what they would get at the equilibrium. The intuition is formalized in the proof of the following result.

Proposition 3: If the cost of guilt is strictly positive and the cost of shame is finite there cannot be an equilibrium in which the more extremist candidates choose to run on policies and the more centrist candidates choose to run on values.

Proof: In the Appendix.

A consequence of Proposition 3 is that there cannot also be an equilibrium in which all candidates choose to run on policies. That leaves two kinds of strategy profiles as candidates for equilibrium. One is all politicians choosing to run on values, and the other has the more centrist candidates running on policies and the more extreme candidates running on values. The first strategy profile is the unique equilibrium if

the unit cost of shame is smaller than the unit cost of guilt. In that case, politicians would simply ignore policy announcements and the equilibrium would be identical to the one in Section 3.2. Otherwise, the equilibrium is not unique, but all the equilibria have common characteristics. The types below a certain threshold choose policies and the types above that threshold choose values. The latter choose values statements as in Section 3.2, while the former's equilibrium strategy profile is the solution to an initial values problem with the slope defined as in Section 3.1 and the initial condition given by the continuity of payoff function at the type equal to the threshold.

The equilibrium is no longer unique because there are many candidates for the threshold. Imposing universally divine beliefs following out of equilibrium announcements eliminates some but not all of these candidates. The universal divinity requirement is equivalent to imposing the restriction that the slope of the equilibrium payoff function is steeper to the left of the threshold than the slope of the equilibrium payoff function in values-only elections. Otherwise, a type who should at equilibrium submit policies would deviate and announce a statement about values that is just below the smallest values statement that should be observed at the equilibrium with positive probability.

The multiplicity of equilibria raises the issue of equilibrium selection for the purposes of deriving comparative statics results. The usual equilibrium selection technique in the electoral competition literature is to focus on the equilibrium that yields the largest amount of information to the voters. All the universally divine equilibria here are separating, so the median voter can infer the policy to be implemented by a candidate precisely from his policy or values announcement. Instead, I select the equilibrium that gives all types of candidates the largest expected payoff.

Proposition 4:

a) If $k_s \leq k_g$ the unique electoral equilibrium is for all candidates to run on values: $s^*(p_R) = (v, s_v^*(p_R))$ where $s_v^*(p_R) = -\frac{LambertW(-e^{-2\cdot k_g + 2\cdot k_g \cdot p_R - 1}) - 2\cdot k_g \cdot p_R + 1}{2\cdot k_g}$.

b) If $k_s > k_g$ the electoral equilibrium is not unique. All electoral equilibria belong to the following family: for any $p_R^* \in [0, \frac{k_s - k_g}{k_s}]$ candidates in $[p_R^*, 1]$ run on values with the separating strategy profiles $(v, s_v^*(p_R))$ as above; candidates in $[0, p_R^*]$ run on policies with equilibrium strategy $(p, s_p^*(p_R))$ given by the initial value problem with ordinary differential equation $\frac{\partial s_p^*}{\partial p_R} = \frac{1 - k_s \cdot (p_R - s_p^*(p_R))^2}{2\cdot k_s \cdot (p_R - s_p^*(p_R)) \cdot (1 - p_R)}$ and initial condition $s_p^*(p_R^*) = s_v^*(p_R^*)$. The electoral equilibrium that yields the largest payoff to all types of candidates has $p_R^* = \frac{k_s - k_g}{k_s}$.

Proof: In the Appendix.

Figure 3 shows the equilibrium payoff to each candidate's type $U^*(p_R)$ for the case $k_s = 4$ and $k_g = 1$, and Figure 4 shows the equilibrium strategy profiles $s^*(p_R)$ for these parameter values. The solid red lines show the equilibrium payoffs and strategies in elections in which both messages are used. The dotted green lines represent payoffs and strategies in policy-only elections and the dashed purple lines these in values-only elections. The vertical line at 0.75 represents the cutoff above which politicians run on values.

The types $p_r > 0.75$ run on values choosing the same separating strategy they would have chosen in values-only elections. The types more centrist than 0.75 choose to run on policies. Notice that the switch from values statements to policies does not take place for the type p_R for which $U_p^*(p_R) = U_v^*(p_R)$. When politicians start campaigning on policies, they are able to do it by announcing policies that are closer to their ideal policy than the policies they would have submitted in policy-only elections. The fact that the more extremist candidates choose values statements allows the candidates who announce policies to lie less in attempting to separate from them. The outcome is that the candidates who choose policies benefit from the more extremist candidates choosing values: the payoff when both kinds of electoral messages are available is larger than the payoff when only policies are available for all types that make policy statements. The advantage is the largest for the type who is indifferent between policies and values, and it decreases for more centrist types, but it remains positive even for the most centrist of the candidates.

The choice of refinements for equilibrium selection is sometimes a controversial issue in signaling games. I chose to use the universal divinity refinement in this paper despite its failure to generate a unique equilibrium in part to facilitate comparison with models in the related literature. An unique equilibrium could be obtained by imposing the never a weak best response requirement. In that case, for any strictly positive cost of guilt and any finite cost of shame, the only equilibrium would have all types running on values statements. This Gresham's Law type of result for electoral messages lacks realism. Various refinements are also controversial because they sometimes impose unreasonable computational burdens on the voters in the likelihood of facing out-of-equilibrium messages. The particular equilibrium selected has the nice feature that it could also be sustained by relatively simple out-of-equilibrium beliefs. The same family of equilibria would result if the voter assumed, after observing an electoral message that should not have been sent at equilibrium, that it was sent by a type who is not aware that the other kind of electoral messages are available.

5 Discussion of Equilibrium

I discuss here only the predictions that are distinct from the literature on electoral competition under incomplete information. I begin by addressing the main question: which candidates would choose to run on values and which candidates would choose to run on policies?

5.1 The Rhetoric Of Electoral Messages

Any political position is observed at equilibrium with positive probability. The more extreme the position contained by an electoral message, the more likely it is that the position is delivered as a statements about values than in the form of a policy proposal. The more extremist a candidate is, the more likely he is to run on values as opposed to policies. Candidates who run on values tend to lose to candidates who announce policies precisely because the former tend to be more extremist than the latter. The values statements tend to reflect more extreme positions both because more extreme candidates are more likely to run on values

and because lying about values is more costly than lying about policies. This is true for all candidates, but it is especially true for the extremist candidates who have a low probability of being elected and therefore have a small chance of facing public shame for changing their policies.

This result provides an alternative explanation for the pattern observed in Glaeser et al. (2005), who inferred that while parties tend to converge on policies, they tend to diverge on values because the strategic extremism might encourage turnout among their core voters. The alternative explanation suggested by the model is that the politicians who use values are different from those who use policies. The latter tend to be more moderate and to run on policies while the former have and espouse more extreme views, so the parties seem to agree on policies while differing sharply on values.

Assuming that the cost of shame depends on the size of the electorate while the cost of guilt is independent of it, one can derive additional testable predictions. Candidates are more likely to propose policies in large, national elections, or when talking in front of large audiences. They are more likely to talk about their attachment to values in small, local elections, or in front of small groups of voters. For the same political office one would expect candidates in larger countries or states to run on policies while the candidates in smaller polities to run on values. For the same population size, as the share of eligible voters or the proportion of potential voters who participate in the electoral process increases, the fraction of politicians proposing specific policies as opposed to offering values statements also increases.

The majority of candidates running for office in the United States must first to win their party's nomination in primary elections. Ignoring the complication that the median voters in primary elections are different than the median voters in general elections, the equilibrium can offer some predictions about the behavior of politicians in primaries as well. One would expect to see candidates choosing values statements more often in primaries than in the general election because the size of the electorate is smaller in the former than in the latter. This effect is strengthened by the relative cheapness of policy announcements as signals in primaries because a candidate needs to win two rounds of elections to experience any cost from lying about policies. If the electorate in one state is not informed about the positions taken by a candidate in another state, one would expect candidates for their party's nomination to run more on values in small, caucus states, and more on policies in large, primary states. This disparity in electoral messages should disappear as the voters become more informed about the electoral message used in other states.

5.2 The Median Voter Theorem and The Truthfulness Of Elections

A central question in the electoral competition literature is whether the median voter theorem holds. The strong statement of the median voter theorem states that at equilibrium politicians in two=candidate elections both adopt the position favored by the median voter. In practice, while politicians tend to move to the center of the political spectrum, they almost never converge to the same centrist position, as documented by Alesina and Rosenthal (1995). In this model the strong version of the median voter theorem does not hold, although it does in the version of the model in which full separation is not possible presented in Section 6. Weaker statements or implications of the median voter theorem still hold in this model. Cen-

trist positions are indeed more likely to be observed at equilibrium than extremist announcements because they could be made by politicians in both parties. Also, the policies the winner implements are closer on average to the median voter's preferences than to the preferences of any other voter.

In the early models of electoral competition the candidates pander to the median voter with impunity because they bear no cost of lying. A more realistic assumption is that the candidates have some cost in misrepresenting their position, as in Banks (1990). In his model candidates can only run on policies. At equilibrium, candidates avoid taking very extreme and near-center positions. Allowing candidates to run on values increases the truthfulness of elections: both the candidates who run on values and the candidates who announce policies announce positions that are closer to the policies they would eventually implement. This happens because the most extreme candidates who run on values bear a cost regardless of their likelihood of winning the election, so they would misrepresent their position less than if they were forced to make policy announcements. A consequence is that the candidates who choose to run on policies also have to misrepresent their positions less than in policy-only elections.

The increase in the truthfulness of election has little importance for the median voter. Since candidates separate in all kinds of elections considered in Sections 3 and 4, the median voter is always able to infer the policy to be implemented from candidate's announcements. But the increase in the honesty of politicians in elections has a positive impact on their own utility. Allowing candidates to run on values as well as policies is in this setup a Pareto improvement over policy-only elections.

5.3 The Role Of Religious Values In Electoral Competition

To explore the role of deeply felt personal values such as religious beliefs, I relax the symmetry between parties and assume that one party has access to costlier ways to signal the values. As a very rough approximation of the political environment in the United States, suppose that all the voters and candidates who believe in some form of Divinity (not to be confused with the equilibrium refinement) are Republicans, while all the voters and candidates who do not believe in Divinity are Democrats. The median voter belongs to neither party and is agnostic. Also suppose that the identity-related cost from misrepresenting one's values is constant across parties. The candidates who believe in Divinity, however, have some additional cost from misrepresenting their values. This could be either because their religion strongly requires them to "bear witness" or because they might be concerned about the consequences of their statements for the after-life. This asymmetry creates an advantage for all politicians in the more religious party, regardless of their choice of electoral message.

Figure 5 shows such a situation in which the cost of shame is $k_s = 4$ for both parties, but the cost of guilt k_g is 1 for the Democrats (in dashed blue) and 3 for the Republicans (in dotted red.) The top panel shows the payoffs to each type of candidates and identifies the type of candidate who is indifferent between making values statements and announcing policies by vertical dotted lines. The bottom panel shows the difference in payoffs between candidates who are equally far from the median voter but belong to different parties. The politicians' payoff will be larger in the more religious party because the candidates

are able to signal their position to the median voter through smaller deviations from their true position. This advantage is to be expected for the candidates who choose values in both parties (those with types more extreme than 0.75 in absolute values) because the Republicans use more costly signals. But even the candidates whose type in absolute values lies between 0.25 and 0.75 experience an advantage, even though in that range of types the Republicans use signals that are less costly ($k_g = 3$) than the Democrats ($k_s = 4$.)

The more religious party will therefore have more politicians using values and fewer politicians running on policies. On average, its positions would also be more extremist than their opposition in the less religious party regardless of the kind of electoral message used. Assuming the same outside opportunities for potential politicians, the more religious party would be able to attract more politicians. This would not, however, translate into an electoral advantage for the religious party as long as all candidates separate. But in models in which not all the candidates separate, as in Section 6, more costly religious values create an electoral advantage to the more religious party.

6 Restricting The Ability Of Candidates To Cross The Party Lines

The results in the previous sections are derived under a few assumptions that allow politicians to fully separate at equilibrium by submitting positions that are in the domain of the opposing party. At equilibrium all candidates lie but no voters are fooled. Arguably the most interesting cases involve equilibria in which at least some types of candidates are able to hide their intentions by pooling along with other types. In this section I discuss when such situations might occur and I describe how the equilibrium would change. I then revisit the desirability of allowing values statements to be used as electoral messages and the role they play in the electoral competition between parties.

There are a few reasons candidates might not be able to fully separate by crossing the party lines. One is that the politicians might be restricted to announce policies or values from the domain of the policies intended to be implemented by the politicians in the party. This could be done by party leadership for long-term strategic reasons or to avoid confusing the electorate. The game would then change by restricting the set of actions the Democrats could take to $A_D = \{p, v\} \times [-1, 0]$ and that of actions the Republicans can take to $A_R = \{p, v\} \times [0, 1]$. This is the assumption made by Callander and Wilkie (2007), although their analysis involving a multi-dimensional type space for candidates does not apply here directly.

In the United States some candidates seem to be able to join any political party or to switch their allegiance to the parties. This and the presence of Blue Dog Democrats and liberal Republicans seem to suggest that in practice the supports of the distributions of preferred policies usually overlap. In that case, although the action space does not change, at the equilibrium the candidates can no longer fully separate. To see why this is the case, suppose that Republican candidates of type x and $-x$ separate. Then they must submit different strategies, but the median voter would treat them identically, so one type of candidate would benefit by submitting the equilibrium strategy prescribed uniquely to the other type.

Another reason full separation would not take place at equilibrium is that the candidates might engage

in post-election re-calibration of the policies to be implemented. Suppose, for example, that a candidate who ran on policies during the election decides what policy to implement, p_I, by maximizing a function such as: $1 - k_s \cdot (p_I - a_p)^2 - k_p(p_I - p)^2$, where a_p is the policy announced in the campaign, p is the politician's ideal policy, k_s is the cost of shame, and k_p is a private cost of deviating from the one's ideal policy in implementation. k_p must be strictly positive, because otherwise one would commit to a policy during the election, which is almost never observed in practice. The implemented policy of a candidate who runs on policies would therefore be $p_I = \frac{k_s \cdot p + k_p \cdot a_p}{k_s + k_p}$. If candidates separate as before, the most centrist Republican candidate (with $p = 0$) would submit policy announcements $a_p < 0$, resulting in implemented policy $p_I < 0$. But that would make him less desirable for the median voter than a less centrist candidate who would end up implementing policy $p_I = 0$. The very centrist candidates might then have an incentive to pool with less centrist candidates, which would lead to unraveling of the full separation equilibrium.

All these situations would lead to some pooling of the most centrist types. I consider further only the situation in which messages are restricted to fit the party ideology. The other situations lead to similar qualitative predictions, although the quantitative results may depend on the degree of overlap between parties or the value of parameter k_p.

6.1 Restrictions On The Candidates' Positions

The equilibrium resembles that of Banks (1990): the centrist candidates pool at 0, while the extremists separate. The politicians who separate do so to avoid being thought as being more extreme than they are, so they behave exactly as the candidates in the original model. If their type is larger than $\frac{k_s - k_g}{k_s}$, they would choose values statements, otherwise they would choose policies, as in Section 4.

To see which candidates would pool at the center, assume first that pooling can take place only on policies. All the types with $p_R < p_P$ pool at 0, while all the rest separate as before. p_P is given by: $(1 - \frac{1}{2} \cdot p_P) \cdot (1 - k_s \cdot p_P^2) = U^*(p_P)$, where U^* is the expected payoff to each type if separating derived in Section 4. The left hand side of the equation represents the expected payoff if types smaller than p_P pool announcing policy 0. These types win against all separating types and win with probability $\frac{1}{2}$ against the pooling types of the opposite party; when winning, they get 1 minus the cost of shame due to misrepresenting their policies at 0. This equilibrium closely mirrors the one in Banks (1990). The only difference here is that some extreme types choose to separate by announcing values rather than policies.

Announcing the median voter's preferred policy is not the only way for politicians to pool; they could use centrist values instead. In this alternative equilibrium, politicians with $p_R \in [0, p_V]$ pool by announcing values of 0, while the rest separate by announcing policies or values, as in the previous section. p_V is given by: $1 - \frac{1}{2} \cdot p_V - k_g \cdot p_V^2 = U^*(p_V)$. This equilibrium breaks the monotonicity in the choice of electoral messages. It is no longer necessarily true that the most centrist candidates chose policies. Now the candidates choosing policies find themselves between more centrist and more extremist candidates who choose to run on values.

Figure 6 presents these two equilibria. The top panels on the left and right columns show the equi-

librium strategy profiles for Republican candidates in policy-only elections. The middle panels show the equilibria when the candidates are allowed to run on values as well. The panels on the left show the equilibrium when the politicians pool at centrist policies (solid green). Some extreme candidates choose to run on values (dashed purple). As in the previous section this would lead the politicians running on policies to announce policies that are closer to the truth. Consequently, lying by pooling at the center is relatively more expensive than in policy-only elections, thus fewer politicians would do so, and therefore the median voter gets more information at equilibrium. The bottom graph compares the equilibrium payoff in policy-only elections (solid blue) to the equilibrium payoff with both policies and values (dotted red). Allowing candidates to run on values continues to represent a Pareto improvement if candidates select this way of pooling at the center.

The second equilibrium is shown on the right. Again the more extreme candidates choose to run on values, but many more candidates than before choose to pool by submitting centrist values. For the values of parameters chosen ($k_s = 3, k_g = 1$) no candidate wants to run on policies. Introducing the ability to run on values no longer represents a Pareto improvement, as the graph on the bottom right shows. The more extreme politicians benefit from running on values, and some of the pooling candidates benefit as well, but the more centrist candidates and the median voter are hurt. One implication that has some empirical validity is that the centrist voters and politicians have a common interest in making it difficult for the more extreme candidates to run on the values.

6.2 An Electoral Advantage For The More Religious Party

In Section 5.3, I assume that Republicans have access to more costly values statements than Democrats. When the candidates are able to separate completely, Republicans do not obtain an electoral advantage from more costly values. When the candidates cannot completely separate, as in this and the previous section, this result no longer holds. Notice first that whether candidates pool by choosing centrist policy announcements or values statements, if the median voter treats the pooling candidates in both parties identically there will be a smaller fraction of pooling types among Republicans. Because the pooling types have fewer extremists, the pooling Republicans would then be preferred by the median voter to the pooling Democrats, so the median voter must vote for the pooling Republicans with probability one whenever they meet pooling Democrats. The identical treatment of pooling candidates in both parties by the median voter cannot be an equilibrium.

There are two distinct equilibria in this asymmetric version of the model, both of which give a distinct electoral advantage to the more religious party. One solution is to allow the median voter to favor slightly the pooling Republicans over the pooling Democrats when he is indifferent between them. That would increase the fraction of pooling Republicans and would reduce the fraction of pooling Democrats. But this is exactly what should happen at the equilibrium. The type who is indifferent between pooling and separating in both parties would be equally far away from the median voter. The pooling Republican would experience a larger cost of lying than the pooling Democrat, but he would be compensated by a

larger probability of winning because the favoritism of the median voter.

Another solution resembles the equilibrium in Callander and Wilkie (2007). In both parties, the candidates whose type lies above a given threshold p_0^* separate by announcing policies or values as in Section 4. In the Democratic party, the candidates whose type in absolute values is below p_0^* pool at 0. In the Republican party, types in $[0, p_1^*]$, with $p_1^* < p_0^*$ pool at 0 and win with probability 1 regardless of the opponent they meet in the election. Types in $[p_1^*, p_0^*]$ either pool at $s^*(p_0^*)$ or separate by announcing their type truthfully if $p_R < s^*(p_0^*)$. They are able to announce the truth because their probability of winning does not change: being more extremist than the pooling Democrats they cannot them and are able to beat the separating Democrats anyway. The pooling Republicans in $[0, p_1^*]$ would also have a larger cost than the pooling Democrats, but would be compensated by winning the elections with certainty.

7 Conclusions

Candidates differ not only in the political positions they take in elections, but also in the kinds of electoral messages they use. In this paper I construct a model in which voters care only about the policy to be implemented by the candidates and candidates care only about being elected. Candidates have two kinds of electoral messages, neither one being cheap talk. They can run on policies, experiencing the shame of changing their policy if and only if they are elected, or they can run on values, experiencing an identity-related cost regardless of the outcome of the election. This simple characterization of the costs of using the different electoral messages yields powerful equilibrium predictions. If for the same lie the cost of shame is smaller than that of guilt, at equilibrium all types of candidates separate by making distinct values statements. If the cost of shame is larger than the cost of guilt, the more extreme candidates separate by running on values, while the more centrist candidates separate by running on policies. This characteristic of equilibrium explains why the values statements observed during electoral campaigns contain on average more extreme positions than the policy announcements and why candidates who run on values have an electoral disadvantage over candidates who run on policies.

Shame is a public or public-related emotion, so it is natural to assume that the cost of shame is correlated with the size of the audience. In that case, any given candidate is more likely to run on values in smaller, local elections and when running for nomination, and more likely to run on policies in larger, national elections and after he has secured the party's nomination. Testing these predictions is currently difficult. The electoral competition literature has so far mainly discussed the political positions of candidates after they are elected and not during the election. The rhetorical content of these messages have received even less attention. Some progress has been recently made on automatically extracting policy positions from texts by examining the frequency of key words. Laver et al. (2003) use this method to infer the political position of politicians in Great Britain. In a forthcoming paper, Gentzkow and Shapiro use the frequency analysis to determine the slant of newspaper editorials. The same approach could perhaps be used to categorize candidates' speeches in values statements and policy proposals in future empirical research.

The results of the model could be extended to more than just the choice of electoral rhetoric. The key difference between values statements and policy announcements is their verifiability, which is an important characteristic of other aspects of politicians' behavior. Consider for example the choice of running on social versus economic policies. It is typically more difficult for the voters to verify a candidate's promises about his social policy than it is to observe his economic policy. The model would predict that the most extremist candidates would tend to run on social policies and tend to lose to the more centrist candidates running on economic policies. An explicit test is beyond the scope of this paper, but casual empirical observation seems to confirm this hypothesis.

The model and some of its extensions are useful in explaining why values statements are prevalent in electoral competition. Allowing candidates to make values statements in lieu of policy announcements is a Pareto improvement when the politicians are segregated in parties with distinct ideologies and can cross the party lines. In this situation, the politicians in the party with the stronger beliefs have a larger utility, but the party does not necessarily enjoy an electoral advantage. These results change when either the parties' ideology overlaps or when the candidates are restricted to submit positions that belong to their own party's ideology. In that case the party with the stronger beliefs gains an electoral advantage. Allowing politicians to make values statements during the election is no longer a Pareto improvement over the situation in which politicians must announce policies. The "grass-roots" candidates and voters prefer to let politicians use values statements, while the centrist voters and politicians in both parties share a common interest in banning the use of values statements in elections.

A limitation of the model is the assumption that once the voters learn the candidate's system of values they can infer the policies he will implement. This may be true for some policies but it is certainly not true for all the decisions a candidate makes while in the office. A more realistic model would relax the assumption of perfect correlation between policies and values by enlarging the candidate's type space. In an environment in which values and policies are totally uncorrelated, one could still envision equilibria in which the equilibrium behavior of the candidates would allow the voters to infer the expected policies from candidate's values statements. A rigorous analysis of such environments is beyond the scope of this paper and it is left for future research.

8 Appendix

8.1 Proof of Proposition 1

I first show that there cannot be any universally divine equilibrium in which some types pool, then I derive the separating equilibrium.

Suppose there is an equilibrium in which some types pool. Let types $p_R \in [p_R^1, p_R^2]$ pool at m and the rest separate at a strategy $s(p_R)$. Assume that $s(p_R) < p_R$ and $m < p_R^1$; all other cases could be treated similarly. Type p_R^1 is indifferent between pooling and separating, but the median voter prefers type p_R^1 to types between p_R^1 and p_R^2, so it is must be the case that choosing the pooling message involves a larger cost of lying, so $s(p_R^1) < m$. Pick one out of equilibrium announcement $p \in (s(p_R^1), m)$ and compute the type that would be the most likely to submit that announcement, that is the type p_R for whom

$$\theta(p, p_R) = \frac{U(p_R, s(p_R))}{1 - k_s \cdot (p_R - p)^2} \tag{1}$$

is minimized. Banks (1990) shows that the sign of $\frac{\partial \theta(p, p_R)}{\partial p_R}$ is given by the sign of

$$\Psi(p_R, p) \cdot \frac{\partial \Psi(p_R, s)}{\partial p_R} - \Psi(p_R, s) \cdot \frac{\partial \Psi(p_R, p)}{\partial p_R}, \tag{2}$$

where $\Psi(p_R, s)$ is the payoff if the candidate of type p_R wins the election and submitted policy s. In this case $\Psi(p_R, s) = 1 - k_s \cdot (p_R - s)^2$, so plugging it in Equation 2:

$$\frac{\partial \theta(p_R, p)}{\partial p_R} = s(p_R) - p + k_s \cdot (p_R - s(p_R)) \cdot (p_R - p) \cdot (s(p_R) - p). \tag{3}$$

The expression 3 is positive for all $p_R > p_R^1$ because $p_R > s(p_R) > p$, so the p_R that minimizes θ must be smaller than p_R^1. In that case, by submitting $p < m$, type p_R^1 improves his payoff relative to submitting $s(p_R^1)$, which by equilibrium equals the payoff from submitting the pooling message. This is a violation of equilibrium. Some types pooling cannot therefore be an equilibrium, so the only equilibrium would have every type separating.

If all the types separate, the incentive compatibility condition is: for any types p_R and $p_R^1 \in [0, 1]$, $U_R(p_R, s_p^*(p_R)) \geq U_R(p_R, s_p^*(p_R^1)$, or

$$(1 - p_R) \cdot (1 - k_s \cdot (p_R - s_p^*(p_R))^2) \geq (1 - p_R^1) \cdot (1 - k_s \cdot (p_R - s_p^*(p_R^1))^2). \tag{4}$$

Differentiating the right hand side of Equation 4 with respect to p_R^1 while keeping the equilibrium strategies unchanged, and evaluating the resulting expression at $p_R^1 = p_R$ gives:

$$-(1 - k_s \cdot (p_R - s_p^*(p_R))^2) + (1 - p_R) \cdot 2 \cdot k_s \cdot (p_R - s_p^*(p_R)) \cdot \frac{\partial s_p^*(p_R)}{\partial p_R} = 0 \tag{5}$$

which is a differential equation governing the family of equilibrium separating strategies. The universal divinity condition assures that the most extreme type chooses a strategy such that if he won the election with positive probability his payoff would be zero. This follows Banks (1990): if the payoff after winning the election is negative, by the continuity of s_p^*, there must be a type who wins the election with positive probability and whose payoff after winning the election is negative, but this type would prefer to submit the announcement made by type 1 to avoid winning the election. If the payoff of type 1 after winning the election is positive, then type 1 would deviate because by the continuity of the strategy and probability of winning functions there is a type close to 1 that wins the election with positive probability and has strictly positive payoff after winning the election. Thus most extreme type chooses

$$1 - k_s \cdot (1 - s_p^*(1))^2 = 0. \tag{6}$$

Equations 5 and 6 define an initial values problem whose solution is the unique equilibrium strategy profile.

8.2 Proof of Proposition 2

Banks's result that the probability of winning is weakly decreasing in the type does not depend on the specific payoff function for the candidate, so I use it here without proof. I first show that the equilibrium strategy is weakly increasing in p_R in this setup as well. I then follow the same argument as for Proposition 1 to show that there cannot be an equilibrium with some types pooling and I derive and characterize the separating equilibrium.

Suppose the equilibrium strategy is decreasing in candidate's type on some interval, that is there are two types $p_R^1 < p_R^2$ with $s_v^*(p_R^1) > s_v^*(p_R^2)$ and $\lambda_R(p_R^1) \geq \lambda_R(p_R^2)$. The incentive compatibility constraint states that

$$\lambda_R(p_R^1) - k_g \cdot (p_R^1 - s_v^*(p_R^1))^2 \geq \lambda_R(p_R^2) - k_g \cdot (p_R^1 - s_v^*(p_R^2))^2 \tag{7}$$

and therefore

$$\lambda_R(p_R^1) - \lambda_R(p_R^2) \geq k_g \cdot (p_R^1 - s_v^*(p_R^1))^2 - k_g \cdot (p_R^1 - s_v^*(p_R^2))^2. \tag{8}$$

Differentiating the right hand side of Equation 8 with respect to p_R^1 and holding the strategies constant gives $s_v^*(p_R^2) - s_v^*(p_R^1) < 0$, so the right hand side decreases as p_R^1 increases, and therefore at $p_R^1 = p_R^2$ it must hold with inequality. That gives:

$$\lambda_R(p_R^2) - \lambda_R(p_R^2) = 0 \geq k_g \cdot (p_R^2 - s_v^*(p_R^1))^2 - k_g \cdot (p_R^2 - s_v^*(p_R^2))^2, \tag{9}$$

which means that the type p_R^2 should prefer to make announcement $s_v^*(p_R^1)$ since it would give him a larger probability of winning and it would cost him less to do so. Therefore, the equilibrium strategy is weakly increasing in a candidate's type.

Suppose there is an equilibrium in which some types pool: let types $p_R \in [p_R^1, p_R^2]$ pool at m and the

rest separate at a strategy $s(p_R)$. Assume that $s(p_R) < p_R$ and $m < p_R^1$; all other cases could be treated similarly. Type p_R^1 is indifferent between pooling and separating, but the median voter prefers type p_R^1 to types between p_R^1 and p_R^2, so it is the case that $s(p_R^1) < m$. The probability of winning that would make one indifferent between submitting an out-of-equilibrium message $p \in [m, s(p_R^1)]$ and playing the equilibrium strategy is

$$\theta(p, p_R) = \lambda(p_R) - k_g \cdot (p_R - s(p_R))^2 + k_g \cdot (p_R - p)^2. \tag{10}$$

Expression 10 is increasing in p_R to the right of p_R^1, because the probability of winning λ does not change when the types pool and $p < m$ when p_R^1 pools. $\theta(p, p_R)$ is decreasing in p_R to the left of p_R^1 because both the probability of winning decrease and p is greater than the separating strategy for p_R^1. Therefore $\theta(p, p_R)$ is minimized at $p_R = p_R^1$, so observing $p \in [m, s(p_R^1)]$ the median voter infers that p was submitted by p_R^1. In that case, p_R^1 is better off submitting p than $s(p_R^1)$ which at equilibrium should give him the same utility as submitting m, so pooling candidates cannot be an equilibrium strategy.

Finally, if all candidates separate, the separating strategy is given as above by differentiating the incentive compatibility condition for types p_R and p_R^1 with respect to p_R^1 and setting it equal to zero when $p_R = p_R^1$. For any types p_R and p_R^1, $U_R(p_R, s_v^*(p_R)) \geq U_R(p_R, s_v^*(p_R^1)$, or

$$(1 - p_R - k_g \cdot (p_R - s_v^*(p_R))^2) \geq (1 - p_R^1 - k_g \cdot (p_R - s_v^*(p_R^1))^2). \tag{11}$$

Differentiating the right hand side of Equation 11 with respect to p_R^1 and evaluating the expression at $p_R^1 = p_R$ gives the expression for a first order differential equation:

$$\frac{\partial s_v^*(p_R)}{\partial p_R} = \frac{1}{2 \cdot k_g \cdot (p_R - s_v^*(p_R))}. \tag{12}$$

The initial condition for the initial values problem that yields the equilibrium strategy profiles is:

$$s^*(1) = 1. \tag{13}$$

If the equilibrium required type 1 to submit a value larger than 1, he would win with probability 0 but would bear a cost, so he would be better off submitting 1 and winning with positive probability at no cost. If the equilibrium required type 1 to submit a value smaller than 1, he would again win with probability 0 but would bear a cost, so he would be better off submitting 1 and bear no cost regardless of the median voter's beliefs about who would submit the out of equilibrium message 1. Equations 12 and 13 define an initial values problem whose solutions is the unique equilibrium strategy profile:

$$s_v^*(p_R) = -\frac{LambertW(-e^{-2 \cdot k_g + 2 \cdot k_g \cdot p_R - 1}) - 2 \cdot k_g \cdot p_R + 1}{2 \cdot k_g} \tag{14}$$

8.3 Proof of Lemma

To prove the result compare the value of the payoff function and the value of derivatives around $p_R = 1$. In both cases the equilibrium payoff is zero for the most extreme type: $U_p^*(1) = U_v^*(1)$. The first order derivative of U_p^* with respect to p_R is by envelope theorem:

$$\frac{\partial U_p^*}{\partial p_R} = -2 \cdot k_s \cdot (1 - p_R) \cdot (p_R - s_p^*(p_R)), \tag{15}$$

which equals 0 when $p_R = 1$. The second order derivative of U_p^* with respect to p_R is then:

$$\frac{\partial^2 U_p^*}{\partial p_R^2} = 2 \cdot k_s \cdot (p_R - s_p^*(p_R)) - 2 \cdot k_s \cdot (1 - p_R) \cdot (1 - \frac{\partial s_p^*(p_R)}{\partial p_R}). \tag{16}$$

Evaluating Equation 16 at $p_R = 1$ and using the fact that

$$\lim_{p_R \to 1} \frac{\partial s_p^*(p_R)}{\partial p_R} = \frac{1}{2}$$

gives a finite expression:

$$\frac{\partial^2 U_p^*}{\partial p_R^2}\Big|_{p_R=1} = \frac{2}{\sqrt{k_s}}. \tag{17}$$

On the other hand the first derivative of U_v^* with respect to p_R is:

$$\frac{\partial U_p^*}{\partial p_R} = -2 \cdot k_g \cdot (p_R - s_v^*(p_R)), \tag{18}$$

which equals 0 when $p_R = 1$ because $s_v^*(1) = 1$. The second order derivative of U_v^* is then:

$$\frac{\partial^2 U_v^*}{\partial p_R^2} = -2 \cdot k_g \cdot (1 - \frac{\partial s_v^*(p_R)}{\partial p_R}). \tag{19}$$

But

$$\lim_{p_R \to 1} \frac{\partial s_v^*(p_R)}{\partial p_R} = \infty,$$

and therefore

$$\lim_{p_R \to 1} \frac{\partial^2 U_v^*}{\partial p_R^2} = \infty. \tag{20}$$

So both payoff functions have value and slope of 0 at 1, but the slope of U_v^* increases much faster as one moves away from the most extreme type than U_p^*, as long as neither $k_g = 0$, nor $k_s = \infty$. So by continuity there must exist types p_R sufficiently close to 1 such that $U_v^*(p_R) > U_p^*(p_R)$.

8.4 Proof of Proposition 3

Suppose there is such an equilibrium in which candidates in $[0, p_1]$ choose to run on values and the candidates in $(p_1, 1]$ choose to run on policies, with $p_1 < 1$. Let p_0 be defined by $U_p^*(p_0) = U_v^*(p_0)$, where U_p^* and U_v^* are the equilibrium payoffs in the simpler models in Section 3.1 and 3.2, respectively. Let $p_1 > p_0$; the other case could be treated similarly.

At equilibrium, the candidates in $(p_1, 1]$ behave just like the candidates that had no values statements available in Section 3.1. Then the equilibrium strategy and payoffs for these types of candidates the same as in Section 3.1: $U^*(p_R) = U_p^*(p_R)$ and $s^*(p_R) = (p, s_p^*(p_R))$ for $p_R > p_1$, where $U^*(p_R)$ is the equilibrium payoff with both kinds of messages and $s^*(p_R)$ is the equilibrium strategy profile in this setup. Candidate of type p_1 is indifferent between choosing policies or values, so for him $\lambda(p_1) - k_g \cdot (p_1 - a_v)^2 = U^*(p)$, where a_v is defined by the equilibrium strategy $s^*(p_1) = (v, a_v)$. Because $p_1 > p_0$, the equilibrium payoff in elections with values must be larger than the equilibrium payoff in elections with policies only: $\lambda(p_1) - k_g \cdot (p_1 - a_v)^2 = U^*(p_1) = U_p^*(p_1) < U_v^*(p_1) = \lambda(p_1) - k_g \cdot (p_1 - s_v^*(p_1))^2$, so the equilibrium values statement for type p_1 must be closer to 0 than it would have been in a race in which only values statements were available: $a_v < s_v^*(p_1)$. Therefore announcements about values arbitrarily close to 1 should be observed with probability 0 at equilibrium.

Suppose such an announcement $a = 1 - \epsilon$ is observed. The probability with which one would have to win the election in order to be indifferent between the equilibrium payoff and submitting the out-of-equilibrium announcement a is:

$$\theta_v(a, p_R) = U^*(p_R) + k_g \cdot (p_R - a)^2, \tag{21}$$

so

$$\frac{\partial \theta_v(a, p_R)}{\partial p_R} = \frac{\partial U^*(p_R)}{\partial p_R} + 2 \cdot k_g \cdot (p_R - a). \tag{22}$$

The first term is always negative and the second term is positive for $p_R > a$. Consider the sign of Equation 22 when $p_R = s_v^{*-1}(a)$ and the first term is replaced by $\frac{\partial U_v^*}{\partial p_R} = -2 \cdot k_g \cdot (p_R - s_v^*(p_R))$, the derivative of the equilibrium payoff that would take place if policies were not available. This expression is zero because $p_R = s_v^{*-1}(a)$, so $2 \cdot k_g \cdot (p_R - s_v^*(p_R)) = 2 \cdot k_g \cdot (p_R - a)$. Lemma shows that in the neighborhood of 1, the slope of the equilibrium payoff when values are used is a more negative number than that when policies are used, so for $p_R = s_v^{*-1}(a)$, $\frac{\partial \theta}{\partial p_R}$ is positive. That implies that if the median voter observed an out of equilibrium values statement very close to 1, he would believe that it was announced by somebody who is more centrist than the type that would make that announcement when one could not run on policies. But in that case, types arbitrarily close to 1 that are supposed to run on policies should deviate and make values statements because they would get an even larger payoff than their equilibrium payoff when only values statements were available, U_v^*, which in turn by Lemma is larger than the current equilibrium payoff with policy announcements, $U_p^* = U^*$.

8.5 Proof of Proposition 4

The proof proceeds as follows: I first examine the sequential equilibria that are not ruled out by Proposition 3. Then I examine the conditions under which these sequential equilibria are universally divine. I then obtain the equilibrium that gives the largest expected payoff to the candidates. Finally, I show that there cannot be other universally divine equilibria outside the family described by Proposition 4.

Proposition 3 states that there cannot be any equilibria in which the most extreme types choose to run on policies. That leaves as candidates for equilibrium strategy profiles characterized by a threshold p^* in which types smaller than that would choose policies and types larger than p^* would choose values. The equilibrium strategy for candidates in $(p^*, 1]$ would then be: $s^*(p_R) = (v, s_v^*(p_R))$ where $s_v^*(p_R)$ is the equilibrium strategy derived in Section 3.2 for an environment in which policy announcements are not available. Candidate p^* chooses policies, so his strategy is $(p^*, a_p^*(p^*))$. At equilibrium, the policy announcement made by type p^* must be such that p^* is indifferent between making the equilibrium policy announcement and choosing to run on values by submitting $s_v^*(p^*)$. Any other values would lead to one type deviating. If the equilibrium policy announcement is smaller, p^* would be better off choosing values statements; if it is larger, by continuity there is a type of candidate who should make a values statement and which would gain by misrepresenting himself as type p^*. This leads to the first condition for an equilibrium in which types in $[0, p^*]$ choose policies and types in $(p^*, 1]$ choose values:

$$1 - p^* - k_g \cdot (p^* - s_v^*(p^*))^2 = (1 - p^*) \cdot (1 - k_s \cdot (p^* - a_p^*(p^*))^2) \tag{23}$$

Equation 23 gives the initial condition for the initial values problem characterizing the equilibrium strategy profile for types $p_R \in [0, p^*]$ who choose $s^*(p_R) = (p, a_p^*(p_R))$. The differential equation is the same as in Section 3.1. in which values statements were not available to politicians: $\frac{\partial a_p^*}{\partial p_R} = \frac{1 - k_s \cdot (p_R - a_p^*(p_R))^2}{2 \cdot k_s \cdot (p_R - a_p^*(p_R)) \cdot (1 - p_R)}$.

All equilibria described above are sequential equilibria which could be supported by some extreme beliefs on out-of-equilibrium announcements: for example, if the median voter would see any deviation from equilibrium as being made by the type $p_R = 1$ and would therefore severely punish the types who deviate. Imposing universal divinity further restricts the range of possible values for p^* because it would require that the slope of the expected payoff function to be steeper than the slope of the payoff function if the candidates continued to submit $s_v^*(p_R)$ for values of p_R smaller than p^*.

$$\frac{\partial U_v^*}{\partial p_R} \geq \frac{\partial U^*}{\partial p_R} \ \forall p_R < p^* \tag{24}$$

Any sequential equilibrium for which Equation 24 is satisfied is universally divine. To see this, consider the out of equilibrium announcements $a_v = s_v^*(p^*) - \epsilon$ for an equilibrium in which (23) and (24) hold. The probability of winning the election that would make a type p_R be willing to deviate from the equilibrium strategy and announce a_v is given by

$$\theta_v(a_v, p_R) = U^*(p_R) + k_g \cdot (p_R - a_v)^2. \tag{25}$$

To find the type who would need the smallest probability of winning to deviate and announce a_v consider the sign of

$$\frac{\partial \theta_v(a_v, p_R)}{\partial p_R} = \frac{\partial U^*}{\partial p_R} + 2 \cdot k_g \cdot (p_R - a_v). \tag{26}$$

This is clearly negative for values $p_R < a_v$ because both terms are negative in that range; as $p_R > a_v$, the first term is negative while the second is positive, and the sign of the expression depends on their relative magnitude. Examine the sign of equation (26) evaluated at $p_R = s_v^{*-1}(a_v)$ in which the first term is replaced by $\frac{\partial U_v^*}{\partial p_R} = -2 \cdot k_g \cdot (p_R - s_v^*(p_R))$:

$$\frac{\partial U_v^*}{\partial p_R} + 2 \cdot k_g \cdot (p_R - a_v) = -2 \cdot k_g \cdot (p_R - s_v^*(p_R)) + 2 \cdot k_g \cdot (p_R - a_v) = 0. \tag{27}$$

Because $\frac{\partial U_v^*}{\partial p_R} \geq \frac{\partial U^*}{\partial p_R}$ for all $p_R < p^*$, this is true for $s_v^{*-1}(a_v)$, so for that type, $\frac{\partial \theta_v}{\partial p_R} < 0$. That means that the type p_R who minimizes $\theta_v(a_v, p_R)$ is more extreme than the type who would have submitted a_v if policies were not available. No type would then gain by deviating to out-of-equilibrium values statements. Type p^* gets larger utility than by submitting any of the more costly out-of-equilibrium values statements since they would give him lower probability of winning; if type p^* does not want to deviate, no type $p_R < p^*$ would like to deviate either. Types $p_R > p^*$ would not want to deviate: they could choose equilibrium announcement $s_v^*(p)$ and get probability of winning $1 - p$; since they would not do it for probability of winning $1 - p$, they would not do it for smaller probability of winning either. Another set of out of equilibrium announcements are policies $a_p > a_p^*(p^*)$. Here $\theta_p(a_p, p_R) = \frac{U^*}{1 - k_s(p_R - a_p)^2}$. Since $U^*(1) = 0$, the minimum $\theta_p(a_p, p_R)$ is for $p_R = 1$, so no type could then gain by deviating and winning with probability 0.

Therefore all sequentially equilibria characterized by p^* and equilibrium strategy profiles as above for which Equations (23) and (24) hold are universally divine. What is the largest possible p^*? That could be obtain by solving the equations in the equality form for $p_R = p^*$. Equation (24) could be rewritten as:

$$-2 \cdot k_g \cdot (p^* - s_v^*(p^*)) = -(1 - p^*) \cdot 2 \cdot k_s \cdot (p^* - a_p^*(p^*)), \tag{28}$$

and therefore: $(p^* - s_v^*(p^*)) = \frac{(1-p^*) \cdot k_s \cdot (p^* - a_p^*(p^*))}{k_g}$. Replacing it in Equation (23) gives:

$$(1 - p^*) - k_g \cdot (\frac{(1 - p^*) \cdot k_s \cdot (p^* - a_p^*(p^*))}{k_g})^2 = (1 - p^*) - (1 - p^*) \cdot k_s \cdot (p^* - a_p^*(p^*))^2, \tag{29}$$

which after simplifying gives: $\frac{(1-p^*) \cdot k_s}{k_g} = 1$. The solution is $p^* = \frac{k_s - k_g}{k_s}$. Plugging the solution in Equation (23) shows that $s_v(p^*) = s^* = a_p(p^*)$. If $k_s < k_g$, $p^* < 0$, so no type would at equilibrium choose policies, which is the statement a). If $k_s > k_g$, there are multiple ultimately divine equilibria, all equally informative, with the largest payoff equilibrium taking place when type $p^* = \frac{k_s - k_g}{k_s}$ switches from values to policies. This is part of the statement b).

To prove the rest of the statement b) one needs to show that there are no other universally divine

equilibria with $p^* > \frac{k_s - k_g}{k-s}$. The proof of this statement mirrors that of Proposition 3 and it is only sketched here. If $p^* > \frac{k_s - k_g}{k-s}$ then the equilibrium payoff function would have a flatter slope around p^* that the function $U_v^*(p_R)$. That means that after observing values statements slightly below $s_v^*(p^*)$, the median voter would infer that the candidate who submitted that message is more centrist than the candidate who would have submitted the message in the absence of policies. But that means that a candidate close to p^* should deviate: he would get a larger probability of winning than when only policies were available, but the inequality in the slopes assures that the latter is larger than the equilibrium payoff. So this cannot constitute an equilibrium.

References

Akerlof, G. A. and R. E. Kranton (2000). Economics And Identity. *The Quarterly Journal of Economics*.

Alesina, A. and A. Cukierman (1990). The Politics of Ambiguity. *The Quarterly Journal of Economics*.

Alesina, A. and H. Rosenthal (1995). *Partisan Politics, Divided Government, and the Economy*.

Aragones, E. and Z. Neeman (2000). Strategic Ambiguity in Electoral Competition. *Journal Of Theoretical Politics*.

Austen-Smith, D. and J. S. Banks (1989). *Electoral accountability and incumbency*, Chapter 1.6, pp. 121–150. Models of Strategic Choice in Politics.

Austen-Smith, D. and J. S. Banks (2000). Cheap Talk and Burned Money. *Journal of Economic Theory*.

Austen-Smith, D. and J. S. Banks (2002). Costly signaling and cheap talk in models of political influence. *European Journal of Political Economy*.

Banks, J. S. (1990). Electoral Competition Under Incomplete Information. *Journal of Economic Theory*.

Callander, S. and S. Wilkie (2007). Lies, damned lies, and political campaigns. *Games and Economic Behavior*.

Crawford, V. and J. Sobel (1982). Strategic information transmission. *Econometrica*.

Downs, A. (1957). *An Economic Theory of Democracy*.

Elster, J. (1998). Emotions and Economic Theory. *Journal of Economic Literature*.

Gentzkow, M. and J. M. Shapiro. What Drives Media Slant? Evidence from U.S. Daily Newspapers. Econometrica, forthcoming.

Glaeser, E. L., G. A. M. Ponzetto, and J. M. Shapiro (2005). Strategic Extremism: Why Republicans And Democrats Divide On Religious Values. *The Quarterly Journal of Economics*.

Glasgow, G. and R. M. Alvarez (2000). Uncertainty And Candidate Personality Traits. *American Politics Quarterly*.

Gneezy, U. (2005). Deception: The Role of Consequences. *The American Economic Review*.

Hotelling, H. (1929). Stability in competition. *Economic Journal*.

Kandel, E. and E. P. Lazear (1992). Peer Pressure and Partnerships. *The Journal of Political Economy*.

Kartik, N. and R. P. McAfee (2007). Signaling Character In Electoral Competition. *The American Economic Review*.

Laver, M., K. Benoit, and J. Garry (2003). Extracting Policy Positions from Political Texts Using Words as Data. *American Political Science Review*.

Loewenstein, G. (2000). Emotions in Economic Theory and Economic Behavior. *The American Economic Review*.

Lundquist, T., T. Ellingsen, E. Gribbe, and M. Johannesson (2009). The aversion to lying. *Journal of Economic Behavior And Organization*.

Shepsle, K. A. (1972). The Strategy of Ambiguity: Uncertainty and Electoral Competition. *The American Political Science Review*.

Vanberg, C. (2008). Why Do Poeple Keep Their Promises? An Experimental Test Of Two Explanations. *Econometrica*.

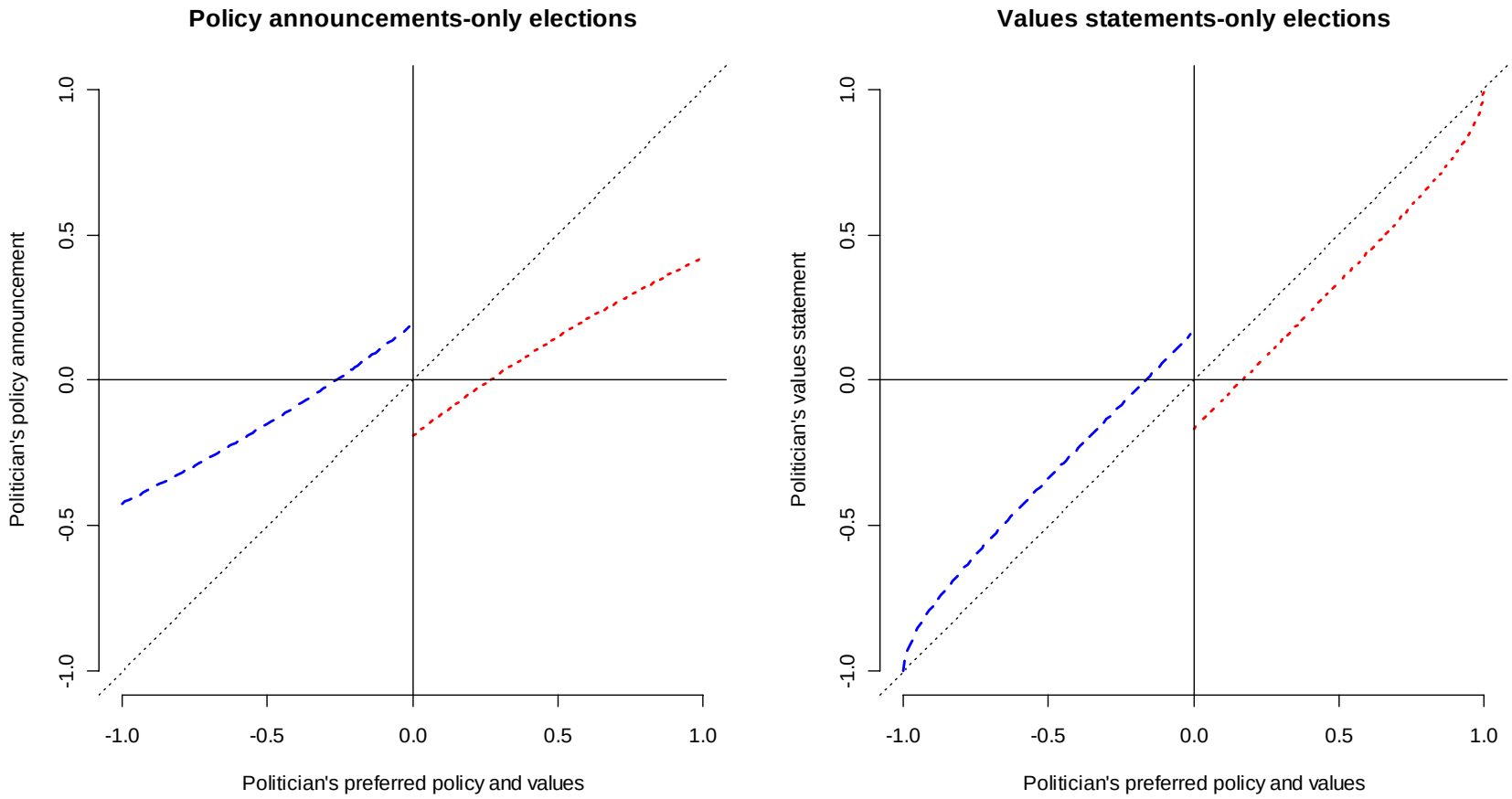

Figure 1: The equilibrium strategy profiles in policy announcements-only elections with cost of shame parameter k_s=3 (left) and values statements-only elections with cost of guilt parameter k_g=3 (right). Politicians are segregated in the Democratic Party to the left of the median voter (blue dashed lines) and the Republican Party to the right of the median voter (red dotted lines). In both cases some candidates' types ''reach across the aisle'' by proposing policies or stating values that belong to the other party. For each type, values statements are more extreme than policy announcements.

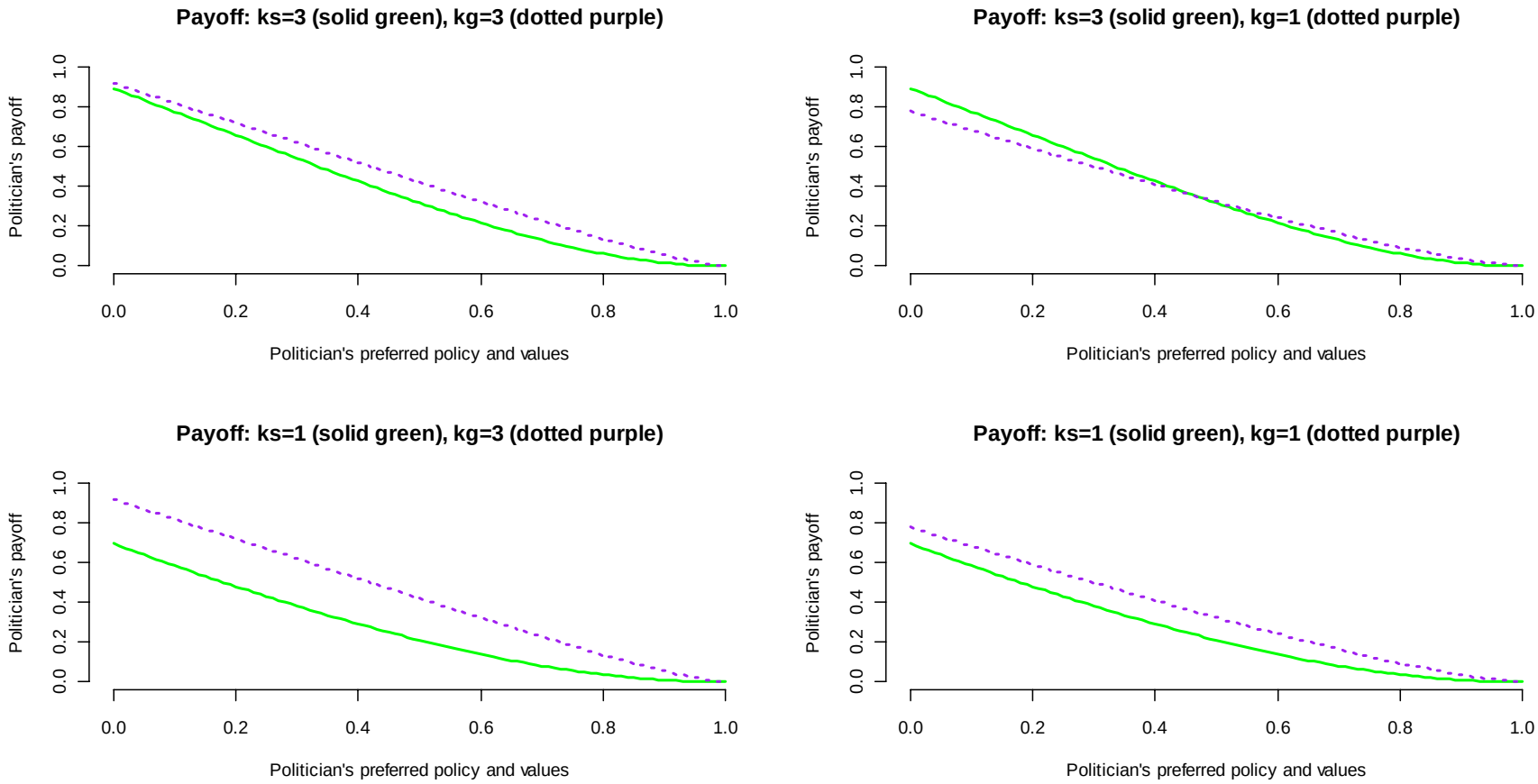

Figure 2: The equilibrium payoffs to Republican types of candidates in policy announcements-only elections (solid green) and in values statements-only elections (dotted purple) for various values of the parameters measuring the cost of shame and guilt. More costly signals yield larger payoffs for the candidates. For the same cost per unit deviation from the truth politicians are better off in elections in which guilt-generating values statements are used exclusively compared to elections in which shame-generating policy announcements are used exclusively.

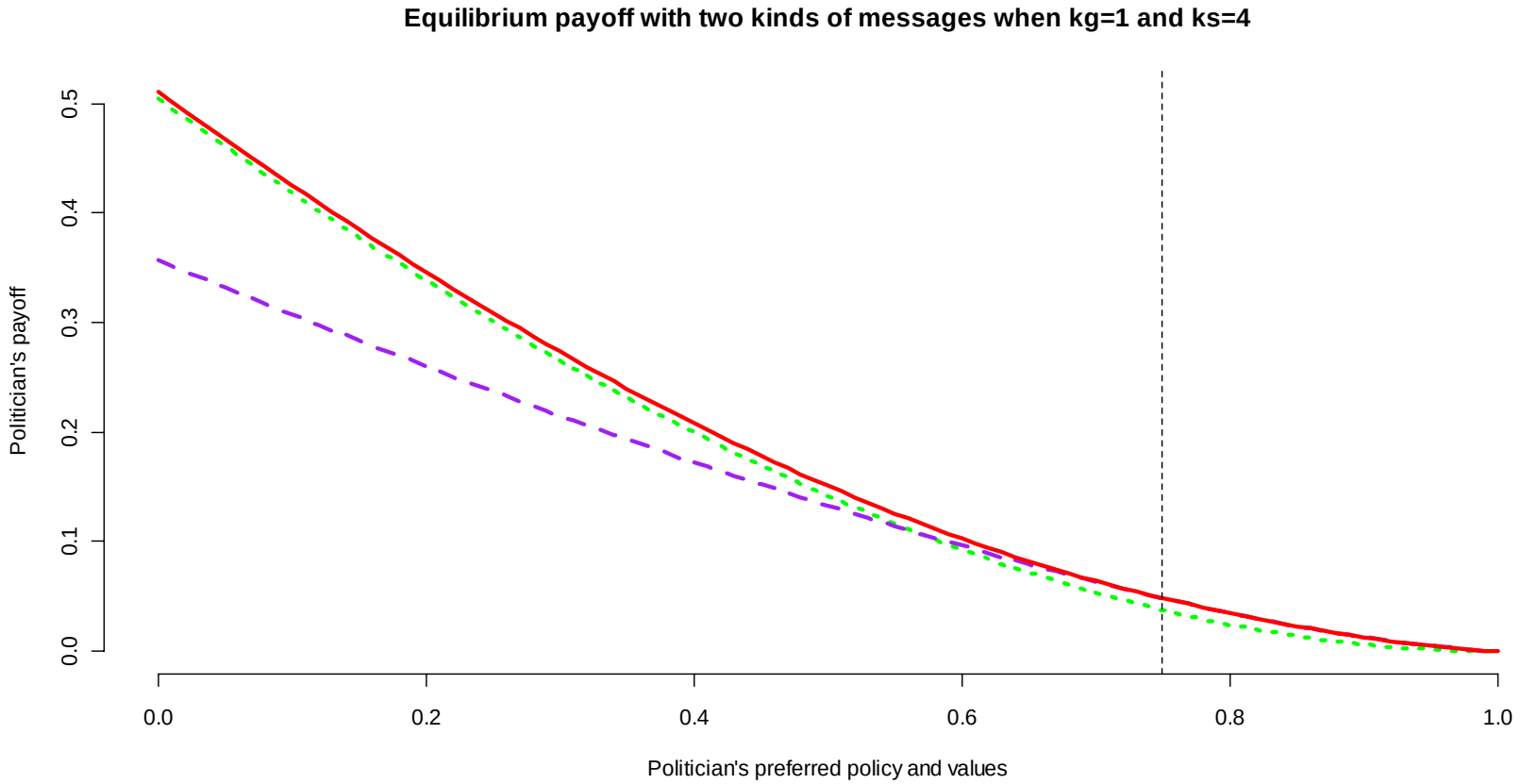

Figure 3: The equilibrium payoffs to Republican types of candidates when both values statements and policy announcements could be used as electoral messages (solid red curve.) The dotted green curve shows the equilibrium payoff to Republican candidates in policy-only elections, while the dashed purple curve shows the equilibrium payoff in values-only elections. Candidates whose type is larger than 0.75 choose to run on values and submit the same policy they would have submitted in values-only elections, receiving the same payoff. The rest announce a policy closed to their intended policy, receiving a larger payoff than they would have in policy-only elections.

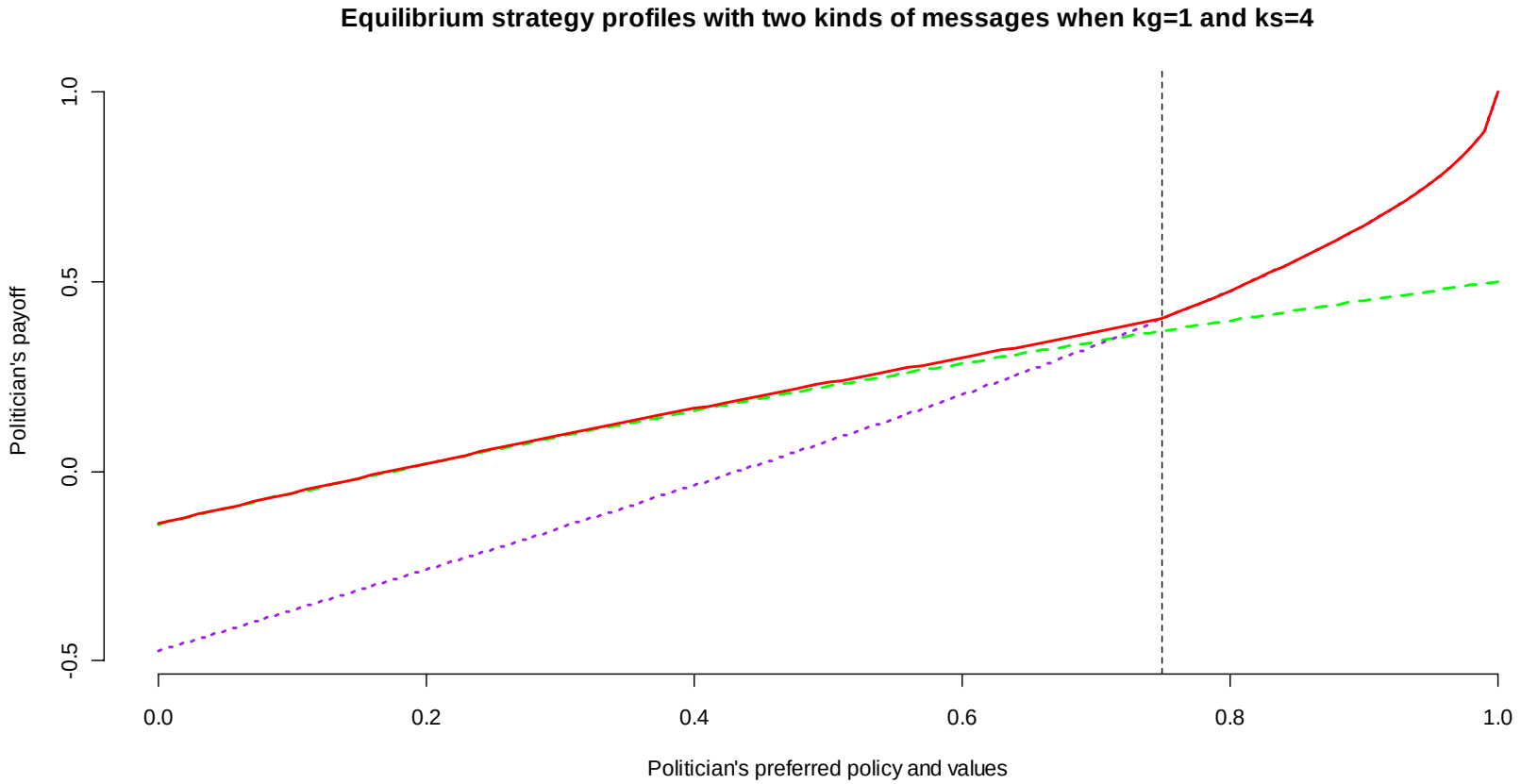

Figure 4: The equilibrium strategy profiles to Republican types of candidates when both values statements and policy announcements could be used as electoral messages (solid red curve.) The dotted green curve shows the equilibrium strategies to Republican candidates in policy-only elections, while the dashed purple curve shows the equilibrium strategies in values-only elections. Candidates whose type is larger than 0.75 choose to run on values and submit the same policy they would have submitted in values-only elections, receiving the same payoff. The rest announce a policy closed to their intended policy, receiving a larger payoff than they would have in policy-only elections.

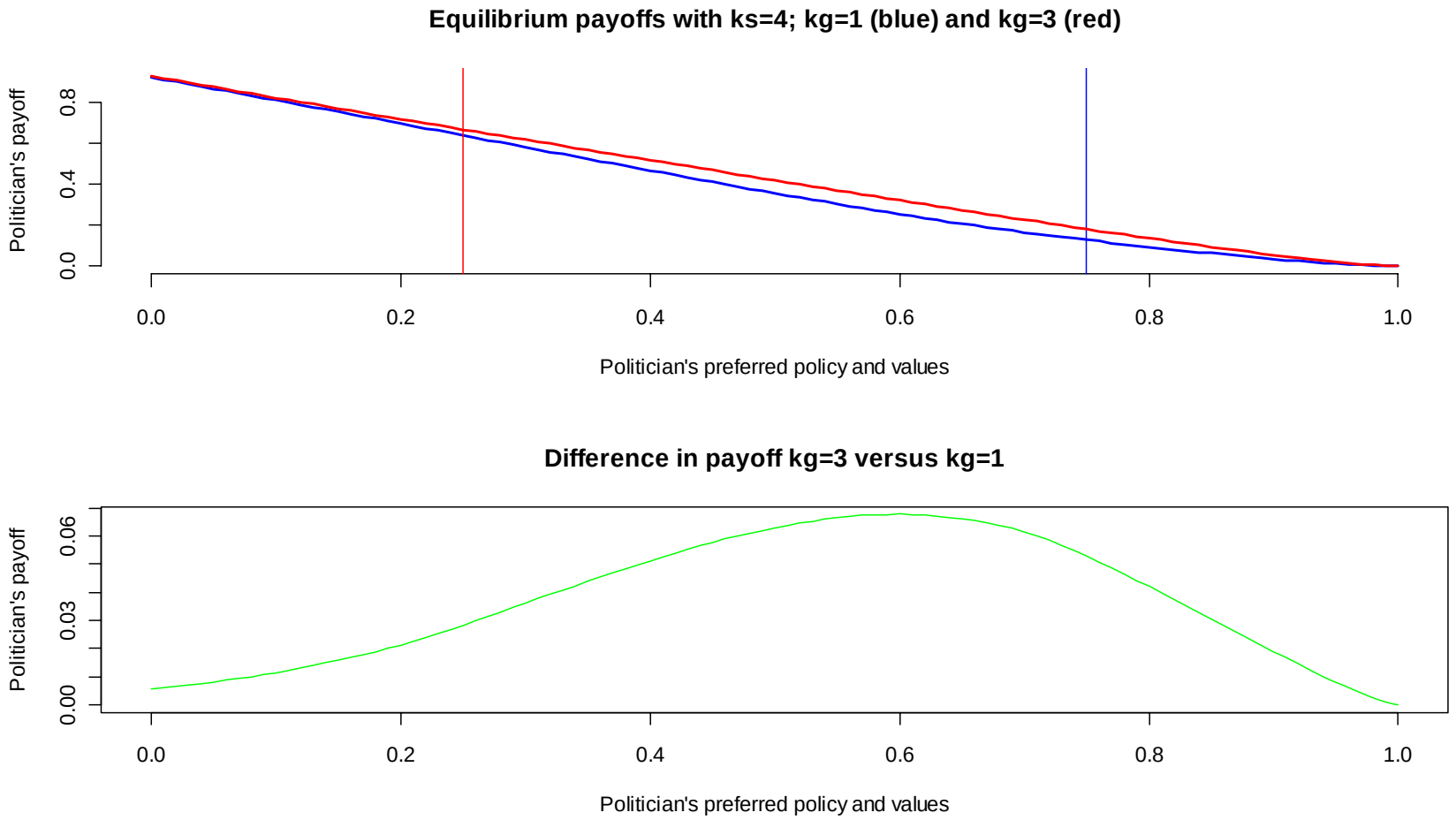

Figure 5: Equilibrium payoffs when the cost of shame is 4 and the cost of guilt is 1 in one party and 3 in the other (top) and the difference between these payoffs (bottom).

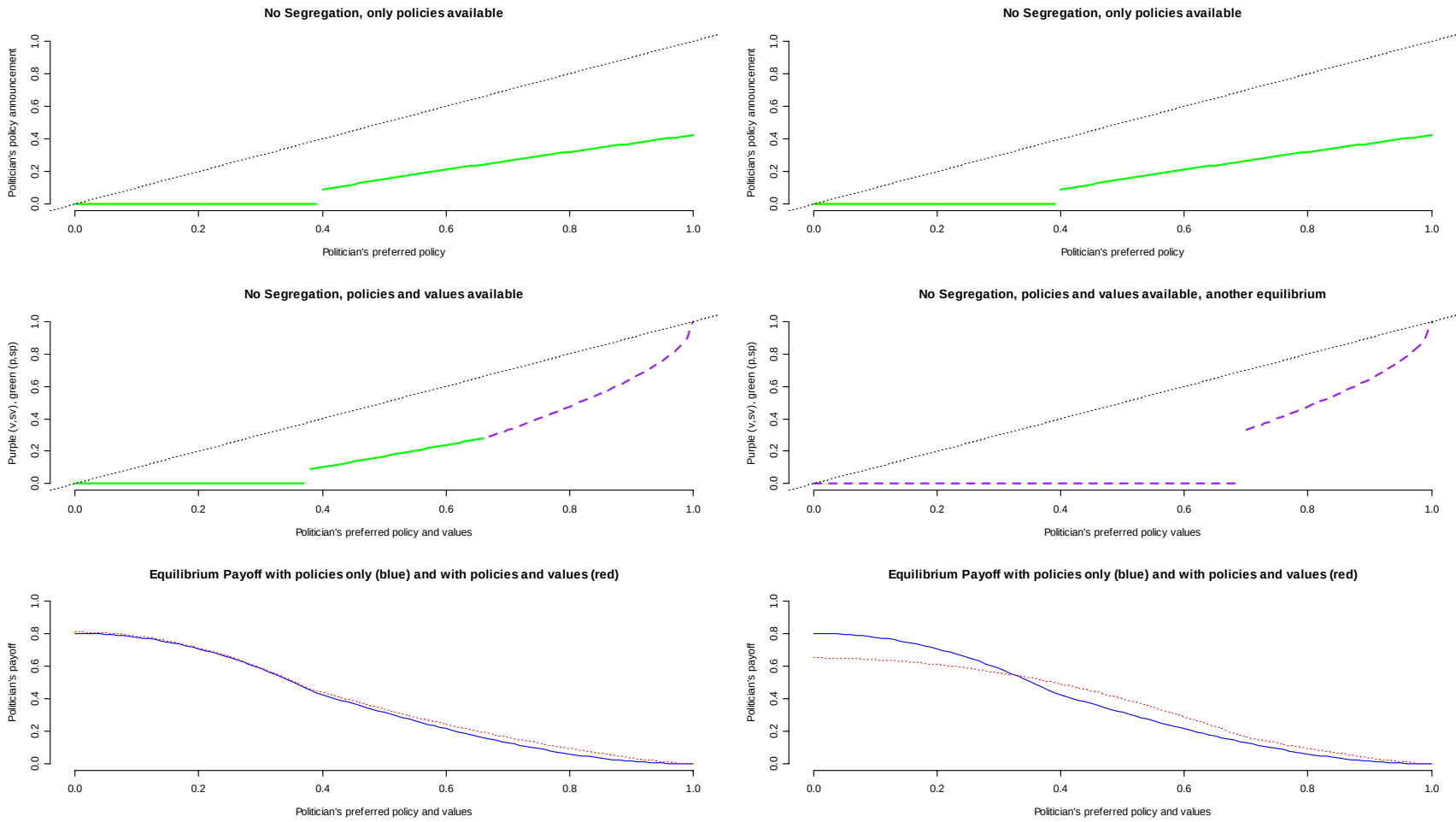

Figure 6: Comparing the equilibrium strategies and payoffs when candidates come from identical distributions of types. On top is the equilibrium in policy-only elections. On the equilibrium on the left, politicians pool at (p,0) after values statements are introduced. The bottom graph shows payoffs to every type. Introducing values statements is a Pareto improvement. On the equilibrium on the right, the politicians pool at (v,0) after values are introduced. Introducing values statements is no longer a Pareto improvement over policy-only elections.