# Unambiguous Campaign as a Signal of Competence in Electoral Competition

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— Preliminary Version —

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**Abstract**

The level of competence that voters attribute to different candidates plays a major role in the results of elections. In addition, it is observed that some candidates tend to be more ambiguous in their campaign regarding their future plans, while others commit to specific policies. In this paper, we offer a model where politicians vary in their level of competence, or policy expertise, and compete by making costly campaign declarations. We show that a separating equilibrium exists, where the ambiguity of candidate's campaign declaration reveals her level of competence. We therefore present a possible way for voters to learn the competence of candidates through campaign declarations, and also provide an explanation for different levels of campaign ambiguity.

*Keywords:* electoral competition, competence, ambiguity, commitment.

*JEL Classification:* D72, D82

## 1. Introduction

The competence of candidates is an issue present in most, if not all, electoral campaigns. Competence may be defined as the ability to make good policy decisions and implement those decisions optimally. In this paper, however, we will focus on competence as decision making skills. Such competence is important to voters, since they usually have only partial information regarding the problems that face the country, and therefore have limited ability

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to asses the consequences of each policy. Voters face uncertainty regarding the best way to deal with specific issues (for example, economic or foreign policy) and therefore aspire to choose a "policy expert" who is most capable of making the best decisions (Popkin (1994), 61).[1]

Campaigning candidates try to persuade voters that they are competent in several ways. The first is by running an "image" based campaign, explicitly declaring themselves as competent, drawing support from their past record. However, candidates' past experience may not always be relevant to the office they are running for,[2] and can be undermined by their rival's claim of either irrelevance or lack of success.[3]. Another way to display competence is by running an "issue" based campaign, that is, a campaign that centres on intended the policy measures. Such declarations are usually considered a means to convey information about candidates' views. However, recent literature in political communication suggests that candidates use "issue" campaign declarations to display their character and competence.[4]

The main purpose of this paper is to present an explanation for the way in which voters can infer the competence of a candidate from "issue" declarations.[5] We do so by demonstrating the key role of *ambiguity* within "issue" campaign declarations.

When making declarations regarding their preferred policy, candidates can control their level of ambiguity. They do so by varying either their level of decisiveness; or the time allocation to various issues in their campaign ads and broadcasted appearances; or the amount of detail provided regarding future plans. Ambiguity of declarations is often adopted by candidates, and therefore obviously plays an important role in political campaign.

[1]Obviously, there are other issues that are present in elections: voters might have a personal view regarding the best policy, and would like to elect a candidate with a corresponding plaform. This for example, includes moral issues such as abortions. Even when it comes to the qualities of the candidate itself, there are other qualities besides competence that voters look for, such as integrity, truthfulness, etc. In this paper we focus on situations where politicians make policy decisions with uncertain consequences, and therefore focus on competence.

[2]Incumbent, however, might have an advantage as voters are familier with their record (Popkin (1994), 65-67).

[3]For example, the presidential Democratic nominee for 2004, Senator John Kerry, tried to use his decorated military experience in the Vietnam war to signal personal competence and character. However, during his campaign, Kerry was accused for lying during his Vietnam service to attain his medals. The group that attacked Kerry was funded by Republican supporters (for just a fraction of the news regarding that incident see "Friendly Fire: The Birth of an Anti-Kerry Ad" by K. Zernike and J. Rutenberg, published August 20, 2004 in *The New-York Times*, ; and "Navy Says Kerry's Service Awards Were properly Approved" published September 17, 2004 in *USA Today*).

[4]For a detailed discussion on this issue as well as literature see Louden (1994). See also Popkin (1994), p. 62.

[5]More specifically, a possible *rational* explanation, as the literature previously mentioned usually relies on psychological processes that are only "bounded rational".

When candidates are less ambiguous regarding their future plans, they may be perceived as being more competent. Yet unequivocal declarations also serve as a *commitment* to the voter as opposed to an ambiguous declaration that can easily be dismissed by the elected candidate. Candidates are expected to carry out the policies they placed in the forefront of their campaign, and failing to do so, they suffer a loss of public support. The famous declaration of President George Bush "read my lips: no new taxes", in his nomination speech at the 1988 Republican National Convention demonstrates this well. The striking difference between "one of the strongest, starkest, and most memorable promises of any recent presidential campaign" and "the largest single tax increase in the country's history" in 1990 during Bush's presidency term, eroded Bush's credibility in the 1992 presidential campaign, and contributed to his electoral defeat (Popkin (1994), 245-6).[6]

Competence relates to the candidates' self confidence in their knowledge about the issues at hand and their intended policy plans if elected and therefore enables them to commit to the voter. Less competent candidates, who face larger uncertainty regarding policies, will be more reluctant to do so, as they might suffer the cost of lost support if they break their commitment. Different levels of ambiguity in campaign may therefore reflect differences in competence.

Overall, this paper offers the following intuition: if an unequivocal stand results in commitment; and if the more competent candidate has a greater willingness to commit to a specific policy; then we would expect those who are competent to be less ambiguous in their campaign. Voters can thus learn of the competence of the candidate from the ambiguity of her declarations. As a result, candidates can present a competent "image" of themselves by making their campaign "issue" declarations unequivocal.

By exploring the association between competence and ambiguity we are also able to shed more light on the question of strategic ambiguity in electoral campaigns and explain the existence of varing degrees of ambiguity in real-life campaign. While there may be ambiguity in many political campaigns, we also see candidates who offer unequivocal declarations. Moreover, candidates tend to portray themselves as leading an unambiguous campaign, involving "straight talk", and accuse their opponents of the opposite.

Following our line of thought, we suggest that candidates have incentive to remain am-

[6] Another example for this is the fact that interest groups and politicians from a candidate's own party often demand that the candidate will endorse a certain policy in public, knowing that once a clear declaration is made, the candidate is more committed to that policy. A recent example from the 2008 presidential camapign is an ad paid by a Republican politician, challenging the Republican nominee Senator John McCain to speak out on immigration. The ad asked McCain whether he is "avoiding this American issue" ("Political Radar", ABC News website, 4 August 2008).

biguous due to uncertainty regarding the policy they will implement if elected. Differences in ambiguity between candidates reflect differences in levels of competence. Our model therefore allows us to address not only the question of competence, but also the question of ambiguity.

We explore these questions using a formal game-theoretic model. Voters and candidates have the same policy preferences, but are uncertain regarding their preferred policy. Competence of a candidate is represented by the quality of her private information, and the winning candidate may receive additional information before she chooses policy. We characterize an equilibrium whereby campaign declarations differ with the competence of the candidate. A less competent candidate has a significant chance to discover some new information after she is elected, which will change her beliefs regarding the best policy. She is therefore reluctant to commit on a specific policy, as she is less sure of her prior information. Such candidate will remain ambiguous compared to a more competent one. In such equilibrium, voters can identify the candidates' competence from the amount of commitment induced in their campaign declarations. We explore the conditions in which such equilibrium might exist, and discuss the possibility that a candidate is bound to her declaration, thus unable to react to new information she receives after being elected.

The paper proceeds as follows. The model is presented in Section 2. Section 3 characterizes the equilibrium. In section 4 we analyze the 1992 US elections as an empirical example for signaling competence using unambiguous declarations. Section 5 provides a literature overview relating the model to other papers in political economics.

## 2. The Model

There are two equally likely states of the world, $A$ and $B$. There are two policies, $a$ and $b$.

### 2.1. Voter

There is a single voter. The voter's preferences are defined over the policy that is implemented. The voter strictly prefers $a$ over $b$ when the state of the world is $A$, and strictly prefers $b$ over $a$ when the state of the world is $B$.[7] In the following discussion, we will at times use the term "the best policy" for the policy that is preferred by the voter ex-post.

[7] A single voter can model either an electorate with homogenous preferences, or a median voter in an electorate with heterogenous preferences: we can think of a situation where there are voters who prefer one of the policies regardless of the state of the world, as long as the median voter has the preferences described above.

### 2.2. Candidates

#### 2.2.1. Campaign declarations:

There are two candidates, denoted 1 and 2.[8] During campaign, each candidate makes declarations regarding the policy she will choose if elected. The declaration space is the interval $[-1, 1]$, where $-1$ represents policy $b$ and 1 represents policy $a$.

A candidate $j$ fully endorses policy $a$ in her campaign if she declares $m_j = 1$, and fully endorses policy $b$ if she declares $m_j = -1$. Mediocre values represent ambiguous declarations – candidates are not clear regarding their future policy choice, although they may present some preference toward a certain policy: a campaign declaration is $a$-preferred if it's positive, and $b$-preferred if it's negative, while $m_j = 0$ represents complete ambiguity regarding the policy that candidate $j$ prefers. The absolute value $|m_j|$ thus represents the degree of *commitment* to a specific policy.

#### 2.2.2. Preferences:

The utility function of the candidates is

$$U(m, x|\omega) = \begin{cases} R - C(m, x) & \text{if elected and chooses the best policy } (x = \omega) \\ -R - C(m, x) & \text{if elected and chooses the poor policy } (x \neq \omega) \\ 0 & \text{if not elected} \end{cases} \tag{2.1}$$

where $m$ is the campaign declaration, $x \in X = \{a, b\}$ is the policy they choose if they are elected, and $\omega \in \Omega = \{A, B\}$ is the state of the world.

$R$ is a constant representing the candidate's *policy preferences* – these preferences are identical to those of the voter. Therefore, a candidate enjoys $R$ only if she is elected and chooses the policy that match the state of the world, and suffers disutility $-R$ if she is elected and chooses the poor policy (that is, the one who does not match the state of the world).

Policy preferences reflect the candidate's private policy preferences as well as a "legacy motive", that is, the candidate wish to make the best decision in order to be remembered as a talented leader. We assume that the candidate enjoys that payoff only if she is elected, either because she relies only on herself to implement the policy in a suitable way, or because her benefit from a suitable implementation is a career benefit that exists only if she is in power. For the same reasons, a candidate suffers disutility from a poor policy only if she is

[8] Throughout the paper, we use male pronouns for the voter and female pronouns for the candidates.

the one who is responsible for it;[9]

$C(m_j, x)$ represents a *commitment costs* associated with the candidate's campaign declaration. The more a candidate is committed to a specific policy, the larger the price she will have to pay for breaking this commitment and choosing the opposite policy. The cost is therefore proportionate to the distance of the chosen policy from the campaign declaration, implying it is more costly to implement a policy that is farther from your declaration (see figure 2.1). The cost can be thought of as a blow to the politician's good name, thereby decreasing her chances to be reelected.[10] We also require that $C(m_j, x)$ be a convex function of the distance, thus representing an increasing marginal cost from breaking a commitment. This quality will assure that when a candidate is unsure which policy she will implement, she will be reluctant to fully commit on a specific policy.

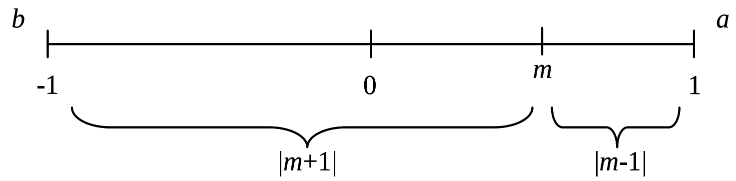


Figure 2.1: The cost for breaking a commitment is proportionate to the distance between declaration $m$ and the "marker" of the policy (1 for $a$ and $-1$ for $b$).

We specifically define the declaration cost to be quadratic, that is

$$C(m, x) = \begin{cases} k(m-1)^2 & if \quad x = a \\ k(m+1)^2 & if \quad x = b \end{cases}, \tag{2.2}$$

where $k$ is a parameter of the political environment, stating the electorate's tolerance toward deviation in policy from the one promised. A higher $k$ means more public demand for keeping one's word[11].

[9]Notice it is not necessary that the utility from implementing the best policy will be equivalent to the disutility from implementing the poor policy. We let both of these parameters equal $R$ for simplicity. If, however, the disutility for implementing poor policy equals zero, then the separating equilibrium we later characterizes cannot exist.

[10]Banks (1990) states that the cost can be thought of as a reduced form of the payoffs in a dynamic model with repeated elections (p. 311). That line of reasoning also fits here.

[11]Callander and Wilkie (2007), on the contrary, interpret the declaration cost as an ability to lie that depends on the candidate's character. Therefore, they attach the $k$ parameter to the candidate's type and not to the political environment. Although one might think of politicians who have more of a chance of "getting away" with this, this is not the interpretation given in this model.

### 2.2.3. Information:

**Pre-election (before campaigning):** Candidate $j \in \{1,2\}$ observes a signal $s_j \in \{A,B\}$ about the state of the world $\omega$, where $\Pr(s_j = A|\omega = A) = \Pr(s_j = B|\omega = B) = \pi_j \geq \frac{1}{2}$ and $\Pr(s_j = A|\omega = B) = \Pr(s_j = B|\omega = A) = 1 - \pi_j$. $\pi_j \in \Pi \subseteq [\frac{1}{2}, 1]$ is the signal quality of the candidate and describes its *competence*. It describes the strength of the candidate's incentive to be well informed, and/or her ability to process and comprehend the political environment. Signals are independent among candidates conditional to the state of the world.

It is natural to think of candidates as differing in their level of competence, and we will allow different levels of $\pi$ attached to different candidates. Every candidate knows her level of competence, but that level is unknown to the other players. However, there is a common prior over the competence levels with a density function $f : \Pi \longrightarrow [0,1]$.

**Post-election (before policy decision):** The winning candidate has, following her election but before she makes her policy decision, a chance $q \in (0,1)$ to discover the true state of the world. The idea behind this assumption is that once a candidate is in office, she may receive inside information that is held by her new subordinates. She can gain new information about her country's true abilities, political interests and diplomatic relations, which is not necessarily known to the public.

We specifically model the post-election information using a signal $\rho \in \{\varnothing, A, B\}$. With probability $q$ the signal's content is the state of the world, and with probability $1-q$ the signal is uninformative, that is $\rho = \varnothing$.

## 2.3. Strategies

The strategy for the voter is a function $r : [-1,1] \times [-1,1] \longrightarrow \{0, \frac{1}{2}, 1\}$, where $r(m_1, m_2)$ is the probability that the voter votes for candidate 1 , given the observed campaign declarations $m_1$ and $m_2$. Abstention is not allowed, so the probability for voting 2 is $1 - r(m_1, m_2)$. We suppose that the voter will vote with probability one for the candidate he believes has the highest probability to implement his favorable strategy. If he cannot distinguish between the two candidates on that basis, he will randomize.

The strategy of a candidate is a pair of functions $(m_j, x_j)$, where $m_j : \Pi \times \Omega \longrightarrow [-1,1]$ is the candidate's campaign declaration, given her signal quality and the signal content, and $x_j : \Pi \times \Omega \times [-1,1] \times [-1,1] \times \{\varnothing, A, B\} \longrightarrow X$ is the policy she will implement if elected, based on her pre-election signal content and quality, her personal campaign declaration, the declaration of her opponent, and postelection signal. For simplicity, we will restrict our attention to pure strategy equilibria only.

### 2.4. Description of the game steps

The sequence of the game is as follows:

1. Nature determines the competence of the two candidates, and the state of the world (random independent draws).

2. Each candidate observes her signal.

3. The candidates simultaneously make their campaign declarations.

4. The voter elects a candidate.

5. The elected candidate discovers the state of the world with probability $q$.

6. The elected candidate implements one of the policies.

7. The state of the world is revealed, and all players receive their payoffs.

## 3. Equilibrium

### 3.1. General description

In the following section, we will characterize two types of separating equilibria, whereby candidates with different levels of competence differ in the ambiguity level of their declarations. More detailed characterization and proofs of existence appear on appendix B. After every equilibrium we add several remarks on the properties of the equilibrium.

In the following analysis we will make two simplifying assumptions: first, that the type space of the candidates is discrete and contains only two types, that is $\Pi = \{\pi^L, \pi^H\}$ where $0.5 < \pi^L < \pi^H < 1$, and second, that $\Pr(\pi = \pi^L) = \Pr(\pi = \pi^H) = 0.5$.

The equilibrium concept used is perfect Bayesian. Specifically, an electoral equilibrium consists of strategies $m_j^*(\pi_j, s_j)$, $x_j^*(\pi_j, s_j, m_j, m_{-j}^*, \rho)$, $r^*(m_1, m_2)$, such that:

1. Given the declarations $m_1^*$ and $m_2^*$, the voter picks a election rule $r_i^*(m_1^*, m_2^*)$ that maximizes his utility.

2. If elected, every candidate decides on her implemented policy $x_j^*(\pi_j, s_j, m_j^*, m_{-j}^*, \rho)$, which will maximize her utility given her competence, pre-election signal, campaign declaration, the other candidate's declaration, and post-election signal.

3. Given her signal quality $\pi_j$ and content $s_j$, each candidate selects a campaign declaration $m_j^*$ that will maximize her expected utility, given the optimal election rule $r^*(\cdot)$ and policy rule $x_j^*(\cdot)$.

### 3.2. Voter's beliefs and behavior

When characterizing the equilibrium, we focus our attention on a specific belief structure, and limit our discussion to equilibria with such beliefs. We offer a belief construct which distinguishes between low and high types by a threshold or cut-off commitment in the following sense:

**Definition 1.** *we will say that voter's beliefs are **cut-off beliefs** when there is a critical value $m^c$, where candidate $j$ is believed to be very competent ($\pi_j = \pi^H$) if $|m_j| > m^c$ and less competent ($\pi_j = \pi^L$) otherwise.*

Using such beliefs, we can characterize the voter's strategy in a separating equilibrium. In such equilibrium, the voter wishes to elect the more competent candidate, since this candidate will implement the best policy with the highest probability. Given the aforementioned beliefs, the voter will adopt a choice rule where the probability for electing the first candidate would be

$$r(m_1, m_2) = \begin{cases} 1 & \text{if } |m_2| \leq m^c < |m_1| \\ 0 & \text{if } |m_1| \leq m^c < |m_2| \\ \frac{1}{2} & \text{otherwise} \end{cases} \tag{3.1}$$

### 3.3. Candidate's policy choice

In this section we will examine how candidates decide which policy to adopt in case they are elected. A candidate's policy decision after she is elected depends upon her campaign declaration as well as her belief regarding the true state of the world. Her prior belief is a result of her pre-election signal only. In case she is elected, she updates her beliefs according to the other candidate's declaration, and her post-election signal (in case it is informative).

We first can characterize a simple lemma, regarding the declarations in equilibrium:

**Lemma 2.** *in equilibrium under cut-off beliefs, any candidate with $\pi > 0.5$ who observes $s = A$ will always declare $m > 0$ and when observing $s = B$ will declare $m < 0$*

**Proof.** without loss of generality, we assume that a candidate with competence $\pi$ receives a signal of $s = A$. Her prior belief is therefore $\Pr(\omega = A) = \pi > 0.5$[12]. Since under cut-off

[12] We ignore for now the limit case of $\pi = 0.5$, where the pre-election signal is uninformative.

beliefs the voter only cares about $|m|$, a candidate can achieve the same chance of election by declaring $m$ and $-m$.[13] However, when a candidate's pre-election signal is $s = A$, she believes there is larger probability that she will implement $x = a$ in case she is elected. Therefore, her expected utility, if she is elected, is larger for a positive $m$ compared to $-m$ for all $0 < m < 1$: a positive declaration is expected to incur lower commitment cost and higher probability for enjoying the best policy payoff. For the same reasons, $s = B$ entails $m < 0$. ■

However, before we can specifically state candidates' declarations in equilibrium, we need to specify the candidates' policy choice rule if elected. The following lemma describes how this rule depends on the candidates' beliefs and declarations:

**Lemma 3.** *define a candidate's posterior beliefs after winning the elections as* $\Pr(\omega = A) = \mu$ *and* $\Pr(\omega = B) = 1 - \mu$. *The candidate will prefer* $x = a$ *to* $x = b$ *if and only if* $m \geq -\frac{R}{2k}(2\mu - 1)$.

***Proof.*** *from 2.1 and 2.2 we obtain that the candidate's expected utility for the policy* $x = a$ *is* $EU(m, a|\mu,\text{elected}) = \mu R - (1 - \mu)R - k(m - 1)^2$ *and for* $x = b$ *is* $EU(m, b|\mu,\text{elected}) = (1 - \mu)R - \mu R - k(m + 1)^2$. *Equating those terms we obtain the result immediately.* ■

An immediate corollary of that lemma is that if the benefit from making the best decision $R$ is relatively low compared to the cost of breaking a commitment $k$, and specifically when $\frac{R}{2k} < 1$, there is a set of declarations in which a candidate will choose her policy only as a result of her campaign, without regarding her posterior beliefs: if a candidate declares $\frac{R}{2k} < m < 1$ and gets elected, she will implement policy $a$ even if she knows for sure the state of the world is $\omega = B$. Similarly, a declaration of $-1 < m < -\frac{R}{2k}$ will always lead to a policy choice $x = b$ (see figure 3.1). The reason behind such behavior is that the candidate is so committed to a specific policy, that the cost of choosing a policy different to the one she promised is greater than the payoff achieved for making the best policy. We shall call these declarations "*rigid*", and sometimes relate to candidates who declare them as "rigid candidates", since they will never change their behavior as a result of new information they receive after they are elected.

The following proposition states the optimal policy choice of candidates in equilibrium. It follows from the two lemmas and belief structure:

[13] Therefore, the lemma is true under any belief structure that only relates to $|m|$, not necessarily cut-off beliefs.

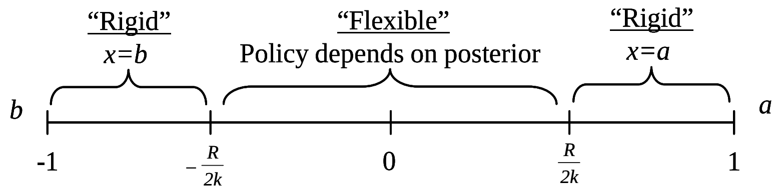


Figure 3.1: "Rigid" and "flexible" declarations, and the policy choices they entail.

**Proposition 4 (optimal policy choice).** *in any separating equilibrium with cut-off beliefs, for every candidate $j$ with $\pi_j > 0.5$:*

1. *If the pre-election signal is $s_j = A$ then $m_j > 0$ and $x_j^* = a$, unless $m_j < \frac{R}{2k}$ and the post-election signal is $\rho = B$. In that case, $x_j^* = b$.*
2. *If the pre-election signal is $s_j = B$ then $m_j < 0$ and $x_j^* = b$, unless $m_j > -\frac{R}{2k}$ and the post-election signal is $\rho = A$. In that case, $x_j^* = a$.*

The full proof is in appendix A. The proposition merely says that the winning candidate follows her pre-election signal if she does not discover the state of the world after she is elected. If, after election, she discovers that the true state of the world is opposite to her prior belief, she will implement the opposite policy only if she is not rigid. The loser's signal, as identified through the loser's declaration, does not change the winner's behavior, as in a separating equilibrium the losing candidate cannot be more competent than the winner.

### 3.4. Equilibrium without rigid declarations

After describing the voter's strategy and candidates' policy choice in a separating equilibrium, we are ready to describe the optimal declaration for each candidate, and thereby complete the characterization of a pure strategy separating equilibrium with cut-off beliefs. First, we will characterize equilibrium where there are no rigid declarations, that is $\frac{R}{2k} > 1$. In such equilibrium candidates will change their behavior if they receive new information after being elected.

Since there are two types and two possible signals, there are four possible declarations in a pure strategy equilibrium. We denote $m^L$ the declaration of the less competent candidate ($\pi = \pi^L$) when observed $s = A$, and $m^H$ the declaration of the more competent candidate ($\pi = \pi^H$) in the same case. Notice that lemma 2 entails $m^L, m^H > 0$. Since the game is symmetric, the optimal declarations in case $s = B$ are $-m^L$ and $-m^H$ respectively, so we can characterize equilibrium by the pair $\{m^L, m^H\}$.

Let us first describe, for simplicity, equilibrium where the voter has cut-off beliefs as defined above with the cut-off $m^c = 1$. In other words, we characterize an equilibrium where candidate $j$ is identified as more competent only if she fully commits ($m_j = 1$ or $m_j = -1$), and following 3.1 she is elected with probability one only if she fully commits and the other candidate does not.

Given these beliefs, we can characterize the conditions for equilibrium where $m^L < m^H = 1$, and therefore the competence of candidates is revealed:

**Proposition 5 (separating equilibrium without rigid declarations).** *consider the following beliefs and strategies, and assume that candidates observe $s = A$:*

1. *The voter has cut-off beliefs as defined above, where $m^c = 1$, and his election rule is as described by 3.1.*

2. *More competent candidates ($\pi = \pi^H$) declare $m^H = 1$.*

3. *Less competent candidates ($\pi = \pi^L$) declare $m^L = 1 - 2(1 - \pi^L)q < 1$.*

*In case $\frac{R}{2k} > 1$ (no rigid declarations), a sufficient condition for the above to be an equilibrium is*

$$\frac{1 + 0.5(1 - \pi^H)q}{1 + \frac{\pi^H - 0.5}{(1-\pi^H)q}} \leq \frac{R}{2k} \leq \frac{1 + 0.5(1 - \pi^L)q}{1 + \frac{\pi^L - 0.5}{(1-\pi^L)q}}. \tag{3.2}$$

Notice that the equilibrium described is not the only possible one when we assume cut-off beliefs: there exist equilibria where $m^c < 1$, that is, a candidate is believed to be of more competent even when she does not fully commit but selects $m^H \in (m^c, 1)$. For a full specification of such equilibria see appendix B.1. The proof for the general proposition holds for the specific case where $m^c = 1$ presented here[14].

The intuition of the proof is simple: every candidate that does not have perfect knowledge (i.e. $\pi < 1$) knows there is a chance she will discover after the election her signal was false and choose the opposite policy. She therefore prefers to remain ambiguous and not fully commit on a specific policy, to decrease her expected cost from breaking a commitment.

[14]In addition, separating equilibria without rigid declarations are possible also when rigid declarations may exist, i.e. when $\frac{R}{2k} < 1$. In such equilibria candidates' declarations maintain $m^L < m^H < \frac{R}{2k} < 1$. These equilibria are very similar to the one discussed here, so we will not go into details discussing them here. However, we characterize them in appendix B.2.

However, a more competent candidate will be more willing to fully commit despite a higher expected cost, in order to be recognized as more competent and get elected with higher probability. The condition assures incentive compatibility for separating equilibrium: first, it demands $\pi^L$ low enough so a less competent candidate prefers to not fully commit, albeit the fact that such action identifies her as less competent and decreases her probability to get elected (the right argument of the inequality decreases in $\pi^L$, so it represents an upper bound on $\pi^L$). Second, the left inequality demands $\pi^H$ which is high enough so the more competent candidate will prefer to fully commit in equilibrium.

### 3.4.1. Expected difference between commitments

Notice that as $\frac{R}{2k} > 1$ decreases, and $q \in (0,1)$ increases, the separating equilibrium we discuss is sustained for higher $\pi^L$s (and demands higher $\pi^H$). This is because high cost for breaking a commitment (relative to the payoff from being elected) and high probability for post-election new knowledge, increase the expected cost of breaking a commitment, so candidate with higher competence levels prefers not to fully commit.

Even then, we find that separating equilibrium is possible only when the less competent have quite low signal quality: when $\frac{R}{2k} \simeq 1$ and $q \simeq 1$ condition 3.2 becomes $\pi^L \leq 2 - \sqrt{2} = 0.585 \leq \pi^H$. Notice, that even if the difference in competence is small, we find that the less competent commitment is $m^L \leq 3 - 2\sqrt{2} \simeq 0.17$ while the more competent fully commit, i.e. $m^H = 1$. So, the model assumes that in any separating equilibrium, we expect to see one candidate with a very low level of commitment, and one with a very high one, even when the differences in competence will not necessarily be very large.

### 3.4.2. The role of parameter $q$

Notice that in the case of $q = 0$, the winning candidate never knows the true state, and therefore implements the policy that matches her pre-election signal. Such candidate will always fully endorse one of the policies, since she has no reason to be ambiguous. Therefore, we expect $(m_j, x_j)$ to be either $(1, a)$ or $(-1, b)$ depending on the pre-election signal $s_j$, with no connection to the candidate's competence, and a separating equilibrium cannot exist.

When $q = 1$, as mentioned, separating equilibrium is possible in various levels of $\pi^L$ and $\pi^H$. However, in such case all candidates are fully informed after they get elected, so any candidate will choose the utility maximizing policy whatever her competence may be. In such case the voter is indifferent to the candidates, so campaign declarations would be meaningless. Only when $q \in (0,1)$ we would expect equilibrium of the kind described above:

while $q$ needs to be high enough so candidate will have an incentive to remain ambiguous, there should still be possible uncertainty so the voter will have concern on the competence of the candidates.

### 3.4.3. Properties of the voter's beliefs

The beliefs we introduced in equilibrium have two desirable properties. First, the beliefs are *symmetric*: for every two campaign declarations $m_i$ and $m_j$, the beliefs of the voter regarding the competence of candidates $i$ and $j$ depends only on the relation between $|m_i|$ and $|m_j|$. Since both states of the world are equally likely, this is a plausible assumption: the positivity or negativity of the declaration is a result of the content of private information each candidate has, but is irrelevant to determine her competence. Competence is connected only to commitment, which expresses the confidence a candidate has with her information.

Secondly, the beliefs *monotonically increase* in commitment, that is, for every two campaign declarations $m_i$ and $m_j$, the voter will believe that candidate $i$ is at least competent as $j$ if and only if $|m_i| \geq |m_j|$. We restrict ourselves to monotone beliefs, since the correlation between commitment and competence, as perceived by the voter, has no reason to reverse at any degree of commitment. Given that, increasing beliefs are more plausible than decreasing ones as there is no rational reason for the voter to think that candidates who are more ambiguous actually have better knowledge of the best policy.[15]

Finally, since we have a discrete type space, we cannot characterize an equilibria with strong monotone beliefs: if any increase in $|m|$ increases the belief that the candidate is of higher type, a candidate's best response will always be to increase her commitment by a small amount and therefore increase drastically her chances of election. We therefore characterize beliefs with a cut-off, which are weakly increasing, and enable existence of equilibrium.

### 3.4.4. Declarations of the less competent candidate

The expected utility of candidate $j$ when she is making her campaign declaration equal to

$$EU_j(m_j, x^*|s_j) = \lambda_j(m_j, m_{-j}) \cdot EU_j(m_j, x^*(m_j)|s_j,\text{elected})$$

where $\lambda_j$ is the probability for electing $j$, and therefore, $\lambda_1(m_1, m_2) = r(m_1, m_2)$ and

[15] In the game we described, separating equilibria with decreasing beliefs can actually be found, where the more competent candidate is completely ambiguous, while the less competent is slightly more explicit on the policy she will implement (though still not very committed). We ignore such equilibria, as we do not think they have any meaningful interpretation.

$\lambda_2(m_1, m_2) = 1 - r(m_1, m_2)$. Since both candidates' type are likely with probability half, in a separating equilibrium the election probability of the less competent candidate is 0.25, while the probability of the more competent type is 0.75.

In a separating equilibrium, a less competent candidate will simply choose a declaration which maximizes her utility if elected. Following 2.1 and 2.2, such utility equals, in the case her pre-election signal is $s = A$, to

$$\begin{aligned} &EU(m, x^*(m)|s = A, \text{elected}) \\ &\quad = ((1-q)\pi + q)R - (1-q)(1-\pi)R - k[(1-q+\pi q)(m-1)^2 + q(1-\pi)(m+1)^2] \\ &\quad\quad = (2q + 2(1-q)\pi - 1)R - k[(m-1)^2 + 4q(1-\pi)m]. \quad (3.3) \end{aligned}$$

Notice that a candidate will implement the best policy (and receive $R$) if the state is revealed after election, or if the state is not revealed but her pre-election signal was correct. A candidate will follow her pre-election signal (and suffer, in the case above, cost of $k(m-1)^2$ for implementing $a$) in case her post-election signal is uninformative, or if it is informative and equal to the pre-election signal.

Maximizing 3.3 relative to $m$, we obtain

$$m^*(\pi|q, s = A) = 1 - 2(1-\pi)q.$$

Maximizing $EU(m, x^*(m)|s = B,\text{elected})$ we obtain the equivalent $m^*(\pi|q, s = B) = -(1 - 2(1-\pi)q)$. We therefore find that the commitment of the less competent candidate equals to $m^L = m^*(\pi^L, A) = 1 - 2(1-\pi^L)q$. Notice that $|m^*|$ decreases in $q$ and increases in $\pi$, capturing the basic intuitions we described: higher $q$ decreases the incentive to commit since it implies higher chance for a change in beliefs regarding the best policy, while higher competence increase the incentive to commit for exactly the opposite reason.

### 3.5. Equilibrium with rigid declarations

A second kind of pure strategy separating equilibrium we would like to focus on is equilibrium where the more competent candidate makes a rigid declaration. In such equilibrium, $m^H > \frac{R}{2k}$, so the more competent candidate, if elected, chooses the policy she has committed to, disregarding any new information she gets after the election. Obviously, such equilibrium can exist only when $\frac{R}{2k} < 1$.

We will now characterize a separating equilibrium with rigid declarations, given a belief structure and the voter's election rule as described in 3.1. We continue to characterize the optimal declarations using the pair $\{m^L, m^H\}$ as described above.

Let us again, for simplicity, assume a specific beliefs cut-off that equals $m^c = \frac{R}{2k}$, meaning that a candidate is believed to be more competent if she is rigid ($|m| > \frac{R}{2k}$). The following proposition characterizes the conditions for an equilibrium where $m^L < m^H = 1$, and therefore the competence of candidates is revealed:

**Proposition 6 (separating equilibrium with rigid declarations).** *consider the following beliefs and strategies, and assume that candidates observe $s = A$:*

1. *The voter has cut-off beliefs as defined above, where $m^c = \frac{R}{2k}$, and his election rule is as described by 3.1.*

2. *More competent candidates ($\pi = \pi^H$) declare $m^H = 1$.*

3. *Less competent candidates ($\pi = \pi^L$) declare $m^L = 1 - 2(1 - \pi^L)q < 1$.*

*In case $\frac{R}{2k} < 1$ (rigid declarations exist), sufficient conditions for the above to be an equilibrium are that, given $q$ and $\frac{R}{2k}$, $\pi^L$ and $\pi^H$ satisfy*

$$\frac{1 - \left(1 - \pi^L\right) q}{1 - 2\frac{\pi^L - 0.5}{(1-\pi^L)q}} \leq \frac{R}{2k} \leq \frac{1 - \left(1 - \pi^H\right) q}{1 - 2\frac{\pi^H - 0.5}{(1-\pi^H)q}}; \tag{3.4}$$

*and*

$$q \leq \frac{\pi^H - \pi^L}{1 - \pi^L}. \tag{3.5}$$

Notice that when rigid declarations are possible, i.e. $\frac{R}{2k} < 1$, there are a few more separating equilibria with cut-off beliefs. When $m^c \in (\frac{R}{2k}, 1]$, we obtain the same equilibria with a little different condition. But rigid declarations can exist in such a separating equilibrium even when $m^c < \frac{R}{2k}$, meaning that even when candidates do not *need* to be rigid in order to be identified as more competent, they *choose* to be rigid. A general proposition describing the conditions for all these possible equilibria with cut-off beliefs is offered in appendix B.3. The proof offered there for the more general proposition holds for the simple case described above.

To understand the equilibrium, first notice that when a candidate makes a rigid declaration she knows her future policy choice, and therefore can escape any commitment cost by fully committing and declaring $|m| = 1$. This is why the more competent candidate will declare $|m| = 1$ when the cut-off is $m^c = \frac{R}{2k}$ (or higher). The intuition behind condition

3.4 is basically the same as 3.2 in proposition 5 – the condition represents the demand for incentive compatibility to both types of candidates.

The other condition, presented in 3.5, makes sure that the voter's choice will be optimal given the candidates' declarations. When there are no rigid declarations, any separating equilibrium is optimal from the voter's point of view, because choosing the more competent candidate leads to a greater chance that the best policy will be implemented. In the above equilibrium, however, the more competent candidate is rigid while the less competent is not, so choosing the more competent candidate in this case is not necessarily the best thing to do. Condition 3.5 requires a minimal difference between $\pi^H$ and $\pi^L$ to assure an advantage gap to the more competent candidate, so that she will be preferred by the voter in spite of her rigidness.

### 3.5.1. Optimal rigid declarations and equilibrium existence

In a separating equilibrium, the less competent candidate chooses the declaration that maximizes her utility if she is elected. However, and unlike in the previous section, such declaration might be $m = 1$ or $m = -1$. To see this note first that following 2.1, 2.2 and proposition 4, the expected utility conditional on being elected is as follows (we assume without loss of generality that $s = A$):

$$EU(m, x^*(m)|s = A, \text{elected}) = \\ \begin{cases} (2\pi - 1)\,R - k(m-1)^2 & \text{if } \frac{R}{2k} < m \leq 1 \\ (2q + 2(1-q)\pi - 1)R - k\left[(m-1)^2 + 4q(1-\pi)m\right] & \text{if } 0 \leq m < \frac{R}{2k} \end{cases}. \tag{3.6}$$

The lower part of the equation is the same as in 3.3, and the declaration that maximizes it is $m = 1 - 2(1-\pi)q$. The upper part represents the situation whereby a candidate is rigid, and is therefore maximized by $m = 1$. Equivalent results are achieved when $s = B$.

Comparing the utility from declaring $m = 1 - 2(1-\pi)q$ and $m = 1$ for every level of competence, we obtain the optimal declaration when election chances are disregarded, which equals

$$m^*(\pi) = \begin{cases} 1 & \text{if } \pi \geq \tilde{\pi} \\ 1 - 2(1-\pi)q & \text{if } \pi < \tilde{\pi} \end{cases}$$

where $1 - (1-\tilde{\pi})q = \frac{R}{2k}$ or $\tilde{\pi} = 1 - \frac{1}{q}\left(1 - \frac{R}{2k}\right)$. Obviously, a necessary condition for a the separating equilibrium we characterized is $\pi^L < \tilde{\pi}$. A sufficient condition for a more competent candidate to fully commit is $\pi^H > \tilde{\pi}$.[16]

Notice, that when rigid declarations are optional, candidates with $\pi > \tilde{\pi}$ opt for rigidity and thus fully commit, although such degree of commitment wouldn't be made in the absence of this declaration possibility. Such behavior is puzzling at first, since rigid declarations limit the candidate by forcing her to commit on a policy before she is elected, and prevents her from reacting to new information. However, more competent candidates may prefer a pre-election commitment on policy, as it decreases the probability for implementing the best policy, but also prevents any cost of breaking a commitment. If such rigidity is not possible, as in the case of $\frac{R}{2k} > 1$, these candidates must take into account a possible new post-election signal that will change their policy choice (as described in proposition 4), and therefore remain ambiguous.

We therefore can explain an equilibrium where the more competent candidates (if $\pi^H > \tilde{\pi}$) fully commit not only in order to distinguish themselves from the less competent as in the previous equilibrium, but do so because they rationally prefer to be followers of a specific policy even when they are not sure it is the best one, rather than retain the possibility of changing their mind due to new information.

### 3.5.2. Different behavior relative to $\frac{R}{2k}$ in the two equilibria

As before, when $q \in (0, 1)$ increases, the aforementioned separating equilibrium exists for higher $\pi^L$s. However, we can see from condition 3.4 that separating equilibrium exists for higher $\pi^L$s when $\frac{R}{2k} < 1$ increases, which is opposite to the case of no rigid declarations. This fact demonstrates the different rationale low competence candidates face when considering whether to deviate from $m^L$ to declaration of the more competent candidate, $m^H$: when there are no rigid declarations, a less competent candidate expects an increase in her cost for breaking a commitment when she deviates to $m^H$, as she fully commits to a policy she's not sure she will implement. When $m^H$ is a rigid declaration, she expects that her commitment cost will decrease as fully commits and becomes rigid. Therefore, for a given $R$, increase in $k$ will decrease the incentive of the less competent candidate to deviate from equilibrium while no rigid declarations are present, and increase her incentive when the declaration of the more competent candidate is rigid.

[16] Both of these terms are embodied in condition 3.4 – $\pi^L < \tilde{\pi}$, or $1 - (1 - \pi^L)q < \frac{R}{2k}$, is demanded in the left inequality, which equals to $1 - (1 - \pi^L)q$ multiplied by a number greater than one. For the same reason, $\pi^H > \tilde{\pi}$, or $1 - (1 - \pi^H)q > \frac{R}{2k}$ is sufficient for the right inequality to hold.

Notice, however, that as in the case of separating equilibrium without rigid declarations, there are no parameter values that can support a separating equilibrium when $\pi^L > 2 - \sqrt{2}$, and therefore we expect that the less competent candidate will make a very small commitment ($m^L$ close to zero) while the more competent fully commits.

## 4. An Example: Commitment and Competence in the 1992 US Presidential Campaign

In this section, we attempt to illustrate how the basic results of our model are present in real-life elections. Obviously, this must take into account the limits of the simplifying assumptions underlying our model, which can not possibly be found in real life election systems. Firstly, elections are not only about competence: ideological differences definitely play a major role in many elections. Even when the candidate's perceived qualities ("image") are of great significance, other qualities besides competence, such as integrity, honesty, etc. play a major role in the electoral campaign. Secondly, the model contains the implicit assumption that voters cannot learn the competence of the candidates from their past record, an assumption that usually fails when there is an incumbent.

Therefore, real-life examples should be elections where competence plays a major role, and candidates are relatively young without a significant past political record. An example might be an election for a small scale managerial position, such as mayor of a town. Unfortunately, small scale elections attract minimal academic attention, so we were unable to find any empirical work analyzing such campaigns.

Most attention in empirical analysis of campaign is turned towards US presidential campaigns. It is therefore worthwhile examining whether our findings are relevant to these campaigns. We believe that the 1992 elections are a good example, since they revolved mostly around the economic issue, which is distinctively an issue of competence; as the electorate is usually uninformed regarding the steps that should be taken to fix an economy, each candidate needs to convince the public that she has the best ability to handle the economic problems and improve the voters' well being.

The question of economic competence first arose in the 1992 Democratic primary elections. Bill Clinton, the young governor of Arkansas, and almost unknown politician in the national level, and Paul Tsongas, a senator who retired from office in 1984 due to cancer without holding public office since, distinguished themselves from the other candidates by each offering a specific and concrete plan for dealing with the economy (Popkin (1994), p.

240). Their economic plans were printed as booklets and distributed to citizens. The plans were the focus of both candidates' television commercials. Clinton and Tsongas' campaign strategy proved to be efficient as they quickly became the lead candidates in the primaries[17]. Clinton managed to lead the race, eventually earning the Democratic nomination.[18]

The detailed plans offered by the Clinton and Tsongas' campaigns, served as an unequivocal message suggesting the best economic policy. By providing such a detailed plan, the candidates were committing themselves to a specific policy, thus signaling their competence to deal with the economy. As Samuel Popkin has noted, "[t]he experience of the 1992 campaign suggests that whenever a candidate makes a clear and confident offer...voters perceive it as an important cue." (1994, p. 249). Another striking example to the effectiveness of an unequivocal declaration in public opinion, is that a week after Clinton's economic plan was released in January 1992, he rose in the primary polls from fourth to first place.[19]

Clinton's success in presenting a clear plan and thus signaling his competence, continued in the presidential campaign, contributing to his defeating of the incumbent president, George H. W. Bush. Since Bush was in office from 1988, the public was able to judge him based on his first period record. One might claim that the economic issue was important in the 1992 election due to President Bush's failure to deal with the economy in his first term, and failure to meet his aforementioned promise of "read my lips: no new taxes". But the story of the 1992 campaign is not only of an electorate who punished an unsuccessful incumbent. We believe that it was the difference in the candidates' declarations, and the impact it made on their perceived competence in dealing with the economy, that significantly influenced the results of the elections.

In the beginning of the presidential campaign, while Clinton continued to base his campaign on the economy, the Bush campaign did not offer an economic plan, but instead tried to "divert the voters' attention from the economy" to other issues such as foreign policy and

[17] In New Hampshire, the first primary, Tsongas won 33% of the votes and Clinton 25%, while another 3 candidates won between 11% to 8% (Baker (1993), pg. 47-49).

[18] Clinton's second place in New Hampshire was considered a big success as it was obtained despite heavy attacks made on his personal character. He was considered by the media to be the leading candidate, and continued to win in a few major states. Tsongas fell behind and failed short in raising money, and eventually suspended his campaign after 18 states.

Another candidate, Jerry Brown, gained momentum after Tsongas' retirement, by defining himself as an anti-Clinton candidate, and attacking him on character issues. Running until the end of the campaign, he was able to achieve second place in the race, with 20% of the votes, while Tsongas final results were 18.2%, and Clinton received 52.1% of the votes (for more details see Baker (1993)).

[19] Clinton moved up in the New Hampshire polls from 16% and fourth position to 33% and first (Popkin (1994), p. 249).

character[20]. Later on in the campaign, Bush offered a detailed economic plan, but unlike Clinton, who placed his plan in the forefront of his campaign, Bush mentioned the plan just several times. Shortly after it was presented, "the campaign references to the plan ceased and it quietly disappeared" (Arterton (1993), p. 78). While a large share of the voters had concerns over the economic conditions, were pessimist toward the future of America, and believed a change should be made (Popkin (1994), 241), they also believed that Bush did not have a plan: six months before the elections, 58 percent of registered voters said in a poll that "the Bush administration was drifting without clear plans" (Popkin (1994), 247). Bush was even criticized for lack of plan by members of his own party and by conservative journalists (Burnham (1993), 28-29). In contrast, voters believed they had insight into what steps Bill Clinton would take if he is elected. By mid-June 1992, when voters were asked whether each candidate was "telling enough about where he stands on the issues for you to judge what he might do if he won the presidential election", 43 percent thought Clinton, a candidate who was unknown to them earlier that year, was telling enough. Only 32 percent thought Bush was telling enough, although he was the incumbent president (CBS/New York Times polls, cited in Popkin (1994), 255).

The data above suggests that the basic result of our model is of great relevance to the 1992 US presidential elections. A major reason for Bush's defeat, was the fact that he did not present a clear plan to deal with the problems of the voters, and therefore signaled himself as incompetent to lead. Bill Clinton committed to a detailed and clear economic plan, thus signaling his competence, and was therefore able to win the presidential election. Bush's record definitely played some role, but as F. Christopher Arterton noted, "the story of the 1992 campaign is fundamentally shaped by the failure of Bush's campaign to address voter concerns about the economy." (1993, p. 77).

## 5. Related literature

This paper belongs to the vast economic literature that analyses the electoral process as a game of incomplete information. We will examine a selected sample of existing papers that deal with the key concepts of our paper, namely competence, campaign declarations, and

[20] It is worth noting that Bush's campaign on foreign policy was a competence-based campaign, mentioning Bush's past record and focusing on the success of Desert Storm operation. However, in 1992, two years after the collapse of the Soviet Union, the voters did not feel that foreign policy is a priority issue, and sought economic competence rather than foreign policy competence (see Arterton (1993), 76-80 and Popkin (1994), 240-244). The lesson here that it is not enough to display competence, but also to synchronize it with the voters' needs.

ambiguity.

Our model is part of a larger collection of models that describe how agency problems between politicians and voters can be addressed using elections. Amongst these, Canes-Wrone, Herron, and Shotts (2001) deals with similar matters to those detailed in our paper. In their model, voters also face an adverse selection problem, as the competence (or "policy expertise") of every candidate is her private information. However, unlike our model, candidates do not engage in campaign, and voters only examine past actions of the incumbent in order to decide whether to reelect her. The model also assumes that voters have a preferred policy, and thus candidates face issues of policy popularity, which are absent from our model. Competence of the same kind plays a role also in Maskin and Tirole (2004), but in their model all politicians have the same competence, and selection problems arises from possible preference differences between candidates and voters.

Another group of papers where voters try to discover the competence of candidates is Rogoff (1990) and Rogoff and Sibert (1988). However, in these papers competence is defined as administrative skills, while we define competence as decision-making skills, or policy expertise. As we stated in the beginning of this paper, the term competence in its political meaning is usually a combination of both these skills. In addition, in these papers there is no campaign, and competence is signaled through the actions of the incumbent. Overall, none of the above mentioned papers include a campaign as part of their model. These papers present dynamic models, where voters can learn something of the incumbent only by watching her past record, thus following a retrospective rule. The implicit assumption in these models is that campaign declarations are cheap-talk, and are therefore not informative to voters.[21]

Banks (1990), alternatively, provides a model where campaign declarations (or promises) are neither binding nor cheap-talk. Banks offer a Downsian spatial model where candidates differ in their policy preferences, and describes a cost function for "lying" which is monotone in the distance between the campaign declaration and the policy the candidate intends to implement. Using costly declarations, Banks explores the conditions where campaign declarations signal the candidates' type to voters.[22] In our model we use an altered version of Banks' cost function, to model the cost associated with commitment..

Finally, the model presented in this paper relates to the question of strategic ambiguity, and the attempts to explain why some candidates prefer to express themselves vaguely when

[21] However, see Harrington (1993) and later Triossi (2007) for models where voters can learn the candidate's preferences from cheap-talk campaign declarations in a dynamic two-period model. Note that these papers do not deal with competence.

[22] Callander and Wilkie (2007) extend Banks model to include candidates who bear no cost from "lying".

they run for election. There is a large body of work that relate to the issue of ambiguous declarations as a means to maximize voters support by appealing to varied policy preferences.[23] Papers of this sort usually focus on conditions and voters' preferences that enable ambiguous declarations in equilibrium.

Aragonès and Neeman (2000), on the contrary, offer a model where candidates prefer to have vague campaign declarations, in order to retain some flexibility when reaching the stage of policy implementation once in office. The logic behind such preferences is that since candidates are ex-ante unsure regarding their preferred policy after election, they prefer ambiguous campaign declarations[24]. However, in the model that Aragonès and Neeman present agents are not exposed to any uncertainty, and the candidates' preference for ambiguity is exogenously given. While our model follows the same basic intuition, ambiguous declarations in our model arise endogenously being associated to the candidates' competence. We are also able to explain that the degrees of ambiguity are derived from the different levels of candidate's competence.

# A. Appendix: Proofs

<THE APPENDIX IS PARTIAL AND NEEDS MORE EDITING>

## A.1. Proof of Proposition 4

**Proof of proposition 4.** We will only prove the first part: the proof for the second part is equivalent. First, let us recall from lemma 2 that if $s_j = A$ then $m_j > 0$. Consider the case where $\rho = B$. In that case, the candidate's posterior is $\mu = \Pr(\omega = A) = 0$, and from 3 we obtain that she will select $x_j = a$ iff $m \geq \frac{R}{2k}$. Therefore, $x_j^* = b$ if $\rho = B$ and $m < \frac{R}{2k}$.

We now need to show that in all other cases $x_j^* = a$. In case $\rho = A$ then $\mu = 1$, and since $m_j > 0$, we directly obtain from 3 that $x_j^* = a$. In case $\rho = \varnothing$, we need to pay attention to the other candidate's declaration $m_{-j}$, since candidate $j$ updates her beliefs according the that declaration. In what follows, we will concentrate on the behavior in a separating equilibrium, where one can infer from $m_{-j}$ not only the other candidate's signal content $s_{-j}$ (positive or negative declaration) but also her competence $\pi_{-j}$.

From 3 and the fact that $m_j > 0$, it is enough to show that the posterior $\mu = \Pr(\omega = A)$ is larger or equal to 0.5 in order show that $x_j^* = a$:

[23] Zeckhauser (1969) and Shepsle (1972) are among the earliest works in Economics in this field, and were followed by many others. For recent work see Aragonès and Postlewaite (2002).

[24] This is close to the idea of "preference for flexibility" modeled in Kreps (1979).

1. In case that $s_{-j} = \dot{A}$ The candidate's posterior increases so obviously $0.5 < \pi_j < \mu$.

2. Let us assume that $s_{-j} = B$ and the winning candidate is more competent that the loser, that is $\pi_j = \pi^H$ and $\pi_{-j} = \pi^L$. In that case the posterior is $0.5 < \mu = \frac{\pi^H(1-\pi^L)}{\pi^H(1-\pi^L)+\pi^L(1-\pi^H)} < \pi_j$.

3. Let us assume that $s_{-j} = B$ and both candidates has the same competence ($\pi_j = \pi_{-j} = \pi^H$ or $\pi_j = \pi_{-j} = \pi^L$). In that case $\mu = 0.5$.

Notice, that in a separating equilibrium, the losing candidate cannot be more competent than the winning one. Therefore, even if the losing candidate has a opposite signal, we have shown that the winner's posterior will be at least half, and since her declaration is larger than zero, she will choose to implement $x = a$. This sums up all the cases. ■

# B. Appendix: Full Description of Separating Equilibria

## B.1. Separating equilibrium when rigid declarations are not possible

<<change the proposition to be more similar to the way it is written in the paper>>

Let us now describe the set of separating equilibria when there are no rigid declarations. First notice, that since the candidates' type is drawn i.i.d with the prior $\Pr(\pi = \pi^L) = \Pr(\pi = \pi^H) = 0.5$, in a separating equilibrium the probability of a low competence candidate to be elected is 0.25, while the probability of the more competent type is 0.75.

We are now ready to describe the set of separating equilibria:

**Proposition 1 (seperating equilibrium when there is no rigid zone).** *when $\frac{R}{2k} > 1$ (no rigid declarations), the set of separating perfect Bayesian equilibria can be described by $\underline{m} < 1$ and $\overline{m}$ such that:*

1. *Voters' beliefs consist of a cut-off level $m^c$ as described above, where $\underline{m} \leq m^c \leq \min\{1, \overline{m}\}$.*

2. *The voters' strategy is as described by 3.1*

3. *Less competent candidates ($\pi = \pi^L$) declare $m^L = m^*(\pi^L) = 1 - 2(1-\pi^L)q$ ($-m^*(\pi^L)$) if they observed $s = A$ ($s = B$).*

4. *More competent candidates* ($\pi = \pi^H$) *declare* $m^H$ ($-m^H$) *if they observed* $s = A$ ($s = B$), *where*

$$m^H = \begin{cases} m^*(\pi^H) = 1 - 2(1-\pi^H)q & \text{if } m^c \le m^*(\pi^H) \\ m^c & \text{if } m^c > m^*(\pi^H) \end{cases}.$$

5. *If elected, all candidates choose policy according to choice rule* $x^*$ *described in proposition 4.*

6. $\underline{m}$ *is defined using the following equality:*

$$\underline{m} + \frac{(\underline{m}-1)^2}{4(1-\pi^L)q} = \frac{R}{2k}\left(\frac{1}{3}\frac{2\pi^L - 1}{(1-\pi^L)q} + \frac{2}{3}\right) + \frac{1}{3}\left(1 - (1-\pi^L)q\right). \tag{B.1}$$

7. $\overline{m}$ *is defined using the following equality:*

$$\overline{m} + \frac{(\overline{m}-1)^2}{4(1-\pi^H)q} = \frac{R}{2k}\left(\frac{1}{3}\frac{2\pi^H - 1}{(1-\pi^H)q} + \frac{2}{3}\right) + \frac{1}{3}\left(1 - (1-\pi^H)q\right). \tag{B.2}$$

**Proof.** Let assume without loss of generality that $s_j = A$ for $j = 1, 2$. In a separating equilibrium, low type candidate will have a 0.25 chance of being elected, and will declare her "natural" declaration, that is $m^L = m^*(\pi^L) = 1 - 2(1-\pi^L)q$. We need to assure that she doesn't want to declare the high type's strategy and increase her chance for election. The utility in any case is:

$EU^L(m^L, x^*) = 0.25 \cdot \left[(2\pi^L - 1 + 2q(1-\pi^L)R - 4k\left((1-\pi^L)q - (1-\pi^L)^2q^2\right)\right]$ and $EU^L(m^H, x^*) = 0.75 \cdot \left[(2\pi^L - 1 + 2q(1-\pi^L)R - k\left((m^H-1)^2 + 4(1-\pi^L)qm^H\right)\right]$.

Demanding $EU^L(1-2(1-\pi^L)q, x^*) \ge EU^L(m^H, x^*)$ we obtain a minimum condition for $m^c$: $\frac{3}{4}(m^H-1)^2 + 3(1-\pi^L)qm^H \ge \frac{R}{2k}(2\pi^L - 1 + 2(1-\pi^L)q) + (1-\pi^L)q - (1-\pi^L)^2q^2$.

We define $\underline{m}$ to be the smallest $m$ that follows the above inequality, and by some substitution receive B.1. We demand the cut off in beliefs $m^c$ to be above $\underline{m}$ in equilibrium. Obviously, if $\underline{m} \ge 1$ then separating equilibrium cannot exist.

If $\underline{m} \le m^c < m^*(\pi^H) = 1 - 2(1-\pi^H)q$, then naturally high type candidate will declare $m^*(\pi^H)$ in equilibrium, and incentive compatibility is satisfied. However, if $m^*(\pi^H) \le m^c$, we need to make sure that high-types candidates will not deviate in equilibrium to their "natural" declaration, although such declaration decreases their chances of election:

$EU^H(m^H, x^*) = 0.75 \cdot \left[(2\pi^H - 1 + 2q(1-\pi^H)R - k\left((m^H-1)^2 + 4(1-\pi^H)qm^H\right)\right]$

$EU^H(m^*(\pi^H), x^*) = 0.25 \cdot \left[(2\pi^H - 1 + 2q(1-\pi^H)R - 4k\left((1-\pi^H)q - (1-\pi^H)^2q^2\right)\right]$

Demanding $EU^H(m^H, x^*) \geq EU^H(m^*(\pi^H), x^*)$ we obtain a maximum condition for $m^c$ and $m^H$: $\frac{3}{4}(m^H - 1)^2 + 3(1-\pi^H)qm^H \leq \frac{R}{2k}(2\pi^H - 1 + 2(1-\pi^H)q) + (1-\pi^H)q - (1-\pi^H)^2q^2$.

We define equivalently $\overline{m}$ to be the largest $m$ that follows the above inequality, and by some substitution receive B.2.

We need to check individual rationality constraints for both types. The condition for the low-type candidate $EU^L(1 - 2(1-\pi^L)q, x^*) \geq 0$ gives us the inequality

$$\frac{R}{2k} \geq \frac{2(1-\pi^L)q}{2(1-\pi^L)q + 2\pi^L - 1}\left(1 - (1-\pi^L)q\right) \tag{B.3}$$

which is always satisfied, since the LHS is larger then one by definition, and RHS is smaller then one (remember $0.5 < \pi^L < 1$). If in equilibrium the high-type candidate declares $m^*(\pi^H) = 1 - 2(1-\pi^H)q$, we obtain an equivalent condition which is satisfied. For $m^H > m^*(\pi^H)$, $EU^L(m^H, x^*)$ is decreasing in $m^H$. Therefore, it is sufficient to check individual rationality for $m = 1$. $EU^H(1, x^*) \geq 0$ gives us the inequality

$$\frac{R}{2k} \geq \frac{2(1-\pi^H)q}{2(1-\pi^H)q + 2\pi^H - 1}$$

which is always satisfied, and therefore IR is satisfied for all $m^*(\pi^H) < m^H < 1$.

Finally, if the voters has a cut-off beliefs with $\underline{m} \leq m^c \leq \overline{m}$, and they choose the candidate they believe is more competent, they maximize their utility, since the probability for a high-type candidate to implement the best policy is $q + (1-q)\pi^H$, which is higher then the same probability for the low-type, which is $q + (1-q)\pi^L$. ■

### B.2. Separating equilibrium when rigid declarations are possible but not made

The first is an equilibrium where both the high and low types' candidates make declarations that are not rigid. The equilibrium is basically the same as described in proposition **??**, with an additional condition:

**Proposition 2.** *when $\frac{R}{2k} < 1$ (there are rigid declarations), separating perfect Bayesian equilibria where there are no rigid declarations is possible only when $\pi^L < \pi^H < \tilde{\pi} = 1 - \frac{1}{q}\left(1 - \frac{R}{2k}\right)$. The set of equilibria can be described by $\underline{m} < 1$ and $\overline{m}$ so that:*

1. *Voters' beliefs consist of a cut-off level $m^c$ as described above, where $\underline{m} \leq m^c \leq \overline{m}$.*

2. *The voters' strategy is as described by 3.1*

3. *Less competent candidates* ($\pi = \pi^L$) *declare* $m^L = m^*(\pi^L) = 1-2(1-\pi^L)q$ ($-m^*(\pi^L)$) *if they observed* $s = A$ ($s = B$)*.*

4. *More competent candidates* ($\pi = \pi^H$) *declare* $m^H$ ($-m^H$) *if they observed* $s = A$ ($s = B$)*, where*

$$m^H = \begin{cases} m^*(\pi^H) = 1 - 2(1-\pi^H)q & \text{if } \ m^c \leq m^*(\pi^H) \\ m^c & \text{if } \ m^c > m^*(\pi^H) \end{cases}.$$

5. *If elected, all candidates choose policy according to choice rule* $x^*$ *described in proposition 4.*

6. $\underline{m}$ *is defined using B.1:*

7. $\overline{m}$ *is defined using the following equality:*

$$\overline{m} + \frac{(\overline{m}-1)^2}{4(1-\pi^H)q} = \min\left\{\frac{R}{2k}, \frac{R}{2k}\left(\frac{1}{3}\frac{2\pi^H - 1}{(1-\pi^H)q} + \frac{2}{3}\right) + \frac{1}{3}\left(1-(1-\pi^H)q\right)\right\}. \quad \text{(B.4)}$$

**Proof.** The proof is basically equal to the proof of **??**. The incentive constraints are equal, with one addition to the high-type candidate: since the voters' beliefs are monotonous, then for an $m^c < 1$ a high-type candidate might still declare $m = 1$ and be identified as a high type. Therefore we must add the condition $EU^H(m^H, x^*) \geq EU^H(1, a)$ or $0.75 \cdot \left[(2\pi^H - 1 + 2q(1-\pi^H)R - k\left((m^H-1)^2 + 4(1-\pi^H)qm^H\right)\right] \geq 0.75 \cdot (2\pi^H - 1)R$ which, after rearrangement leads to $\overline{m} + \frac{(\overline{m}-1)^2}{4(1-\pi^H)q} \leq \frac{R}{2k}$. Notice that the condition also entails $m^H \leq \frac{R}{2k}$, so the declarations are indeed in the non-rigid zone.

Adding that condition to the other incentive compatibility condition for $\pi^H$, we obtain the upper bound of $m^c$ and $m^H$ as described by B.4.

The proof for individual rationality also changes only slightly – for the low-type candidate, we obtain the same condition B.3, which still holds since $1-(1-\pi^L)q \leq \frac{R}{2k}$. For the high-type individual rationality is immediate from the additional condition we have just described, since $EU^H(m^H, x^*) \geq EU^H(1, a) \geq 0$. ■

### B.3. Separating equilibrium with rigid declarations

A more interesting result is that when rigid declarations are present, we obtain separating equilibria when the more competent candidate fully commits and is therefore rigid and cannot use any new information once elected, while the less competent candidate commits less, but she is therefore possible to react to new information.

**Proposition 3.** *when $\frac{R}{2k} < 1$ (there are rigid declarations), there exists a separating perfect Bayesian equilibria where the competent candidate makes a rigid declarations and the less competent candidate declares a non-rigid declaration, as described by the following conditions:*

1. *Voters' beliefs consist of a cut-off level $m^c$ as described above, where $\underline{m} < m^c \leq 1$.*

2. *The voters' strategy is as described by 3.1*

3. *Less competent candidates ($\pi = \pi^L$) declare $m^L = m^*(\pi^L) = 1-2(1-\pi^L)q$ ($-m^*(\pi^L)$) if they observed $s = A$ ($s = B$).*

4. *More competent candidates ($\pi = \pi^H$) declare $m^H = 1$ ($m^H = -1$) if they observed $s = A$ ($s = B$).*

5. *If elected, all candidates choose policy according to choice rule $x^*$ described in proposition 4.*

6. *$\pi^L$ and $\pi^H$ satisfy*

$$\frac{\left(1-\pi^L\right)q\left[1-\left(1-\pi^L\right)q\right]}{\left(1-\pi^L\right)q-\left(2\pi^L-1\right)} \leq \frac{R}{2k} \leq \frac{\left(1-\pi^H\right)q\left[1-\left(1-\pi^H\right)q\right]}{\left(1-\pi^H\right)q-\left(2\pi^H-1\right)}. \tag{B.5}$$

7. *$\pi^L$ and $\pi^H$ satisfy*

$$q \leq \frac{\pi^H-\pi^L}{1-\pi^L}. \tag{B.6}$$

8. *$\underline{m}$ is defined using the following equality:*

$$\underline{m} + \frac{(\underline{m}-1)^2}{4(1-\pi^L)q} = \max\left\{\frac{R}{2k}, \frac{R}{2k}\left(\frac{1}{3}\frac{2\pi^L-1}{(1-\pi^L)q}+\frac{2}{3}\right)+\frac{1}{3}\left(1-(1-\pi^L)q\right)\right\}. \tag{B.7}$$

**Proof.** we first need to confirm incentive compatibility for both types. Let us first calculate incentive compatibility for the low-type candidate (we assume that $s = A$. As before, the case of $s = B$ can be proven equivalently):

$EU^L(1-2(1-\pi^L)q, x^*) = 0.25\cdot\left[(2\pi^L-1+2q(1-\pi^L)R-4k\left((1-\pi^L)q-(1-\pi^L)^2q^2\right)\right]$.

$EU^L(1, a) = 0.75\cdot(2\pi^L-1)R$.

$EU^L(1-2(1-\pi^L)q, x^*) \geq EU^L(1,a)$ can be rewritten as the left inequality of B.5. Incentive compatibility for the $\pi^H$ type is attained by $EU^H(1-2(1-\pi^H)q, x^*) \leq EU^H(1,a)$, which leads to the right part of B.5. Individual rationality is the same as was calculated in the proof for proposition **??**.

There other two constraints are a result of the voters' beliefs and behavior. First, the cut-off in voters' beliefs should be high enough so low-type candidates will not want to deviate up to $m = m^c$ from their natural declaration. This lower bound is stated in B.1. In addition, it should be high enough so high-type candidate would not want to deviate down to $m = m^c$ from $m = 1$. This is exactly the complementary to the condition in proposition **??**, or $\overline{m} + \frac{(\overline{m}-1)^2}{4(1-\pi^H)q} > \frac{R}{2k}$. The conjunction of these conditions leads to lower bound described in B.7.

The final constraint demands that selecting the most competent candidate will be preferred by the voters. The voters' goal is to maximize the probability that the best policy will be chosen. This probability for the high-type candidate is $\pi^H$, since this type is rigid, and therefore depends only on the quality of her first signal. The probability for the low-type candidate is $(1-q)\pi^L + q$. We therefore have the condition $\pi^H \geq (1-q)\pi^L + q$ which leads to B.6. This completes the proof. ■

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