

Social Identity, Political Speech, and Electoral Competition

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Much research in political science suggests that social identity can be an important factor in motivating behavior. If voters care about social identity, when will politicians find it in their interests to make group-based appeals? Do social identity concerns affect the policy platforms offered by candidates? In a model of political speech and electoral competition, in which voters care about both social identities and policy, we demonstrate that social identity concerns can lead to platform divergence even when the policy dimension is uncorrelated with identity. Further, the need for candidates to resort to group-based appeals depends on such factors as the relative sizes of social groups; the policy preferences of group members; whether candidates care about policy and if so, their preferred policies; and the extent of individual identification with groups. The analysis demonstrates that social identity can have a striking impact on the strategic conduct of campaigns.

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1 Introduction

“Issues are important, but they are not as important as the fact that this is an opportunity to vote for one of your own.”

Tony Sanchez, Democratic candidate for governor of Texas, September 2001.

“Buri ’mbuzi aha nkoondo yaayo” (“every goat at its stump” meaning every Mwiru vote for a fellow Mwiru).

Campaign slogan for Patrick Buriiku, local elections in Kampala, Uganda, April 1998.

Why do candidates in democratic elections sometimes make campaign appeals to voters’ social identities? When and where are such political speeches most likely to be made? Answers to these questions are central to understanding the dynamics of electoral competition, as well as the connection between democracy and social conflict, in many societies. But the formal literature on electoral competition offers few, if any, insights into either question. Generally, candidates are assumed to compete for votes by announcing positions on the policies that voters care about or else by offering voters direct or indirect monetary transfers. Aside from making such information known, these accounts suggest no reason that politicians would give speeches generally or engage in group-based rhetoric in particular. In contrast, the empirical literatures on public opinion, voting behavior, and campaigns, along with insights from psychology and sociology, suggest that social identity can provide an important motivation for vote choice. Thus, a simple answer to the first question is that candidates seeking office can have an incentive to make group-based appeals because such appeals can attract votes. This is, however, an incomplete answer, and the existing literatures do not persuasively address the second question concerning the conditions under which rhetoric will be observed. To answer both questions requires a strategic analysis of electoral competition; politicians’ incentives to engage in group rhetoric are determined not only by the social identity interests of voters but also by the strategies of competitors and the structure of electoral competition.

This paper sheds light on both questions by introducing two innovations to standard game-theoretic models of electoral competition. First, we specify a utility function for voters that depends both on policy outcomes and on identity-related payoffs. Second, we explicitly model candidates' strategic use of political speech in their election campaigns. Following a substantial empirical and experimental literature, we argue that political speeches and advertisements can affect identity payoffs by *priming* the salience of identity in the context of a given election, thereby varying the strength of behavioral prescriptions associated with membership in social groups. In our model, competing candidates must decide not only what policies they will announce, but also the level of group rhetoric they will employ.

These two innovations allow us to study the effects of voter social identities on candidates' strategic position-taking and speech-making behavior. In the context of our model, social identity appeals by a candidate can be thought of as a defensive tactic that serves to shore up support among members of favorably disposed social groups. The effect of such identity appeals is that a voter no longer responds continuously to small differences between candidate platforms. Rather, a voter sticks with the candidate favored by her social group until the difference between platforms exceeds some threshold magnitude that is increasing in the intensity of group-based rhetoric. That is, using political speech, politicians are able to give themselves a valence advantage with voters from favorable social groups. A natural result is that it never hurts competing candidates to engage in maximal group rhetoric, at least so long as political speech is costless. Empirically, however, elections exhibit widely varying levels of group rhetoric. Our model demonstrates that politicians' level of *need* for the group-rallying effect of identity-related speech, and therefore the existence of equilibria with lower group rhetoric, depends on various factors, such as social group size, the policy preferences of group members, whether candidates care about policy and if so, which policies they prefer, and the extent of habitual social group identification among voters. As such, the analysis suggests under what conditions

varying levels of group rhetoric are most likely to be observed.

The paper contains four additional sections. Section 2 motivates the analysis by discussing relevant literature on identity-related voting behavior. Section 3 presents a model of electoral competition in which candidates make speeches that appeal to voters' social identities, thereby potentially affecting voting behavior. We discuss equilibria of the model and demonstrate the ways in which various factors affect the potential for lower levels of identity-related rhetoric. Section 4 discusses several cases from US and Caribbean politics that illustrate the logic of the model. The final section contains a summary of the results and a discussion of possible extensions.

2 Identity-Related Behavior and Elections

Virtually all of the seminal empirical work on voting emphasizes the importance of one type of social identity or another for explaining why citizens cast the ballots that they do (e.g. Lazarsfeld, Berelson, and Gaudet 1944; Berelson, Lazarsfeld, and McPhee 1954; Campbell, Converse, Miller, and Stokes 1960; Lipset and Rokkan 1967). The social categories commonly thought to be important for vote choice include class, religious, linguistic, ethnic, and partisan groups. Different contributions emphasize the importance of different social categories and there is often a recognition that in some political environments multiple categories appear to influence individual voting decisions. Nonetheless, there is considerable consensus about the importance of social identities generally. The empirical foundation of this consensus largely derives from the correlations between social category membership and vote choice found in survey data.

The interpretation of these correlations, however, is highly contested. On this question there are two main schools of thought. The first is that the correlation between social group membership and vote choice simply reflects the extent to which individuals in the same social groups have similar policy interests (e.g. Bates 1974; Rabushka and Shepsle 1974). The extreme version

of this view is that social identity is epiphenomenal, playing no independent role in motivating behavior once individual policy preferences are taken into account. An alternative perspective holds that individuals develop psychological attachments to social groups (e.g. Horowitz 1985) and that the correlation between social group membership and vote choice is heightened by these attachments. In this view, the act of voting is at least in part expressive rather than instrumental, and identity is a direct and central causal determinant of political behavior.

It is well beyond the scope of this paper to review the theoretical and empirical merits of these two interpretations. In our view, both the rational-choice policy-based and psychological identity-related research traditions contain valuable insights into voter behavior. As such, we develop a model that explores the consequences for the strategic conduct of campaigns if indeed voters are, at least in part, directly motivated by their social identities.

To incorporate identity-related voting behavior into a model of electoral competition, it is necessary to alter standard formulations of voter utility in a manner consistent with basic empirical findings about the role identity plays in motivating behavior. We follow Akerlof and Kranton (2000) by adopting a utility function with the following general form:

$$U_i = U_i(\mathbf{a}_i, \mathbf{a}_{-i}, I_i) \tag{1}$$

where individual i 's utility depends on her actions, \mathbf{a}_i ; on the actions of other individuals, \mathbf{a}_{-i} ; but also, unlike in standard models, on i 's identity or self-image, I_i . The Akerlof-Kranton model of identity is based on the assignment of social categories. Individuals place themselves and others in society in some finite set of categories, \mathbf{C} . Let \mathbf{c}_i be a mapping for individual i assigning the set of all individuals, \mathbf{F} , to categories in \mathbf{C} ($\mathbf{c}_i : \mathbf{F} \rightarrow \mathbf{C}$). Crucially, social categories may be associated with *behavioral prescriptions* \mathbf{P} , which are sets of actions (or characteristics) deemed appropriate for individuals in given social categories. Finally, individuals are endowed with basic characteristics, ϵ_i , that are not *a priori* assumed to be correlated with social categories.

Identity payoffs are then represented as:

$$I_i = I_i(\mathbf{a}_i, \mathbf{a}_{-i}; \mathbf{c}_i, \epsilon_i, \mathbf{P}) \quad (2)$$

In the Akerlof-Kranton framework, a person’s identity depends on his or her social categories assigned by \mathbf{c}_i , which may be exogenous and fixed or endogenously chosen. Identity is also allowed to be a function of the extent to which an individual’s own characteristics, ϵ_i , match any ideal characteristics, defined by \mathbf{P} , associated with the social categories to which he or she is assigned. Most relevant for us, identity payoffs may also depend on the extent to which an individual’s own actions, \mathbf{a}_i , and the actions of others, \mathbf{a}_{-i} , correspond to the behavioral prescriptions for social categories, also defined by \mathbf{P} . The violation of prescriptions associated with social categories is thought to generate anxiety and thus identity losses.¹

The model of identity formalized in Equation 2 is based on the key principles of social identity theory (Tajfel and Turner 1979, 1986; Tajfel 1981; Turner 1984). Individuals are understood to have a sense of self or ego that is defined on both an individual and collective basis. The construction of the self involves a process of identification in which one associates oneself with others in one’s social categories and differentiates oneself from nonmembers. To the extent to which social rather than personal identity is salient, self-esteem, understood to be a central motivation of behavior, is substantially determined and maintained by individuals’ social settings and the categories or roles they fill in that environment.

In section 3, we adapt this framework to the context of voter behavior in the following ways. An individual voter must decide how to cast her ballot (\mathbf{a}_i) given the policy platforms of candidates (\mathbf{a}_{-i}). With respect to social identity, we assume that the mapping of social

¹We therefore take the position that individuals internalize relevant group prescriptions, and that the identity issues in question are therefore psychological in nature rather than a result of external enforcement.

categories (\mathbf{c}_i) is exogenous and fixed, that it is commonly held, and that it partitions the voter population, so that each member of the public is unambiguously affiliated with a single social group, both in her mind and in the minds of all the other actors.² We will take the same to be true of candidates: each candidate will be unambiguously affiliated with exactly one social group (and each social group will be represented by exactly one candidate). Finally, we will suppose that for each social group there exists a behavioral prescription \mathbf{P} instructing voters to support their group's candidate. Those that fail to do so will suffer identity losses that reflect psychological anxiety generated by deviating from internalized behavioral prescriptions. While the prescriptions themselves are internalized, the extent of the identity losses resulting from a violation of the prescriptions are endogenously determined by elite appeals to voters.

In our model, the mechanism by which politicians appeal to voters' social identities is political speech. Typical studies of the ways in which speeches, advertisements, and other forms of communication affect voter behavior can be usefully organized into three main categories. First, political campaigns may inform and persuade voters (see e.g. Popkin 1991; Mutz, Sniderman, and Brody 1996; Lupia and McCubbins 1998). Such speech can resolve uncertainty about how a policy or candidate alternative will impact an individual's or group's welfare. A second view of political campaigns is that messages are an effective coordinating device in elections. To the extent that elections are accurately depicted as strategic situations marked both by conflict and by incentives to coordinate, political communication may reduce the incidence of coordination failures (Cox 1997), but not necessarily inform or persuade voters about the desirability of candidates. Finally, campaign communications may prime voters about particular

²Obviously, the relevant social categories (\mathbf{C}) for political competition in the real world are in part endogenous and a matter for contestation. An important set of extensions to our model would be to investigate the consequences of endogenous social categories. See Bawn (1999) for an insightful analysis of endogenous coalition formation relevant to this extension.

issues or candidates (e.g. Iyengar and Kinder 1987, Zaller 1992, Mendelberg 2001). Speeches and advertising may affect what voters think about without actually introducing new information. Influencing the salience of particular considerations affects voting choices by determining the criteria individuals use to make political decisions.

How best to understand the impact of social identities on the key characteristics and effects of political communications is not altogether clear. A number of scholars have focused on identity as providing informational cues (see e.g. Brady and Sniderman 1985; Chandra 2000; Posner 2001; Ferree 2002). Other scholars have argued that campaigns prime voters about identity politics (e.g. Lazarsfeld, Berelson, and Gaudet 1944; Berelson, Lazarsfeld, and McPhee 1954; Kinder and Sanders 1996; Metz and Tate 1995; Mendelberg 2001; Wilkinson 2004) by making it more likely that voters will use social identity as a consideration when they cast their ballots. In the context of US politics, many scholars have argued that elections become racialized when voters are primed about the political relevance of black and white groups, whether explicitly through the discussion of race or implicitly through the discussion of issues like crime that may have developed racial meanings for some voters (Metz and Tate 1995, Mendelberg 2001). The key point is that in this framework campaigns are not thought to make individuals more or less liberal about various social identity concerns but rather to activate or to fail to activate their predispositions about those concerns in deciding for whom to vote.

We model political communication as changing the costs of violating existing prescriptions for particular social identities.³ Identity payoffs are reduced for voters who cast votes counter to

³We do not model at least two important ways in which political communication might interact with social identity. First, candidates and parties are likely to want to construct political identities. Individuals typically have various social identities which can be induced to be politically relevant, in part through political speech. Although an important subject in the politics of identity, this type of political communication may be of only limited use in the

group norms because of the anxiety generated by violating the behavioral prescription. Political speeches and advertisements affect identity losses by priming the salience of identity in the context of a specific election. Given the importance attributed to priming effects generally in empirical studies of political communications, we suggest that this particular interaction between social identity and political speech is both prevalent and effective. Consequently, it is this interaction, in the context of a game-theoretic model of electoral competition, that forms the core of our model in the next section.

3 A Model of Social Identity Appeals in Elections

We consider electoral competition within a divided society under a first-past-the-post electoral system. The voter population we consider is partitioned into two distinct categories \mathbf{C} , indexed by j , to be labelled A and B. Two candidates seek office: Candidate A, who comes from group A, and Candidate B, who comes from group B. (Thus we use j to index candidates as well.)⁴

The sequence of events in the election game is as follows. Candidates A and B simultaneously choose an election strategy. For each candidate j , an election strategy consists both of a policy platform x_j , selected from the one-dimensional space \mathbf{X} of policy alternatives, as well as a campaign message $m_j \in [0, \bar{m}_j]$, a measure of how strongly politician j chooses to prime the social identity sentiments of the voters in her group. Candidate strategies will be denoted by ordered pairs, i.e. (x_j, m_j) . Voters then cast their ballots in a way that is consistent with

 context of a single election campaign, since social identities are habitual and are unlikely to be easily manipulated over short time scales. Second, candidates and parties are likely to want to manipulate the prescriptions that accompany identities. Campaigns may inform voters which candidate represents their social category (see e.g. Ferree (2002) and Chandra (2000)).

⁴As indicated above, we take the partition of voters between the two social groups, as well as the social group affiliations of the candidates to be both fixed and commonly known.

maximization of their (identity-related) utility functions.⁵ The votes are then tallied, a winner is declared, payoffs are distributed, and the game ends.

As indicated in Section 2, we adapt the social identity utility function described by Akerlof and Kranton (2000) to describe the mixture of policy and identity concerns faced by voters. In particular, we model voter utility functions according to the simple form $U_i(\mathbf{a}_i, \mathbf{a}_{-i}, I_i) = W_i(\mathbf{a}_i, \mathbf{a}_{-i}) + I_i$, where W_i represents a voter's utility over policy outcomes. Specifically, each voter i , regardless of her group membership, is assumed to have a policy ideal point x_i^* on a single policy dimension \mathbf{X} , with all $x_i^* \in [0, 1]$.⁶ The voter's policy utility W_i for a policy outcome x will be assumed to take on the form $W_i = -|x - x_i^*|$. It will prove convenient to denote the distributions of voter ideal points within groups A and B as $a(x^*)$ and $b(x^*)$ respectively.

The identity-related component of voters' utility functions is derived as follows. It is assumed that each voter faces a behavioral prescription \mathbf{P} instructing her to support the candidate from her own group. A voter i who obeys this prescription receives an identity payoff that is normalized to $I_i = 0$. On the other hand, a voter i from group j who fails to obey this prescription receives an identity payoff equal to $I_i = -f_j - m_j$ where $f_j \in [0, \infty)$ is a group-specific fixed value representing the innate (unprimed) intensity of group sentiment while m_j is the campaign message chosen by the candidate from the voter's own group.⁷ These identity payoffs represent the psychological anxiety generated by deviating from internalized behavioral

⁵Formally voter strategies are a mapping $\sigma_i : ((x_A, m_A), (x_B, m_B)) \rightarrow \{A, B\}$.

⁶Note that we make no *a priori* assumptions about the degree, if any, to which policy preferences and group membership are correlated. As such, our framework is able to examine both situations in which different social groups have highly polarized preferences, as well as those in which group membership and policy views are totally unrelated.

⁷Later, we discuss the implications for our results of an alternative specification in which voters' social identities are also primed by campaign messages from the *other group's* candidate.

prescriptions of group membership.⁸ While the prescriptions themselves are internalized, the extent of the identity losses resulting from a violation of the prescriptions are endogenously determined by elite priming of voters.

One essential feature of the identity-related utility function used here is that voters are influenced, but not necessarily defined by, their social identities—they remain free to violate the prescriptions relevant to individuals within their social categories. Whether or not they will do so depends on the relative costs and benefits of such an action. We believe that this picture accords well with reasonable intuitions about the ways in which identity is likely to influence decision makers in the real world and allows for a novel analysis of campaign dynamics when policies and social identities both matter.

In the following two subsections, we will consider electoral dynamics under two separate assumptions about candidates' motivations. First, we consider vote-maximizing politicians;

⁸We model voters as feeling the influence of social prescriptions and being non-strategic in their vote choice because we believe this to be a relatively realistic depiction of voters. If we had modeled voters as feeling the influence of social prescriptions while being fully strategic, an additional complication would have arisen in some circumstances: a free-rider problem in which voters would not want to bear the identity cost of voting for a policy-preferred out-group candidate unless they were pivotal. It is worth noting a variation of our story in which fully strategic voters would behave in the same way as the doubly-behavioral voters we describe. If, rather than suffering a prescription-based cost attached to the act of voting for an out-group candidate, voters' utility functions contained a standard valence gap of equal magnitude attached to the outcome of in-group versus out-group candidates winning, then it would be a (weakly) dominant strategy for fully strategic voters to vote their true preference—and therefore, to make the same choices that our doubly-behavioral voters make. As such, the formal analysis in the paper holds for both interpretations of voter behavior.

then, we allow candidates to care about both policy and winning.

We begin, however, by demonstrating a result common to both settings. For simplicity of exposition, our theoretical presentation focuses on a world in which the strongest possible identity message, \bar{m} , is fairly large. In particular, we will make repeated reference to the following condition:

Condition 1. When Identity Messages Can Completely Overwhelm All Policy Considerations. $\bar{m}_A > 1 - f_A$ and $\bar{m}_B > 1 - f_B$.

When this condition is satisfied, politicians are able to induce sufficient identity sentiment that they are capable of inducing members of their groups to support them regardless of the tradeoff between candidates' policies. This is clearly a strong assumption, but the comparative statics we discuss remain broadly unchanged when the assumption is lifted. Because the more general case adds considerable analytical difficulty without contributing much intuition, the exposition we present here assumes Condition 1 to hold.⁹

The first proposition demonstrates that Condition 1 is a sufficient condition for maximal group rhetoric to be used in equilibrium speech patterns.¹⁰

Proposition 1. Maximal Group Rhetoric. Suppose that Condition 1 holds. Then, when candidates are vote maximizers, the set of equilibria includes every strategy pair $((x_A, \bar{m}_A), (x_B, \bar{m}_B))$, for all $x_A \in \mathbf{X}$ and for all $x_B \in \mathbf{X}$. When candidates' preferences have some policy component,¹¹ then the set of equilibria always includes the strategy pair $((x_A^*, \bar{m}_A), (x_B^*, \bar{m}_B))$.¹²

⁹A supplemental appendix posted on the authors' websites addresses this more general case. We comment on these generalizations for a few selected results in the paper.

¹⁰The proofs of all the Propositions and Corollaries are contained in the Appendix.

¹¹Our formalization of candidate utility functions with policy interests appears in the subsection "Policy-Oriented Candidates."

¹²When Condition 1 does not hold, equilibria sometimes exist and sometimes do not, but the existence of maximum-rhetoric equilibria is a necessary condition for the existence of lower-rhetoric equilibria.

For vote-maximizing candidates, when the strongest possible identity messages are sufficiently strong, it is always an equilibrium for both players to choose them. This has strong consequences for the set of equilibrium platforms. Unlike the familiar arguments about convergence to the median voter in the standard vote-maximizing model of two-candidate electoral competition, here multiple equilibria are possible because social identity coarsens voters' responses to policy differences. As long as candidates are sufficiently close together on policy relative to the strength of identity appeals, it may be that a candidate cannot improve her vote share by switching to a new platform. For example, a precondition for winning support from her opponent's social group is that she must differentiate herself enough on policy to overcome her identity valence disadvantage among those voters. But if that valence disadvantage, as affected by political speech, is large enough, then the only policies offering enough differentiation might be extreme or otherwise unattractive ones. In the limiting case when Condition 1 holds, equilibria exist corresponding to the selection of *any* pair of policy platforms.

This insight also has interesting implications when politicians care about policy as well as winning. Appeals to social identity give politicians a measure of “policy slack,” or an ability to pursue candidate-preferred policies that might diverge from group members' interests, because social identity and policy outcomes are substitutes in voters' utility functions. In the limiting case of Condition 1, so much “policy slack” exists that candidates can always pursue their privately most-preferred policies in equilibrium.

In addition to multiple equilibria involving different policy platforms, the existence of multiple equilibria in campaign messages are a nearly ubiquitous feature of our model. These can be conceptualized in the following way. In a given strategic setting, candidates may “need” differing amounts of campaign rhetoric in order to achieve their objectives; a candidate who wishes to maximize vote share may need to employ a certain amount of rhetoric to maximize her share of in-group support, while a candidate who cares about policy may need campaign messages

of a certain strength to win majority support for her favored campaign platform. These needs define a *minimum* level of group rhetoric that can sustain electoral equilibrium for given policy platform pairs. Because we do not model costs to political speech, additional levels of rhetoric beyond the minimum do not cost the candidate anything, but they do not gain the candidate anything either. As a result, it is typical that a range of equilibrium messages exists including all intensities of speech between the minimum level and the maximum feasible level.

Such multiple equilibria naturally have consequences for predictions about political rhetoric. The equilibria in the model are consistent both with a world in which all candidates make maximal identity appeals all the time, as well as with a world in which all candidates deliver minimum equilibrium messages. In the former case, the comparative statics results would not appear at all in data; in the latter case, they would come across strongly. However, as a practical matter we believe that political speech in the real world, unlike the speech in the model, is costly; catching the attention of relatively inattentive mass publics requires the use of scarce campaign resources, and unlike the simple voters in our model, some members of the public may have a distaste for “empty” — that is to say, non-policy-based — political rhetoric.¹³ In some settings, political speech by a candidate might also have the undesired effect of priming the social identity of the *other* group.¹⁴ As such, we believe that, in most circumstances, politicians are likely to

¹³We have chosen not to include costs to speech as an explicit part of the model because there is no non-arbitrary way of doing so, and because such a move would complicate the model without adding much insight or substantially changing the qualitative findings. Readers for whom this is unsatisfying may consider as an example a cost function $C_j = \epsilon m_j$, where ϵ is some small value. It is easy to see that, in the presence of such costs, the use of any campaign message above a minimum necessary level constitutes a dominated action, and that the set of equilibrium messages will in most circumstances collapse to a single value near the minimum level that we calculate in our model without costs.

¹⁴Suppose for example that $I_i = -f_j - m_j - \theta m_{-j}$, where m_{-j} is the identity message delivered

use the minimum amount of group-based rhetoric that can get the job done. We therefore expect that comparative statics on the minimum equilibrium rhetoric will be empirically evident.

With these intuitions in mind, we now proceed to more detailed consideration of electoral dynamics under two distinct assumptions about candidate motivation.

Vote-Maximizing Politicians

The following proposition addresses the outcomes of elections with vote-maximizing politicians.

Proposition 2. Census Elections. When Condition 1 holds, all equilibrium strategies in the vote-maximizing case result in all voters casting their ballots for the candidate that is a member of their social identity group.¹⁵

by the candidate from the other group and $\theta \in (0, 1)$ is a weighting parameter. Depending on context, θ can be thought of as reflecting information about the relative psychological impact of messages from different sources, or as a technological variable reflecting how precisely politicians can aim their messages at target audiences. In a given strategic setting, each candidate has a level of need for group rhetoric in order to do as well as she can in equilibrium. It is easy to see that the value of θ affects the minimum level of equilibrium rhetoric; the higher the value of θ , the more a given candidate's speech primes the counterpart group's social identity and "does her opponent's work for her," so that the overall level of rhetoric decreases. At the same time, candidates' level of need for rhetoric, in terms of the value of identity payoffs they need to induce in voters to do the best they can in equilibrium, remains fixed, determined by underlying aspects of the strategic interaction. It is therefore intuitive that the comparative statics of the $\theta = 0$ model in the paper, which describe the effects of different variables on this level of need, broadly hold when $\theta \in (0, 1)$; for fixed θ , all other things equal, more need leads to more rhetoric. Since a model with nonzero θ involves substantial technical complications without significantly affecting our main qualitative results, we consider only $\theta = 0$ throughout the rest of the paper.

¹⁵Even when condition 1 does not hold, each candidate still receives a vote share equal to her group's fraction of the total population in every equilibrium. Now, however, "crossover" voters

Without specifying the details of the candidates' strategies, Proposition 2 yields an unsurprising conclusion: when identity appeals have the potential to be very influential, politicians will take advantage of this opportunity, and the resulting electoral contest will effectively be a census election, in which every voter supports the candidate from her own group.

This result, however, says little about the *amount* of group-based rhetoric that might be *necessary* for politicians to employ in order to maximize support in equilibrium. For the analytically simple case when Condition 1 holds, the following proposition answers this question, and demonstrates the effects of different parameters of the model, such as the distributions of voter preferences, on the answer. While the technical details differ in the absence of Condition 1, the basic conclusions about comparative statics remain unchanged.

Proposition 3. Minimum Group Rhetoric for Vote-Maximizing Politicians. When Condition 1 holds and when politicians maximize vote share, an equilibrium with policy profile (x_A, x_B) exists when $m_A > \underline{m}_A$ and $m_B > \underline{m}_B$, where

$$\underline{m}_A = \max(0, \max(|x_A - x_A^{\min}|, |x_A - x_A^{\max}|) - f_A) \quad (3)$$

$$\underline{m}_B = \max(0, \max(|x_B - x_B^{\min}|, |x_B - x_B^{\max}|) - f_B) \quad (4)$$

and x_j^{\min} (x_j^{\max}) is the minimum (maximum) x^* for members of group j .

The proposition provides insight into the factors affecting the minimum level of group rhetoric that can be observed in equilibrium. The following corollaries elaborate on these.

Corollary 3.1. For vote-maximizing politicians, minimum group rhetoric (\underline{m}_j) weakly decreases as innate group attachment (f_j) increases.

may exist. Of course, many real elections do not result in census-style outcomes. This may reflect the presence of politician policy interests, considered later, or the violation of one of the simplifying assumptions of the model, such as the partition of the population into clear social groups or the homogeneity of social identity identification within given groups.

One factor that plays a straightforward role in determining the range of equilibrium messages is the extent to which individuals have internalized the behavioral voting prescription independent of candidates' campaign messages. This factor is parameterized in the model by f_j —the exogenous group-specific element of the identity cost parameter. The function in Equation 3 of Proposition 3 for the minimum message necessary to generate an equilibrium is everywhere decreasing in f_A (the relation is of course the same for \underline{m}_B and f_B). This result means that the more important group identity is to an individual's sense of self and the more clear that a particular vote is a central aspect of group membership regardless of any behavior on the part of candidates, the less group-based rhetoric necessary for a candidate to ensure he or she receives all of a particular group's votes.

The following corollary details the dependence of minimum group rhetoric on voters' preference distributions as well as on the policy platforms selected by politicians:

Corollary 3.2. For vote-maximizing politicians, minimum group rhetoric (\underline{m}_j) weakly decreases as the range of group preferences decreases, and as the policy platform moves from the fringes towards the center of the range.

The distributions of policy preferences within groups, as well as the locations of candidates' policy platforms relative to these, also influence the range of equilibrium messages. Because the functional dependence on these variables in Equations 3 and 4 involves the maximum values of sets of expressions, an incremental change in any parameter may or may not have any effect on the range of equilibrium messages, depending on the details of the other parameter values. However, it is possible to make general statements about the directions of effects when they do occur. First, the minimum message required for equilibrium for a candidate from a given group will tend to increase as the preferences of his group's membership become more diffuse, since the expression is weakly decreasing in x_j^{min} and weakly increasing in x_j^{max} . This result is interesting as it indicates that group-based rhetoric may often be used to keep coalitions of voters with diverse policy preferences in line even when politicians care neither about policy nor about

identity. Second, the smallest equilibrium message will decrease the closer the candidate’s policy announcement is to the midpoint between x_j^{min} and x_j^{max} . This point, of course, corresponds to the median voter for symmetric distributions. We will revisit this result in our discussion of the model in which candidates care about policy, for which it is much clearer what equilibrium policy announcements will be.

One extension of the vote-maximizing framework is to investigate the effects on electoral equilibrium of a population of “independent” voters who remain unmoved by any candidate appeals to identity, but instead care only about policy outcomes. The most dramatic effect is straightforward. When Condition 1 holds, any positive population fraction of independent voters—no matter how small—leads to the elimination of most of the multiple policy equilibria described above. The presence of identity effects in a given voter’s utility function coarsens that voter’s response to differences in policy between the candidates in the manner already described. When all voters’ responses are coarsened in this way, vote-maximizing politicians’ incentives to choose one policy over another nearby policy are similarly coarsened. However, when independent voters are present, the return to vote-maximizing politicians is again sharply sensitive to the precise policy advocated. Under Condition 1, the separation that takes place in the way candidates pursue their divergent pools of potential support is total: politicians attract members of their own group with appeals to identity, but they influence the vote choice of independents by choosing policy. As a result, the distribution of policy preferences within the candidates’ own groups is irrelevant to the policies chosen in equilibrium. Instead, all equilibria involve the selection of the ideal point of the median *independent* voter as the platform of both candidates. Multiple equilibria can still exist, but only because different candidate messages can usually sustain the equilibrium level of in-group support.

The introduction of independent voters also has a more subtle effect on the minimum level of rhetoric that can be observed in equilibrium.

Remark 3.1. For vote-maximizing politicians, minimum group rhetoric (\underline{m}_j) weakly

decreases as the population fraction of independents increases.

Recall that the equilibrium platform pair when vote-maximizing politicians court an electorate including any number of independents is (x_{med}^*, x_{med}^*) , where x_{med}^* is the ideal point of the median independent voter. Consider the incentives of candidate A in choosing a message to send. When no independents were present in the population, candidate B would have nothing to lose by choosing any arbitrary out-of-equilibrium platform, so long as she employed a strong enough identity appeal to afford her the necessary policy slack. As such, candidate A had to give a sufficiently strong speech to keep all of her group's members in the fold in order to deter such deviations from equilibrium. When independents are present, however, the incentives faced by candidate B are different. In particular, any movement away from the equilibrium platform x_{med}^* will result in a loss of support from independent voters. Because of this, there is now a tradeoff that did not exist before: in order for a deviation from equilibrium to be worthwhile, the deviation must bring in sufficient new support to offset the independents who would be lost in deviating. This means that candidate B will no longer be willing to deviate to *any* out-of-equilibrium platform. Depending on the spatial extent of group A's preference distribution, it may therefore be the case that candidate B will not find it worth her while to try to attract certain sections of the A population to her cause. This has a consequence for the behavior of candidate A as well: she may no longer have to worry about securing the votes of some of her group's members using political speech. Depending on the relative positions of x_{med}^* , x_A^{min} , and x_A^{max} , this will either leave \underline{m}_A unchanged or it will result in a *smaller* value of \underline{m}_A . Thus, the presence of independent voters can lower the minimum equilibrium message. Further, all other things equal, \underline{m}_A will be weakly decreasing in the size of the independent population, because candidate B will require greater returns in A voters to offset the loss of support from independents that she suffers in deviating.

It is particularly noteworthy that the presence of independent voters can have an effect on the political speeches made by candidates in equilibria *even though independent voters completely ignore all political speech* in our model. If independent voters had a distaste for identity appeals, it would be obvious that their presence might give politicians an incentive to tone down their rhetoric. However, independents have no such distaste in our model; instead, it is the case here that their presence can make such speech less *necessary*. After all, identity appeals are basically a defensive tactic in our model. Since independent voters provide an alternative source of potential votes, one's own group members can become a relatively less attractive target for an opponent, and hence they can become easier to defend.

Policy-Oriented Politicians

Although Proposition 1 was presented for both vote-maximizing candidates and politicians with policy concerns, the other formal results discussed thus far have been for the vote-maximizing case. We now turn to the task of characterizing in greater detail the model for politicians who care both about winning elections and about policy.

The election game is exactly as described above, except that candidates are assumed to have the following utility functions (rather than maximizing vote share):

$$Y_j = -|x - x_j^*| + w_j \tag{5}$$

where j is again a candidate index; x is the policy implemented; x_j^* is j 's ideal policy; and w_j is equal to 0 if j loses the election but is equal to some positive value γ_j if j wins.

Voters are assumed to behave exactly as before, so there is no change in the vote share function $V_j(x_A, m_A, x_B, m_B)$. Thus, the probability that a given candidate j wins the election, p_j , can be described by the following function:

$$p_j = \begin{cases} 0 & \text{if } V_j < 0.5 \\ 0.5 & \text{if } V_j = 0.5 \\ 1 & \text{if } V_j > 0.5 \end{cases}$$

Candidates choose strategies by announcing policy positions, x_j , and messages, m_j , to maximize their expected utility. For candidate A,

$$E[Y_A] = p_A(-|x_A - x_A^*| + \gamma_A) + (1 - p_A)(-|x_B - x_A^*|) \quad (6)$$

Candidate B's expected utility is defined symmetrically. We start with a brief reminder of the intuition for the result in Proposition 1 that the set of equilibria always includes the strategy pair $((x_A^*, \bar{m}_A), (x_B^*, \bar{m}_B))$ when politicians' preferences include a policy component.

From the proof of the vote-maximizing case, we know that, assuming Condition 1 holds, if candidate A and candidate B announce \bar{m}_A and \bar{m}_B that each candidate maximizes their vote share V_A and V_B . Since p_A and p_B are non-decreasing in vote share, \bar{m}_A and \bar{m}_B also maximizes each candidate's probability of winning, p_A and p_B , for any values of x_A and x_B . Given that \bar{m}_A and \bar{m}_B ensure that p_A and p_B are at their maximum for any x_A and x_B , each candidate can choose x_A and x_B to maximize her expected utility (Equation 6 for candidate A) taking p_A and p_B as given. Each will choose x_A^* and x_B^* respectively. Thus, the strategy pair $((x_A^*, \bar{m}_A), (x_B^*, \bar{m}_B))$ is always an equilibrium.

As with the vote-maximizing case, we are interested in characterizing the range of equilibrium messages and, in particular, the factors that affect the minimal group rhetoric necessary for an equilibrium. In this discussion, we will assume a uniform distribution for the policy preferences among voters in groups A and B— $a(x^*)$ is uniform on the interval (α_A, β_A) and $b(x^*)$ is uniform on (α_B, β_B) . The following proposition demonstrates the factors affecting the range of equilibrium messages when politicians have policy preferences and a desire to win elections. It also allows for comparisons with the results for vote-maximizing politicians.

Proposition 4. Minimum Group Rhetoric for Policy-Oriented Candidates.

When Condition 1 holds and when politicians care about policy and winning, the

minimum levels of group rhetoric necessary for the existence of an equilibrium are given by

$$\underline{m}_A = \begin{cases} 0 & \text{if } A < 0.5 \\ \max(0, \min(\max(|x_A^* - \alpha_A|, |x_A^* - \beta_A|) - f_A, 1.5|x_A^* - x_B^*| + 0.5\gamma_B - f_A)) & \text{if } A = 0.5 \\ \max(0, \min(\max(|x_A^* - \alpha_A|, |x_A^* - \beta_A|) - \frac{(2A-1)(\beta_A - \alpha_A)}{2A} - f_A, 2|x_A^* - x_B^*| + \gamma_B - f_A)) & \text{if } A > 0.5 \end{cases}$$

$$\underline{m}_B = \begin{cases} 0 & \text{if } B < 0.5 \\ \max(0, \min(\max(|x_B^* - \alpha_B|, |x_B^* - \beta_B|) - f_B, 1.5|x_A^* - x_B^*| + 0.5\gamma_A - f_B)) & \text{if } B = 0.5 \\ \max(0, \min(\max(|x_B^* - \alpha_B|, |x_B^* - \beta_B|) - \frac{(2B-1)(\beta_B - \alpha_B)}{2B} - f_B, 2|x_A^* - x_B^*| + \gamma_A - f_B)) & \text{if } B > 0.5 \end{cases}$$

where $A = \int_0^1 a(x^*)dx^*$ and $B = \int_0^1 b(x^*)dx^*$, the proportion of the population made up of members of groups A and B respectively.

The expression in Proposition 4 provides a number of insights about the factors that affect the range of equilibrium messages when politicians care both about policy and about winning elections. We begin first by comparing these results with the analogous ones for vote-maximizing politicians. Do the different incentives of policy-motivated candidates alter the insights of the vote-maximizing model in important ways?

To begin, the comparative static of Corollary 3.1 concerning the internalization of behavioral voting prescriptions (f_j) remains unaffected when politicians care about policy.

Corollary 4.1. When politicians care about policy, minimum group rhetoric (\underline{m}_j) weakly decreases as innate group attachment (f_j) increases.

When there is an effect, the expression in Proposition 4 for the minimum rhetoric of candidate j indicates that increases in f_j always result in decreases in \underline{m}_j as was the case for the vote-maximizing candidates in Proposition 3.

Other independent variables analyzed in the vote-maximizing case described the distribution of voters' preferences and politicians' policies relative to these. The following corollary demonstrates that the comparative statics developed in Corollary 3.2 are not retained in their most general form, but that analogous comparative statics continue to hold.

Corollary 4.2. For a politician who cares about policy, minimum group rhetoric (m_j) is not always weakly decreasing as the range of her group’s preferences decreases, as in the vote-maximizing case. However, it is weakly decreasing if her group’s preference distribution is linearly compressed about the politician’s fixed policy platform. Similarly, for a politician who cares about policy, minimum group rhetoric is not always weakly decreasing as her policy platform moves from the boundaries toward the interior of her group’s preference distribution. However, it is weakly decreasing in this if the distance between her policy platform and her opponent’s policy platform is held fixed.

The differences in incentives between vote-maximizing politicians and those who care about policy are illuminated by the results concerning group preference distributions. Intuitively, vote maximizers wish to secure as much of their own group as possible—when Condition 1 holds, this will include all group members—so that the extrema of the preference distribution are the only things that really matter in choosing a social identity message. On the other hand, politicians who care only about policy and winning can achieve their ends efficiently by pursuing a minimum winning coalition. Because of this, the details of precisely how many voters are where becomes significant in a way that it was not before, and, depending upon the location of the candidate’s policy and voters’ tastes, shifts in the distribution’s boundaries can lead to pivotal voter types being moved either towards or away from the politician’s preferred policy.

A comparative static analogous to the original one from Corollary 3.2 is recovered when the problem is described a bit differently. If the distribution of voter preferences is linearly scaled about the politician’s fixed platform—that is, if the preference distribution is stretched or compressed, but otherwise maintains its shape, and the politician remains fixed both in policy space as well as relative to her group’s voters—then minimum group rhetoric is weakly decreasing as the range of group preferences decreases. This recovers the original intuition that, all other things equal, politicians leading groups with more homogeneous preferences can have less of a need for rhetoric as a unifying device.

Another type of variable—the relative sizes of politically salient social groups—was irrelevant to candidates’ equilibrium behavior in the vote-maximizing case, but matters when candidates

have policy concerns. The next corollary addresses the effects of group size on identity rhetoric.

Corollary 4.3. When politicians care about policy, minimum group rhetoric (\underline{m}_j) for minority groups is 0, while minimum group rhetoric (\underline{m}_j) for majority groups weakly decreases in the size of the majority.¹⁶

Obviously, the most significant way in which group size matters is stated directly in Proposition 4. Minority, majority, and equal-sized groups all have different conditions determining the equilibrium range of messages. When candidates care a lot about winning (γ is large), it is not surprising that the minimal rhetoric necessary for equilibrium for a given distribution of voters and set of candidate preferences is lower for minority and majority candidates than for the most competitive case of candidates from equal-sized groups. This relationship does not hold, however, when politicians care much less about winning and more about policy.

Corollary 4.3 highlights that among majority groups, the size of the majority can matter. For the majority group case, the function for minimal group rhetoric in Proposition 4 is weakly decreasing in the size of the majority (A or B). Lower levels of group rhetoric may be observed

¹⁶When Condition 1 is relaxed, the relationship between majority group size and minimum rhetoric is retained, but minimum identity messages can be nonzero in equilibrium for minority groups. The intuition is simple. Under Condition 1, majority candidates were always able to win elections with their policy ideal point as their policy platform, simply by issuing a strong group-based message. Without Condition 1, however, majority candidates might not be able to do this, because their maximum feasible message might not be large enough, and their policy ideal point might not represent a winning position. The minority candidate therefore has an opportunity to influence the majority candidate's (winning) policy platform by choosing a platform and speech that the majority candidate could defeat only by choosing a policy platform closer to the minority candidate's own ideal point. In particular, issuing a nonnegative group-based message can aid the minority candidate in doing this by compelling the majority candidate to move further away from her policy ideal point than she would otherwise have to.

as the size of a candidate's majority base grows, because it becomes less essential that all group members stay on board for the purposes of winning an election.

To this point, the analysis has considered comparative statics over a variety of variables for the case of policy-oriented politicians, and has compared these results to those of the vote-maximizing case when appropriate. The series of formal results concludes by examining the direct effects of policy motivations themselves on group rhetoric in the following corollary.

Corollary 4.4. For a given equilibrium pair of policy platforms, minimum group rhetoric (\underline{m}_j) is weakly lower when politicians care about policy than when they are pure vote maximizers. Further, minimum group rhetoric (\underline{m}_j) weakly decreases as the opposing candidate's weight on winning (γ_{-j}) decreases.¹⁷

Does the introduction of candidate policy preferences in place of vote-maximizing assumptions have a direct impact on group rhetoric? The answer to this question is clearly yes if we limit the comparison to a given set of equilibrium policy announcements under each assumption about the motivation of politicians. Specifically, we know that all equilibria in the case in which candidates care about policy will be characterized by policy announcements of x_A^* and x_B^* and that any policy announcements including these can be an equilibrium announcement if candidates are vote maximizers. In the initial comparison, assume that these policy announcements are the same x_A^* and x_B^* . Under this assumption, the minimal rhetoric necessary for equilibrium will be at least as low under the policy preferences assumption as under the vote-maximizing assumption and usually lower. Further, the more politicians care about policy and the less they care about winning elections, the lower will be the levels of group rhetoric necessary in equilibrium.

To see this, consider the three different cases for minority groups, majority groups, and evenly

¹⁷The proof is omitted, but a sketch of the arguments is contained in the following discussion.

We also note that this is the only comparative static for which the authors have not derived an analogous form in the absence of Condition 1.

divided groups in Proposition 4. For the case of minorities, the minimum rhetoric includes no rhetoric at all and so for this subset of cases the assumption that candidates care about policy clearly allows for less group rhetoric. When groups are evenly divided, the expression in Proposition 4 is either equal to or less than the expression in Proposition 3 when the policies announced in equilibrium under both assumptions are x_A^* and x_B^* . Finally, for majority groups, the expression in Proposition 4 is always less than that in Proposition 3 for a given $x_A = x_A^*$ and $x_B = x_B^*$ played in equilibrium. It is critical, however, not to conclude from this observation that the introduction of policy preferences on the part of candidates generally leads to less group rhetoric in equilibrium. While it is weakly true for a given x_A and x_B played in equilibrium, we know that only x_A^* and x_B^* are equilibrium policy announcements when candidates have policy preferences but that the entire policy space is an equilibrium for the case of vote-maximizing politicians. Thus, whether the introduction of candidate policy preferences increases or decreases group rhetoric depends on the policy preferences of the candidates and which of the multiple equilibria under the vote maximizing assumption is selected.

Once we assume politicians have policy preferences, the effect of increasing the importance that candidates give to policy relative to winning elections is less ambiguous. It is clear from Proposition 4 that the minimum rhetoric necessary for equilibrium is weakly increasing in γ_{-j} . This means that the less opposing politicians care about winning elections and the more they care about what policy is implemented (the lower is γ_{-j}), the lower is the level of group rhetoric a candidate needs to use in equilibrium. An interesting aspect of this result is that how much a candidate cares about winning elections relative to policy concerns has no effect on her own range of equilibrium speeches. Rather, it is how much her opponent cares about winning relative to policy that matters.

4 Empirical Illustrations

Given our expectation that candidates will tend to deliver messages toward the lower reaches of the allowed equilibrium ranges, the comparative statics of our model should be evident in descriptions of electoral politics. While a systematic test of the model is beyond the scope of the paper, we discuss three examples illustrating important dimensions of the model in the remainder of this section.

The first prediction we illustrate is that the extent of group-based political communications will vary with the relative size of the identity groups (Corollary 4.3). All else equal, under the assumption that politicians care about policy, we expect relatively more group-based appeals in those cases in which the identity groups are approximately of equal sizes.

Our starting point is to identify a country with a simple plurality system for which there are two equal-sized identity groups. With its African and Indian (subcontinent) populations each constituting about 40 percent of the population and its use of simple plurality in its 36 single member districts for the lower legislature, Trinidad and Tobago is arguably the best example of such a case. For comparison, we selected Belize as it shares a number of characteristics with Trinidad and Tobago but the proportions of the population constituted by its two largest ethnic groups, Mestizos (51 percent) and African-Creole (29 percent), are quite different.

The result in Corollary 4.3 implies that under the assumption that politicians care somewhat about policy, increasing the difference between the size of the two competing identity groups decreases observed levels of group-based appeals in election campaigns. Thus, assuming that Trinidad and Tobago and Belize are similar in other characteristics affecting levels of group rhetoric in campaigns, we expect to observe more of such appeals in Trinidad and Tobago where African and Indian population sizes are virtually equal as compared to Belize for which Mestizos are a clear plurality of the population.

Elections in both countries over the last decade broadly confirm this prediction. Trinidad

has held national elections in 1995, 2000, 2001, and 2002. Two parties, the People's National Movement (PNM) and the United National Congress (UNC), have received well over 90% of the votes in each of these elections. The PNM is historically the dominant party having won all but one election from independence in 1961 leading up to the 1995 contest. This party draws its support primarily from the country's African population. The UNC was formed in 1989 from a faction of a multi-ethnic party, the National Alliance for Reconstruction (NAR), that had managed briefly to replace the PNM in government in the late 1980s. UNC's support is predominantly from the Indo-Trinidadian community. Electoral contests over the last decade have been extremely competitive with no party receiving more than a five percent plurality of the vote or more than a four seat plurality in the legislature. The UNC won control of government in 1995 and 2000 while the PNM held power in 2001 and 2002.

The campaigns during these elections have been marked by substantial levels of group-based appeals. The PNM and UNC both claim to be multi-ethnic parties. Further, there is a reasonably strong albeit not infrequently violated norm against campaign rhetoric that is explicitly intolerant or ethnically divisive. Candidates, nevertheless, engage in group-based appeals by using implicit language in public communications and by employing both explicit and implicit group appeals in the extensive person-to-person canvassing that characterizes the country's campaigns. Ralph Premdas summarizes campaigning in Trinidad and Tobago as "contain[ing] two levels of activity, one an issue-oriented debate and the other a subterranean appeal to communal instincts" (Premdas 1999, p. 332). In these campaigns, it is quite clear to the electorate which party is associated with their ethnic group and that casting a vote for that party is a behavior associated with being a good group member. While parties attempt to undermine this behavioral prescription by recruiting candidates from outside their ethnic base to run in selected electoral districts (typically those constituencies where ethnic composition makes the party uncompetitive), this is generally viewed as ineffective. Premdas notes "not

infrequently, an opposite member of a party's communal base is recruited and that person is often paraded as proof of the party's non-ethnic following. No one is fooled or converted however" (Premdas 1999, p. 338). In this context in which electoral competition is structured broadly along the lines envisioned in our model and the identity groups are approximately of equal size, we observe significant group-based appeals.

In contrast to the Trinidad and Tobago case, group-based political communications in elections in Belize over the last decade have been quite modest. During this period, Belize has held national elections for its 29-member lower legislature in 1993, 1998, and 2003. The two main dominant political parties are the United Democratic Party (UDP), winner of the 1993 election, and the People's United Party (PUP), winner of both the 1998 and 2003 elections. During the post-independence era (1981), the UDP is generally identified with the Creole sector of the population while the PUP is associated with the Mestizo population. The competitiveness of these elections has been somewhat uneven. The 1993 election was extremely close with the PUP receiving slightly more popular votes but the UDP winning a narrow plurality of the seats. In contrast, the 1998 election was a sweeping victory for the PUP in terms of both seats and votes while the 2003 election saw some narrowing of the PUP's advantage.

As was the case for Trinidad and Tobago, these parties compete for votes under conditions in which they are both explicitly multi-ethnic parties but at the same time clearly associated with a particular identity group. Further, as with Trinidad and Tobago, ethnic identity groups in Belize are meaningful social categories that individuals readily ascribe to (see e.g. Premdas 2003, p. 3). Thus, there is a very real potential in Belize for group-based electoral appeals similar to those in Trinidad and Tobago. As noted above, however, the level of such rhetoric in the elections under consideration has been limited. Virtually no explicit appeals are employed by candidates in public forums. Implicit group-based appeals, such as some discussions of immigration and language issues, and explicit appeals in person-to-person canvassing are evident but certainly not

to the extent observed in Trinidad and Tobago. Nigel Bolland summarizes the comparison as “ethnic identities and allegiances are part of the political idiom and currency, but it is striking that ethnicity has never dominated party politics in Belize as it has in Guyana and Trinidad and Tobago” (Bolland 1999, p. 502). This pattern of group-based appeals in Belize and Trinidad and Tobago is broadly consistent with the expectation in our model that there will be more group-based appeals in those cases in which the identity groups are approximately of equal sizes.

The second prediction from the model that we illustrate is the effect of the presence of independents on the extent of group-based political communications (Remark 3.1). Holding other factors constant, we expect there to be less group-based rhetoric as the proportion of independents in the population increases.

To illustrate this effect, we note that in our comparison of Trinidad and Tobago and Belize, the two largest ethnic groups make up 80% of the population in each country and thus these countries have a significant proportion of their populations that are not members of the main identity groups. Consistent with Remark 3.1, we expect that a case for which the two largest groups are of equal size like Trinidad and Tobago but for which there are fewer independents will have even more group-based rhetoric than in Trinidad and Tobago. Similarly, a case for which the largest group has a plurality over the second group of approximately 22 percentage points like Belize but for which there are fewer independents should have more-group based rhetoric in elections than Belize.

A comparison of the British colony of Bermuda to Belize is instructive to illustrate this effect. Bermuda’s population is dominated by blacks that constitute 60 percent of the population and whites that make up about 36 percent. This plurality of 24 percentage points is approximately equal to the difference between the Mestizos and Creoles in Belize but there are significantly fewer individuals that do not belong to the main two groups. Consequently, we expect more group appeals in Bermuda than Belize.

Although Bermuda has held regular competitive elections for a couple of decades, we limit our attention to its most recent elections in 2003 for which the electoral system was single member districts in 36 constituencies with simple plurality determining the winner. This system closely matches both the assumptions of the model and structure of competition in Belize. The election pitted an incumbent Progressive Labour Party (PLP), drawing support primarily from blacks, against the United Bermuda Party (UBP), drawing support primarily from whites, and saw the incumbents win the popular vote by a margin of 52% to 48%.

Levels of group-based appeals in this election while not intolerant or threatening were nonetheless significant. It was the rhetoric of the incumbent PLP, the party of the plurality group, for which group-based appeals were most evident.¹⁸ The PLP reelection campaign was based on emphasizing the party's accomplishments in government and appeals to racial solidarity. The form of these appeals ranged from implicit messages focusing on the party's history as an advocate for blacks' full participation in the political and economic life of the island to explicit messages that instructed voters that casting their ballots was an affirmation of their identity as blacks. The party designated July 24th, the day of the election, "Affirmation Day" and organized several well attended "Affirmation Rallies."

A look at a few examples of the rhetoric at the rallies and in the campaign generally makes it clear that voters were being asked to make an affirmation of their identity with their vote not simply returning an incumbent government to power or making a statement of party loyalty. The party's leader and the country's premier Jennifer Smith told the audience at the campaign's culminating rally that "On November 9, 1998 (date of last election and first PLP win) we liberated ourselves and Bermuda. On July 24, we will affirm that decision" (Greening 2003). PLP Transport Minister Dr. Ewart Brown rallied the same audience with "We must not go

¹⁸The apparent asymmetry in the use of group-based rhetoric in the Bermuda case is also consistent with the predictions of our model. See Corollary 4.3.

back, we must go forward ... Have you ever heard of any people on the planet who have voted their way back onto the plantation?...” (Greening and Johnson 2003). Smith, in an open letter during the week of the election in one of the island’s most read weekly newspapers, wrote “We brought unprecedented passion to putting the Bermudian identity first, as demonstrated by last year’s inauguration of the trans-Atlantic African Diaspora Heritage Trail ... When we meet voters on the doorsteps, they look into our eyes and see themselves. This is what sets us apart.” (Smith 2003). These types of appeals were central to the PLP’s campaign strategy and indicate a clearly higher level of group-based rhetoric than what we have already described for recent elections in Belize. This pattern is consistent with the prediction that increasing independents tends to decrease levels of group rhetoric.

The third and final example illustrates how more diverse within-group policy preferences may increase group-based electoral appeals (Corollary 3.2/Corollary 4.2). For this example, we highlight a common phenomenon in mayoral elections in large US cities.

Arguably the most important policy dimension at stake in many of these elections can be summarized in the conflict between “neighborhoods” and “downtown”. Candidates and voters favoring “neighborhoods” want the city’s budget and urban development priorities to be focused on improving residential areas while those placing emphases on the “downtown” want the city to pursue a pro-business, often pro-tourism, development strategy. Preferences about these alternative policies for urban renewal (as well as the myriad of other policies that are bundled with each approach) are often divided along class lines with middle class and wealthy citizens more likely to favor “downtown” friendly policies.

In US mayoral elections, our model suggests that these policy differences can be an important determinant of observed levels of group-based rhetoric. In cities for which black and white social identities remain politically salient, it is not unusual to observe increases in the group-based appeals of black and white candidates to keep racially defined coalitions together. Black or

white candidates that advocate or are identified with a “neighborhood” development strategy may resort to group-based rhetoric to attract the votes of middle-class blacks or whites that prefer an alternative policy. Of course, candidates advocating “downtown” approaches face the same incentives to retain working-class voters in their social group. The comparative static in our model suggests that, all else equal, the greater the diversity of policy preferences within a group, that is income differences among middle-class and working-class blacks or whites, the greater should be the level of group-based appeals.

One example of this effect can be seen in the differences in the level of rhetoric of white candidates in two highly contested and racially polarized elections in the early 1990s in Memphis and New Orleans. These two southern cities are in part distinguished from one another in their degrees of income inequality among whites. The ratio of income for the 90th percentile to the 10th percentile is 10.26 for whites in Memphis and is 15.44 for whites in New Orleans.¹⁹ Because New Orleans has higher income inequality among whites, the model predicts greater group-based rhetoric by white candidates in New Orleans elections than in Memphis.

In New Orleans 1994, the runoff election was between two liberal Democrats, Marc Morial, a black former state senator, and Donald Mintz, a white businessman and lawyer. The Mintz campaign initiated a significant level of racial appeals in this election. Mintz was widely thought to be responsible for unsigned anti-black and anti-semitic campaign fliers. Despite the fact that an unpaid campaign worker of Mintz was found to be involved in distributing the fliers, because Mintz was Jewish, there remained some ambiguity about the connection—though there is no doubt that Mintz used the fliers to aid his fundraising. Nonetheless, the important point is that the subsequent campaign was dominated by accusations and counter accusations of employing hate speech to gain votes. This discussion about the fliers generated a high degree of racial priming. In the end, Morial won by a margin of 55% to 45% with each candidate receiving an

¹⁹These ratios were calculated using data on household income from the 2000 census.

estimated 90% of the votes in their respective identity groups.

In Memphis 1991, the white incumbent mayor, Richard Hackett, was challenged by Dr. Willie Herenton, a black former school superintendent. Hackett’s campaign was a low-profile approach designed to “contact his supporters without alerting his opponents” (Pohlmann and Kirby 1996). This strategy meant not appealing to voters explicitly or implicitly on the basis of race. This is not to claim there was no racial priming on the part of the Hackett campaign only that it was low and unambiguously lower than the Mintz campaign in New Orleans. It is critical to note that in the Memphis election—won by Herenton by 142 votes—the pattern of voting by race was just as evident as in New Orleans. In fact, most estimates suggest each candidate in the Memphis election received at least than 96% of the vote within their social identity group. The key point for illustrating the effect of preference diversity on levels of group rhetoric is that similar patterns of group-based voting can be induced with less rhetoric the more similar are the policy preferences within a social group.

5 Conclusion

This paper addresses the questions of why and under what conditions candidates for elected office engage in group-based rhetoric. Our approach is to consider the strategic incentives of candidates in a game-theoretic model of election campaigns, in which social identities as well as policy preferences influence vote choice, and candidates appeal to social identities using political speech. In the model, political speech works by priming the salience of social identity among voters, thereby varying the strength of behavioral prescriptions associated with membership in social groups. We show that social identity concerns can lead to platform divergence in equilibrium, counter to the standard median voter result, even when the policy dimension is unrelated to identity. We also demonstrate that the need for candidates to resort to group-based appeals can be expected to vary systematically depending on details of the strategic settings

of given elections, such as the relative sizes of social groups; the policy preferences of group members; whether candidates care about policy and if they do, their preferred policies; and the extent to which individuals identify with groups.

We view these results as constituting a significant step towards a strategic understanding of the role of social identity in elections. At the same time, the analysis is limited in scope and detail by a number of characteristics of our model. Most obviously, we consider only a single electoral structure, involving two candidates, two social identity groups, majority rule, and credible commitments to policy platforms. In future research, we plan to investigate the consequences of alternative assumptions about the structure of candidate competition. The way in which we model the effect of priming on voters' identity payoffs is also simplified. We do not explore the potential consequences of candidates having imperfect control over the impact of campaign messages, nor do we consider the details of the types of messages likely to be used. A final simplification in our framework that should be revisited is the exogeneity of social identity groups. Our study of the interaction between political communication and identity to some extent endogenizes the strength of social identity concerns. But the social categories to which voters feel allegiance are taken as exogenous. It seems reasonable to assume that, in many instances, perceived social categories remain fixed over the course of a single election campaign. Nevertheless, over longer time horizons, political elites have the incentive and capacity to forge political identities for the purposes of electoral competition, and it may be productive to analyze this process in the context of our general framework.

Appendix

Proof of Proposition 1. First consider the case of vote-maximizing candidates. Suppose candidate A sets $m_A = \bar{m}_A$. Voters in group A will of course vote for candidate A if they prefer candidate A's policy to candidate B's policy; they will also vote for candidate A even if they

prefer candidate B's policy to candidate A's policy, so long as $|x_A - x_B| < f_A + \bar{m}_A$.

By Condition 1, $\bar{m}_A > 1 - f_A$. Clearly it must also be true that $1 - f_A \geq |x_A - x_B| - f_A$ because the interval over which the policy space is defined is of length 1. Therefore, $\bar{m}_A \geq |x_A - x_B| - f_A$ and the above inequality for group A voter choice is automatically satisfied. As such, all members of group A vote for candidate A, regardless of candidates' policy platforms. What is the best response by candidate B to a strategy involving the message $m_A = \bar{m}_A$? Since all members of group A vote for candidate A, the best that candidate B can hope for is to win the support of all members of group B. Suppose that candidate B chooses $m_B = \bar{m}_B$. Then by an analysis identical to the above, with roles reversed, it must be that candidate B does win all of the votes of group B members. Thus, player B strategies for which $m_B = \bar{m}_B$ are a best response to player A strategies for which $m_A = \bar{m}_A$, again regardless of the policy platforms chosen.

Because candidates (and groups) are interchangeable, replicating the work done so far with all indices swapped leads to the conclusion that player A strategies for which $m_A = \bar{m}_A$ are also a best response to player B strategies for which $m_B = \bar{m}_B$, yet again regardless of the policy platforms chosen. As such, every strategy pair $((x_A, \bar{m}_A), (x_B, \bar{m}_B))$ is an equilibrium and the part of the Proposition concerning vote maximizing candidate preferences is proved.

In the case of candidates who have some policy component in their preferences, policies still do not matter as far as voters are concerned. As such, candidates are free to choose whatever policies they like, and it will clearly be a (weakly) dominant strategy for them to select their policy ideal points as their policy platforms. This observation about candidate policy choice, combined with the foregoing message analysis is sufficient to demonstrate the part of the Proposition concerning candidates with policy preferences. ■

Proof of Proposition 2. From Proposition 1, it is clear that there exists for each candidate a message that ensures that all of her group's members will vote for her—namely, message \bar{m}_A (\bar{m}_B) for candidate A (B). Consider a strategy pair which does not result in all voters casting

their ballots for the candidate that is a member of their social identity group. Clearly this implies that at least one candidate who is not winning full in-group support is choosing some $m_j < \bar{m}_j$. Such a strategy cannot be a best response within the strategy pair since an alternate strategy involving the same policy and a message $m_j = \bar{m}_j$ would yield the same number of out-group voters, since m_j is irrelevant to them, but a greater number of in-group voters. As such, no strategy pair of this kind can be an equilibrium since at least one of the component strategies does not represent a best response, and the Proposition is proved. ■

Proof of Proposition 3. By Condition 1, it is possible for candidate B to choose m_B sufficiently large that she wins the support of all voters in group B; in fact, Proposition 2 requires her to do so. Further suppose that candidate A announces x_A and m_A such that

$$m_A < \max(|x_A - x_A^{\min}|, |x_A - x_A^{\max}|) - f_A \quad (7)$$

In this event, it is possible for candidate B to set x_B such that some A voters who are outliers within the distribution of A voters will fail to fulfill their social group's prescriptions. To see this, recall that a member of group A will vote for candidate B if $-|x_A - x_i^*| < -|x_B - x_i^*| - m_A - f_A$. Rearranging terms $|x_B - x_i^*| + m_A < |x_A - x_i^*| - f_A$. It is immediate that this inequality will be true for some x_B for at least one voter i in group A if m_A is set so the inequality in Equation 7 is true. If this were to take place, candidate A would not receive the full support of her group's membership, which would contradict the result of Proposition 2. If, however, candidate A announces x_A and m_A such that $m_A > \max(|x_A - x_A^{\min}|, |x_A - x_A^{\max}|) - f_A$, then candidate B cannot choose an x_B that would convince any members of group A to defect. Similarly, it is also true that candidate A cannot choose an x_A that would convince any members of group B to defect if the condition $m_B > \max(|x_B - x_B^{\min}|, |x_B - x_B^{\max}|) - f_B$ holds. These two conditions together define the range of equilibrium messages m_A and m_B for which an equilibrium of the type detailed in Proposition 2 can exist. \underline{m}_A and \underline{m}_B are the lower bounds of this range of

equilibrium messages when these are nonnegative; when either is not, the definition of messages as nonnegative quantities provides a more restrictive lower bound of 0. ■

Proof of Corollaries 3.1 and 3.2. These follow immediately from Proposition 3. ■

Proof of Proposition 4. There are three cases. In the first, a group constitutes a minority of the population. Suppose the minority group is B so that $B = \int_0^1 b(x^*)dx^* < 0.5$. We know from Proposition 2 that there always exists a message such that candidate A of the majority group receives all the votes of group A. Such a message from a candidate of a majority group, along with the announcement of that candidate's ideal policy point, guarantees the maximum possible expected utility, γ_A , from Equation 6. Since this outcome is always possible for the majority candidate A, it will never be an equilibrium strategy for A to allow B's probability of election, p_B , to rise above 0. Thus, the minority candidate B's expected utility is equal to $-|x_A - x_B^*|$ for every strategy (x_B, m_B) she could announce. Therefore, whether or not a given strategy pair is in equilibrium will be determined by A's strategy alone; candidate B's strategy (x_B, m_B) is irrelevant. As such, the minimum rhetoric in equilibrium is zero for minority candidate B. Since this result is completely symmetric for a minority candidate from group A, the same is true in this instance as well.

In the second case, each group equally divides the population, $A = \int_0^1 a(x^*)dx^* = B = \int_0^1 b(x^*)dx^* = 0.5$. Again from Proposition 2, we know there always exists a message such that each candidate receives all the votes of his or her group so $V_A = V_B = 0.5$ and thus $p_A = p_B = 0.5$. Since it is always possible to send such a message, it is not possible in equilibrium for candidates to increase their vote share or probability of election beyond 0.5. A message that leads to this equilibrium vote share and probability of election along with the announcement of the candidate's ideal policy point results in expected utility of $(0.5)\gamma_A + (0.5)(-|x_A^* - x_B^*|)$ for candidate A (and a symmetric expression for B).

The minimal message \underline{m}_A (\underline{m}_B) necessary to obtain the equilibrium expected utility for this

case is the smallest message for which candidate B (A) either cannot increase her vote share and thus probability of winning or would be worse off if he or she did so, for any feasible value of $x_B \neq x_B^*$. Consider the identification of this message from the perspective of candidate A. Suppose candidate B were able to increase her vote share by obtaining at least one vote from a member of group A. B's expected utility would then be $-|x_B - x_B^*| + \gamma_B$ as the probability of election would be unity. If, on the other hand, B were to satisfy herself with the equilibrium policy announcement of x_B^* and equilibrium probability of winning $p_B = 0.5$, her expected utility would be $(0.5)\gamma_B - (0.5)|x_A^* - x_B^*|$. The relative values of these two expressions will determine whether or not B will find it worth her while to switch away from her equilibrium strategy. Consider the inequality

$$(0.5)\gamma_B + (0.5)(-|x_A^* - x_B^*|) > -|x_B - x_B^*| + \gamma_B \quad (8)$$

which is satisfied when candidate B prefers to announce the equilibrium platform x_B^* rather than some $x_B \neq x_B^*$. This inequality can never be satisfied for all values of $x_B \neq x_B^*$, because it implies $|x_B - x_B^*| > (0.5)\gamma_B + (0.5)|x_A^* - x_B^*| > 0$, which can be made false for any x_B sufficiently close to x_B^* . There are two further possibilities.

For some γ_B , x_A^* , and x_B^* , this inequality will never hold for any x_B . Candidate B in this situation cares enough about winning to offer an arbitrarily extreme policy in order to obtain votes from one or more members of group A and thus ensure winning the election. When this is true, candidate A must give a message ensuring that none of her voters are susceptible to candidate B. This is the same minimum message necessary for equilibrium in the vote maximizing case as stated in Equation 3 of Proposition 3, where $x_A = x_A^*$, $x_A^{min} = \alpha_A$, and $x_A^{max} = \beta_A$. Thus,

$$\underline{m}_A = \max(|x_A^* - \alpha_A|, |x_A^* - \beta_A|) - f_A \quad (9)$$

Finally, it may be that the inequality in Equation 8 is true for some values of x_B but not for others. When this is true, rather than needing to “protect” all the voters in her group, candidate A may need to protect only a subset of them, because candidate B is no longer willing to choose any arbitrary x_B . In particular, the inequality informs us that candidate B is only interested in x_B between $x_B^* - (0.5\gamma_B + 0.5|x_A^* - x_B^*|)$ and $x_B^* + (0.5\gamma_B + 0.5|x_A^* - x_B^*|)$. As a result, candidate A need only ensure that no A voters are attracted to policies within this same interval so that the inequality in Equation 8 holds. The same technique used to derive Equation 9 yields

$$\underline{m}_A = (1.5)|x_A^* - x_B^*| + (0.5)\gamma_B - f_A \quad (10)$$

However, this relation must be interpreted cautiously because its derivation did not take into account the actual spatial distribution of voters from group A. If the expression given in Equation 9 is less than that given in Equation 10, then m_A must be as given in Equation 9, because this corresponds to candidate A guarding all of her voters, and no minimum message could possibly be larger than this. If instead the expression given in Equation 10 is less than that given in Equation 9, then $(1.5)|x_A^* - x_B^*| + (0.5)\gamma_B < \max(|x_A^* - \alpha_A|, |x_A^* - \beta_A|)$. This expression can be rewritten as $|x_A^* - x_B^*| - \max(|x_A^* - \alpha_A|, |x_A^* - \beta_A|) + \gamma_B < (0.5)\gamma_B - (0.5)|x_A^* - x_B^*|$. As such, the inequality in Equation 8 is automatically true for some x_B if $|x_A^* - x_B^*| - \max(|x_A^* - \alpha_A|, |x_A^* - \beta_A|) > -|x_B - x_B^*|$ for some x_B . The extreme case for x_B involves candidate B trying to pick off the most susceptible member of group A, so that $|x_B - x_B^*|$ equals $\max(|x_B^* - \alpha_A|, |x_B^* - \beta_A|)$. Therefore, for Equation 8 to be true for some x_B , it needs to be true that $|x_A^* - x_B^*| - \max(|x_A^* - \alpha_A|, |x_A^* - \beta_A|) > -\max(|x_B^* - \alpha_A|, |x_B^* - \beta_A|)$. Since the largest possible difference between $\max(|x_A^* - \alpha_A|, |x_A^* - \beta_A|)$ and $\max(|x_B^* - \alpha_A|, |x_B^* - \beta_A|)$ is $|x_A^* - x_B^*|$, this will be automatically true for some x_B —and therefore Equation 10 is relevant whenever the expression given in Equation 10 is less than that given in Equation 9. As such, m_A must be as given in Equation 10 in this circumstance, and we can write overall that m_A is the minimum

of the two expressions given in Equations 9 and 10. Again, the conditions for candidate B's minimum message in equilibrium are symmetric.

In the third case, a group constitutes a majority of the population. Suppose candidate A is from the majority group so that $A = \int_0^1 a(x^*) dx^* > 0.5$. As indicated in the discussion for a minority group's candidate, we know from Proposition 2 that there always exists a message such that candidate A receives all the votes from group A. This message along with the announcement of candidate A's ideal point yields the maximum expected utility, γ_A . In the set of equilibrium strategies, candidate A will always have this expected utility. This requires A to announce x_A and m_A such that the probability that A wins is equal to 1 while x_A equals x_A^* .

The minimal message \underline{m}_A necessary to obtain the equilibrium expected utility for this case is that message such that candidate B either cannot increase her vote share and thus probability of winning or would be worse off if she did so. Suppose candidate B were able to increase her vote share enough by obtaining votes from members of group A to raise B's probability of winning to 0.5. B's expected utility would then be $0.5\gamma_B + 0.5(-|x_B - x_B^*|) + 0.5(-|x_A^* - x_B^*|)$. Alternatively, if candidate B were able to increase her vote share enough to raise her probability of winning to 1, her expected utility would be $\gamma_B + (-|x_B - x_B^*|)$. If, on the other hand, B were to satisfy herself with the equilibrium probability of winning $p_B = 0$, her expected utility would be $-|x_A^* - x_B^*|$. The value of this latter expression relative to the previous two expressions will determine whether or not B will find it worth her while to switch away from her equilibrium strategy. As it turns out, the following inequality

$$-|x_A^* - x_B^*| > \gamma_B - |x_B - x_B^*| \tag{11}$$

is the relevant condition that is satisfied in both instances if candidate B prefers to announce the equilibrium platform x_B^* rather than some $x_B \neq x_B^*$. This inequality can never be satisfied for all values of $x_B \neq x_B^*$, because it implies $|x_B - x_B^*| > \gamma_B + |x_A^* - x_B^*| > 0$, which can be made

false for any x_B sufficiently close to x_B^* . There are two further possibilities.

For some γ_B , x_A^* , and x_B^* , this inequality will never hold for any x_B . Candidate B in this situation cares enough about tying or winning to offer an arbitrarily extreme policy in order to obtain enough votes from group A members to achieve either of these objectives. This implies that the set of equilibrium strategies for candidate A includes any message that along with the announcement of x_A^* yields a vote share of greater than 0.5 and thus a probability of winning of 1. For the uniform distribution defined above, the minimum level of group rhetoric that meets this criteria for majority candidate A is:

$$\underline{m}_A = \max(|x_A^* - \alpha_A|, |x_A^* - \beta_A|) - \frac{(2A - 1)(\beta_A - \alpha_A)}{2A} - f_A \quad (12)$$

The term $\frac{(2A-1)(\beta_A-\alpha_A)}{2A}$, which did not appear in the equal population case, reflects the distinction that candidate A no longer need shield all of her group's members from candidate B's machinations in order to achieve her optimal outcome, as was necessary when her group constituted a majority of the population.

Finally, it may be that the inequality in Equation 11 is true for some values of x_B but not for others. When this is true, rather than needing to “protect” an absolute majority of the voters in her group, candidate A may need to protect only a small number, because candidate B is no longer willing to choose any arbitrary x_B . In particular, the inequality informs us that candidate B is only interested in x_B between $x_B^* - (\gamma_B + |x_A^* - x_B^*|)$ and $x_B^* + (\gamma_B + |x_A^* - x_B^*|)$. As a result, candidate A need only ensure that no A voters are attracted to policies within this same interval so that the inequality in Equation 11 holds. The same technique used to derive Equation 12 yields

$$\underline{m}_A = 2|x_A^* - x_B^*| + \gamma_B - f_A \quad (13)$$

However, this relation must be interpreted cautiously because its derivation did not take into

account the actual spatial distribution of voters from group A. An analysis very similar to the previous one demonstrates that we can write overall that m_A is the minimum of the two expressions given in Equations 12 and 13. Again, the conditions for candidate B's minimum message in equilibrium are symmetric. This completes the proof. ■

Proof of Corollaries 4.1 and 4.3. These follow immediately from Proposition 4. ■

Proof of Corollary 4.2. The elements of the Corollary follow from the results of Proposition 4. First, it is clear from the expressions describing minimum group rhetoric for majority groups that \underline{m}_j is no longer weakly decreasing as the range of group preferences decreases. Suppose that $x_A^* < \alpha_A$. Then a marginal increase in α_A has no effect on the first term, but leads to a marginal decrease in the second term, and therefore to a marginal increase for \underline{m}_j as a whole. If, on the other hand, $\frac{\alpha_A + \beta_A}{2} < x_A^* < \beta_A$, an increase by a small quantity ϵ in α_A lowers \underline{m}_j in the amount of $(1 - \frac{2A-1}{2A})\epsilon = \frac{\epsilon}{2A}$. Hence, \underline{m}_j is non-monotonic in the range of group preferences.

However, \underline{m}_j is weakly decreasing if the group's preference distribution is linearly compressed about the politician's fixed policy platform. To see this, fix x_A^* and scale the preference distribution by a factor χ , with new values $\alpha_A^{new} = x_A^* - \chi(x_A^* - \alpha_A)$ and $\beta_A^{new} = x_A^* + \chi(\beta_A - x_A^*)$. Then the first two terms of the expression for \underline{m}_j describing majority groups simplify to $\chi(\max(|\alpha_A - x_A^*|, |\beta_A - x_A^*|) - \frac{2A-1}{2A}(\beta_A - \alpha_A))$. Because $\max(|\alpha_A - x_A^*|, |\beta_A - x_A^*|) \geq 0.5(\beta_A - \alpha_A)$ and $\frac{2A-1}{2A} \leq 0.5$, \underline{m}_j is weakly monotonic in the scaling factor χ . The same substitution demonstrates that this holds also for groups whose size is equal to exactly half of the population; minority groups have 0 minimum message, so overall \underline{m}_j is weakly decreasing.

As for the effects of moving x^* relative to the group's preference distribution, it is clear that either argument of the minimum function can be smaller, depending on the values of the parameters. As such, the effects of a change in x^* are ambiguous. However, if the distance between candidates' policy platforms is held fixed as x^* varies, then varying x^* affects only the first argument of the minimum function, and the weak comparative static is clearly as stated in

the Corollary for the same reasons that the corresponding weak comparative static held in the vote-maximizing case. And the Corollary is proven. ■

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Supplemental Appendix to
“Social Identity, Political Speech,
and Electoral Competition”

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The analysis in the paper focuses on political environments in which group-based rhetoric is very effective. Specifically, the main results are demonstrated with reference to Condition 1 that sets the strongest possible identity message, \bar{m} , to be large. In many political environments, there may be limitations on the strength of identity appeals. We point out in the text of the paper that with a few exceptions the main findings of the paper hold once Condition 1 is relaxed. This Appendix presents these results.

The first remark demonstrates for cases in which Condition 1 does not hold, that maximal group rhetoric is an equilibrium strategy for both candidates if any equilibria exist.

Remark B.1. On Proposition 1. When Condition 1 does not hold, if an equilibrium $((x_A, m_A), (x_B, m_B))$ exists, then $((x_A, \bar{m}_A), (x_B, \bar{m}_B))$ is also an equilibrium.

Proof. If $((x_A, m_A), (x_B, m_B))$ is an equilibrium, then neither candidate can gain by defecting unilaterally from her position. In particular, candidate j does not gain by switching from (x_j, m_j) to (x_j, \bar{m}_j) . Further, by the assumptions of the model, a candidate increasing the strength of the message (with all else held constant) weakly expands the set of supporters from the candidate's own group without affecting the behavior of other voters. As such, when $((x_A, m_A), (x_B, m_B))$ is an equilibrium, unilateral deviations to maximum speech by either of the candidates has no effect on the distribution of votes cast within either group. (Such a move has no effect on out-group voters, and cannot hurt a candidate overall, so the fact that the original state was an equilibrium implies that the deviation, which cannot be helpful overall, must be neutral with respect to the in-group population as well as the out-group population.)

This result can be used to prove the Remark in the following way. First, it is the case that if $((x_j, m_j), (x_{-j}, m_{-j}))$ is an equilibrium, then $((x_j, \bar{m}_j), (x_{-j}, m_{-j}))$ is an equilibrium also. This is true for the following reasons. For candidate j , it has already been shown that the two alternatives (x_j, m_j) and (x_j, \bar{m}_j) are indifferent against (x_{-j}, m_{-j}) , so if there is no incentive to deviate from the former alternative, there can also be no incentive to deviate from the

latter. For candidate $-j$, it is (weakly) more difficult to attract group j voters when j plays the maximum-rhetoric strategy than when j plays a lower-rhetoric strategy, while the strategic incentives with respect to attracting group $-j$ voters are unchanged. This observation implies that, if $-j$ could not profitably deviate from (x_{-j}, m_{-j}) when A played (x_j, m_j) , it can also not profitably deviate when A plays (x_j, \bar{m}_j) . As such, if $((x_j, m_j), (x_{-j}, m_{-j}))$ is an equilibrium, then $((x_j, \bar{m}_j), (x_{-j}, m_{-j}))$ is an equilibrium also.

Finally, by the symmetry of the players, a second iteration of the same logic implies that if $((x_j, \bar{m}_j), (x_{-j}, m_{-j}))$ is an equilibrium, so is $((x_j, \bar{m}_j), (x_{-j}, \bar{m}_{-j}))$. The last two results together imply that if $((x_j, m_j), (x_{-j}, m_{-j}))$ is an equilibrium, so is $((x_j, \bar{m}_j), (x_{-j}, \bar{m}_{-j}))$, and the Proposition is proved. ■

Thus, when there are limits to the potential effectiveness of group rhetoric, it is nonetheless the case that if equilibria exist for a given pair of policy platforms, then it will be an equilibrium for both candidates to employ the greatest degree of rhetoric available to them. Intuitively, an equilibrium with lower levels of political rhetoric is not destabilized by the intensification of speech in our framework because voters are not turned off by it. In such circumstances, additional rhetoric neither hurts nor helps candidates. This result is analogous to Proposition 1 with the important exception that the existence of equilibria is no longer guaranteed for all cases.

The next remark characterizes, for cases without Condition 1, the equilibrium vote division when candidates are vote maximizers. The key result in Proposition 2 (derived under Condition 1) is that all voters cast their ballots for the candidate who is a member of their social identity group, and thus each candidate's vote share is simply equal to the population fraction of her group. This overall division of votes is robust to the relaxation of Condition 1, although the distributions of candidate support across groups may be different.

Remark B.2. On Proposition 2. When Condition 1 does not hold, all equilibrium

strategies in the vote-maximizing case result in both candidates receiving a fraction of the vote that is equal to their group's population fraction.

Proof. Suppose that $((x_A, m_A), (x_B, m_B))$ is an equilibrium strategy pair. By the definition of equilibrium, defection from this strategy profile cannot be outcome-enhancing for either player. Suppose that A were to deviate by moving her policy position from x_A to x_B . Then, for any values of m_A and m_B , A would receive the votes of all A group members, while B would receive the votes of all B group members. In other words, for a given strategy choice by B, A can guarantee herself a fraction of the vote at least as great as the population fraction of A types. This implies that in no equilibrium can candidate A do worse than to receive the population fraction of A types, because there would be an incentive to deviate from a strategy profile for which this was the outcome. Similarly, B can guarantee herself a fraction of the vote at least as great as the population fraction of B types, by mimicking A's policy position, and cannot do worse than this in any equilibrium. But these two results together imply that, in any equilibrium, each candidate must receive exactly the fraction of the votes equal to the population fraction of her own group. ■

That is, in a world not characterized by Condition 1, it is no longer necessarily the case that every voter supports the candidate from her own group, but it is still true that each candidate receives the same number of votes that they would if this were the case. As such, elections still take on a census-like quality, although in a rather different sense than was the case under Condition 1. The intuition for this finding is simple. Because each candidate could, by mimicking her opponent's policy platform, guarantee herself the full support of her own group based on identity-related concerns, no candidate can do worse than to receive a vote share equal to her own group's population fraction in any equilibrium.

The following two remarks replicate Corollary 3.1 and Corollary 3.2 when Condition 1 is relaxed. The replication is exact for Corollary 3.1's result that for vote-maximizing politicians,

minimum group rhetoric (\underline{m}_j) weakly decreases as innate group attachment (f_j) increases and is closely analogous for Corollary 3.2's result that minimum group rhetoric (\underline{m}_j) weakly decreases as the range of group preferences decreases, and as the policy platform moves toward the center of the range.

Remark B.3. On Corollary 3.1. When Condition 1 does not hold, for vote-maximizing politicians, minimum group rhetoric (\underline{m}_j) weakly decreases as innate group attachment (f_j) increases.

Proof. Given that $k = f + m$, for fixed f , a value \underline{m} implies a value \underline{k} representing the minimum degree of identity-related behavior needed to sustain a particular equilibrium. Because f and m are perfect substitutes in constituting k , in determining the range of equilibrium messages for some fixed degree of equilibrium identity-related behavior, any change in the value of f will be reflected by an opposite change in the value of \underline{m} when this is possible. (When $\underline{m} > 0$, this will be true for any small change in f , but when $\underline{m} = 0$, since \underline{m} is constrained to be non-negative, the minimum equilibrium message will remain fixed rather than be decreasing in f .) This implies the comparative static given in the remark. ■

Remark B.4. On Corollary 3.2. When Condition 1 does not hold, for vote-maximizing politicians, minimum group rhetoric (\underline{m}_j) weakly decreases as the range of group preferences decreases, and as the policy platform of candidate j moves from the boundaries toward the interior of the range.

Proof. Recall from Remark B.2 that in all vote-maximizing equilibria, each candidate receives a share of the vote equal to her group's population fraction. So there are three potential types of equilibrium:

- (i) A receives the support of all A voters, and B receives the support of all B voters.
- (ii) Both A and B receive support both from A as well as from B voters.
- (iii) The candidate from one group (without loss of generality, to be called B) receives the

support of none of her own group's voters, but from sufficient voters of the other group (wlog, A) to leave both candidates with vote shares equal to their groups' population fractions.

Cases (ii) and (iii) can be considered together. In a potential equilibrium, clearly x_A^\dagger and x_B^\dagger must differ, given the distribution of support received by each candidate. Given a profile of policy platforms and campaign messages $(x_A^\dagger, m_A^\dagger; x_B^\dagger, m_B^\dagger)$, so long as $\bar{m}_B > m_A^\dagger$, candidate B could improve her vote share by selecting any $m'_B > m_A^\dagger$ and moving toward x_A^\dagger to a new value of x_B with distance to x_A^\dagger less than m'_B but greater than m_A^\dagger . This would allow candidate B to gain the support of all of her own group's members without losing any out-group support. A symmetric argument holds for a potential deviation from the initial position by candidate A. If such a deviation is possible by either candidate, then the original profile cannot be an equilibrium. But such a deviation is possible by neither candidate only if $m_A^\dagger = \bar{m}_A$ and $m_B^\dagger = \bar{m}_B$ (and if the two maximum messages happen to equal each other). Hence, for any equilibria of types (ii) or (iii) that might exist, each candidate's minimum message is simply fixed at the value of her own maximum message, and does not depend on the characteristics of her voters' characteristics or her own policy platform.

Finally consider case (i), in which each candidate receives the complete support of her own group in the election. Recall from the proof of Proposition 3 that if candidate j chooses x_j and m_j such that

$$m_j > \max(|x_j - x_j^{\min}|, |x_j - x_j^{\max}|) - f_j$$

then no x_{-j} could convince any members of group j to defect. In Proposition 3, this condition was necessary as well as sufficient; because Condition 1 was satisfied, candidate $-j$ could guarantee the support of all group $-j$ voters, regardless of the policy platform she chose, and so had complete freedom to use her policy platform for the purpose of wooing group j voters. As such, in order to maintain the census election guaranteed in Proposition 2, candidate j had to set her message large enough to deter defections that might be sparked by *any* possible value

of her opponent's platform. In the present circumstances, however, Condition 1 does not hold, and while the conditions above still represent a sufficient condition for deterring deviations from equilibrium, these conditions may no longer be necessary, depending on the values of \bar{m} . An opposing candidate $-j$ might not be willing to adopt certain policy platforms because she might lose a pivotal amount of within-group support if she did so.

In particular, define $\rho_j = \max(|x_j - x_j^{\min}|, |x_j - x_j^{\max}|) - f_j$. Without loss of generality, take $\rho_j \geq \rho_{-j}$. We must now consider the candidates' equilibrium behavior for all the possible relative values of the parameters \bar{m} and ρ . First, if \bar{m}_j and \bar{m}_{-j} both exceed $\max(\rho_j, \rho_{-j})$, then $\underline{m}_j = \rho_j$ and $\underline{m}_{-j} = \rho_{-j}$. That is, if both candidates' maximum messages are sufficiently strong to allow them full freedom of movement in efficiently pursuing one another's voters, then the result of Condition 1 is maintained.

Suppose instead that $\bar{m}_j \geq \bar{m}_{-j}$ and that $\rho_j > \bar{m}_{-j} > \rho_{-j}$. Now candidate j maintains the freedom of positioning inherent in Condition 1—she can deviate to any point in the $-j$ group's preference distribution while maintaining the full support of her own group—while candidate $-j$ does not (because $\rho_j > \bar{m}_{-j}$). Clearly based on the same logic as before we must still have $\underline{m}_{-j} = \rho_{-j}$. However, \underline{m}_j may now be different, because a lessened defense might be adequate in repelling deviations from a relatively weaker opponent. For a given message m_j , if candidate $-j$ deviates to any policy position x'_{-j} such that $|x'_{-j} - x_j^\ddagger| < m_j$, then candidate $-j$ will not be better off (because all group j voters will support candidate j , and candidate $-j$ already had the support of all voters in group $-j$ by the stipulation of case (i)). Suppose instead that candidate $-j$ deviates to any policy position x'_{-j} such that $|x'_{-j} - x_j^\ddagger| \geq m_j$. Then, depending on the distribution of voter preferences, candidate $-j$ may gain some group j support (possibly at the expense of group $-j$ support). Clearly the challenge of $-j$ will be (weakly) stronger by choosing the largest possible message, \bar{m}_{-j} , so the maximum vote share that can be won by $-j$ by deviating to x'_{-j} will be, taking $a(x)$ ($b(x)$) to be the distribution function of group j ($-j$)

voters:

$$\int_{\frac{x_j+x'_{-j}-\bar{m}_{-j}}{2}}^1 b(x)dx + \int_{\frac{x_j+x'_{-j}+m_j}{2}}^1 a(x)dx \text{ if } x'_{-j} \geq x_j^\ddagger + m_j$$

$$\int_0^{\frac{x_j+x'_{-j}+\bar{m}_{-j}}{2}} b(x)dx + \int_0^{\frac{x_j+x'_{-j}-m_j}{2}} a(x)dx \text{ if } x'_{-j} \leq x_j^\ddagger - m_j$$

Candidate $-j$ will find a given deviation worthwhile if the resulting fraction of the vote were to exceed her own group's population fraction; the minimum message \underline{m}_j is therefore the smallest value of m_j for which no value of x'_{-j} leads to such a gain (assuming that such a smallest value is smaller than \bar{m}_j and thereby feasible). It is clear from the above that, in the upper range, the vote share weakly increases as x'_{-j} decreases, while in the lower range, the vote share weakly increases as x'_{-j} increases, so that for the purposes of calculating \underline{m}_j we need only consider $x'_{-j} = x_j^\ddagger + m_j$ in the former case and $x'_{-j} = x_j^\ddagger - m_j$ in the latter. Hence, \underline{m}_j is the minimum value of m_j such that both of the following expressions come to no more than the population size of group $-j$:

$$\int_{\frac{2x_j+(m_j-\bar{m}_{-j})}{2}}^1 b(x)dx + \int_{x_j+m_j}^1 a(x)dx \text{ if } x'_{-j} \geq x_j^\ddagger + m_j$$

$$\int_0^{\frac{2x_j-(m_j-\bar{m}_{-j})}{2}} b(x)dx + \int_0^{x_j-m_j} a(x)dx \text{ if } x'_{-j} \leq x_j^\ddagger - m_j$$

Both of these expressions are clearly decreasing in m_j , so the value of \underline{m}_j will be the maximum of the two values implied by the two constraints. First note that any decrease in \bar{m}_{-j} decreases the domains of the integrals, and therefore weakly decreases their values; as such, m_j , in which the expressions are decreasing, must also decrease in order to hold the overall values fixed at the minimum message equilibrium threshold. So, \underline{m}_j weakly decreases as \bar{m}_{-j} decreases. Second, note that as x_j^{max} decreases, all other things equal, the top expression weakly decreases (as population mass potentially moves out of the realm that can be snatched by candidate $-j$), so that m_j must decrease in order to hold the overall values fixed at the minimum message equilibrium threshold; similarly, an increase in x_j^{min} (weakly) necessitates a similar decrease in the value of the minimum message implied by the lower expression. As such, \underline{m}_j weakly decreases as the range of group preferences decreases. Finally, note that the upper expression

weakly decreases in x_j , while the lower expression weakly increases in x_j . The value of \underline{m}_j is determined by the maximum of the two minimum values implied by the two conditions. Because the lower constraint allows for 0 minimum message when x_j is at the left boundary of the group's preference distribution, and the upper constraint allows for 0 minimum message at the right boundary, clearly the upper constraint has bite for the lowest x_j and the lower constraint has bite at the highest x_j . Therefore, as x_j moves to larger values from the leftmost edge of hergroup's preference distribution, \underline{m}_j weakly decreases, and as x_j moves to smaller values from the rightmost edge, \underline{m}_j also weakly decreases. Therefore, \underline{m}_j is initially weakly decreasing in x_j before eventually becoming weakly increasing, as was the case under Condition 1 (although the transition need no longer be exactly at the median of the preference distribution). Thus, for $\bar{m}_j \geq \rho_j$ and $\rho_j > \bar{m}_{-j} > \rho_{-j}$, the comparative statics are as given in the remark.

The remaining parameter orderings can be quickly considered. If $\bar{m}_j > \bar{m}_{-j}$ and $\rho_{-j} > \bar{m}_{-j}$, then there can be no equilibrium, because candidate j will be able to deviate from any case (i) position to one which gives him some group $-j$ support at no cost in group j support. The same statement also holds with all of the indices swapped. The only parameter orderings not yet considered are those for which $\bar{m}_j = \bar{m}_{-j}$ and both of these are less than ρ_j . Then clearly equilibria do not exist except possibly when $m_j = m_{-j} = \bar{m}_j = \bar{m}_{-j}$ independent of the independent variables under consideration in the Remark.

As such, for all possible parameter orderings in all possible cases, either there are no equilibria, there are equilibria with the minimum message fixed at the exogenous maximally allowed value, or there are equilibria with the minimum message following the comparative statics given in the Remark. As such, the Remark is proven. ■

Before proceeding to the results for policy-motivated politicians, we note one further property of equilibria with vote-maximizing candidates when Condition 1 does not hold.

Remark B.5. On a Novel Property of Equilibria Without Condition 1. When

Condition 1 does not hold, for vote-maximizing politicians, minimum group rhetoric (\underline{m}_j) weakly decreases as the opposing candidate's maximum feasible message (\overline{m}_{-j}) decreases.

Proof. The proof is included in the proof of Remark B.4. ■

The intuition behind the remark is straightforward. A politician with a smaller maximum feasible message may have less flexibility in pursuing her opponent's voters, for the same basic reason that the presence of independent voters can deter politicians from pursuing certain policy tactics. A politician whose feasible message set satisfies Condition 1 faces no tradeoffs in pursuing supporters from the opposing candidate's group—all in-group support can be retained by simply issuing a sufficiently strong identity message. However, as a politician's maximum feasible message decreases, she may be deterred from adopting a growing set of platforms because in-group support may become successively less secure. As such, because identity appeals are basically defensive moves, lower levels of rhetoric can exist in equilibrium as an opponent's maximum message decreases, because fewer of one's own group members will need to be “defended” from out-group temptations.

We now turn to the case in which politicians care both about policy and about winning elections. The first result for this case demonstrates that Corollary 4.1 on the effect of innate group attachment on minimum group rhetoric holds when Condition 1 is relaxed.

Remark B.6. On Corollary 4.1. When Condition 1 does not hold, and politicians care about policy, minimum group rhetoric (\underline{m}_j) weakly decreases as innate group attachment (f_j) increases.

Proof. As the proof of Remark B.3 does not rely on the distinction between vote-maximizing and policy-oriented politicians, it serves also to prove Remark B.6. ■

Similarly, the content of Corollary 4.2 concerning voter preferences and candidate platforms also holds in the absence of Condition 1.

Remark B.7. On Corollary 4.2. For a politician who cares about policy, minimum group

rhetoric (\underline{m}_j) is weakly decreasing if her group's preference distribution is linearly compressed about the politician's fixed policy platform. Also, minimum group rhetoric is weakly decreasing as a politician's policy platform moves from the boundaries toward the interior of her group's preference distribution, if the distance between her policy platform and her opponent's policy platform is held constant and the new policy platform pair is in equilibrium.

Proof. We begin by demonstrating the first half of the remark. Start with any set of model parameters and any candidate platforms for which an equilibrium exists, and label the player strategies for an arbitrary equilibrium in which both players employ minimum messages as $(x_j^\dagger, \underline{m}_j^\dagger; x_{-j}^\dagger, \underline{m}_{-j}^\dagger)$. Because this strategy profile is an equilibrium for the given model parameters, neither candidate has an incentive to deviate from its component of the strategy profile.

Suppose that the preference distribution of group j is compressed in the way indicated in the proof of Corollary 4.2, and that the original policy platform pair $(x_j^\dagger; x_{-j}^\dagger)$ remains in equilibrium. Recalling that players use political speech to deter susceptible voters of their own groups from defecting to the opposing candidate, we proceed first by noting that the candidates' sets of susceptible voters are now weakly smaller after the compression of group j 's preferences. In the original configuration of preferences, the equilibrium tells us that without political speech, player $-j$ would have no incentive to deviate to any policy platform for which $x \leq x_j^\dagger - \underline{m}_j^\dagger$ or for which $x \geq x_j^\dagger + \underline{m}_j^\dagger$, but that player $-j$ would have an incentive to deviate to at least some of the policy platforms in the interval $(x_j^\dagger - \underline{m}_j^\dagger, x_j^\dagger + \underline{m}_j^\dagger)$. Consider the situation after group j 's preferences are compressed in the manner indicated above. In the regions where $-j$ previously had no incentive to deviate in the absence of political speech, it must remain the case that she has no incentive, because for the choice of any deviating policy platform, candidate $-j$ would now receive weakly fewer votes than she previously would have by deviating to that platform, and therefore receives a weakly lower overall payoff. (When $-j$ deviates to one of these policy

platforms, the only thing that might be different now is the behavior of group j voters, since everything to do with group $-j$ voters has remained unchanged. Given the strategies of the two candidates under a particular deviation, there exists a cutpoint dividing the preference types of group j voters into those who would support each of the two candidates. The compression of the preference profile of group j about x_j^\dagger implies that weakly fewer j voters remain in the interval of supporters of candidate $-j$.) Further, it is also clear that there may now be points where $-j$ previously did have an incentive to deviate in the absence of political speech, but no longer does, and that such points will sometimes exist, depending on the relative location of the candidates' platforms and voters' preference distributions. (This is true for the same reasons as above, that the compression of group j 's preferences can lead to a flow of group j members out of the interval of candidate $-j$ supporters.) As such, candidate $-j$ now would have an incentive to deviate to a weakly smaller interval of strategies in the absence of political speech by j . But this means that the new value $\underline{m}_j \leq \underline{m}_j^\dagger$. Repeating the analysis with the indices swapped indicates a parallel effect of compressing group $-j$'s preferences on \underline{m}_{-j} , so that minimum group rhetoric is weakly decreasing as the range of group preferences decreases, if the politician's ideal point is fixed relative to her group's preference distribution and the original policy platform pair remains in equilibrium, and the first half of the remark is proved.

We conclude by demonstrating the second half of the remark. Start with any set of model parameters and any candidate platforms for which an equilibrium exists and candidate j 's policy platform is at one of the boundaries of her group's preference distribution, and label the player strategies for an arbitrary equilibrium with minimum messages as $(x_j^\dagger, \underline{m}_j^\dagger; x_{-j}^\dagger, \underline{m}_{-j}^\dagger)$. Now suppose that candidate j moves from the boundary towards the interior of her group's preference distribution by some infinitesimal amount ϵ , and that candidate $-j$'s policy position moves in the same direction by an identical amount ϵ , so that the distance between the two policies remains unchanged. If the resulting policy platform profile can, like the original one,

be sustained as an equilibrium, then clearly both candidates are (within ϵ) relying on the same support as they did previously, because the candidates' relative distance from one another has not changed (and therefore neither candidate has gone within the other's valence boundaries). Because both configurations can be sustained as equilibria, the new sufficient minimum message involves candidate j winning the same set of group j voters as previously. But clearly this involves a decrease of ϵ in the minimum message relative to the old minimum message, because candidate j is now closer to the most distant vulnerable group j member by ϵ . So minimum group rhetoric is weakly decreasing as a politician's policy platform moves from the boundaries toward the interior of her group's preference distribution, if the distance between her ideal point and her opponent's ideal point is held constant and the new policy platform pair is in equilibrium, and the remark is proven. ■

We now consider the impact of group size on minimum group rhetoric. In a world characterized by Condition 1, policy-oriented candidates from majority groups will of course always win elections. (Unlike in Proposition 2, however, which characterized vote-maximizing contests as census elections, votes will not always be cast strictly along group lines.) We begin our analysis of the effects of group size in the absence of Condition 1 by noting in the following lemma that once again only candidates from majority groups can be victors in elections.

Lemma B.1. When Condition 1 does not hold, and when politicians care about policy, then in every equilibrium of the voting game, the candidate of the majority group wins the election.

Proof. Throughout the proof of the lemma, we label the majority group as group A and the minority group as group B.

We first demonstrate that minority group candidates cannot win elections in any equilibrium. Consider every strategy profile $(x_A^\dagger, m_A^\dagger; x_B^\dagger, m_B^\dagger)$ for which candidate B receives a majority of the votes. By deviating from $x_A = x_A^\dagger$ to $x_A = x_B^\dagger$, candidate A could achieve an outcome which

gives her victory in the election without changing the implemented policy. Because $\gamma_A > 0$, such a deviation would leave candidate A strictly better off. Hence, there can be no equilibria of the voting game with policy-motivated candidates in which the minority group's candidate wins the election.

Next, we demonstrate that minority group candidates cannot tie elections in any equilibrium. Consider every strategy profile $(x_A^\dagger, m_A^\dagger; x_B^\dagger, m_B^\dagger)$ for which candidate B receives exactly half of the votes. Clearly x_A^\dagger is not within $k_A = f_A + m_A^\dagger$ of x_B^\dagger , because A would win a majority of the votes if this were the case. We now consider all of the other possible relative locations of x_A^* , x_B^\dagger , and x_A^\dagger and demonstrate that candidate A would be strictly better off deviating away from the strategy profile which yields a tie vote. (In all of the following deviations considered, A's message m_A^\dagger is held constant.) We begin by placing x_A^\dagger some arbitrary distance at least k_A to the right of x_B^\dagger and demonstrate that strictly preferred policies exist for A for every possible location of x_A^* . If $x_A^* < x_B^\dagger - k_A < x_B^\dagger < x_A^\dagger$, then A would be better off deviating to $x_A = x_B^\dagger$, because this would yield a strictly better competitive outcome (winning instead of tying) as well as a strictly better policy outcome (a definite result of x_B^\dagger rather than a lottery between x_B^\dagger and x_A^\dagger). If x_A^* is within k_A of x_B^\dagger , then A would be better off deviating to $x_A = x_A^*$, because this would yield a strictly better competitive outcome (winning instead of tying) as well as a weakly better policy outcome (since the new result, x_A^* , is A's policy ideal point). Finally, if $x_B^\dagger + k_A < x_A^* < x_A^\dagger$ or if $x_B^\dagger + k_A < x_A^\dagger \leq x_A^*$, consider the effects of A deviating to some new $x_A = x_A^\dagger - \epsilon \frac{\gamma_A}{2}$, where $\epsilon \ll 1$ (and is sufficiently small such that $x_A > x_B^\dagger + k_A$), so that x_A is infinitesimally closer to x_B^\dagger than x_A^\dagger . Because the vote is tied in the original strategy profile, candidate A must be receiving some A group support but not all of it (if it did not receive some of it, B would win a majority; if it received all of it, A would). As such, there is a cutpoint in the A population at some location separating voters for A from voters for B. If A's policy moves infinitesimally towards B's, so does the cutpoint. Because each group's voters were assumed

to have uniformly distributed policy ideal points over some interval, it follows that such a deviation would lead to a strict increase in support for candidate A among A group members. There are two cases depending upon the effects of the deviation on B voters. In the first case, if the deviation does not bring x_A closer to x_B^\dagger than k_B , then A will not lose (and may gain) B group voters; as such, A will win the election. All other things equal, winning rather than tying an election leads to a utility increase of $\frac{\gamma_A}{2}$; the effect of policy change on utility, whether positive or negative, will be much less than this because $\epsilon \frac{\gamma_A}{2} \ll \frac{\gamma_A}{2}$. Hence, in the first case, A will have an incentive to deviate slightly towards x_B^\dagger in the manner described. In the second case, if the deviation does bring x_A closer to x_B^\dagger than k_B , then either A had no B group support to lose (in which case A now wins the election and will find the deviation profitable by the above argument) or A loses all of the B group support that it originally had. In the latter eventuality, A will not find the deviation profitable, but an analogous deviation to $x_B = x_B^\dagger + \epsilon \frac{\gamma_A}{2}$ will be profitable, because candidate B will now do strictly better both among A and B voters, leading to a victory bonus at negligible policy cost. This completes the demonstration that there will always be a profitable deviation by some player from any strategy profile leading to a tied election.

Thus, there can be no equilibria in which the smaller group's candidate wins or ties. As such, the larger group's candidate must win in every equilibrium of the voting game with policy-motivated candidates, and the Lemma is proved. ■

The result in this lemma is used in demonstrating the following remark, which addresses the effects of group size in the absence of Condition 1.

Remark B.8. On Corollary 4.3. When Condition 1 does not hold, and when politicians care about policy, minimum group rhetoric (\underline{m}_j) for minority groups may be nonzero, unlike in Corollary 4.3. However, minimum group rhetoric (\underline{m}_j) for majority groups weakly decreases in the size of the majority, as in Corollary 4.3.

Proof. We begin by demonstrating the second half of the remark. Consider a given equilibrium with policy-oriented politicians, in which (without loss of generality) group A is a majority group and group B is a minority group. What is the effect of an increase in group A’s population fraction (holding the shape of the preference distribution fixed) on its minimum group rhetoric, if the initial equilibrium policy platforms remain in equilibrium after the demographic perturbation? As group A’s population fraction increases, the number of votes received by candidate A increases if both candidates’ platforms and messages remain fixed. (The set of voter types, defined over group membership and policy ideal point, which support A remains unchanged, but there is now a larger fraction of the overall population belonging to this set of types.) From Lemma B.1, it is the case that, in any equilibrium, candidate A must win the election. As such, when A’s population fraction increases, A now receives more votes than she needs to win the election at the level of minimum group rhetoric that characterized the equilibrium set before the demographic shift. Because of this, she can now win the election with a lower level of group rhetoric than was previously possible—she can afford to lose the support of some voter preference types on whom she previously relied, because the population of those voter preference types whose support will be retained is larger than it was before. Since, for fixed policy platforms, candidates do not care about vote share, but rather only about whether or not they are victorious, it follows that minimum group rhetoric by the majority group candidate is weakly decreasing in the size of the majority, if a given pair of policy platforms remains in equilibrium after the demographic change.

We now demonstrate the first half of the remark. In Corollary 4.3, the minimum group rhetoric for minority group candidates was 0. This was true because, under Condition 1, majority group candidates could win the election under any policy platform they wished, so that the behavior of minority group candidates had no effect on the identity of the winner or the nature of her policy platform, and was thus basically irrelevant. However, when Condition 1 does not

hold, minority candidates can affect their own utility outcomes; the platforms they propose and the speeches they make can affect the equilibrium policy choice of the majority candidate. In particular, suppose that the majority candidate chooses her policy ideal point and her maximum feasible message. For some configurations of preferences, and some levels of maximum feasible message, this will not represent a winning position for the majority candidate; there will be best responses by the minority candidate that would lead to the minority candidate winning the election. When this is true, any equilibrium must involve the majority candidate choosing a policy platform that differs from her ideal point. While the minority candidate cannot win any election in equilibrium, she can compel the majority candidate to move as close as possible to her own policy ideal point (assuming that the candidates' ideal points differ) by playing an optimal strategy. In particular, it will frequently be the case, again depending upon the distribution of policy preferences, and the candidates' maximum feasible messages, that increasing her message will be outcome-enhancing for the minority candidate; by denying support of some additional of her own group's members, she can cause the majority candidate to move further away from her ideal point in search of the votes necessary to win the election. ■