A Formal Model of Shared Identity Appeals [*]

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Abstract

Applications of social identity theory to elections often assume candidates, especially those from marginalized groups, rely on identity-based appeals to mobilize ingroup voters. Yet, in reality, race and gender minority candidates do not always make identity appeals, nor do race and gender minority voters always support candidates who share their identity. We reconcile this discrepancy by analyzing strategic interactions between candidates and voters in a formal model of election that incorporates instrumental and expressive identity motivations. Our result shows candidate quality differential plays a critical role in explaining the levels of identity appeals. If a candidate has a quality advantage that is not too low and not too high, it can be strategically advantageous to reduce identity appeals, as such reductions are effective in attracting outgroup voters. The proposed model accounts for existing explanations of identity politics, such as group size, ideological position, identity strength, and within-group heterogeneity.

A fundamental premise in identity politics is that candidates make appeals to ingroup voters, who in turn prefer ingroup candidates. Such an assumption of preference for ingroup representation has been used to explain why Black, Latino, and Asian voters in North America turn out and vote for co-ethnic candidates (Tate 1993; Barreto 2010; Besco 2019; Goodyear-Grant and Tolley 2019). Yet, racial minorities often behave in ways that do not align with theoretical expectations. For example, Kamala Harris expressed reluctance about playing the "race card" early in her 2020 presidential bid (Favreau 2019); the Biden/Harris presidential campaign did not focus spending on Asians until the final six weeks (Yam 2020); and Black, as well as Latino candidates, sometimes run "deracialized campaigns" (Wright Austin and Middleton 2004; Juenke and Sampaio 2010). As for voters, Blacks did not fully get behind Barack Obama as a contender for the presidency until he won the 2008 Iowa caucus (Frasure 2010); during a special election to replace Hilda Solis in California's 32nd district in 2009, a third of Latinos voted for Chinese American candidate Judy Chu instead of the co-ethnic candidate Gil Cedillo (Tobar et al. 2009); and Asian voters do not consistently support Asian candidates (Fraga 2015; Sadhwani 2020; Leung 2021; Bouchard 2021). Such counterexamples extend beyond racial identity. During the 2020 presidential election, Pete Buttigieg embraced his identity as an openly gay man but borrowed a page from Barack Obama's playbook in "embracing that (the historic nature of a Black/LGBT president) without letting it define him" (Groppe 2019). In turn, not all LGBT voters supported Buttigieg. Likewise, not all women supported Hillary Clinton during the 2016 elections. Donald Trump's claim "the only thing she's got going is the woman's card, and the beautiful thing is, women don't like her" (Nelson 2016) is partially correct — a majority of White women voted for Trump (Junn 2017).

Departures from conventional wisdom motivate us to re-examine mechanisms assumed to explain identity-based voting. Why don't race and gender minorities always appeal to and vote for one of their own? We build on existing answers to this question in three ways. First, voters withhold support from a candidate who they prefer but perceive to have little chance

of winning (Bateson 2020). In empirical studies, however, it is difficult to operationalize what exact attributes contribute to perceived chances of winning. This is especially the case for underrepresented identity groups because standard markers of the above-mentioned attributes , such as prior office holding and name recognition, are developed when most incumbents are White men; they do not translate into electoral success for women and candidates of color (Phillips 2021). In this article, we focus on developing a formal model to understand the role of non-ideological attributes of a candidate's competence, which we call candidate quality, in identity-based elections. Here, formal modeling allows us to grapple with the concept without being constrained to analyze only measurable aspects.

While there are formal models of identity, they implicitly or explicitly treat identities such as ethnicity as a "purely instrumental" (Bassi, Morton, and Williams 2011, 13) part of political behavior. However, when instrumental utilities are low, even minimal identities influence voting behavior (Bassi, Morton, and Williams 2011). In this paper, we explicitly include both instrumental and expressive views of identity. Our treatment of identity is geared towards the phenomenon we seek to explain, which is not a choice of which identity to emphasize but rather the extent to which political actors emphasize identity at all.

Finally, we account for interactions between candidates, voters, and the electoral environment, which is a more realistic depiction of elections than focusing solely on either one of supply-side or demand-side factors. Both voters and candidates respond to attributes and actions of each other as well as their surrounding environment, then (potentially) make trade-offs between identity-based interests and winning preferred policy outcomes. We model these strategic interactions and trade-offs in a model with two candidates and two representative voters where each set of candidates and voters belongs to a unique identity group. Policy preferences of the candidate and voter who share identity are not the same but assumed to be smaller than if they are from different groups. Then, independent of policy preferences, voters are assumed to receive expressive identity benefit from voting for a candidate who shares their identity (*ingroup candidate*) and pay expressive identity loss from voting for a

candidate who does not share their identity (*outgroup candidate*). Candidates are assumed to receive positive expressive utility from making identity appeals to their ingroup voters, defined as utility independent of appeals' influence on the action of voters. Lastly, candidates vary in their *quality*, which can be conceptualized as their perceived abilities and resources to win elections and implement policies, independent of ideological position and group membership.

Analytical results show that even when both candidates and voters receive a fixed expressive benefit from appealing to and voting for their ingroup, there are conditions in which candidates reduce shared identity appeals to ingroup voters or voters do not vote for ingroup candidates. A trade-off occurs because making shared identity appeals is a double-edged sword: it increases candidates' popularity among ingroup voters but, at the same time, hurts their reputation among outgroup voters. Such trade-off matters the most for candidates on the threshold of quality (dis)advantage. Their winning or losing depends on small movements in the level of shared identity appeals. As for voters, they do not consistently support ingroup candidates not because identity does not matter but because, as strategic actors, there are limits to how willing they are to choose ideological and identity-based interests over quality. Further assessments reveal interactions with other factors, such as the size of the shared identity group, ideological position, identity strength, and within-group heterogeneity.

The paper proceeds as follows: We first review existing research on identity-based campaigning and voting. Next, we present a formal model of shared identity appeals and an extension of the model that allows for within-group heterogeneity in levels of expressive identity utility. We illustrate the core implications of the model through a case study of how Barack Obama handled race during the 2008 presidential campaign. The paper concludes with further extensions and applications of our theoretical framework.

Existing Theories of Voting Based on Shared Identity

The first theory of identity-based voting emphasizes expressive utilities, and it stems from two observations about human nature: we form groups by gravitating toward people who are similar, and we want our own group(s) to be well-regarded by society at large (Tajfel 1978; Tajfel and Turner 1979). For individuals who do not see themselves represented in politics, such as racial minorities, women, and LGBTQ, there are psychological benefits to having elected officials who share their identities, such as higher levels of political knowledge, trust, interest, and efficacy (Bobo and Gilliam 1990; Kaufmann 2003; Barreto 2010; Stauffer 2021). Nevertheless, the electoral salience of expressive utilities derived from race and gender representation may be contingent on political contexts (Gay, Hochschild, and White 2016), and it may be less applicable to individuals who do not identify with their ascribed race or gender or who are part of less homogeneous groups (Kaufmann 2003).

An alternative theory of identity-based voting emphasizes instrumental utilities. For many Blacks and Latinos, racial attachment goes beyond psychological attachment to an invested interest in outcomes for the group as a whole (Dawson 1994; Sanchez and Masuoka 2010). This link gives them the trust co-ethnic elected officials will represent their best interests (McConnaughy et al. 2010). Indeed, Black and Latino elected officials tend to share similar ideological and partisan positions as their co-ethnics, devote more resources to provide substantive representation for co-ethnics (Tate 2003; Burden 2007; Minta 2012), and are more responsive to them than White elected officials (Butler 2014). However, as is the case with variation in ethnic identity, there is variation in ethnic interests within and between racial groups. Compared to Blacks and Latinos, Asian Americans are less likely to think individual successes depend on that of the racial group (Lu and Jones 2019), and their partisan preferences depend on context and vary by ethnicity (Kuo, Malhotra, and Mo 2016). Likewise, female politicians may not represent the interests of all women. They may act on behalf of their husbands (Chattopadhyay and Duflo 2004), or be less responsive to women from different racial backgrounds (Phillips 2021).

Theories based on psychological identity benefit and group-based interests treat identity-based voting as something static and constant. However, voters' support for ingroup candidates can change based on candidates' levels of mobilization effort. Black candidates make positive racial appeals by supporting criminal justice reform, reaching out to Black leaders, and campaigning in predominantly Black neighborhoods (Stout 2015). Likewise, Latino and Asian candidates cater to their bilingual constituents by campaigning in ethnic languages at predominantly Latino and Asian neighborhoods (Guerra 1992; Leighley 2001; Barreto 2010; Mai-Duc et al. 2017). They do so in part because White candidates also actively reach out to non-Whites, albeit with varying degrees of success. On the other hand, we see cases in which candidates are reluctant to make such shared identity appeals. Some Blacks and White-passing Latinos run "deracialized" campaigns (Wright Austin and Middleton 2004; Juenke and Sampaio 2010) and female candidates underplay their gender identity. Arguably because minorities may put off majority group members, they perceive identity appeals as "too ethnic" (Barreto 2010) or playing the "woman card" (Nelson 2016). Here, while scholars have been studying specific cases of the "de-identified" campaign, there are no well-defined theories of identity-based voting for the intra- and inter-group dynamic interactions between voters and candidates.

Candidate Quality and Identity-Based Voting

As rational utility maximizers, voters do not merely support candidates who share identities, align closer in terms of policy interests, and make strong ingroup appeals. They also want candidates who have the highest probability of acting on what they promise on the campaign trail; in other words, candidates who have a quality advantage. Indeed, "Latino voters, like all voters, are unlikely to be mobilized by a poorly run campaign with few resources and little hope of success, regardless of a candidate's ethnicity" (Barreto 2010, p.97). Speaking about Andrew Yang's 2020 presidential campaign, the chair of the Asian American and Pacific Islander (AAPI) Victory Fund, a super PAC focused on AAPI voters, explained

"Just because he is AAPI does not mean that our community will automatically donate to him or support him or vote for him. They have to see how he performs at the debate and to see if he's going to show up to our event. We want to find someone who shares our values and who can defeat the current incumbent. It would be ideal if that person looks like us and speaks our language, but it is not a prerequisite." (Nam 2019)

There is a two-fold challenge to studying candidate quality for race and gender minorities. First, established measures of candidate quality, such as name recognition and incumbency, undervalue candidates who are historically and institutionally marginalized (Phillips 2021). Related to this first point, voters and the media often judge women and candidates of color by a set of less well-defined standards. The career trajectories of candidates such as Barack Obama, Hilary Clinton, and Elizabeth Warren show debate performance and job experience do not necessarily translate into a quality advantage. Valerie Jarrett, an advisor to Barack Obama, surmised after Elizabeth Warren dropped out of the 2020 presidential elections "Women will not be perceived by some as electable until we're elected...There was certainly a time when our country might have thought that an African-American man was not electable." (Linskey and Wang 2020) The tautology in her first statement encapsulates the self-fulfilling prophecy of needing to be perceived as electable in order to be elected and the shifting standards of quality advantage for women and candidates of color.

As described above, there are plausible reasons why candidate quality matters, but it would be unrealistic to expect that it matters to the same extent at all times. Limited to a single vote per electoral competition, voters make trade-offs between quality and other reasons, just as they would for any other choice with a budget constraint. From the candidates' perspective, they can choose campaign strategies that are best suited to their quality (dis)advantage. Television advertisements that last a few minutes or even a ninety-minute debate cannot change voters' race or ideology. What they may change is the *salience* of voters' race or ideology for a particular competition. That is, separate from perceived identity, ideology, and quality differentials, voters may change the way they make trade-offs in

response to what candidates do. Likewise, candidates respond to what voters might do and structure their campaign strategies in ways that maximize their chances of winning. The central aim of this paper is to model such strategic interactions between voters and candidates who share underrepresented social identities. The next section presents a model that reveals the connection between identity and quality.

The Model of Identity-Based Election

We analyze a simple election game where voters select one of two candidates.[1] This game assumes a complete information environment: voters know the exact policy platform of candidates, and the winner sincerely implements the proposed policy after the election. The policy outcome is determined by the combination of ideology and the quality of candidates. As for voters, they care about their identities and the policy outcome. We assume voters receive fixed psychological benefit from supporting an ingroup candidate (e.g., Bassi, Morton, and Williams 2011), and also feel some psychological loss if they support an outgroup candidate. Therefore, voters prefer candidates who are closer to them in ideology, have higher quality, and share the same identity.

There are two identity groups, $g \in \{S, L\}$.[2] Two voters V_S and V_L represent each group and act as unitary actors. V_S are minority voters, and V_L are majority voters. Similarly, two candidates, C_S and C_L, are minority and majority candidates. Each voter and candidate holds ideology $X_g^V, X_g^C \in \mathbb{R}$. For simplicity, we assume $X_S^V < 0$, $X_S^C = -1$, $X_L^V > 0$, and $X_L^C = 1$. This assumption implies ingroup voters and candidates hold closer ideologies than outgroup voters and candidates. Also, since what matters is the relative distance of voters from candidates, fixing candidates' ideology to arbitrary values such as -1 and 1 simplifies analysis without reducing the generalizability of results. Q_g represents the quality of each candidate. For simplicity, we assume $Q_L = 0$ and $Q_S \in \mathbb{R}^+$. Here, $Q_S = Q_S - Q_L$ represents the *quality differential* between two candidates.

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1. For simplicity, voters are not allowed to abstain in this game.
2. In the analysis below, $-g$ is used to indicate outgroup (i.e., $-g = L$ if $g = S$ and $-g = S$ if $g = L$).

The election occurs in two steps. First, candidates decide on the level of shared identity appeals $\alpha_g \in [0,1]$. $\alpha_g = 0$ means they don't make any identity-based appeals to their ingroup, and $\alpha_g = 1$ indicates the maximum use of identity-based campaigning. Independent of its effect on mobilization, we assume each candidate pays some expressive cost $\eta_g(1 - \alpha_g)$ for weakening identity appeals. This formulation follows the premise in the identity politics literature that making appeals is a default strategy. Second, after observing α_g, voters choose their preferred candidate. We denote vote choice as $y_g \in \{0,1\}$ so that $y_g = 1$ indicates the vote for ingroup candidate and $y_g = 0$ the vote for outgroup candidate. Then, independent of ideology and candidate quality, all voters receive the same fixed identity benefit $\beta_g \alpha_g$ (where $\beta_g \in \mathbb{R}^+$) from voting for ingroup candidate ($y_g = 1$) in response to the level of shared identity appeals made by ingroup candidate. In contrast, voters pay a fixed identity loss $\beta_g \delta \alpha_{-g}$ from voting for an outgroup candidate ($y_g = 0$) in response to the level of shared identity appeals made by an outgroup candidate. Both identity benefit and loss are increasing in the level of appeals. $\delta \in (0,1]$ is a discount factor for identity loss. One can think of δ to be related to antagonism towards outgroup rather than preferences for the ingroup. Voters' utility loss from outgroup voting is greatest when $\delta = 1$ (the identity loss occurs at the same rate as identity benefit), their loss declines as δ approaches 0.

At the end of the election sequence, either V_S or V_L is exogenously selected as the pivotal group, and their vote determines the electoral outcome. g is the pivotal group with probability ψ_g and the vote cast by the pivotal group voter determines the electoral outcome. This mechanism deviates from the actual function of an election but has been shown to be effective in inducing realistic uncertainty in electoral outcome when the exact number of voting actors is common knowledge (Morton and Ou 2015; Kato 2020). ψ_g corresponds to the size of identity groups. We assume $\psi_S \in (0, 0.5]$ and $\psi_L = 1 - \psi_S$ such that the size of minority cannot exceed that of majority. This means that majority voter V_L is always equal or more likely to be chosen as a pivotal voter than minority voter V_S. Here, in reality, although the size and demographics of registered voters in each electoral district are public

knowledge, the secret ballot ensures the size and demographics of *actual* voters can only be estimated via instruments such as exit polls and ecological inference methods. It is thus fair to expect that voters have a sense of, but are not certain about, each identity group's actual voting pattern. In other words, ψ_g reflects the incomplete knowledge regarding the pivotal voter group in society. By definition, $\psi_g \in \{0, 1\}$ is impossible, and voters are unable to determine the pivot group with certainty. The probability of ingroup candidate's victory is a function of y_g, y_{-g} and ψ_g: $P_g[y_g, y_{-g}, \psi_g] = \psi_g y_g + (1 - \psi_g)(1 - y_{-g})$.

From the above settings, we can now define the expected utility of a voter V_g as a function of voter-candidate ideological distance, candidate quality, identity benefit and loss, group sizes, and vote choices:

$$
\begin{aligned}
EU_g^V = & P_g[y_g, y_{-g}, \psi_g](Q_g - (X_g^V - X_g^C)^2) \\
& + (1 - P_g[y_g, y_{-g}, \psi_g])(Q_{-g} - (X_g^V - X_{-g}^C)^2) \\
& + \beta_g(y_g \alpha_g - (1 - y_g)\delta\alpha_{-g})
\end{aligned}
$$

Remember $X_S^C = -1$ and $X_L^C = 1$. We can then further simplify the above function:

$$
\begin{aligned}
EU_g^V = & P_g[y_g, y_{-g}, \psi_g](Q_g - (1 - |X_g^V|)^2) \\
& + (1 - P_g[y_g, y_{-g}, \psi_g])(Q_{-g} - (1 + |X_g^V|)^2) \\
& + \beta_g(y_g \alpha_g - (1 - y_g)\delta\alpha_{-g})
\end{aligned}
\tag{1}
$$

Turning to the candidate's side, her expected utility is determined by the ideological distance between herself and the expected winner (zero if she wins), the level of shared identity appeals, the minimal identity benefit of making such appeals, group sizes, and vote

choices:

$$EU_g^C = P_g[y_g, y_{-g}, \psi_g] \cdot 0 + (1 - P_g[y_g, y_{-g}, \psi_g])(X_g^C - X_{-g}^C)^2 + \eta_g \alpha_g$$

$$= -4(1 - P_g[y_g, y_{-g}, \psi_g]) - \eta_g(1 - \alpha_g) \tag{2}$$

This election game has two stages of decision-making, and all actors have complete information of all the parameters. Therefore, the equilibrium of interest is Subgame Perfect Equilibrium. Using backward induction, the following lemma describes the best response of vote choice y_g^* at the second stage, defined as the condition for the level of shared identity appeals made at the first stage:

Lemma 1. *The best response vote choice y_g^* of a group g voter V_g is:*[3]

$$y_g^* = \begin{cases} 1 & \text{if } \alpha_g \geq \dfrac{\psi_g(-4|X_g^V| - (Q_g - Q_{-g}))}{\beta_g} - \delta\alpha_{-g} \equiv \alpha_g^{cut} \\ 0 & \text{if } \alpha_g \leq \alpha_g^{cut} \end{cases} \tag{3}$$

Proof. Directly derived from Equation 1. V_g best responds by $y_g = 1$ if $EU_g^V[y_g = 1] \geq EU_g^V[y_g = 0]$; best responds by $y_g = 0$ if $EU_g^V[y_g = 1] \leq EU_g^V[y_g = 0]$. Each inequality is solved for α_g. $\qquad\square$

Lemma 1 indicates that ingroup voting in the equilibrium ($y_g^* = 1$) can be induced by a sufficiently high level of ingroup shared identity appeals $\alpha_g \geq \alpha_g^{cut}$. Shared identity appeals outgroup candidate C_{-g} makes to outgroup voters V_{-g} (i.e., α_{-g}) increase the chance of ingroup voting by C_g's fellow ingroup voters V_g (i.e., $y_g = 1$) by decreasing α_g^{cut}. This pattern occurs because higher levels of α_{-g} increase the magnitude of identity loss $\beta_g \delta \alpha_{-g}$ among V_g. α_g^{cut} is also decreasing in the extremity of voter ideology $|X_g|$ and ingroup candidate quality advantage $Q_g - Q_{-g}$. Any α_g can induce $y_g^* = 1$ if $-4|X_g^V| - (Q_g - Q_{-g}) < 0$. If such

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3. Technically, voters are indifferent between $y_g = 0$ and 1 if $\alpha_g = \alpha_g^{cut}$. In such case, we assume voters choose a candidate setting $\alpha_g < 1$. This assumption implies voters are more responsive to a candidate deviating from the default behavior, i.e., stick to maximum possible shared identity appeals.

condition is not satisfied, i.e., $-4|X_g^V| - (Q_g - Q_{-g}) \geq 0$, then, α_g^{cut} is increasing in ingroup size ψ_g and decreasing in the magnitude of identity utility β_g.

The Optimal Level of Shared Identity Appeals

Knowing the optimal vote choice conditions in Lemma 1, candidates have two goals: (1) secure votes from ingroup voters and (2) attract votes from outgroup voters. The following lemma summarizes specific conditions in which C_S and C_L can achieve such goals:

Lemma 2. C_S can secure votes from ingroup voters ($y_S^* = 1$) if and only if:

$$\alpha_S \geq \frac{\psi_S(4X_S^V - Q_S)}{\beta_S} - \delta\alpha_L \equiv \alpha_S^{cutS1} \tag{4}$$

C_L can secure votes from ingroup voters ($y_L^* = 1$) if and only if:

$$\alpha_L \geq \frac{(1 - \psi_S)(-4X_L^V + Q_S)}{\beta_L} - \delta\alpha_S \equiv \alpha_L^{cutL1} \tag{5}$$

C_S can attract votes from outgroup voters ($y_L^* = 0$) if and only if:

$$\alpha_S \leq \left(\frac{(1 - \psi_S)(-4X_L^V + Q_S)}{\beta_L} - \alpha_L \right) \bigg/ \delta \equiv \alpha_S^{cutL0} \tag{6}$$

C_L can attract votes from outgroup voters ($y_S^* = 0$) if and only if:

$$\alpha_L \leq \left(\frac{\psi_S(4X_S^V - Q_S)}{\beta_S} - \alpha_S \right) \bigg/ \delta \equiv \alpha_L^{cutS0} \tag{7}$$

Proof. Directly derived from Equation 3 in Lemma 1, replacing g with S or L (and g_S with 1 or 0). $\square$

Lemma 2 clarifies that candidates suffer from dilemma. To start, positive η_g in the candidate's utility function (Equation 2) shows that candidates have an intrinsic incentive, independent of its impact on electoral outcome, to make as intense shared identity appeals

as possible. Equation 4 and 5 follow this implication that higher levels of shared identity appeals are useful in securing votes from ingroup. However, turning to Equation 6 and 7, shared identity appeals have a detrimental effect on winning outgroup votes. Therefore, if a candidate wants to win outgroup votes and if it is possible, she may want to decrease, rather than increase, the level of shared identity appeals.

When do candidates have an incentive to reduce the level of shared identity appeal? The following proposition suggests that such conditions can be determined by the range in the quality differential between two candidates, $Q_g - Q_{-g}$ (measured by Q_S given that $Q_L = 0$).

Proposition 1. *The equilibrium level of shared identity appeals α_g^* is reduced from 1 when the ingroup-outgroup quality differential $Q_g - Q_{-g}$ is not too low and not too high, or:*

$$
\alpha_S^* = \begin{cases} \alpha_S^{cutL0} & if\ Q_S \in \left[4X_L^V + \dfrac{\beta_L(1+\delta)}{1-\psi_S} - \beta_L \delta \cdot min \left(\dfrac{1}{1-\psi_S}, \dfrac{4}{\eta_S} \right), 4X_L^V + \dfrac{\beta_L(1+\delta)}{1-\psi_S} \right) \\ & \in \left[Q_S^{maxL0} - Q_S^{rangeL0}, Q_S^{maxL0} \right) \\ 1 & otherwise \end{cases}
\tag{8}
$$

$$
\alpha_L^* = \begin{cases} \alpha_L^{cutS0} & if\ Q_S \in \left(4X_S^V - \dfrac{\beta_S(1+\delta)}{\psi_S}, 4X_S^V - \dfrac{\beta_S(1+\delta)}{\psi_S} + \beta_S \delta \cdot min \left(\dfrac{1}{\psi_S}, \dfrac{4}{\eta_L} \right) \right] \\ & \in \left(Q_S^{minS0}, Q_S^{minS0} + Q_S^{rangeS0} \right] \\ 1 & otherwise \end{cases}
\tag{9}
$$

Proof. See Online Appendix. ∎

Proposition 1 shows that candidate quality plays a critical role in determining whether a candidate has an incentive to reduce the level of shared identity appeals. Here, keeping the opponent's quality constant, if a candidate is of extremely high or low quality, she sticks to the highest possible level of appeals, since they have nothing to win (or lose) by changing the level of appeal: extremely high-quality candidates always attract *all* voters and extremely low-quality candidates always fail to attract *any* voters, regardless of their levels of appeals. Candidates make reduced appeals only when such practice can potentially sway votes, when their quality (relative to the opponent) is not too high and not too low.

To further interpret the result shown in Proposition 1, the following two propositions illustrate how the range of reduced shared identity appeals can be determined over Q_S.

Proposition 2. *At most one candidate at a time has an incentive to reduce the level of shared identity appeals, only when she has an advantage in the ingroup-outgroup quality differential.*

Proof. Consider Equation 8 in Proposition 1. Given $X_L^V, \beta_L, \delta, 1 - \psi_S, \eta_S \in \mathbb{R}^+$, $Q_S^{maxL0} > 0$ and $|Q_S^{maxL0}| > Q_S^{rangeL0} \geq 0$. C_S has an incentive to set $\alpha_S^* = \alpha_S^{cutL0} < 1$ only if Q_S takes a positive value. Similarly, consider Equation 9 in Proposition 1. Given $X_S^V < 0$ and $\beta_S, \delta, \psi_S, \eta_L \in \mathbb{R}^+$, $Q_S^{minS0} < 0$ and $|Q_S^{minS0}| > Q_S^{rangeS0} \geq 0$. C_L has an incentive to set $\alpha_S^* = \alpha_L^{cutS0} < 1$ only if Q_S takes a negative value. $\square$

Proposition 3. *If a candidate reduces the level of shared identity appeals in the equilibrium, she gains support from both ingroup and outgroup voters and wins the election.*

Proof. Follows directly from Statement 4 and 8 in the proof of Proposition 1. See Online Appendix. $\square$

Proposition 2 implies that two candidates in this game never reduce the level of shared identity appeals simultaneously. If one candidate reduces the level of appeals, another candidate always best responds by sticking to the highest level of appeals, $\alpha_g = 1$. It also suggests that reduced appeals are made by a candidate of higher quality. Proposition 3 clarifies this point from the perspective that a candidate who makes reduced shared identity appeals always secures ingroup votes in addition to attracting outgroup votes, thus wins election for sure. As illustrated in Lemma 2, reducing the level of shared identity appeals can hurt a candidate's ability to sustain ingroup support. Proposition 2 and Proposition 3 suggest even if she loses some ingroup support, a candidate has an incentive to reduce shared identity appeals if she has sufficient quality advantage over an opponent to counter the negative effect of reducing appeals on ingroup support.

Based on Proposition 1, 2, and 3, Figure 1 visually summarizes the equilibrium actions of candidates and their consequences on voting behavior, over the ranges of minority-majority
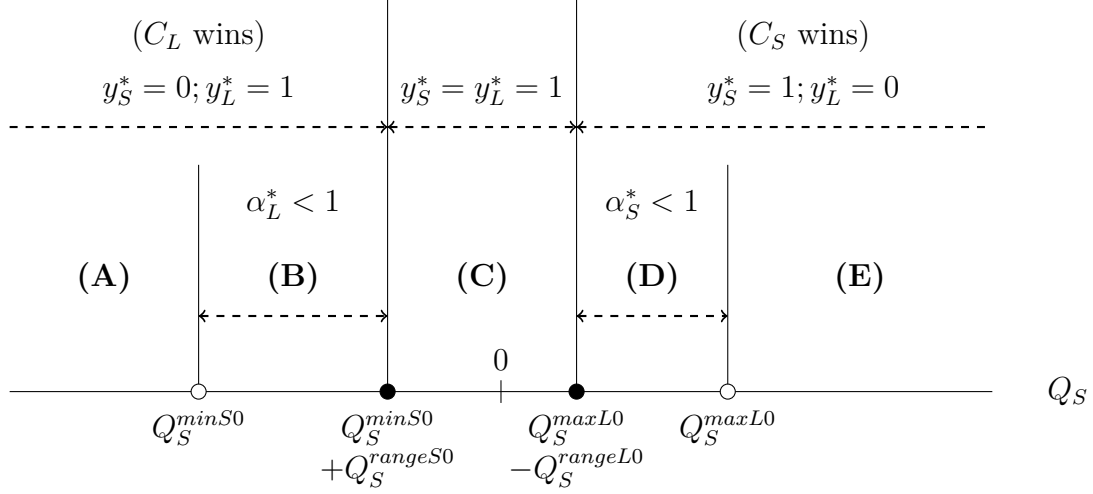
Note: $\alpha_g^* = 1$ for any unspecified range.

Figure 1: Equilibrium level of shared identity appeals α_g^* and vote choice y_g^* over the range of minority-majority candidate quality differential Q_S

quality differential, Q_S. Following the implication in Proposition 2, it shows minority candidate C_S reduces the level of shared identity appeals (and wins the election) only when $Q_S \geq 0$ (the range D), and majority candidate C_L does the same only when $Q_S \leq 0$ (the range B). Then, the reduced level of appeals attracts votes from the outgroup: C_S achieves $y_L^* = 0$ and C_L achieves $y_S^* = 0$. In these conditions (D and B ranges), voting is not polarized along social identities since at least one candidate (the one with quality advantage) tries to appeal to both ingroup and outgroup voters. On the edges, C_S stops reducing appeals if Q_S is sufficiently positive (the range E), C_L if Q_S is sufficiently negative (the range A). Looking at consequences on voting, the logic behind this pattern should be clear: quality advantage is sufficient to attract outgroup votes and win the election, even without the help of reduced shared identity appeals. In these conditions (E and A ranges), voting is also not polarized along social identities, but for a different reason than the D and B ranges. Candidates also stop making appeals if the quality differential is sufficiently small. In contrast to the previous logic, the reason behind this behavior is that since the quality advantage is so small, the reduction in shared identity appeals is not sufficient in attracting outgroup votes. Voting

under such a condition (the range C) is polarized along social identities because both groups of voters vote for their ingroup candidates.

How Electoral Environment Shapes Shared Identity Appeal

In this section, we explore implications of the electoral environment (other than candidate quality differential) on the level of shared identity appeals. To start, we focus on the equilibrium interval of successful outgroup mobilization. In Figure 1, this interval is a range on Q_S such that $y_S^* = 1$ and $y_L^* = 0$ for C_S, $y_L^* = 1$ and $y_S^* = 0$ for C_L. The width of this interval corresponds with the prevalence of a candidate's success in winning votes from both ingroup and outgroup. Then, the following proposition describes how the electoral environment interacts with the prevalence of successful outgroup mobilization:

Proposition 4. *The equilibrium interval of successful outgroup mobilization is weakly shrinking in the size of ingroup ψ_g, the magnitude of outgroup voter's identity utility β_{-g}, the level of identity loss in outgroup voting δ, and the extremity of outgroup voter's ideology $|X_{-g}^V|$.*

Proof. In Proposition 1, the target interval for C_S is shrinking in $|Q_S^{maxL0} - Q_S^{rangeL0}|$; for C_L is shrinking in $|Q_S^{minS0} + Q_S^{rangeS0}|$. The result directly follows from the characteristics of the above quantities. $\square$

Proposition 4 implies that four contextual factors contribute to the prevalence of successful outgroup mobilization. First, group size (determined by the probability of that group being pivotal) matters. So, the majority candidate is less successful than the minority candidate in attracting outgroup votes. Intuitively, this pattern occurs because minority voters put heavier weight on expressive identity utility than their ability to change the electoral outcome. Their group size is small, so their votes have lower chances of becoming pivotal. Therefore, even if the majority candidate is of higher quality and even if she reduces ingroup appeals, minority voters would rather vote for the ingroup minority candidate and secure expressive identity utility than contribute to the victory of the majority candidate. As a result, even

when the majority candidate has a more extensive voter base than the minority candidate, she has a harder time gaining support from *all* voters in society.

Second, the size of identity utility for outgroup voters also contributes to the difficulty in mobilizing outgroup voters. Intuitively, it is just hard to attract voters from other groups if they are highly committed to their own groups. Third, the level of identity loss in voting for the higher quality outgroup candidates also makes it challenging to mobilize outgroups for a similar reason as above. Fourth, the extremity of outgroup voter's ideology matters: it is more difficult for a candidate to attract outgroup voters who have an ideology further away from her own. Note that only the outgroup voters' attributes matter, not ingroup voters'. As stated in Proposition 3, if a candidate can attract outgroup votes, ingroup votes are automatically secured. The latter's attributes are not consequential for candidates' ability to attract outgroup votes.

Next, we focus on the equilibrium interval of reduced appeals. In Figure 1, this interval is a range on Q_S such that $\alpha_g^* < 1$. The width of this interval corresponds with the prevalence of C_g making reduced appeals. Then, the following proposition describes how the electoral environment interacts with the prevalence of reduced appeal:

Proposition 5. *The equilibrium interval of reduced shared identity appeals is weakly expanding in the size of ingroup ψ_g, the magnitude of outgroup voter's identity utility β_{-g}, and the level of identity loss in outgroup voting δ; weakly shrinking in the cost of reducing shared identity appeals η_g.*

Proof. It follows directly from the characteristics of $Q_S^{rangeS0}$ and $Q_S^{rangeL0}$ in Proposition 1. $Q_S^{rangeL0}$ and $Q_S^{rangeS0}$ represent the equilibrium interval of reduced shared identity appeals for C_S and C_L, respectively. $\qquad\square$

Proposition 5 has some contrasting implications compared to Proposition 4. To begin with, group size matters again, but in the opposite direction. The majority candidate has a broader range of opportunities to make reduced identity appeals than the minority candidate, and

this gap in opportunities is widening in group size. This pattern is a flip side of implication from Proposition 4. The fact that the majority candidate has more difficulty mobilizing outgroup voters means that she is *forced to* reduce the level of shared identity appeals to attract minority votes even when there is a fair amount of quality advantage. For the minority candidate with quality advantage, on the other hand, reduction of appeals is often not required to gain majority votes. For those in the majority, because they are more likely to be pivotal in determining the electoral outcome, supporting a higher quality candidate has more important consequences than supporting one of their own and receiving the feeling of empowerment (i.e., expressive identity utility).

The next part of Proposition 5 takes into account changes over space and time in the magnitude of identity utility β_{-g} and the level of identity loss to outgroup voters δ. As they increase, the interval of reduced appeals widens. The logic behind this pattern parallels that of group size. The need to reduce shared identity appeals is rising in outgroup voters' commitment to identity because it is more difficult to mobilize them.

Lastly, as the cost of reducing shared identity appeals η_g increases, the equilibrium interval of shared identity appeals shrinks. This relationship marks the trade-off of reducing appeals from the perspective of candidates. Candidates in elections aim to win. So, as much as they would like to make maximum ingroup appeals as default and lose intrinsic utility from reducing shared identity appeals, they quit reducing appeals (even when it is possible) if outgroup mobilization does not produce sufficient benefits to counter such loss.

Figure 2 visualizes comparative statics over different values of group size, keeping other parameters fixed at typical values. Each panel of figures contains information that parallels Figure 1. Lines represent the equilibrium level of shared identity appeals in the vertical axis (solid line is minority candidate, dashed line is majority candidate), and the horizontal axis represents the quality differential between minority and majority candidates. The range of those lines deviating from 1 is the equilibrium interval of reduced shared identity appeals (Proposition 5). Then, shaded areas illustrate the equilibrium interval of successful outgroup
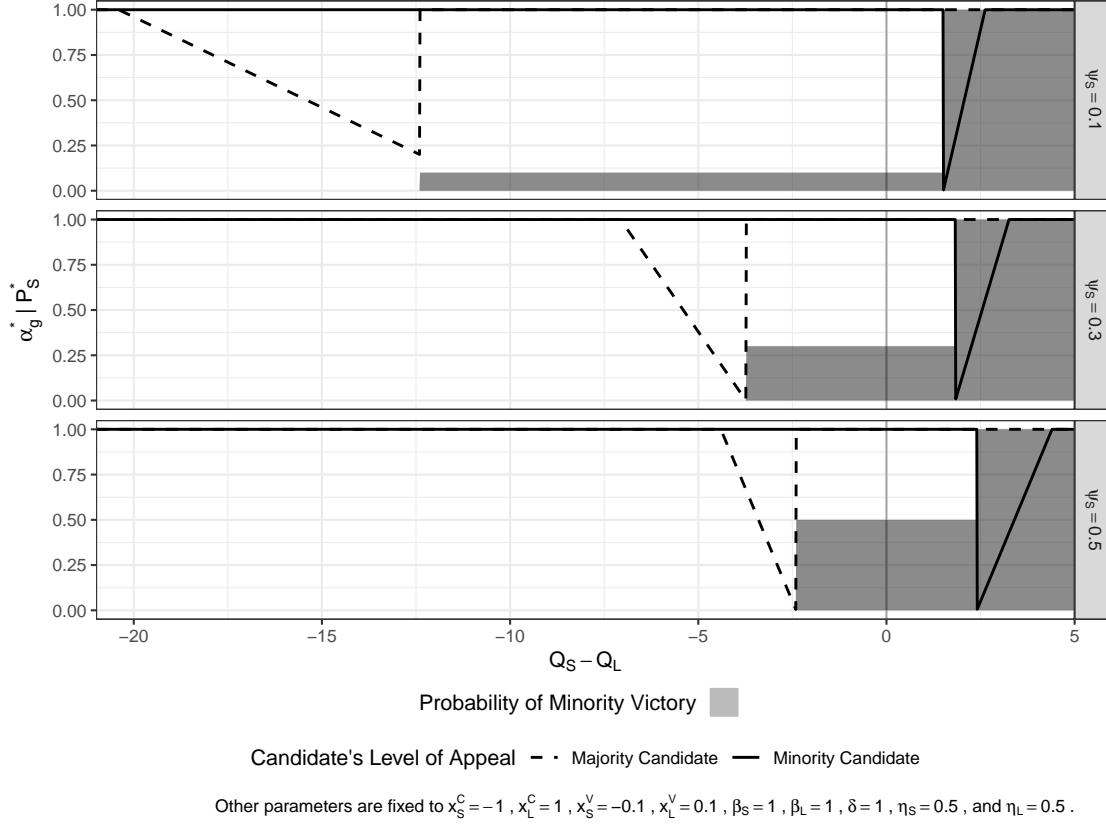
18

Figure 2: Equilibrium level of shared identity appeals α_g^* and probability of minority victory P_S^* over the range of minority-majority candidate quality differential Q_S and minority group size ψ_S

mobilization (Proposition 4). The completely white range implies successful mobilization of minority voters by the majority candidate, and the completely gray range (on right-hand sides) implies successful mobilization of majority voters by the minority candidate. The area in the middle with split colors indicates polarized voting: voters from each group vote for their ingroup. Subsequently, the height of the gray shade corresponds to the winning probability of the minority candidate (also the losing probability of the majority candidate).

In Figure 2, panels reflect variations in the size of minority group ψ_S (also recall that the size of majority group $\psi_L = 1 - \psi_S$). One can see that if the minority group is as big as the majority group (the bottom panel), equilibrium actions of majority and minority candidates and voters are symmetric across $Q_S = 0$.[4] As the minority group gets smaller than the

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4. Note that ideologies and identity utilities are set at symmetric values for minority and majority in this

majority group (moving up the panels), we see changes. First, regarding the interval of successful outgroup mobilization, the threshold of successful versus unsuccessful mobilization moves away from zero as the group size increases (furthest away from zero for the majority candidate in the top panel, for the minority candidate in the bottom panel). As stated in Proposition 4, smaller groups are harder to be mobilized by the outgroup candidate. Also, while minority group mobilization (by majority candidate) becomes exponentially more difficult as minority group size decreases, the rise in the difficulty of majority group mobilization (by minority candidate) in response to the majority group size is not as much. Outgroup sizes matter differently for the majority and minority candidates.

In terms of equilibrium interval of reduced appeals, Figure 2 shows that such interval is shrinking in the size of outgroup, as stated in Proposition 5. Furthermore, the figure illustrates *how* the level of shared identity appeals is reduced. It shows that the amount of reduction decreases in the amount of quality advantage, i.e., candidates with higher quality advantage have a lesser need to reduce appeals. Then, the level of appeals jumps back to the maximum value $\alpha_g^* = 1$ once the quality advantage is sufficiently low. The threshold represents the point at which any amount of reduction in shared identity appeals can no longer be able to mobilize outgroup voters.[5]

Within-group Heterogeneity in Identity Strength

In the baseline model above, we assume each group of voters makes a dichotomous choice $y_g \in \{0, 1\}$. This assumption effectively implies that each identity group is completely homogeneous, i.e., every group member receives the same amount of expressive identity utility from their voting decision. However, variations in within-group heterogeneity may play important roles in the strategic calculation behind electoral behaviors (e.g., Duell 2020). In

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simulation.

5. Reduction in appeals does not always hit $\alpha_g = 0$ before passing the threshold. This is true in the top panel of Figure 2. Such a pattern occurs when the intrinsic cost of reducing shared identity appeals η_g is large enough so that the maximum reduction in appeals is too costly even when it successfully mobilizes outgroup voters.

this section, we modify the model slightly to test the implications of within-group inequality in identity strength, the concept relevant to heterogeneity, while still keeping the framework of unified voters.

Specifically, we add two modifications to the baseline model of election. First, we consider vote choice as a continuous variable between 0 and 1, $y_g \in [0,1]$, rather than a binary choice by each group of voters. Consider this decision as a group of voters deciding on what proportion of their group members vote ingroup (and the remainder of them vote outgroup). Second, we posit that the realized size of expressive identity utility is not necessarily directly proportional to y_g.[6] Thus, we re-write the last line of Equation 1 as follows: $\beta_g(f_g[y_g]\alpha_g - (1 - f_g[y_g])\delta\alpha_{-g})$. Here, we assume the function $f_g[y_g]$ to be continuous and have the following characteristics: $f_g(y_g)$ is monotone increasing in y_g, $f_g(y_g)$ is concave, $f_g(y_g) \geq y_g$, and $f_g(0) = 0$ and $f_g(1) = 1$. These characteristics are parallel to that of Lorenz Curve (Kakwani and Podder 1973), whereas the values are ranked in decreasing, rather than increasing, order. This assumption implies that ingroup voting is observed among the most strongly identified $y_g \times 100\%$ of group members, and $f_g(y_g)$ reflects the fraction of the group's total identity utility represented by this subset.

Then, we further assume that the underlying within-group relative identity strength I follows a single-peaked beta distribution, $Be[I = i|a_g, b_g]$ where $a_g > 1$ and $b_g > 1$.[7] The single-peaked beta distribution can also be represented by two alternative parameters, $\kappa_g = a_g + b_g$ and $\mu_g^I = (a_g - 1)/(a_g + b_g - 2)$ (Kruschke 2015, 129). Here, $\kappa_g > 2$ is the concentration parameter. As κ_g increases, i is more concentrated around its single-peak, thus the group becomes more homogeneous.[8] As κ_g approaches 2, i is more spread out,

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6. Note that instrumental utility (the first two lines in Equation 1) must *always* be proportional to y_g. This is because the democratic electoral rule does not allow votes to be counted unequally.

7. Using the beta distribution, values are contained within finite range $[0,1]$ so that it can be summed to some finite β_g. Also, since many psychological attributes are known to have single-peaked distribution, we believe it is fair to assume single-peakedness.

8. The spread of the beta distribution can also be described in terms of variance $\sigma_g^2 = \frac{a_g b_g}{(a_g + b_g)^2(a_g + b_g + 1)} = \frac{\mu_I^g(1 - \mu_I^g)}{\kappa_g + 1}$. This variance is strictly decreasing in κ_g, approaches zero as κ_g approaches infinity.

thus the group becomes more heterogeneous.[9] $\mu_I^g \in (\frac{1}{\kappa_g}, \frac{\kappa_g - 1}{\kappa_g})$ represents the the mean of the distribution. The deviation of μ_I^g from 0.5 describes the skewness. Smaller $\mu_I^g < 0.5$ indicates more group members have relatively weak identity, and larger $\mu_I^g > 0.5$ indicates more group members have relatively strong identity.

To analyze the equilibrium outcome of the modified game, the following Lemma stands:

Lemma 3. *When the concentration parameters κ_S and κ_L go to infinity, the modified game can generate the equivalent equilibrium outcome as the baseline game.*

Proof. $\lim\limits_{\kappa_g \to \infty} Be[i|\omega_g, \kappa_g]$ has a positive density only at ω_g (i.e., every group member has exactly the same identity strength). Therefore, $f(y_g) = y_g$.[10] $\qquad \square$

Lemma 3 implies that the baseline model can be seen as the special version of the modified game where $\kappa_S, \kappa_L \to \infty$. In fact, the following Lemma implies that the core qualities of the baseline model are preserved in the modified game.

Lemma 4. *In an equilibrium of the modified model, α_g^* is reduced from 1 when $Q_g - Q_{-g}$ is not too low and not too high, or in the range $\left[\underline{Q_g - Q_{-g}}, \overline{Q_g - Q_{-g}} \right)$. Only a quality advantaged candidate has the potential to reduce the level of appeals after securing ingroup votes. Reducing appeals lead to a gain in some, if not all, votes from outgroup voters.*

Proof. See Online Appendix. $\qquad \square$

The equilibrium interval of reduced appeals described in the baseline model is equivalent to $\left[\underline{Q_g - Q_{-g}}, \overline{Q_g - Q_{-g}} \right)$ in Lemma 4. On the other hand, the following Lemma shows the conditions for the existence of such an interval and the instance of outgroup mobilization in the equilibrium of the modified game:

Proposition 6. *In the modified model, the interval $\left[\underline{Q_g - Q_{-g}}, \overline{Q_g - Q_{-g}} \right)$ where C_g sets $\alpha_g^* < 1$ exist if δ, μ_I^{-g}, and κ_{-g} are sufficiently high and ψ_g and η_g are sufficiently low. Some*

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9. See Figure D.1 in the Online Appendix for the visual demonstration of κ_{-g}.

10. The baseline model is one of the outcomes under this condition where $y_g^* \in \{0, 1\}$.

outgroup mobilization ($y^*_{-g} < 1$) can occur at lower values of $Q_g - Q_{-g} < \underline{Q_g - Q_{-g}}$ where making reduced appeals ($\alpha^*_g < 0$) is not optimal. Reducing appeals decreases y^*_{-g} but it does not necessarily pull y^*_{-g} down to 0.

Proposition 6 redefines the relationship between reduced appeals and outgroup mobilization. In the baseline model, making reduced appeals is a tool to gain full support from outgroup voters otherwise impossible to mobilize. In the modified game with a finite κ_{-g}, outgroup mobilization is no longer a black and white process. Outgroup members with weak identities can easily be mobilized even before reduced appeals become optimal. Therefore, making reduced appeals is often an effective strategy to attract outgroup voters with moderate to strong identities and *accelerate* the mobilization process. The high heterogeneity (low κ_{-g}) and higher concentration in weaker identity (low μ_I^{-g}) imply the decline in those with moderate to strong identities, thus can lower the effectiveness of reduced appeals. As a result, if κ_{-g} and μ_I^{-g} are too low, the cost of reducing identity appeals (η_g) always outweighs the benefit of accelerating the mobilization process.

Given the complex nature of the modified game, we use the simulation below to explore further the implication of within-group identity inequality. Figure 3 explores how κ_{-g} conditions the connection between group size ψ_g and the equilibrium prevalence of reduced appeals (the relationship in the baseline model discussed in Figure 2). The left panel shows the relationship for $\underline{Q_g - Q_{-g}}$, the lowest value of $Q_g - Q_{-g}$ such that making reduced appeals is optimal. It has an implication similar to Figure 2: regardless of κ_{-g}, the difficulty of making reduced appeals optimal is increasing significantly in the ingroup size ψ_g (or decreasing in the outgroup size $1 - \psi_g$). This pattern follows the intuition from Proposition 4. Such difficulty increases in outgroup homogeneity κ_{-g} only when the ingroup size is sufficiently small. Consistent with Proposition 6, it also shows $\underline{Q_g - Q_{-g}}$ does not exist for sufficiently large ψ_g and sufficiently low κ_{-g}.

The right panel of Figure 3 illustrates the relationship for the width of the equilibrium interval of reduced appeals $\overline{Q_g - Q_{-g}} - \underline{Q_g - Q_{-g}}$. Here, we see a change in the effect of ψ_g
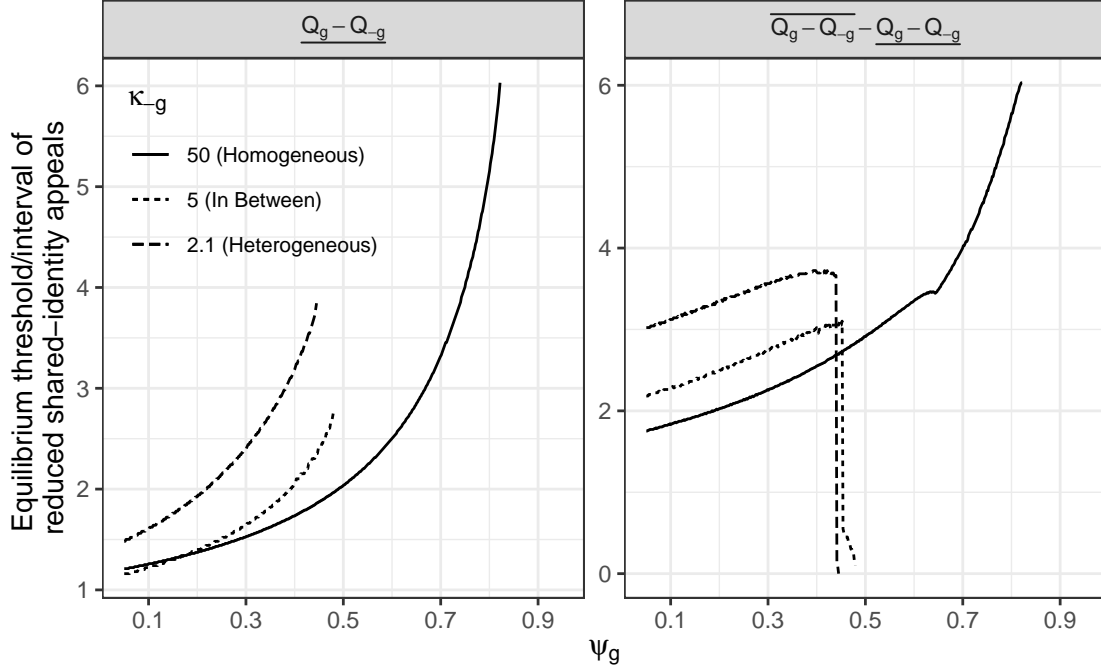
Other parameters are fixed to $x_S^V = 0.1$, $x_L^V = -0.1$, $\beta_{-g} = 1$, $\delta = 1$, $\mu_l^{-g} = 0.5$, and $\eta_g = 2$.

Figure 3: How the outgroup identity concentration κ_{-g} conditions the connection between ingroup size ψ_g and the equilibrium prevalence of reduced shared identity appeals

depending on the value of κ_{-g}. If the outgroup is highly homogeneous ($\kappa_{-g} = 50$), we see the relationship similar to Proposition 5 and Figure 2: the range of reduced appeals is monotone expanding in the ingroup size ψ_g (shrinking in the outgroup size $1 - \psi_g$). However, when the outgroup is highly heterogeneous ($\kappa_{-g} = 50$), this relationship breaks up for a sufficiently high ψ_g. If an ingroup size passes a threshold, expansion in ingroup size (or shrinkage in outgroup size) leads to a sharp drop in the prevalence of reduced appeals. In other words, if a minority group is sufficiently heterogeneous, a majority candidate may no longer reduce appeals further and attract minority voters as her majority ingroup becomes larger, even when such an option is available. And again, for a highly heterogeneous group, very large ψ_g leads to the disappearance of the equilibrium interval of reduced appeals.

The above deviations from the patterns observed in the baseline model demonstrate the change in the candidate's decision calculus if their outgroup is highly heterogeneous. Transitions from a homogeneous to a heterogeneous group lead to the lower effectiveness of

reduced appeals. Suppose the heterogeneous outgroup size is large (i.e., low ψ_g). In that case, while they may be ineffective, reduced appeals can still increase the chance of winning significantly, and it is still worth paying the identity cost. Therefore, small-group candidates with moderate quality advantages have incentives to make reduced appeals (similar to the logic behind Proposition 5). However, suppose the heterogeneous outgroup size is smaller (i.e., high ψ_g). In that case, the absolute magnitude of mobilizable voters is small, and the benefit of reducing appeals may no longer make up for the identity loss. As a result, the candidate from a sufficiently large group may have a lesser incentive to reduce appeals, and the opportunity to reduce appeals can even disappear (Proposition 6).

Application to Barack Obama in the 2008 US presidential campaign

In this section, we apply our theoretical framework to briefly examine how Barack Obama varied the extent to which he downplayed his racial identity according to changes in the political environment during the 2008 presidential campaign, not according to changes in his own views on the importance of race. Blacks voters faced considerations characterized in Lemma 1, so, as Obama described in his 2020 autobiography, "Black attitudes toward my candidacy were complicated …especially during the first months of the campaign" (Obama 2020, 116). Although they derived expressive utility from voting for an ingroup candidate, they also cared about Obama's policy position, the quality advantage over the "safer choice" (117) of Hillary Clinton, and whether he was Black enough to be considered an ingroup. In turn, Obama confronted the dilemma characterized in Lemma 2. To win the Democratic primary nomination and then the general election, he had to secure votes from ingroup (Black) and outgroup (non-Black) voters. Therefore, no matter how much expressive or instrumental utility he got from making racial appeals to Black voters, "the immediate formula for racial progress was simple—we needed to win. And this meant gaining support not just from liberal white college kids but also from voters for whom the image of me in the White House involved a big psychological leap" (Obama 2020, 115).

According to Proposition 1, 2, and 3, candidates have incentives to reduce identity appeals when they have a quality advantage over their opponent, but not so large that they can win entirely based on quality. During the 2008 presidential primaries, Obama's quality advantage over Hillary Clinton was not straightforward. He had on his side "friendly media coverage and an over-stoked appetite for anything new" (Obama 2020, 67) but by traditional standards of quality—name recognition, political experience, and early endorsements—Clinton surpassed him at least in the early stages of the primary. It makes sense then that heading into the Iowa caucus, Obama recalled "[i]t wasn't that we ducked racial issues …[b]ut Plouffe, Axe, and Gibbs (his campaign advisors) made no apologies for de-emphasizing any topic that might be labeled a racial grievance, or split the electorate along racial lines, or do anything that would box me in as 'the Black candidate'" (Obama 2020, 115).

As assumed in our model, downplaying identity can be costly. In February 2007 and March 2008, ducking racial issues became impossible when the media circulated inflammatory quotes on race by Obama's church minister, Reverend Jeremiah Wright. After much deliberation, Obama eventually delivered the speech "A more perfect union" on March 18, 2008. On the surface, this speech confronted race head-on, but it also pushed back against "the temptation to view my candidacy through a purely racial lens". Obama spoke about his biracial heritage, distanced himself from Reverend Wright's most controversial comments, and reminded the audience he had beaten Clinton at predominantly White states such as Iowa. Furthermore, in May 2008, Obama announced his departure from Reverend Wright's church.

Racially inflammatory remarks resurfaced during the general elections when Black Congressman John Lewis compared John McCain and Sarah Palin to White segregationist George Wallace (Spetalnick 2008). This time around, Obama did not publicly repudiate Congressman Lewis or his comments. Even when McCain pressured him to do so during the third presidential debate, he did not (The New York Times 2008).[11] Why did Obama

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11. McCain urged during the debate "I hope that Senator Obama will repudiate those remarks that were made by Congressman John Lewis, very unfair and totally inappropriate." Obama did not mention John

leave his church to distance himself from Reverend Wright but refuse to do likewise for Congressman Lewis? One obvious explanation is that he did not want to offend a close political ally. Our theoretical framework offers another set of explanations based on how the political environment changed between the Democratic primaries and the general election.

First, in contrast to the primaries, Obama sensed a clearer quality advantage over McCain. In the summer of 2008, this advantage was not so high that he had nothing to gain by reducing racial appeals. However, there was less to gain: judging by quality alone, he recognized outgroup voters (non-Blacks) were more likely to support him than McCain. Based on observations of McCain during the Republican primaries as well as a political and economic climate that disadvantaged Republicans, Obama surmised "I wasn't sure I could beat the 2000 version of John McCain. But I was increasingly confident that I could beat the McCain of 2008." (Obama 2020, 153) According to Proposition 1, this advantage would give him less incentive to downplay his Black identity. Second, since there are fewer Black voters among non-Democrats, the relative size of Obama's racial ingroup is smaller in the general election than in the Democratic primaries. According to Proposition 5, this change also weakens incentives to downplay identities. Note that Proposition 6 and the simulation in Figure 3 show this expectation holds when the outgroup is sufficiently homogeneous. If we think about Whites as the main outgroup, it is fair to say that more than a small portion of Whites make vote choices based on identity.

Around the same time that Reverend Wright's comments on race surfaced in 2007, Obama took to heart a biblical analogy on his place in (Black) American history. A veteran of the civil rights movement told Obama he embodied "the generation of Joshua", put in the right place and time to finish the work of "the generation of Moses", men like himself and Dr. Martin Luther King (Obama 2020, 115). Yet, the success of Joshua was never a foregone conclusion, certainly not in the early days of the Democratic primaries. As the election progressed and doubts about the electability of a Black man diminished, so too, did Obama's

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Lewis's name or remark in his immediate response.

attempts to duck racial issues. The"strategic patience" (Obama 2020, 119) he had asked of himself and Black voters paid off on November 5, 2008. His victory speech concluded with an anecdote of Ann Nixon Cooper, a 106-year-old voter from Atlanta who was born "just a generation past slavery". As president-elect, Obama had nothing to gain by reducing racial appeals, so he could finally afford to publicly take his place in the legacy of the civil rights movement.

Discussion

This paper seeks to explain empirical findings that race and gender minorities do not always make electoral decisions based on these identities, even when they are personally meaningful. It does so by constructing an election game in which shared identity appeals generate expressive benefit for ingroup voters but result in an expressive loss for outgroup voters. Furthermore, the model accounts for trade-offs in voters' willingness to back a candidate who shares identity with them but lacks resources to implement policy competently (i.e., lacks quality). The analysis shows that candidate quality plays a key role in explaining when candidates *reduce* the level of appeals to their own identity group. We find that a candidate with a quality advantage that is not too low and not too high has an incentive to reduce the level of appeals. If the quality advantage is too low, mobilization of outgroup voters is not possible even with reduced appeal; if it is too high, mobilization succeeds without the help of reducing appeals. Electoral environment, such as relative group sizes, the intensity of identity conflict, and within-group heterogeneity and inequality, conditions the equilibrium occurrence and extent of reduced appeals.

The current study contributes to the development of a formal theoretical framework on strategic incentives in identity-based electoral decision-making. We believe there are many avenues that require further inquiry. The immediate next step of our theory involves electoral participation. Before adult citizens decide on which candidate to support, they must decide whether they want to become voters or donors. Here too, there is debate on just how much

women or racial minorities on the ballot can mobilize participation from one of their own (Tate 1993; Barreto 2010). The empirical debate persists in part because the secret ballot presents a legal barrier to identifying the demographic makeup of voters (King, Rosen, and Tanner 2004). To engage in this debate from a formal model perspective, the current game can be extended or modified and incorporate the participation calculus of voters.

The second avenue of research is to shift from complete information to incomplete information game. Although identity appeals can serve as a heuristic for candidates' ideologies, they can also lead voters astray (Boudreau, Elmendorf, and MacKenzie 2019). Since our current model is a complete information game, we assumed that the ingroup candidate and voters are ideologically aligned with each other. Future versions of the game can relax this assumption through an incomplete information game whereby voters do not have perfect knowledge of candidates.[12]

Finally, we currently treat candidate quality as something independent from other parameters introduced in the game. As long as the quality is operationalized by attributes such as name recognition and political experience, it makes sense to treat it as an exogenous parameter. However, since these attributes do not accurately measure the quality (dis)advantage of race and gender minority candidates, discussions of their candidacy often shift to the closely related concept of *electability* (e.g., Linskey and Wang 2020). Unlike quality, electability can be endogenous to other factors such as group size, group status, and group ideology. Thus, future versions of the game can model and explore the (normative) implications of potential endogeneity between candidate electability and other group-level attributes.

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12. Similar to the model suggested by Bassi, Morton, and Williams (2011), but their game does not consider the incentives of candidates.

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