

Divide or Alienate: Effects of Social Identity Appeals in Electoral Competition*

Dominik Duell
Institute for Advanced Study in Toulouse

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Abstract

Appeals to social identities are commonplace in electoral politics and are known to influence voting behavior. Conventional wisdom suggests that the effectiveness of group appeals depends on its ability to provide clear heuristics to voters either by activating recognizable stereotypes, setting a target for an expressive choice, or by priming shared group interests. What happens when such cues are less readily available because the targeted constituency the candidate tries to lure into her electoral coalition is increasingly heterogenous? To answer this question, I designed a laboratory experiment that instantiates an election environment with campaign appeals to group identities where voters of one social group favor one candidate on the main dimension of political competition but may jointly coordinate their electoral support on *any* of the candidates in exchange for group-targeted policies. I find that when identity appeals are aired, voters shift the focus of their vote choice from a self-centered perspective to one that accounts for the actions and expectations of fellow group members and of other social groups. This sometimes creates a situation in which members of different groups support opposing candidates, deepening societal divisions along group lines. Often, however, salient group identities make voters turn their back on the candidate they would prefer on the main policy dimension and flock to another candidate to secure policy benefits distributed at the group-level.

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1 Introduction

Election-seeking politicians frequently appeal to ethnic, racial, or religious groups in an attempt to insert group concerns in voters' decision-making calculus. 'Playing the race card' by appealing to ethnic and religious identities is generally seen as a viable campaign strategy – in the U.S. (Mendelberg, 2001) and elsewhere (Wilkinson, 2004; Chandra, 2004). Conventional wisdom suggests that the effectiveness of such group appeals depends on its ability to provide clear heuristics to voters by activating recognizable stereotypes (Valentino, Hutchings and White, 2002), setting a target for an expressive choice (Fiorina, 1976; Schuessler, 2000), or by priming shared group interests (Rabushka and Shepsle, 1972). What happens, then, when such cues are not readily available? In today's increasingly diverse society, candidates continue to use targeted group appeals, but are more than ever forced to build coalitions that combine varied interests and heterogenous characteristics to stay electorally competitive. Activating clear stereotypes to guide voters' choices or finding obvious common interests shared among members of one social group becomes more difficult to achieve. This paper argues that social identity appeals primarily force voters to pay more attention to their expectations of how others will behave, thereby initiating a strategic response among members of one group as they react to the anticipated effect of the appeal on which candidate emerges as the most likely winner and which candidate will be more likely deliver policies beneficial to the group. As a result, identity appeals may backfire for the candidate whose campaign targets a specific social group by either reducing their electoral support – even if such behavior can be quite costly to that group on some policy dimensions – or increasing the electoral support from other social groups for the political opponent.

The mechanism I propose can be clearly observed in the American electorate as the major political parties attempt to organize and rebuild electoral coalitions to account for the steady influx of Hispanic and Latino voters (DeSipio, 1998; Abrajano and Alvarez, 2010; Abrajano and Hajnal, 2015). In the 1997 mayoral election in Los Angeles, two white candidates, Republican businessman Richard Riordan and former activist Democrat Tom Hayden, ran for office. Both competed for Latino support by offering group-targeted benefits. Riordan pushed for massive transfers to LA's schools (Kaufmann, 2003, 162), which are dominated by Latino students, and Hayden took a strong stance against anti-illegal immigration initiatives (Newton, 1997). Despite the fact that only 43%

of Latino voters supported Riordan in the 1993 mayoral race, on this election day, according to Los Angeles Times exit polls, he scored 60% of the Latino vote (Kaufmann, 2003, 164) in a city where Democrats outnumber Republicans two-to-one. Exit polls show that voters were satisfied with Riordan's record of improving public safety and pro-business stance (Pinkus, 1997, 2). His success with Latino voters, however, was largely attributed to his ability to convince them that he will continue to produce the promised outcomes in strengthening LA's public education system (Kaufmann, 2003, 162) even though he may promote economic policies that are costly to many members of the voting population who are "more likely to be working class" (Sonenshein, 2004, 95). In other words, Latinos may have flocked to Riordan at such a scale because it seemed likely he would win the popular vote and he had established a reputation of delivering on important group-targeted policies.

Like Riordan, New York Governor George Pataki saw a similar increase in Hispanic electoral support when he garnered 38% of the vote share in his third re-election bid in 2002, which represents an increase of 13 percentage points over his mobilization of this constituency in 1998 (Coffin, 2003). Along with his Democratic opponent, Andrew Cuomo, Pataki heavily campaigned for Latino votes. The incumbent had established a reputation as using his office to offer pork to supportive constituencies (Jacoby, 2002), so when he offered targeted policies to Hispanics by announcing strong opposition to U.S. military exercise on the Puerto Rican Island of Vieques and fostering a better immigration status for Colombians, voters could reasonably trust that Pataki would come through on his campaign promises. Additionally, since polls projected he would win throughout the period running up to election day, a sizable proportion of Hispanic voters opted to bandwagon with the likely winning coalition to receive at least some tangible benefits, and Pataki took the governor's seat in a landslide with an unexpectedly large Hispanic vote share.

Also, state-level results of the 2004 presidential elections give evidence of coordination effects among non-affiliated groups of voters who accept cost in the economic policy dimension because of the conviction that George W. Bush was more likely than John Kerry to deliver on other issues they care about. Given the toss-up in 2000, many were surprised to that Bush managed to secure the state with an unexpectedly larger margin. Both Bush and Kerry deliberately appealed to the various Hispanic constituencies in the state but it was Bush that won a decisive victory among the

numerically strongest of the state’s new electorates: Puerto Ricans.¹

While these examples are quite telling, it is not yet enough to fully assess the effects of identity appeals on increasingly heterogenous electorates. After all, each individual election has unique features and lacks the appropriate counterfactual to identify any causal effect. If Hayden and Cuomo had been incumbents, would Latinos have discounted Riordan’s and Pataki’s ability to deliver the goods? If Bush had focused his campaign in a state where his brother, as governor, hadn’t tailored the same electoral coalition for himself just two years earlier, would Puerto Ricans have been as convinced that Bush would care about their particular needs in a way Kerry would not?

I designed a laboratory experiment to model the described formation of electoral coalitions and to cleanly distinguish the effect of identity appeals from other correlates of observed behavior. The experiment instantiates an election environment where subjects in the role of voters of one social group favor a particular candidate on the main dimension of political competition but may jointly coordinate their electoral support on *any* of the candidates in exchange for group-targeted benefits in another dimension. Experimental treatments, reflecting the content of campaigns, vary whether personal interests or benefits from acting jointly with fellow group members are made salient. The baseline treatment operationalizes the main dimension of political conflict as a distribution of income with a majority group comprised of mostly rich members, a minority group that is mostly poor, and two candidates that either propose redistribution or a wealth-preserving policy. The group-targeted benefit is represented by a club good that the group can secure for all of its members.

This study contributes to research on social identities in politics by providing a framework that accounts for the relationship between psychological and strategic implications of heightened group concerns in electoral campaigns in a controlled setting. Artificially induced social groups enable to identify the roots of candidate choices that are not related to the omnipresent influence of extant stereotypes. The experimental design further teases out whether an individual’s group-regarding concerns are driven by expressive motives, instrumental reasoning induced by a communality of interests, or a strategic decision about which candidate will most successfully deliver the goods to the group, or, whether individuals simply ignore the group and choose based on narrower personal interest.

¹For a recap, see [Bishin and Klobstad \(2009\)](#) and media reports ([Goodnough, 2004](#)).

The results show that when identity appeals are aired, voters not only trade-off personal and group interests differently, they also shift the focus of the individual's vote choice from a self-centered perspective to one that accounts for the actions and expectations of fellow group members and of other social groups. This sometimes creates a situation in which members of different groups support opposing candidates, deepening societal divisions along group lines. Often, however, salient group identities make voters turn their back on the candidate they would prefer on the main issue dimension and flock to another candidate to secure group-targeted policy benefits on another policy dimension. As a result, by priming group interests, candidates might find that they alienate who seemed, at first, to be their main supporters.

2 Preference-driven, informational, and strategic effects of identity appeals

In a demographically changing electorate, activating stereotypes may be harder to achieve and more likely to backfire, candidates are less likely to share many social traits with voters, and political interests are less easily aligned with social group boundaries. This makes it necessary to reassess the ways by which identity appeals translate into vote choice.

Perhaps the most commonly considered mechanism underlying the effect of social identity² salience on individuals' decisions works through changes in preferences. When their group identity is salient, individuals give more weight to group-regarding interests than they otherwise would; this socially motivated behavior is attributed to general warm-glow in-group favoritism, group equality concerns, or reciprocity, among others (Tajfel, 1981; Tajfel and Turner, 1986; Andreoni, 1989; Goette, Huffman and Meier, 2006; Bernhard, Fehr and Fischbacher, 2006; Chen and Li, 2009; Landa and Duell, 2015). Extant research suggests that social identity effectively changes the preference structure because individuals receive emotional gains by conforming to group norms (Akerlof and Kranton, 2000, 2010; Dickson and Scheve, 2006), from group status (Shayo, 2009; Klor and Shayo, 2010), or by simply acting in conformity with fellow group members (Bernheim, 1994), but may also suffer from emotional losses by failing to give in to peer pressure and selling out

²Social identity may be defined as an emotionally heightened aspect of a person's sense of self that derives from perceived membership in a social group.

(White, Laird and Allen, 2014). With respect to voting, all these motivations may be the source of what is labeled expressive behavior: an action that is not taken only to enjoy the benefits from the indirectly influenced electoral outcome but also because it induces positive utility itself (Brennan and Hamlin, 1998; Tyran, 2004; Hillman, 2010; Hamlin and Jennings, 2011).³ Symbolic expression of group identity may have positive downstream benefits for individuals in in-group interactions (Schnakenberg, 2014).

Although emotional gains and losses associated with group identity, personal interests that are correlated with those of other group members, and expressive motivations undoubtedly enter individuals' utilities, salient group identities may also increase the awareness of incentives and circumstances of fellow group members or of the constellation of social groups and, with it, their expected actions and beliefs. Previous work has shown that voters use social identity as a low-cost informational cue (Lupia and McCubbins, 1998, 2000; Chandra, 2004) and these cues are more valuable to them when they are otherwise more ignorant (Morton, Williams and Bassi, 2011). Stereotypes are one example of such a heuristic. In many elections, however, information provided by cognitive shortcuts linked to social identity could be ambivalent or absent – e.g., no candidate emerges as clear target of a groups' coordinated support. In these situations, the mere existence of salient social group markers may already generate common knowledge among the members of a social group allowing for successful group coordination – a strategic response – similar to other more context-rich public signals like rituals (Chwe, 2013), status symbols (Ridgeway et al., 2009), or information about political outcomes (Mebane, 2000; Mebane and Sekhon, 2002).

Even if some research finds that politically-relevant group identities, i.e. partisanship, are no good predictor of whether individuals “cognitively elaborate” on which candidate they should support after receiving cues about the behavior of fellow group members (Mutz, 1997). It still remains to be shown whether salient group identity or interaction with fellow group members establishes a group-centered perspective (Walsh, 2004) with significant impact on how collective decisions are made; or, whether, identity appeals are simply a framing tool used by elites to shape political attitudes (Zaller, 1992).

The model and experiment that follow characterize the kind of group concerns that voters in-

³To be sure, the boundaries between expressive and instrumental behavior is very much context dependent (Hamlin and Jennings, 2011)

corporate into their decision-making, and the process by which this happens, in a multi-dimensional collective choice problem with benefits distributed at the individual *and* group-level. This study aims to parse the effects of group identity on preferences or the use of salient identities as informational shortcut from how individuals' strategic considerations change when their group membership is primed. I analyze, in particular, whether appeals to group identities increase the likelihood that a decision maker considers strategic complementarities – that is, the benefits that arise from joint group action resulting from coordinated support of a particular candidate. I provide behavioral expectations that reflect the multi-faceted nature of the effects of salient identity after introducing the experimental design and set them in relation to the incentive structure set by the model. Finally, I explain how experimental treatments are able to distinguish between those different underlying motives of identity appeals-induced behaviors and present results from the experimental sessions.

3 A simple model of electoral competition

Electoral competition is modeled in a complete information environment and I provide equilibrium predictions accordingly. As the primary purpose of the model is to illustrate the set of incentives underlying vote choices in a decision situation approximating democratic electoral competition without group identity-based allegiances between voters and candidates, the explicit role of identity appeals is notably absent.

Consider a society of $N = 5$ agents where agent i is characterized by two distinct attributes. The first attribute is her level of income ω_i distributed according to $F(\omega_i)$. The second attribute is a binary social identity attribute (e.g., social group membership), which, given N odd, induces a division of citizens into two social identity groups, orthogonal to income distribution. Thus, with respect to the distribution of this second attribute, agent i is either a member of the *majority identity group* MJ ($N_{MJ} = 3$) or of the *minority identity group* MI ($N_{MI} = 2$).⁴

The political competition is a majority voting contest between two candidates, $C = \{P, R\}$. Candidate P 's platform is to provide a public good, which voters value at V , at the cost of a tax τ to finance it. Candidate R is the anti-redistribution candidate whose platform is to maintain

⁴Throughout the paper, I will refer to the majority identity group sometimes as majority group and to the minority identity group as minority group.

the existing income levels without redistributive public good provision. I assume throughout that candidates are committed to implementing their respective platforms if elected and abstract away from the reasons they might have for running.⁵ Agent i chooses which of the candidates to vote for, $a_i \in \{p, r\}$. Agent i 's utility has two components. One component, denoted U_i^C , is induced directly by which candidate wins the election:

$$U_i^C = \begin{cases} \omega_i(1 - \tau) + V & \text{if } P \text{ wins} \\ \omega_i & \text{if } R \text{ wins} \end{cases}$$

The second component is the *group benefit* which depends on whether agent i is a member of the group which represents a majority of voters who voted for the winning candidate. Formally,

$$I = \begin{cases} \mathcal{I} & \text{if } n_{MJ} > n_{MI} \text{ and } i \in MJ \\ & n_{MI} > n_{MJ} \text{ and } i \in MI \\ \frac{1}{2}\mathcal{I} & \text{if } n_{MJ} = n_{MI} \\ 0 & \text{otherwise,} \end{cases}$$

where n_{MJ} is the number of voters in the majority group who voted for the winning candidate, n_{MI} is the number of voters in the minority group who voted for the winning candidate, and $\mathcal{I} > 0$.

Agent i 's utility is thus, given as

$$u_i = U_i^C + I.$$

I can be seen as the reward given to members of the social group that most strongly supports the victorious contender representing the allocation of a scarce resource exclusively to that group. In the real world, such policies may allocate funds to an industry that is located where a critical mass of a supportive social group resides or protect an exclusive right valued by that social group. Mining subsidies for conservative whites in West Virginia are illustrative of the first type of policy, while things like exemption from military service for orthodox Jews in Israel, policies that set official languages in multi-lingual societies, or immigration regulations that restrict resident permits to

⁵The game that is analyzed is not one of strategic candidate entry. Candidates in empirical elections run for a number of reasons including their assessment of the probability of winning but also reputation building, grass-roots mobilization for future campaigns, etc. Models of strategic candidate entry that focus on distinct rationales include (Gordon, Huber and Landa, 2007; Ashworth and Shotts, 2014).

non-universal groups are examples of the second type. The relationship between politicians and voters in many societies is frequently characterized as clientilistic (Kitschelt and Wilkinson, 2007); examples can be found from New Haven, Connecticut (Dahl, 2005) to Zambia (Posner, 2005). Policies that exclusively benefit non-universal social groups are a standard feature of politics, even if their “purchase” in Western democracies is not acknowledged by stakeholders as explicitly as it is in patronage systems. The public often sees politics as “group-centric” and evaluates political outcomes in terms of who gets what and whether they deserve it (Nelson and Kinder, 1996). Politicians allocating resources to discernible social groups makes each voter pivotal in the fight for such a targeted benefit.⁶

Note, in the model, even when i does not vote for the winning candidate, she receives the group benefit when her group represents a majority in the winning coalition. Suppose agent i is member of MJ and the two other members of MJ as well as one member of MI vote for P but agent i herself votes for R . Then, MJ represents a majority of votes in the winning coalition and all members of MJ, including agent i , receive the group benefit.

I will restrict analysis to the pure strategy Nash equilibria. Equilibrium profiles of this game are of the form $(a_1^{\text{MJ}}, a_2^{\text{MJ}}, a_3^{\text{MJ}}, a_1^{\text{MI}}, a_2^{\text{MI}})$ where $a_i^{\text{MJ}}, i = \{1, 2, 3\}$, are the pure strategies chosen by the three members of MJ and $a_j^{\text{MI}}, j = \{1, 2\}$, are the pure strategies chosen by the two members of MI .

Given that this is a coordination game, there is a range of Nash equilibria in pure strategies. There are equilibria that are not contingent on the distribution of income (*income-independent equilibria*), where all agents vote for the same candidate, and Nash equilibria that are contingent on a particular distribution of income across groups MJ and MI (*income-dependent equilibria*). In the latter equilibria all members of MJ choose the same candidate.

Income-independent equilibria are characterized by convergence of all voters on voting for the same candidate: $(p, p, p; p, p)$ and $(r, r, r; r, r)$. To see that these are equilibria, suppose one voter in MJ deviates and votes for the other candidate. Then, her group will need to share the group benefit with the minority group because the winning candidate would now be supported by two voters from

⁶This also helps explain why turnout is often high, even though the influence of each individual vote on the overall electoral outcome is minuscule, and it illuminates why some voters make choices that reduce their own welfare in exchange for an attempt to secure a prize for their group (Smith and Bueno De Mesquita, 2012).

each group and that will mean a drop in her expected utility, making this deviation unprofitable. Holding everybody else fixed, no member of MI has a profitable deviation given that the voting outcome is fully determined by the unanimous vote of members of MJ and those members capture the group benefit.⁷

In income-dependent equilibria, all members of MJ vote for R if all of their incomes are higher than

$$\omega^L = \frac{V - I}{\tau}$$

and vote for P if all of their incomes are lower than

$$\omega^H = \frac{V + I}{\tau}.$$

Strategy profiles fitting the description of income-dependent equilibria are (1) $\forall j \in MJ$ s.th. $w_j \leq \omega_H$ and $\forall i \in MI, (p, p, p; r, r)$ and (2) $\forall j \in MJ$ s.th. $w_j \geq \omega_L$ and $\forall i \in MI, (r, r, r; p, p)$. To see why (1) is an equilibrium, suppose members of MJ vote for P and members of MI vote for R . Considering a deviation, a member of MJ trades-off receiving a payoff of $(1 - \tau)\omega_i + V + I$ from voting with her fellow group members and ω_i from voting with the other group. Solving for ω_i reveals that any member of MJ is willing to vote for P as long as $\omega_i < (V + I)/\tau = \omega^H$. Equivalently, to see why (2) is an equilibrium suppose members of MJ vote for R and members of MI vote for P . Considering deviation, a member of MJ trades-off receiving a payoff of $\omega_i + I$ from voting with her fellow group members and $(1 - \tau)\omega_i + V$ from voting with the other group. Solving for ω_i reveals that any member of MJ is willing to vote for R as long as $\omega_i > (V - I)/\tau = \omega^L$. Holding the actions of everybody else fixed, no member of MI , again, has a profitable deviation given that the voting outcome is fully determined by the unanimous vote of members of MJ and those members capture the group benefit.

Several specific values of ω_i are important cut-points in the income-space characterized by differences in behavioral predictions above and below them. I will refer to incomes below ω_L as *very poor*, those between ω_L and $V/2$ as *moderately poor*, those between $V/2$ and ω_H as *moderately rich*, and those above ω_H as *very rich*.⁸

⁷Note, also $(p, p, p; p, r)$ and $(r, r, r; r, p)$ are Nash equilibria in pure strategies.

⁸From the equilibria described above it should be immediately obvious that ω_L and ω_H are two of these cut-points.

This simple model illustrates gains or losses in payoff for the individual agent given her level of income – very poor, moderately poor, moderately rich, or very rich. And, it demonstrates the existence of two equilibria – all agents vote for P and all agents vote for R – under any income distribution as well as of one equilibrium in which the majority group votes for R and the minority group votes for P . The experiment below, then, tests whether priming the income- or group-component of the utility function makes agents coordinate on one particular equilibrium.

4 Experimental design

The experiment simulates political competition between two candidates with appeals to non-universal identity groups. In this interaction, if elected, one candidate will implement a redistributive platform while the other a wealth-friendly policy. Additionally, the winning candidate will reward the social group that constitutes a majority of voters among those who support her by implementing a policy that will disproportionately allocate a scarce resource to that group. Voters are characterized by two attributes: individual income and membership in a social group. Because the focus centers on the effects of priming a particular attribute *as a group attribute*, I will refer to it as *social identity* (and to the group sharing that attribute as a *social identity group*), and to the other as individual-level attribute (assigned income).⁹

The experiment instantiates voting in a redistributive environment with variation in the level of income and membership in a social identity group. The game closely follows the model from Section 3. I implement different distributions of income that correspond to the existence of different equilibria in the model. In the baseline treatment condition (*No appeals*) there is no priming and in the identity appeals treatment condition (*ID appeals*) the subjects’ social identity is primed; details $\omega_i = V/2$ is relevant only insofar as the limit as I goes to 0, $\lim_{I \rightarrow 0} \omega_H = \lim_{I \rightarrow 0} \omega_L$. That is, as I is going to zero, the groups of moderately rich and moderately poor become smaller and smaller. But, in all equilibria, members of MJ vote together and, at $I = 0$, the moderates are gone.

⁹Of course, income itself could be primed in a social group relevant way. Social identities, and what constitutes them, are fluid. We might attach emotion to a social attribute we share with a group, raising that attribute to be the root of a social identity at some point in time but not another. From this perspective, income could be the shared social attribute that is the base of a social identity – i.e., class – just as being Punjabi could be the base of an ethnic social identity. How and whether an attribute is primed in a campaign will determine the “socialness” of the identity it evokes.

of appeals are described below. I will refer to those two treatments as *main treatments*. In the main treatments, most members of the society are assigned an income below the mean, but most members of the majority identity group are wealthier than the mean income. I implement three supporting treatments with the explicit purpose to clarify the behavior – choices upon receiving identity appeals in contrast to no appeals – observed in the main treatments. In one, I prime voters’ income (*Income appeals*). In a second, I repeat the main treatments – identity appeals and no appeals condition – with a mostly poor majority group and a mostly rich overall society (I will refer to those treatments as *Poor majority*). In the final supporting treatment all members of the minority identity group are assigned a high income (*All rich*).

Table 1: Summary of treatment conditions

Treatments		Number of subjects	Number of observations
Main treatments	No appeals	40	1600
	ID appeals	40	1600
	Income appeals	40	1600
Poor majority treatments	No appeals	15	600
	ID appeals	40	1600
All rich treatment	ID appeals	10	300

Each experimental session unfolds in two stages: (1) Group identity inducement stage and (2) voting game stage.

Social identity inducement stage At the beginning of each experimental session, subjects are shown 5 pairings of paintings, one by Paul Klee and one by Wassily Kandinsky, and are asked to choose their preferred painting in each pair. Based on which painter’s work a subject prefers most of the time, he or she is assigned to be a *Klee* or a *Kandinsky*.¹⁰ Once identities are assigned, in collaboration with other subjects in the same identity group, subjects participate in a quiz in which they are asked to identify the painter (Klee or Kandinsky) of five further paintings. Subjects within an identity group receive additional payoff if the majority of members of their identity group name

¹⁰See [Tajfel et al. \(1971\)](#), [Chen and Li \(2009\)](#), and [Landa and Duell \(2015\)](#) for examples of the use of painter-preferences to induce identities.

the correct painter. In the subsequent voting game stage, the identities of all subjects with whom individual subjects interact are displayed for them on the screen. The group inducement stage approximates *minimal groups* (Tajfel and Turner, 1986) which allows the experimenter to avoid uncontrolled associations of identity with the particular choices available to the subjects.¹¹

Voting game stage The voting game proceeds as follows:

1. Subjects are randomly assigned to a *decision group* of 5 at the beginning of the session and that assignment stays fixed until the end of the experiment.
2. Subjects are randomly assigned their income from the underlying set of fixed income distributions without replacement (see Supporting Information Section C.3).
3. Subjects are informed about income and identity group membership of all subjects in their decision group.
4. Subjects' income or identity group membership is primed in the income appeals and ID appeals treatment, respectively.
5. Subjects are asked to make a choice between two alternatives, P , referred to as *Alternative A*, and R , referred to as *Alternative B*. Whichever alternative is chosen by a majority of participants in their decision group becomes the *winning alternative* of that decision group (See Supporting Information Section C.4 for an illustration of what subjects see on their computer screen while making this decision).
6. The majority winning alternative is announced to the members of the decision group and subjects are privately informed about their round earnings.

In this experiment, $V = 25$, $\mathcal{I} = 10$, and $\tau = .5$, which ensures existence of the equilibria described in Section 3 and allows for easily comprehensible cut-points in the income space separating

¹¹Considerable experimental literature using the minimal group paradigm has shown its effectiveness in inducing patterns of responses to identity, including in-group favoritism and inter-group competition, that resemble those usually observed outside the laboratory with naturally occurring group identities. Induced identities significantly affect subject behavior with respect to individual shirking and free-riding (Eckel and Grossman, 2005), cooperation, and willingness to reward or punish (Chen and Li, 2009; Goette, Huffman and Meier, 2006; Bernhard, Fehr and Fischbacher, 2006; McLeish and Oxoby, 2007). Eckel and Grossman (2005) and Goette, Huffman and Meier (2012) provide evidence that the effects of identity being induced are monotone in many circumstances in the strength of that identity (i.e., the weakness of identity inducement does not bias results in the wrong direction). Also, the effects of artificially induced weak identities increase with the salience of identities (Eckel and Grossman, 2005; Charness, Rigotti and Rustichini, 2007; Chen and Chen, 2011); operationally, a key factor that raises such salience is interactions with fellow group members in performing joint tasks such as the group quizzes administered as part of each experimental session.

those subjects who benefit more from voting for P from those who benefit more from voting for R in the income-dimension.

The round payoff to subject i when P wins is given by

$$\text{payoff}_i(\text{P wins}) = \begin{cases} \frac{1}{2} \text{income}_i + 25 + 10 & \text{if } i\text{'s identity group hold a majority} \\ & \text{among all voters who vote for } P \\ \frac{1}{2} \text{income}_i + 25 & \text{otherwise} \end{cases}$$

The round payoff to subject i when R wins is given by

$$\text{payoff}_i(\text{R wins}) = \begin{cases} \text{income}_i + 10 & \text{if } i\text{'s identity group hold a majority} \\ & \text{among all voters who vote for } R \\ \text{income}_i & \text{otherwise} \end{cases}$$

As made clear in the experimental instructions, and is further revealed on the subjects' screens, there are two distinct parts to the subjects' round payoff: (1) a portion that depends on their assigned income ($(1 - \tau) \text{income}_i + V$ when P wins or income_i when R wins), referred to as *decision payoff*, and (2) a portion that is determined by whether i 's identity group holds a majority among the supporters of the winning alternative, the group benefit in the model in Section 3, referred to as *identity payoff*.

The list of feasible income values potentially assigned to each subject contains 10, 22, 27, 38, 44, 56, 62, 73, 78, and 90. With these parameters and the payoff function taken from the model, voters are defined as “very poor” if they are assigned an income lower than 30, “moderately poor” if income falls between 30 and 50, “moderately rich” with an income between 50 and 70, and “very rich” by incomes above 70.

In the main treatment, I implement four different income distributions where all of them feature a poor minority group with one very poor and one moderately poor voter. The majority group always contains one very rich and one moderately rich subject while the income of the third member of that group varies between very poor and moderately poor.¹² One income distribution allows for the existence of the income-dependent equilibrium as well as the income-independent

¹²In the income distributions of the main treatment, assigned very poor incomes in the majority group are 10 and 22 while moderately poor incomes are 44.

equilibria characterized in Section 3 (two poor voters in the minority group, two rich voters and one moderately poor voter in the majority group). Three income distributions that feature one very poor voter instead of a moderately poor voter in the majority group result in the existence of only income-independent equilibria.

The payoffs in the game are structured in such a way that the loss in the decision payoff when R wins with the help of a moderately poor voter is offset for that voter should the group secure the group benefit from jointly supporting R . Similarly, the decision payoff loss for a moderately rich voter when P wins is negated should the group win the group benefit as well.¹³ Note that, even though subjects interact anonymously through a computer terminal, the group composition stays fixed for the duration of the experiment. As a result, the experiment instantiates social monitoring: subjects are able to monitor how fellow group members and other voters choose and are free to reciprocate or punish behavior they observe. Also, designing a basic setup that has no pure self-interest equilibrium, the identity payoff is large enough to make ignoring group complementarities always costly, makes this an interaction that is closer to the interdependent nature of political interactions I aim to approximate than most experimental studies on voting behavior. This interdependence between individual- and group welfare even allows to study mass behavior (voting) in those small groups formed in the laboratory, given that in reality the individual voter is similarly pivotal in influencing politicians' decision which group to target with the benefits from a club good.

Identity and income appeals Appeals are shown to subjects on their computer screens. Recall that in the experimental instructions and on subjects' screens, candidate P is referred to as *Alternative A* and candidate R as *Alternative B*. The statement representing an identity appeal reads:

“Remember you are a KLEE (KANDINSKY)! Should you vote with other Klees (Kandinskys), you may receive a higher identity payoff.”

And the income appeal statement is:

“Remember your income is below (above 50)! Should you vote for Alternative A (Alternative B), you may receive a higher decision payoff.”

¹³In this sense, *selling out* (White, Laird and Allen, 2014) is defined as the situation when a moderately poor voter decides to vote for P (helping the redistributive candidate win should the minority group vote for P as well) while her fellow group members vote for R .

5 Identification of the effects of identity appeals and motivations behind observed behavior

Targeted identity appeals raise the salience of group cleavages and alter voter behavior in meaningful ways, but the fundamental question of causal interpretation remains: Are voters simply suddenly more concerned with the well-being of their fellow group members? That is, do they put more weight on group-regarding preferences in their decisions? And, if yes, which concerns and to what behavioral effect? Or, will their decision-making calculus also now include strategic motivations?

In this experiment, identification of causal effects of identity appeals on voting behavior rests on four pillars: (1) complete information, (2) selection into and priming of a single, controllable group-level attribute (social identity), (3) varying the salience of different components of individuals' utilities: personal interest (decision payoff) or group complementarity (group benefit) component, and (4) random assignment of income according to particular distributions of income across identity groups.

The advantage of (1) complete information about candidates' payoffs, voters' payoffs and policy consequences, and instantiation of truthful campaign appeals, implies that we can set aside interpretative complexities due to information asymmetries and possible perceptual biases.

The value of attribute (2) mitigates the concern raised by the possibility of the existence of multiple social identities for each individual (Klar, 2013). Whatever identity is the most prominent determinant of behavior at a given point in time affects choices in ways that may differ and even contradict those implied by a different social identity (Shih, Pittinsky and Ambady, 1999; Benjamin, Choi and Strickland, 2010). Restricting the range of available social identities to a single trait that is seemingly unrelated to the behavior of interest enables cleaner inference than in the case with multiple and/or prima facie choice-related social identities. Inducing artificial group identity also means that stereotypes will not guide behavior.¹⁴ Both treatments feature a manipulation, where the appeal appears as a simple sentence on each subject's computer screen. Although the treatments draw attention to some aspect of the subject's utility function, the appeal is far weaker

¹⁴Group selection based on painter preferences can be contrasted with group selection on race, for example, which has a range of associations for different subjects not accessible to or controllable by the experimenter.

than the implications that stem from peer pressure and/or the strength of social norms outside of the laboratory. As a result, if I am able to identify any treatment effect in such an environment, it is reasonable to assume that the effect will persist in the real world. In short, if a weakly induced identity and simple appeal to those identities is enough to shape behavior, contextualized and consequential naturally occurring identities should have a stronger effect and follow the same pattern. Of course, that pattern will be sometimes magnified or disguised by those effects only actually existing group identities feature.

Attaching salience to different components of individuals' utilities (3) in combination with variation in income distributions (4), facilitates the ability to parse different effects of identity appeals on voters' choices. The basic interaction instantiated in the laboratory features group complementarities, in which coordination with fellow group members on one of the alternatives increases the chances of a higher group benefit. Appealing to voters' income primes subjects to ignore these group complementarities and to instead make a choice based on narrow self-interest defined by assigned income. In contrast, appealing to voters' group identity should trigger a stronger focus on group complementarities initiating coordination on one of the two alternatives. Since the groups can converge on either of the alternatives, varying the underlying income distribution within the identity appeals treatment condition allows the elicitation of different coordination mechanisms. Of course, the identity appeal could also increase individuals' concern with the welfare of fellow group members. In the context of this experiment, such a higher weight on group-regarding preferences in subjects' decision-making takes two potentially contradicting expressions: a vote to increase total group welfare and a vote to decrease inequality within the group.¹⁵

Should identity appeals shift weight to emphasize group-regarding preferences in decision-making, voters may be more concerned with overall group welfare or with the welfare of those least well-off within the group.¹⁶ When appeals raise the importance of group concerns in voters' utilities in a way that makes maximizing overall group welfare the objective, a voter that is a member of a mostly rich group would be expected to vote for wealth-preserving candidate *R*. In

¹⁵Aspect (4) actually has a second effect: random assignment to income helps rule out subject-level effects in the sample statistics.

¹⁶In effect, decisions may resemble "ethical voting" (Feddersen, Gailmard and Sandroni, 2009) with the fellow group-members as target of beneficial treatment.

contrast, a voter that is member of a mostly poor group will support the redistributive candidate P . Following a group-utilitarian approach (Coate and Conlin, 2004) means that even strategic problems, like the coordination problem to secure the club good, “are transformed into parametric decisions where each individual simply pursues the group’s goal by choosing a profile of strategies that maximizes collective utility” (Guala, Mittone and Ploner, 2013).

The behavioral expectation in the context of the main treatment of this experiment is that

increasing the salience of the group identity should increase the support for R among the voters in the identity majority group and for P among the voters in the identity minority group independent of individually assigned income (BE-Group Welfare).

When voters start emphasizing the welfare of the least well-off in their group triggered by appeals to their group identity,

increasing the salience of identity should lead all voters to increase their willingness to vote for P (BE-Redistribution).

Voters in general, and subjects in experimental laboratories in particular, display preferences for redistribution. Extant experimental literature finds that subjects are not only selfish in games with redistributive consequences but make choices that benefit subjects with low endowments on a regular basis; this is particularly true when income is randomly assigned (Loewenstein, Thompson and Bazerman, 1989; Bolton and Ockenfels, 2000; Fehr and Schmidt, 1999; Charness and Rabin, 2002; Durante, Putterman and Weele, 2012).

If identity appeals shift attention to group complementarities, which of the two alternatives should groups coordinate on to secure the group benefit?

In the context of comparative politics, Chandra (2004, 13) articulates one important argument that provides a starting point to guide our thinking about how identities may serve as group coordination device: “If voters formulate preferences across parties by counting the heads of co-ethnics across parties, then it follows that they can form a reasonable expectation about the likely electoral outcome by counting the heads of members of their own category and others in the electorate.” Only when co-ethnics represent a large enough electoral coalition to help the candidate win, will we see coordination of vote choice along ethnic lines.¹⁷

¹⁷Among others, we find evidence of coordination driven voting choices in Argentina (Stokes, 2005), India (Chandra, 2006), South Africa (Ferree, 2006), Benin (Wantchekon, 2003), Mexico (Magaloni, Diaz-Cayeros and Estévez, 2007),

Extending this argument to multi-dimensional political competition suggests that group members are expected to coordinate by aligning with and supporting the apparent policy preferences of the group's majority. The argument behind such *group-majoritarian coordination* follows the intuition of counting heads where the individual voter assesses the likely vote choice of fellow group members based on what is best for the majority of that group. Suppose, for example, that a politician appeals to a social group whose membership consists mostly of wealthy individuals. According to majoritarian coordination, voting for the group would mean to vote against redistribution regardless of whether or not the individual voter is poor.¹⁸

The behavioral expectation in the context of this experiment states that

increasing the salience of the group identity should increase the support for R among the voters in the identity majority group independent of individually assigned income (BE-Majoritarian).

BE-Majoritarian describes the behavior equivalent to the strategy profile of the income-dependent equilibrium in which all members of the majority group vote for R and the income-independent equilibrium in which all voters vote for R .

This raises the question: is there any rationale that could justify the majority identity group attempt to coordinate on the candidate that offers the redistributive platform (P)? The answer is yes. In contrast to the predictions of group-majoritarian coordination, voters may want to jointly support a candidate that is most likely to win *given the preferences of non-members and broader incentives (i.e., incentives on other issue dimensions) of fellow group members*, and who will deliver the group benefits. It may, on such *equilibrium coordination*, turn out that members of the group will most likely coordinate on voting for a candidate who would otherwise be preferred by the group's minority.

Suppose the majority of a society would benefit from redistribution (the median income is below the mean income) but most members of an ethnic majority group are disproportionately wealthy. Appeals to the ethnic group identity makes ethnicity salient and undoubtedly raises

¹⁸Such behavior is observationally equivalent to the frequently noted phenomena whereby low-income groups vote for conservative parties when salient social group membership blurs the relationship between income and preferences for redistribution, effectively leading poor voters to at least partially ignore their pocketbook interests (Roemer, 1998; Scheve and Stasavage, 2006; De La O and Rodden, 2008).

awareness of the interests of that particular group, but it also serves to highlight the existence and preferences of the ethnic minority; the members of the ethnic majority should subsequently be more aware of the fact that the poorer ethnic minority prefers redistribution.¹⁹ This recognition will be particularly influential in altering the voting calculus of poorer members of the ethnic majority – those on the margins – by increasing the the likelihood that these individuals vote for redistribution as well. Given that the ethnic minority together with the poorer members of the ethnic majority represent a majority of votes in this society, the politician that offers a higher level of redistribution becomes a viable candidate for winning the election. At this point, it is optimal for the richer members of the ethnic majority to bandwagon and vote for more redistribution in an attempt to at least secure the club good for their group.

The equilibrium coordination argument suggests that

increasing the salience of the group identity should increase support for P among the voters in the identity majority group (BE-Equilibrium).

The equilibrium coordination argument predicts a unanimous vote for P , which is also an income-independent equilibria of the simple model of electoral competition.

To summarize the possible effects from salient identities, Table 2 lists four changes in behavior that are hypothesized to follow from exposing voters to identity appeals. Should the appeal prime the benefits from joint group action (group benefit), voters may respond by voting for R when the majoritarian coordination argument is correct or by voting for P when the equilibrium coordination claim is prevalent.

¹⁹Choices by members of the minority identity group in the experimental data, in fact, indicate the prevalence of the belief that voting for R is, indeed, not worth the attempt; they almost unanimously vote for P independent of particular income and treatment (See Section 6).

Table 2: Summary of treatments and expected behavior by the majority group

Treatment	Expected behavior	Treatment positively affects ...
ID Appeals		
Benefit of joint group action primed	R (<i>Majoritarian coordination</i>)	anticipation that all group members want to maximize group welfare
	P (<i>Equilibrium coordination</i>)	anticipation of actions of group members and minority voters
Group identity primed	P (<i>Group redistribution</i>)	willingness to redistribute within the group
	R (<i>Group welfare</i>)	willingness to maximize group welfare
Income Appeals		
Income level primed	P if poor, R if rich (<i>Income voting</i>)	consideration of own income

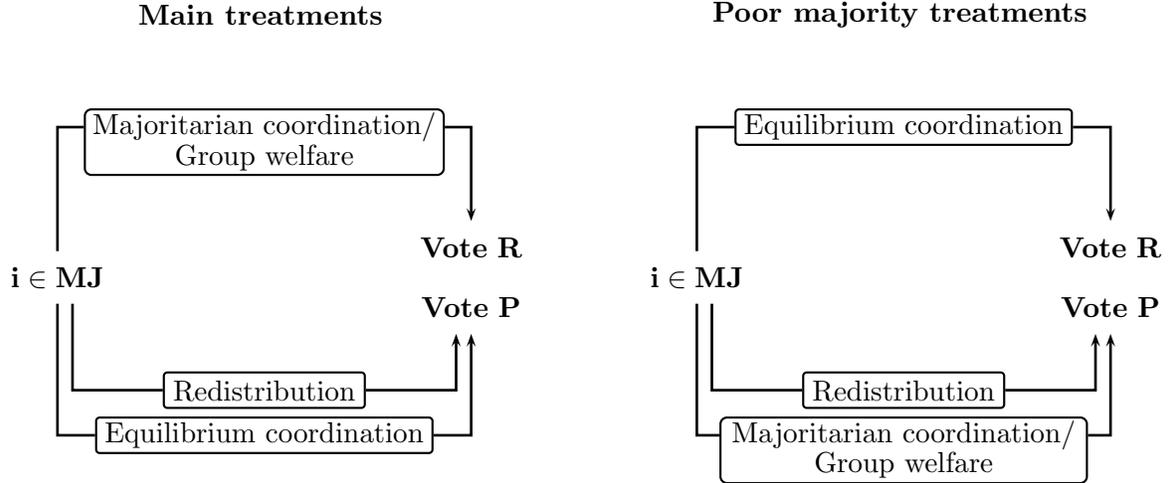
With the income distributions of the main treatment, the predictions of the equilibrium coordination argument are confounded by the logic of the group redistribution argument. To separate the equilibrium coordination argument from this redistribution argument, I conduct the *poor majority treatments* that mirror income distributions. In the distributions they implement, the majority identity group is mostly poor with one rich member and the minority identity group is rich. While those distributions are, arguably, less empirically relevant, the prediction of the redistributive argument within the majority group there goes in the opposite direction of the prediction of the equilibrium coordination. If we observe the poor members of the majority shift to support R , and the rich member fail to switch to P , we can safely conclude that the equilibrium coordination argument dominates the redistributive argument and be more confident in interpreting the behavior in the empirically more plausible treatment.

The predictions of majoritarian coordination point in the same direction as concerns for group welfare. The poor majority treatments do not ameliorate this concern; with a mostly poor majority group membership, maximizing group welfare means to vote for P , which is the same prediction derived from the majoritarian coordination argument for these treatments. However, because the results presented below clearly demand a rejection of the majoritarian coordination claim, behavior consistent with group welfare maximization can similarly be rejected.

Figure 1 summarizes behavioral expectations of the effect of identity appeals in the majority group arising from each of the four arguments above and shows how they play out in the main

treatments (rich-majority/poor-minority) and poor majority treatments.

Figure 1: Separating predictions of group-majoritarian coordination/group welfare and redistribution from equilibrium coordination behavioral expectations for the majority group, MJ .



The final treatment (*income appeal treatment*) primes subjects to consider their narrowly defined personal interest determined by their assigned income. By shifting the focus from group-regardingness or group complementarities, variation in the salience of a different component of voters' utility function should drive voters away from group concerns and thus represent an alternative test to determine the circumstances that lead to coordination with fellow social identity group members.

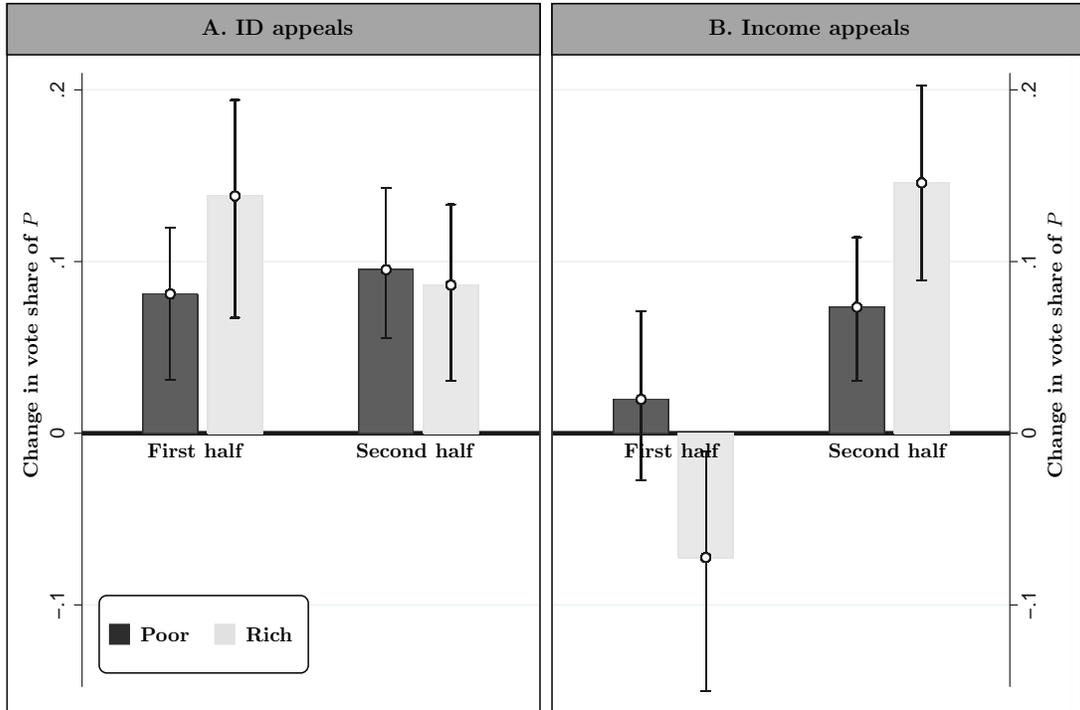
The prediction follows in that

increasing the salience of income should lead poor voters to increase their willingness to vote for P and rich voters to increase their willingness to vote for R, creating discordance in the majority identity group (BE-Income-Voting).

6 Results

I find that appealing to group identities, on average, causes voters to put less weight on narrow personal interest, but, more interestingly, also fails to translate into a greater emphasis on group concerns. Instead, voters are more likely to recognize the strategic nature of the interaction and to consider the benefits from joint group action in a way that leads to coordination of vote choices on the alternative that is, counterintuitively, not the most beneficial to most members of the majority identity group.

Figure 2: **Average treatment effect of identity and income appeals** – change in vote share of P for poor (income < 50) and rich (income > 50) in first (Round 1-20) and second half (Round 21-40) of the experiment; 95%-confidence band based on bootstrap clustered at the decision group-level.



Identity appeals increase the vote for the redistributive candidate P . Considering the main treatments (rich majority, poor minority), the experiment reveals that candidate P wins 55% of the time in the no appeals treatment and 68% of the time in the ID appeals treatment where the difference of 13% (3,24) is systematically larger than zero (the 95%- confidence band based on a bootstrap are given in parentheses).²⁰ This indicates that voters neither aim to maximize group welfare in the majority group nor do they try to coordinate with their group to secure the club good according to the majoritarian coordination argument when identity appeals are aired; both accounts would have called for a larger vote share for R .

In fact, both poor and rich voters increase their propensity to vote for P upon receiving an identity appeal and they do so throughout (i.e., in the first and second half of the experiment; see

²⁰Summary statistics for all variables are given in Section A.2 of the Supporting information. More detailed elaborations and statistical evidence supporting the claims made about treatment effects as well as their robustness and interpretation are reported in Section B of the supporting information.

Panel A. of Figure 2). Overall, the average treatment effect is a 9% (1,13) increase in vote share of P among poor subjects and a 11% (6,16) increase in vote share among rich subjects over the baseline.

Appealing to income makes voters pay more attention to narrow self-interest – at least for a while. Priming subjects' income, in contrast to priming their group identity, initially decreases the propensity among rich voters to vote for P and slightly increases it for poor voters over the baseline (see Figure 2, Panel B). In effect, voters are successfully persuaded to ignore the benefits that would come with joint group action by appealing to their narrowly defined income-based self-interest. As the experiment goes on, however, voters realize that their initial ignorance is costly because they fail to secure the group benefit. As a result, we observe gradual convergence on vote choice for candidate P . And yet, a simple appeal that heightens fiscal considerations by drawing attention to a subject's status as either rich or poor triggers a lack of coordination for a non-trivial number of rounds.

Equilibrium coordination is more prevalent. Although the results reveal that convergence to P is achieved in later rounds of the income appeals treatment, I argue that identity appeals prime voters to coordinate more quickly according to the equilibrium coordination argument by magnifying the recognition that it is entirely plausible that P would gain support from a majority of voters.

It is worthwhile to differentiate behavior in more detail to ascertain which type(s) of voters drive this result. To do so, I separate vote choices into distinct categories: those by voters in the majority identity group, by voters in the minority identity group, and by four classes of income level (very poor, moderately poor, moderately rich, and very rich). In general, the result that identity appeals increase the propensity to vote for redistribution holds across subsets, but at different quantities.

I find that, on average, voters who are assigned to be very poor vote for redistribution at the highest rates. Poor members of the majority group vote for P 61% of the time in the no appeals baseline and 72% of the time in the ID appeals treatment. In the minority identity group, the numbers are 81% and 86% in baseline and ID appeals treatment, respectively. Voters who are

assigned high incomes (moderately rich and very rich) show a weak tendency to support candidate R . Moderately poor voters have an absolute inclination to vote for R when in the majority identity group, but support P most of the time when in the minority identity group. This illustrates that incentives derived from the group benefit allow moderately poor voters in the majority identity group to make up for losses on the income dimension, which in turn raises the propensity to vote for R in an attempt to coordinate on the non-redistribution candidate with richer fellow group members.²¹ Nonetheless, identity appeals decrease, or at least leave unchanged, such a propensity to vote for the non-redistribution candidate across all income groups. Moderately poor voters choose R in 81% of observations in the no appeals baseline but only in 72% in the ID appeals treatment (difference = 9% (-5,24)).

In summary, identity appeals increase the propensity to vote for P 's redistribution platform among all voters. This finding undermines the majoritarian coordination argument that suggests that voters rely on simple heuristics when their group identity is primed. What, then, is it that makes equilibrium coordination possible? And, is it possible to separate equilibrium coordination from the observationally equivalent group redistribution argument?

Equilibrium coordination is a robust finding. Additional tests establish that the evidence points affirmatively toward prevalence of the equilibrium coordination argument. In particular, through the implementation of supporting treatments, I show that the reported behavioral patterns are not explained by (1) preferences for redistribution, as predicted by BE-group redistribution, or (2) by history-driven coordination. Further, I demonstrate (3) that subjects' exit-survey responses support the equilibrium coordination account, and (4) that beliefs about behavior of the minority identity group drive coordination of the majority identity group by confirming the existence of the proposed mechanism that makes up the equilibrium coordination argument.

With respect to (1), if the equilibrium coordination account is correct, reversing the income

²¹Stated differently, 28% of moderately poor voters in the identity treatment are selling out their group in order to vote for the redistribution candidate P even though their loss in decision payoff with R winning would be made up for by the group benefit. In contrast, only 19% of moderately poor voters in the baseline do not vote with their rich fellow group members. This behavior, of course, is perfectly rational given the fact that rich voters in the income distribution with one moderately poor and two rich voters in the majority group do not support R all the time (only in 73% of observations).

distribution (poor majority treatments) to create a mostly poor majority group and a rich minority group shifts the target of coordination to R , the wealth-preserving alternative, upon receipt of an identity appeal. Conversely, should an appeal to group identities increase the vote share of P over the share observed in the non-identity baseline, the preference for redistribution argument is valid. The results reveal that the vote share of R in the majority identity group is by 8% (3,15) higher in the ID appeals treatment than the baseline treatment when the income distribution is reversed lending additional support to the equilibrium coordination argument.

(2) Also, facing a history of high support for the redistributive platform P leaves the treatment effects of identity appeals unchanged in the main treatments. Looking at the choices of voters in decision groups with more than 50% support for P in previous rounds leave the average treatment effect unchanged at 11%.

Another key piece of evidence comes from subjects' self-reports recorded in an exit-survey (3): contrary to the no appeals baseline, those who received the identity appeals treatment more frequently indicated that they jointly considered the expected behavior of others and the behavior they believed others would expect of them in their vote choices. Upon receiving an identity appeal, 39% of subjects said they considered "the behavior they expected from others" and 44% took "behavior that they thought others expected from them" into account when making their decisions. In the baseline, these numbers are only 29% and 21%, respectively.

Finally, in the main treatments, equilibrium coordination is dependent on the belief that the poor minority group is highly likely to support P . By stripping away this foundational belief and removing this prerequisite (4) through the creation of a scenario in which all subjects are wealthy, as in the all rich treatment, I observe substantial coordination on R among the majority identity group. Indeed, the wealth-preserving candidate receives support in 92% of observations.

7 Interpretation of experimental results

In this experiment, raising the salience of group identities does not increase the significance of group cleavages or causes the individual voter accept a personal loss to foster group welfare. Assuming the role of voters, subjects do not show group-regarding preferences: they do not seek to maximize group welfare, they do not make decisions with the goal of increasing the payoff for the poorest member of

the group, and they do not consider within-group income inequality. When appeals raise the salience of an identity, subjects simply become decision-makers who are more aware of others' intentions and their expected behaviors. For sure, the minimal groups induced may be too weak to allow for emotional on top of strategic effects of identity appeals. Nonetheless, the real world phenomena I aim to approximate – voting with redistributive consequences, characterized by the opportunity to secure group-targeted benefits, where individuals are required to make reasonable guesses about the responses of fellow group members to a salient shared identity – is a strategic interaction that features uncertainty about optimal behavior; and this is exactly the realm of behavior in which my experiment can make substantively interesting predictions.

Individuals usually rely on focal points in decision situations with uncertainty, which could be established by group-related institutions like traditions, customs, or rituals (Schelling, 1960; Chwe, 2013).²² Majoritarian coordination provides the cue to rally the group around the alternative that maximizes group welfare. However, the uncertainty about how others will behave seems to be sufficient to steer voters away from this easily recognizable focal point. Instead, decision makers follow a mechanism – equilibrium coordination – by which joint group action emerges from far less obvious considerations of the interests and expected behaviors of fellow group members and the other group.

What exactly is behind equilibrium coordination? While the actual electoral outcome results from features of the game – a poor minority that sees no chance in winning the group benefit and thus sticks to a strategy profile strictly supporting the candidate that is most beneficial for their decision payoff emerges by design and aides equilibrium coordination on P – the mechanism by which subjects arrive at this electoral outcome is driven by a possibly more fundamental response to salient social identities. Upon receipt of an appeal to group identity, a subject more easily infers what the focal point of joint group action should be since it raises awareness of the consequences of the subject's individual choice, of the expected actions of others, and of others' beliefs. In general,

²²In the game I instantiate in my experiment, standard selection criteria (i.e., pareto-dominance, risk-dominance) give conflicting guidance about which equilibrium is most sustainable. With this set-up, my experiment goes beyond a series of studies in experimental economics, which show that salient group identities improve efficiency in coordination games with pareto-ranked equilibria (Charness, Rigotti and Rustichini, 2007; Croson, Marks and Snyder, 2008; Chen and Chen, 2011). Also, in other laboratory experiments, focal points have been shown to have limited power as soon as there are only small differences in payoffs between the alternatives (Crawford, Gneezy and Rottenstreich, 2008).

as decision makers become increasingly aware of the expectations of others, it resolves strategic uncertainties and, ultimately, enables coordinated collective behavior of a group. In situations of strategic uncertainty²³ the individual is unsure whether others will act purposefully (Brandenburger, 1996) and most experimental evidence suggests that, relative to their own, decision makers tend to underestimate the rationality of the people with whom they interact (Huck and Weizsäcker, 2002; Weizsäcker, 2003; Beard and Beil, 1994). Conversely, an appeal to a shared group identity may convince the individual that those s/he is interacting with are quite similar to herself and actually display levels of rationality close to her own. Social identities, then, may allow a decision maker to make inferences about the behavior of others based on her own actions and expectations; after all, identifying with the same group suggests a high degree of correlation or commonality in traits and interests. A rational agent can exploit such information she infers from her own actions and subsequently impose it on others (Grafstein, 1995).

Also, observed behavior is close to what is generally described as bandwagoning following a strategic rationale; individual decision-makers infer from others' actions which candidate is the most likely winner and start herding (Bartels, 1988).²⁴ In this experiment, however, subjects coordinate on one alternative when their group identity is primed because of a better anticipation of others' behavior from the very beginning of the session. They do not need the sequential nature of voting and the information provided in such a process to engage in bandwagoning (Morton and Williams, 1999, 2001; Morton et al., 2015).

Salient social identities help to create common conjecture; they serve to persuade the individual that others will take a specific action, that others are similarly convinced that everyone else will also take this action, that others are sure that the individual will take this action, etc. My study provides clear evidence of the existence of common conjecture resulting from identity appeals by counterfactual: in experimental conditions with appeals to narrowly defined self-interest the content of the common conjecture is muted and with a different income distribution the target of the group's

²³Strategic uncertainty arises when the rational decision maker deductively formulates beliefs about the state of the world and others' behavior but does not know for sure which equilibrium concept other decision makers will use (Van Huyck, Battalio and Beil, 1990).

²⁴It is also said in the strategic account of bandwagoning motivation that rational decision-makers infer the quality of a candidate from the extend of other voters' observed support; given that subjects in my experiment have complete information, this rationale is mute.

joint action shifts.

8 Conclusion

This paper began by illustrating that in political competition with demographically changing electorates, the effect of group-targeted campaign appeals on voting behavior may not be obvious. These observations led to an important question: What are the effects of appeals to group identities when those appeals cannot activate readily available stereotypes, cannot be expressed through voting for an in-group candidate, or priming shared group interests gives ambiguous guidance?

Previous work on social identity has shown that emotional attachment to an individual's social group, with the concomitant "warm-glow" one experiences when being nice to in-group members and the good feelings generated from acting in conformity with one's identity group, consistently plays a role in a voter's decision-making calculus. Still other mechanisms include an abundance of ways by which behavior is linked to salient group identities through changes in voters' preferences. It's also been shown that group identities provide focal points for coordinated behavior, e.g., through customs and traditions. A central contribution of this paper is to show how appeal to social identity function as strategic mechanism: voters respond to the existence of social identity by changing their behavior in response to how they expect social identity to shape the actions of others. Indeed, social identity appeals do not merely lead an individual to adhere to group norms or to value the overall welfare of the group, but alternately makes it more likely that the voter considers the experiences of others and how everyone else might respond to their choice. They hasten the coordination on the candidate most likely to be the electoral victor.

The strategic response to salient social identities I characterize may even account for situations where members of one social group react to the anticipated effects of identity appeals on another group. Consider the claim by [Wilkinson \(2004\)](#) who argues that appeals to the Muslim minority in India are a viable tool to add non-Hindu voters to a larger Hindu-based electoral coalition, a tactic which also positively affects the willingness of the Hindu majority to vote for the candidate that aligns with the Muslim voting bloc. He argues that in heterogenous societies with salient *intra*-group cleavages, "politicians from the ethnic majority will often prefer to seek minority support rather than the support of segments of their own ethnic group with which they may be in competition for

scarce economic and political goods” (Wilkinson, 2004, 139). This means, however, that in societies with salient *inter*-group cleavages, appeals to minorities may backfire because the majority group does not want to share such goods with a broader set of benefactors, which now also includes members of the minority. In other words, increased understanding of societal cleavages primed by identity appeals may help the appealing candidate in some constellations but not in others. My experimental results point to a possible extension of such a study, for example, through an examination of the behavioral response of the group that is *not* targeted by the campaign appeals in other societies where inter-group cleavages are important, societies which frequently observe a plethora of identity appeals during electoral campaigns.

To put it in more concrete terms, take the run-up to the 2012 presidential election where President Obama’s campaign grew concerned about the potential for a “huge white turnout” (Warren, 2012) and Republicans complained about the supposedly automatic but mindless support of minorities for the incumbent President. Why were both camps predicting heavy mobilization along racial divisions?²⁵ In a race-salient election, everyone was aware of the fact that the opposing candidate may do a better job than usual in mobilizing in-group voters. This concern generates an even greater willingness to turn out for the co-racial candidate and is a perfectly reasonable strategic response to the salience of race, going well beyond electoral support driven by emotional attachment or shared interests. A strategic politician may well evaluate how an opposing social group might systematically respond to his or her message and alter the rhetoric of campaign appeals accordingly. A speculative observation suggests that the Obama campaign may have been reluctant to openly appeal to minority voters as it could serve to raise awareness among the racial majority of the potential for a large minority turnout.

Whether a candidate can increase her electoral support from a particular social group that has no current closer affiliation with any candidate by making a shared identity salient depends on many features of the political environment and social structure. What my experiment shows is that such appeals raise group consciousness in a way that may even decrease the willingness of the targeted group to join the appealing candidate’s electoral coalition. Although this laboratory experiment, with its clearly defined decision structure, does not point to the directionality of the effect of

²⁵As a racial minority, Obama certainly engenders emotional attachment among African Americans and potentially other minorities, and his platform speaks more to the concerns of minorities than to the white majority of Americans.

that results from raising the salience of group identities in all circumstances, it generates specific predictions about the strategic nature of social identity: in addition to increasing an individual's willingness act for the good of the group or to be more attentive to group norms, individual decision makers will be cognizant of what other members of their group want, what other social groups want, and how the societal structure affects electoral chances of candidates.

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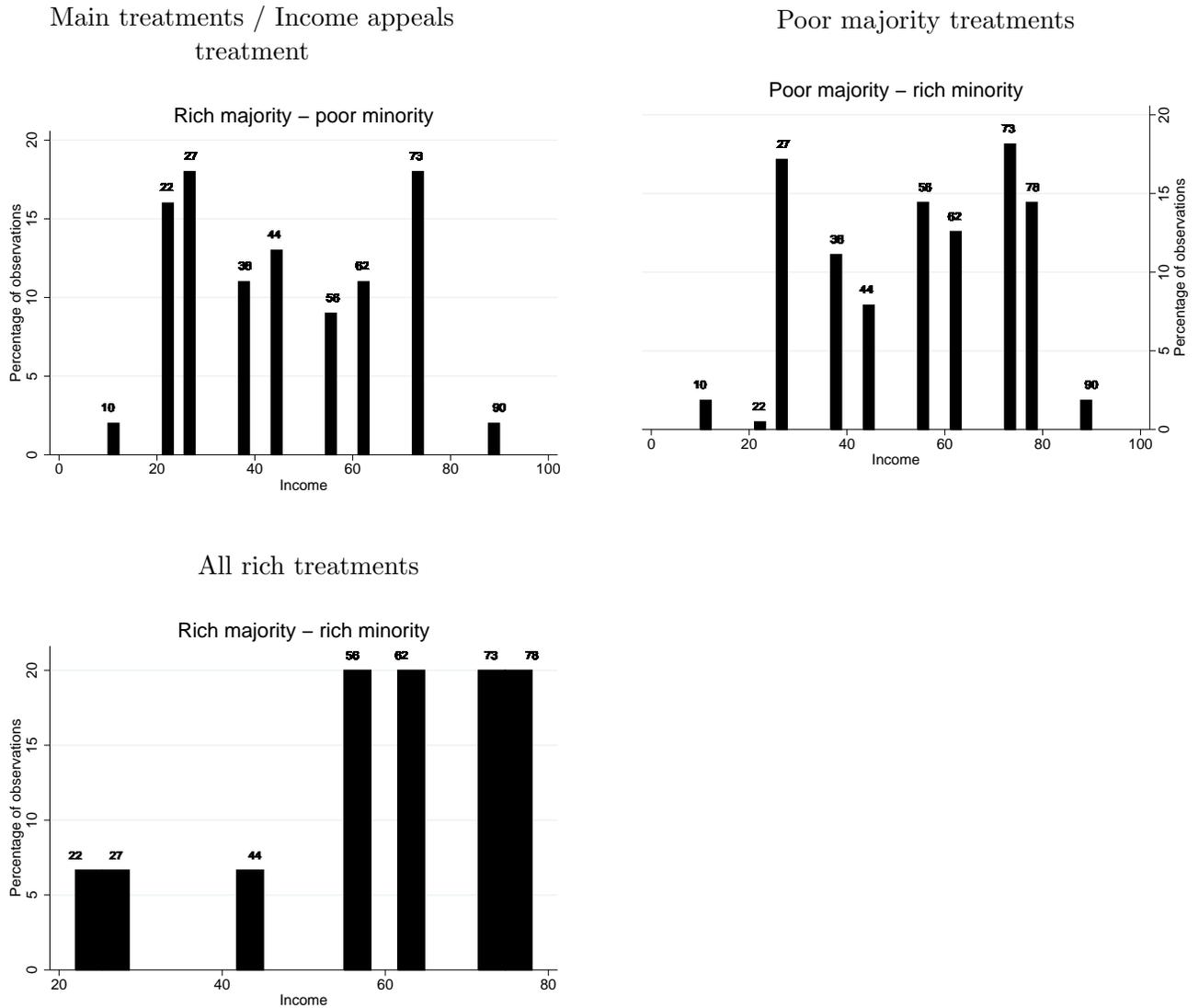
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Supporting information

A Auxiliary statistics

A.1 Distribution of income

Figure A.1: Distribution of income values in each treatment



A.2 Summary statistics

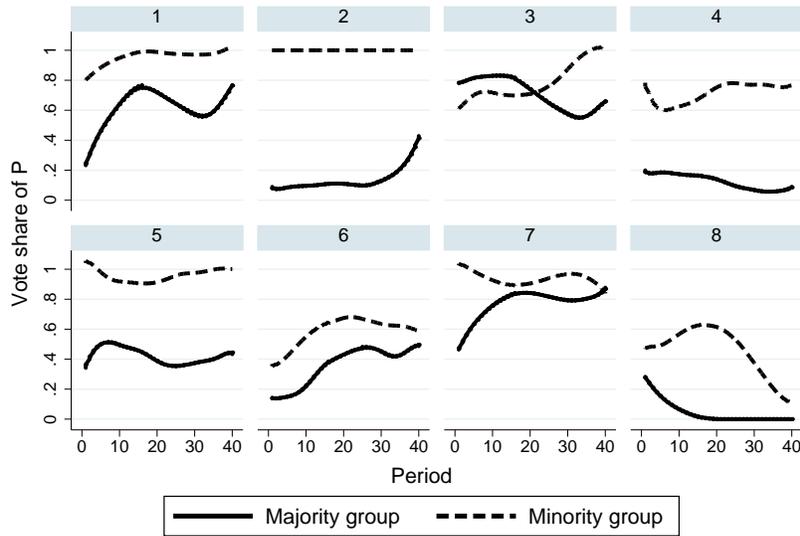
Table A.1: Summary statistics of main variables by treatment

Variable		Rich majority - poor minority				Poor majority - rich minority		Min	Max
		Main treatments		Income appeals t.	All rich t.	Poor majority t.			
		No Appeals	ID Appeals	Income Appeals	ID Appeals	No Appeals	ID Appeals		
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)		
<i>voteP</i>	All	.56 (.50)	.66 (.47)	.61 (.49)	.08 (.27)	.36 (.48)	.36 (.48)	0	1
	Very poor	.72 (.45)	.79 (.41)	.76 (.43)	.25 (.43)	.63 (.48)	.53 (.50)	0	1
	Moderately poor	.69 (.46)	.81 (.39)	.76 (.43)	.10 (.31)	.53 (.50)	.48 (.50)	0	1
	Moderately rich	.37 (.47)	.48 (.50)	.39 (.49)	.08 (.26)	.22 (.42)	.32 (.47)	0	1
	Very rich	.30 (.46)	.41 (.49)	.37 (.48)	.03 (.16)	.21 (.41)	.24 (.42)	0	1
<i>voteWinner</i>	All	.55 (.50)	.68 (.47)	.63 (.48)	.00 (.00)	.29 (.46)	.38 (.48)	0	1
<i>income</i>	All	45 (20)	45 (20)	45 (20)	60 (17)	54 (20)	54 (20)	10	90
<i>Number of Observations</i>		1600	1600	1600	300	600	1600		
<i>Number of Subjects</i>		40	40	40	10	15	40		

A.3 Group level behavior

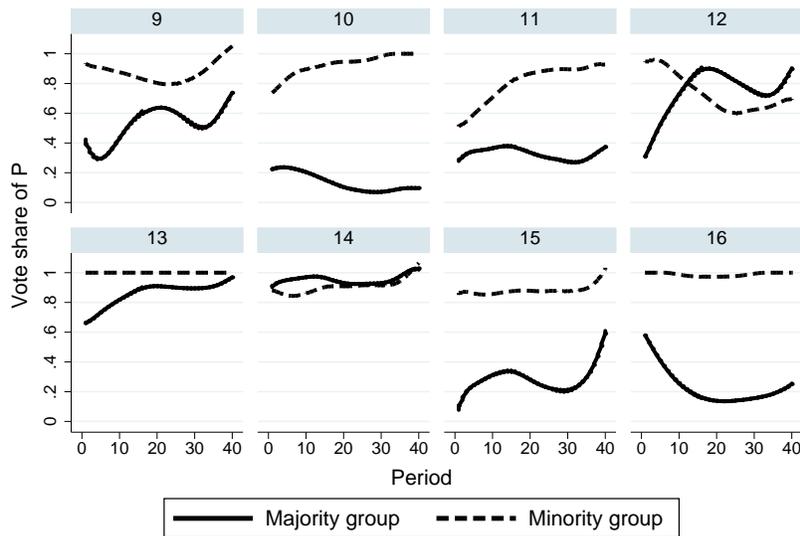
A.3.1 Main treatments

Figure A.2: Rich majority - poor minority: No appeals



Graphs by group(treatment session group)

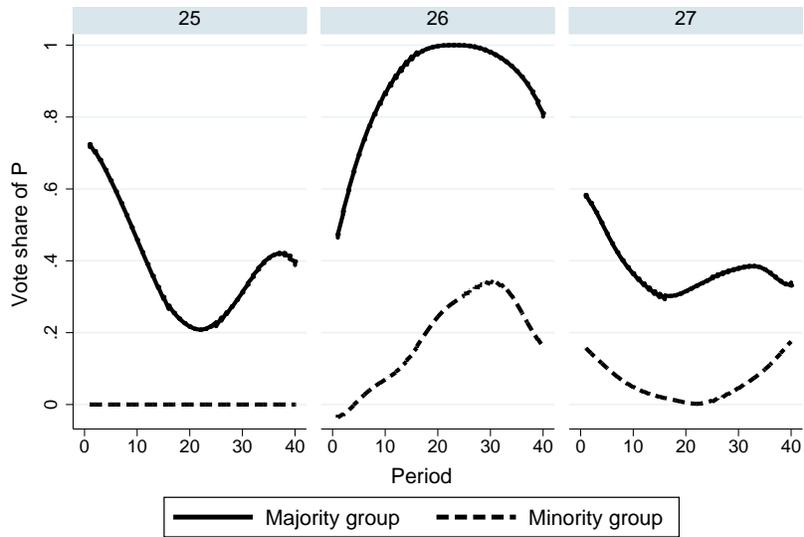
Figure A.3: Rich majority - poor minority: ID appeals



Graphs by group(treatment session group)

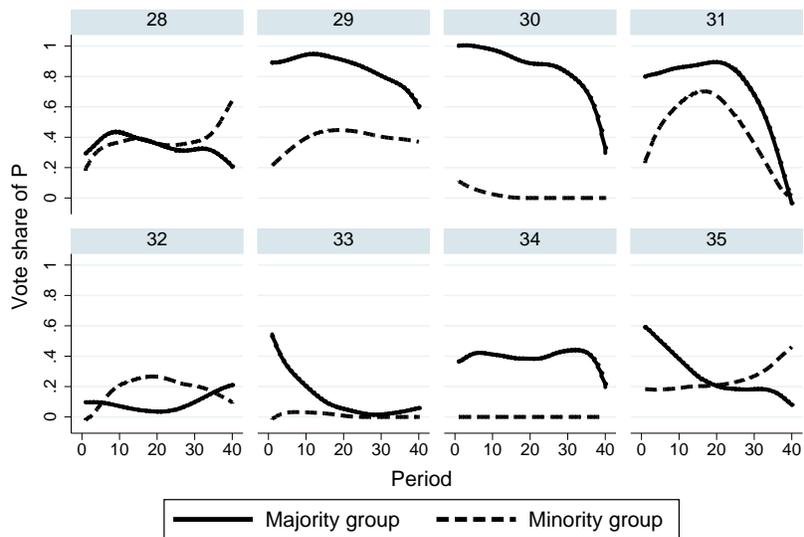
A.3.2 Poor majority treatments

Figure A.4: Poor majority - rich minority: No appeals



Graphs by group(treatment session group)

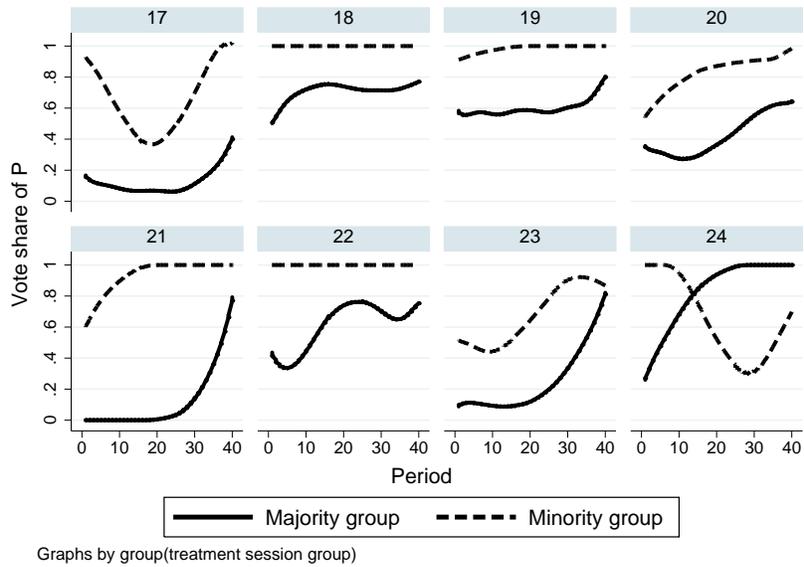
Figure A.5: Poor majority - rich minority: ID appeals



Graphs by group(treatment session group)

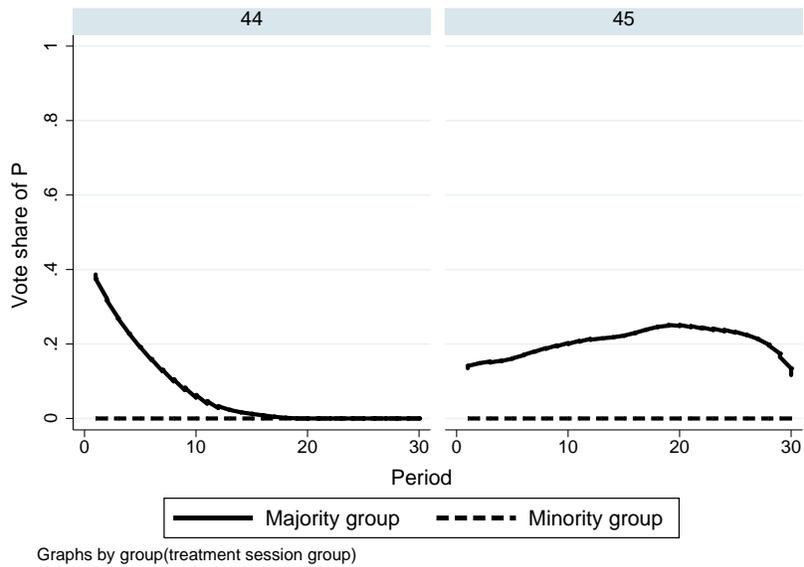
A.3.3 Income appeals treatment

Figure A.6: Rich majority - poor minority: Income appeals



A.3.4 All rich treatment

Figure A.7: All rich: ID appeals



B Robustness of treatment effects

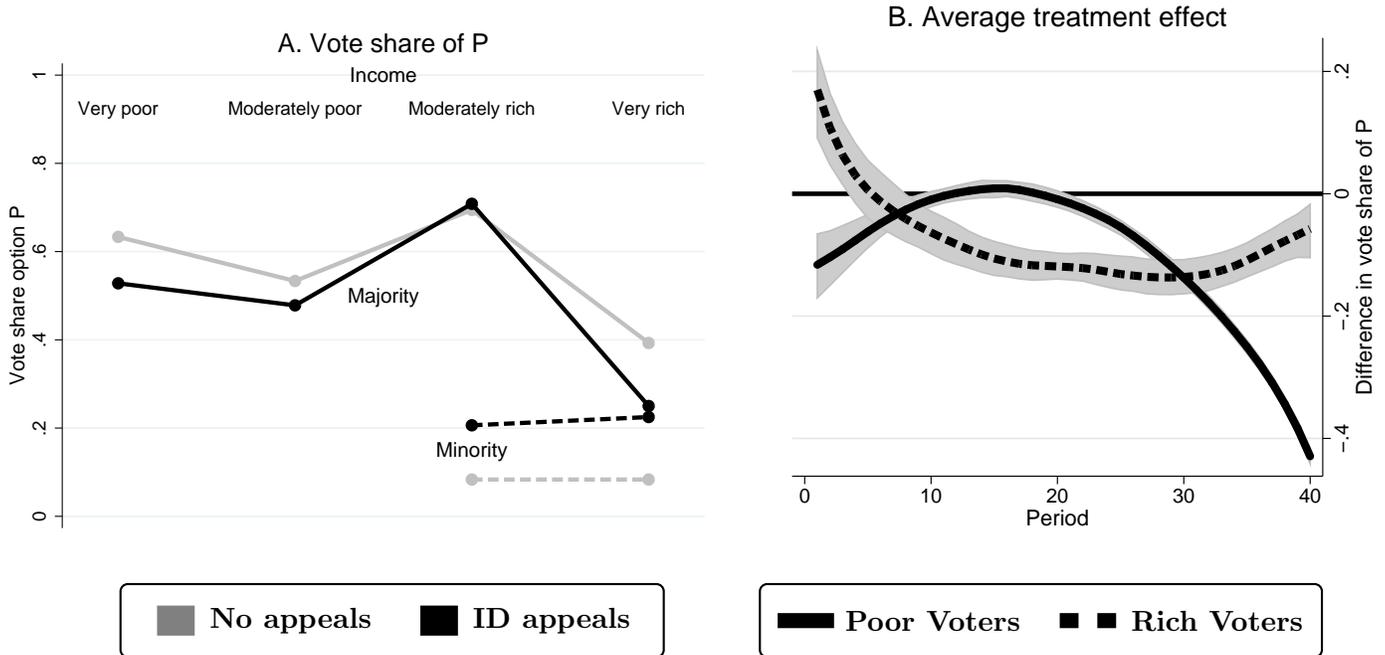
Assessing the robustness of treatment effects in reported in Section 6, I demonstrated in Section B.1 that the presented treatment effects are not explainable by preferences for redistribution, as predicted by the behavioral prediction BE-Redistribution, or by history-driven coordination (Section B.2). Further, in Section B.3 I show that subjects' exit-survey responses support the equilibrium coordination account. Finally, Section B.4 gives more evidence for the claim that beliefs about behavior of the minority identity group drive coordination of the majority identity group.

B.1 Testing for preferences for redistribution – poor majority treatments

Voting for P transfers wealth from high to low levels of income within identity and decision group. To rule out the explanation that subjects' prefer the redistribution candidate because they value sharing income with the poor member of the majority identity group, or with other members of society in general, I turn to the analysis of the poor majority treatments. If we see the poor members of the majority in these treatments supporting R , and the rich member not switching to P , we should conclude that the equilibrium coordination argument dominates the redistributive argument and be more confident in interpreting the behavior in the empirically more plausible treatment.

Voters in the poor majority treatments show mirrored patterns of behavior to those observed in the main treatments. Very rich voters vote for R in high numbers, a behavior that is equivalent to the actions of very poor voters who vote for P almost all the time in the income distributions of the main treatments described earlier. This finding is consistent, again, with the behavioral prediction associated with the equilibrium coordination argument (BE-Equilibrium) but not the one following the idea that preferences for redistribution factor into voters' decision making when group identities are primed (BE-Redistribution).

Figure B.8: **Vote share of P** (redistribution platform) by level of income and treatment (Panel A) and average treatment effect of identity appeals by rich vs poor voters in the supporting treatments 1 (Panel B). Average treatment effect-estimates are based on loess smoothing of difference in vote share of P in a given period **for observations on members of the majority identity group**; 95%-confidence band based on a decision group clustered bootstrap of the loess estimates.



With the income distribution in poor majority treatments, and now mostly poor members of the majority identity group, treatment effects should be most obvious for the group of poor voters in this majority group as they were for rich voters in the majority group in the main treatments.

Voters in the majority identity group react to identity appeals in the supporting treatment 1 by significantly increasing their willingness to vote for R , and the wealth-preserving platform, in contrast to behavior in the no appeals baseline. Figure B.8.A shows that for all voters in the majority identity group in the ID appeals treatment, the average vote share of P is below the average for voters in the no appeals baseline except for moderately rich voters for whom behavior is undistinguishable across treatments. The average treatment effect is systematically negative for very poor and very rich voters. Figure B.8.B indicates that the average treatment effect of identity appeals remains clearly negative or not systematically positive over all periods of play; rich voters start out voting for P but switch after a few rounds to vote for R for the rest of the experiment.

B.2 Robustness to history-driven coordination

Given that subjects interact in the same decision group of five subjects throughout the experiment, we would like to reject the interpretation that treatment effects could be an artifact of dynamics in particular decision groups, which would be driven by particular personalities of members rather than the assigned incomes. After all, the game presented to subjects features a coordination problem, and any given decision group, independent of treatment, may at one point converge on a candidate, with choices in the following rounds being driven by past convergence. To show that attempting to coordinate on voting for P faster and more frequently is, indeed, a treatment effect of identity appeals, voting history on the decision group-level needs to be taken into account.

Findings presented above are robust to decision group-level path dependencies when treatment effects are constant in the history of voting for P within a decision group. Restricting attention to decision groups with a history of P 's vote share of more than 50%, average treatment effects remain at 11% (exactly as reported above; $p=.00$). In the complimentary subset (groups with a history of R 's vote share of more than 50%), average treatment effect drops somewhat, but remains a significant 6% ($p=.02$).

B.3 Motivational rationales in treatment effects: evidence from exit-surveys

Subjects responses in the exit-survey²⁶ provide further evidence that identity appeals increase awareness of behavior and beliefs of other subjects and the overall incentive structure. When asked, what factors affected their 50% did so in the no appeals treatments. Upon receiving an identity appeal, 39% of voters additionally considered “the behavior they expected from other voters”, and 44% considered “the behavior that they thought other voters expected from them.” In the no appeals treatments, those numbers were 29% and 21%, respectively. All comparisons are significantly different from zero.

²⁶Answers to questions reported in this section were asked to the 55 subjects in the no appeals treatments and the 40 subjects in the ID appeals condition of the poor majority treatments.

B.4 The influence of minority identity group behavior on equilibrium coordination of the majority identity group

Equilibrium coordination of the majority identity group turns on their members' beliefs about preferences and likely actions of the members of the minority identity group. With respect to how behavior in majority and minority group interact, I argued that (1) in the experiment, it is very costly for members of the minority identity group to attempt securing the group benefit from the non-redistribution candidate, accounting for why they vote for candidate P almost all the time; and (2) anticipating such behavior, members of the majority identity group vote for P when assigned a very low income and, anticipating that, vote for the redistribution candidate when assigned to be a high income.

Note that this logic relies on the expectation of the behavior of the members of the minority group. If that logic is correct, then when those members' incentives change, we should see the resulting change in the behavior of the members in the majority group. In particular, it should also be the case that when members of the minority can be expected to vote for R , rich voters in the majority group should do so as well since they can effect the victory for R . And, now the very poor voters in the majority group should anticipate such behavior and vote for R as well, since that would double their chances of getting an group benefit. In short, we should see the coordination among the members of the majority group switch from the vote for P to the vote for R .

I test this prediction with the all rich treatment. In this treatment, the minority is comprised of rich voters and not poor voters as it was in the main treatments. Voters in the minority identity group were assign incomes 56, 73, or 78. Not a single voter among them chose candidate P . Furthermore, very poor voters in the majority group voted for R 75% of the time and rich voters 90% of the time. Candidate R won in every decision group in every round.

C Experimental design

C.1 Experimental sessions

Experimental sessions were carried out in an experimental social science lab at Technical University Berlin. Participants signed up via a web-based recruitment system, ORSEE (Greiner, 2015), that draws on a large, pre-existing pool of potential subjects. Subjects were not recruited from the author's courses. The recruitment system contains a filter that blocked subjects from participating in more than one session of a given experiment. The subject pool consists almost entirely of students from around the university.

Subjects interacted anonymously via networked computers. The experiments were programmed and conducted with the software z-Tree (Fischbacher, 2007). After giving informed consent according to standard human subjects protocols, subjects received written instructions that were subsequently read aloud in order to promote understanding and induce common knowledge of the experimental protocol. In accordance with the long-standing norms of the lab in which the experiment was carried out, no deception was employed at any point in the experiment. Before the voting game stage commenced, subjects were asked three questions concerning their understanding of the payoff tables provided to them in the instructions. 90% of participating subjects answered those questions correctly. At the end of the experiment, an exit survey was conducted. Subjects received a show-up fee of \$7 (5 Euro) and performance-based payments of on average \$22 (16 Euro) for an experiment that lasted about 1 hour. Payments from the voting game were taken from the higher round-payoff from two randomly selected rounds.

C.2 Experimental instructions (English translation, original in German)

Introduction

This is an experiment on decision-making. In this experiment you will make a series of choices. At the end of the experiment, you will be paid depending on the specific choices that you made and the choices made by other participants. If you follow the instructions and make appropriate decisions, you may make up to 21 Euro. For convenience, your payoff will be initially calculated in tokens and converted into Euros at the end of the experiment.

This experiment has 2 parts. Your total earnings will be the sum of your payoffs in each part plus the show-up fee of 5 Euro. We will start with a brief instruction period, followed by Part 1 of the experiment. We will then pause to receive instructions for Part 2. If you have questions during the

instruction period, please raise your hand after I have completed this reading of the instructions, an experimenter will come to you and answers your questions. If you have any questions after the paid session of the experiment has begun, raise your hand, and an experimenter will come and assist you.

Part 1

Assigned painter groups

In Part 1 of the experiment, everyone will be shown five pairs of paintings by two artists, Paul Klee and Wassily Kandinsky. You will be asked to choose which painting in each pair you prefer. You will then be classified as member of the “KLEEs” (or “a KLEE” as a shorthand) or member of the “KANDINSKYs” (or “a KANDINSKY” as a shorthand) based on which artist you prefer most and informed privately about your classification. Your classification as KLEE or KANDINSKY is based on your preferences but also on how close your preferences are to the preferences of other participants’ that received the same classification as yourself. Everyone’s identity as a KLEE or as a KANDINSKY will stay fixed for the rest of the experiment (that is, in both Part 1 and Part 2 of the experiment). We will refer to the group of participants who share your classification as either KLEE or KANDINSKY as your *painter group*.

You will then be asked to identify the painter (Klee or Kandinsky) of five other paintings. For each of those paintings, you will be asked to submit two answers: your initial guess and your final answer. After submitting your initial guess, you will have an opportunity to see the initial guesses of your fellow KLEEs if you are a KLEE, or of fellow KANDINSKYs if you are a KANDINSKY, and then also an opportunity to change your answer when you are submitting your final answer.

If you are a KLEE and a half or more of KLEEs give a correct final answer then, regardless of whether your own final answer was correct or incorrect, you and each of your fellow KLEEs will receive 10 tokens. Similarly, if you are a member of the KANDINSKYs and a half or more of KANDINSKYs give a correct final answer then, regardless of your own final answer, each of the KANDINSKYs, including you, will receive 10 tokens. However, if you are a KLEE and more than a half of KLEEs give an incorrect final answer, then, regardless of whether your own final answer was correct or incorrect, you and each of the KLEEs will receive 0 tokens. And similarly, if you are a KANDINSKY and the final answers from more than a half of KANDINSKYs were incorrect, then you and each of your fellow KANDINSKYs will receive 0 tokens regardless of what answer he or a she gave personally.

In addition, if you and your fellow *painter group* members answer at least as many quiz questions correctly than members of the other group, you will receive an additional payoff of 10 tokens. That is, if you are a KLEE and you and your fellow KLEEs give more correct answers than the KANDINSKYs, you receive the additional payoff. If you are a KANDINSKY and you and your fellow KANDINSKYs give more correct answers than the KLEEs, you receive the additional payoff.

We will now run Part 1 of the experiment. After Part 1 has finished, we will give you instructions for Part 2.

Part 2

We will now move on to Part 2 of the experiment. Part 2 will consist of **40** different rounds.

Assigned decision groups

At the beginning of each round, you are randomly matched into groups of **five** participants. We will refer to those groups as your *decision group*. You will stay in your *decision group* for the duration of the experiment; that is, you will interact with the same 4 participants in all rounds of part 2 of the experiment. All participants interaction, however, will take place anonymously through a computer terminal so you do not know which participants are in your decision group.

Assigned income

At the beginning of each round, you are randomly assigned a level of *income* in tokens. This income determines your payoff from this part of the experiment; your payoff, however, will be mainly determined by your decisions and the decisions of other participants in your decision group. The income assigned to you is one from the following list of feasible incomes:

10, 22, 27, 38, 44, 56, 62, 73, oder 90

You might be assigned any of the feasible incomes and you will be assigned a new income in every round; that means, your income may or may not change from round to round and throughout the experiment, you may or may not be assigned each one of the feasible incomes at some point.

Information about your decision group

In each round, after all participants have been assigned an income, you are informed about the income and painter group membership with the KLEEs or KANDINSKYs of all participants in your decision group. Everybody, is shown a graph plotting income and associated painter group memberships on a line ranging from 0 on the left end to 100 on the right end. KLEEs are displayed with the acronym “KL” and KANDINSKYs with the acronym “KA”. An exemplifying plot of an artificially created distribution of income and painter group membership is shown on page 6 (Figure 1) of these instructions.

Choices within each round

In each round, you are offered a choice between two alternatives, *Alternative A* and *Alternative B*. Whichever alternative is chosen by a majority of participants in your decision group becomes the *winning alternative* of your decisions group.

Payoffs

How much money you receive for participating in this experiment will depend on the choices that you and the choices that other participants make during the experiment. For convenience, your payoff for each round will be initially calculated in tokens and reported to you at the end of each round. At the end of the session, the sum of payoffs you will have received for each round will be converted into Euro at the rate of

100 tokens = 10 Euro

You will receive the higher round payoff out of two randomly chosen rounds plus the payoff from part 1 and the show-up fee of 5 Euro.

In each round your payoff is computed as

$$\textit{round payoff} = \textit{decision payoff} + \textit{identity payoff}$$

Your decision payoff depends on your income and the winning alternative in your decision group. The following table displays your decision payoff given your income and the winning alternative.

Table C.2: **Decision payoff given income and winning alternative**

Your income	Decision payoff given	
	Alternative A wins	Alternative B wins
10	30	10
22	36	22
27	38.5	27
38	44	38
44	47	44
56	53	56
62	56	62
73	61.5	73
90	70	90

For example, say your income is 27 and Alternative A is the winning alternative; in this case your decision payoff would be 38.5 tokens. In case Alternative B wins, however, your decision payoff would be 27 tokens.

Your identity payoff depends on whether you and the KLEES, if you are a KLEE, or you and the KANDINSKYs, if you are KANDINSKY, represent a majority among participants that voted for winning alternative in your decision group. You and the KLEEs represent a majority if more KLEEs than KANDINSKYs voted for the winning alternative. You and the KANDINSKYs represent a majority if more KANDINSKYs than KLEEs voted for the winning alternative.

Should you and the KLEEs, if you are a KLEE, or you and the KANDINSKYs, if you are a KANDINSKY, represent a majority among participants that voted for the winning alternative in your decision group, your identity payoff would be

10 tokens

Should you and the KLEEs, if you are KLEE, or you and the KANDINSKYs, if you are a KANDINSKY, **not** represent a majority among participants that voted for the winning alternative in your decision group, your identity payoff would be 0 tokens. Should the number of KLEEs and KANDINSKYs that voted for the winning alternative be equal, all participants in your decision group would receive 5 tokens.

Suppose for example that you are a KLEE and there are three KLEEs in your decision group including yourself; suppose further that all participants in your decision group, including yourself, vote for Alternative A. Alternative A would be the winning alternative and you and the KLEEs would represent a majority among participants in your decision group that voted for the winning alternative. Your identity payoff would be 10 tokens.

Your payoff in this round would be the sum of your decision payoff and your identity payoff. In the aforementioned example with your income of 27, with Alternative A as winning alternative, and with you and the KLEEs representing a majority of votes for the winning alternative, your payoff would be

$$38.5 + 10 = 48.5 \text{ Tokens}$$

Should, however, the 2 KANDINSKYs and one KLEE in our decision group vote for Alternative B, Alternative B would be the winning alternative and you and the KLEEs would not any longer represent a majority of votes for the winning alternative in your decision group; now, your payoff would be

$$27 \text{ Tokens}$$

Again, your total earnings from this experiment are the higher *round payoff* out of two randomly chosen rounds plus the payoff from part 1 and the show-up fee of 5 Euro.

C.3 Income distributions

Table C.3: Income distributions by round

Period	Main treatments					Supporting treatments 1				
	Rich majority - poor minority					Poor majority - rich minority				
	Majority group		Minority group			Majority group		Minority group		
1	22	62	73	27	38	78	38	27	73	62
2	27	56	73	22	44	73	44	27	78	56
3	27	56	73	22	44	73	44	27	78	56
4	44	62	73	27	38	56	38	27	73	62
5	44	62	73	27	38	56	38	27	73	62
6	22	62	73	27	38	78	38	27	73	62
7	22	62	73	27	38	78	38	27	73	62
8	22	62	73	27	38	78	38	27	73	62
9	22	62	73	27	38	56	38	27	73	62
10	27	56	73	22	44	56	44	27	73	62
11	27	56	73	22	44	73	44	27	78	56
12	27	56	73	22	44	73	44	27	78	56
13	44	62	73	27	38	56	38	27	73	62
14	27	56	73	22	44	73	44	27	78	56
15	22	62	73	27	38	78	38	27	73	62
16	22	62	73	27	38	56	44	27	73	62
17	22	62	73	27	38	78	38	27	73	62
18	22	62	73	27	38	78	38	27	73	62
19	27	56	73	22	44	73	44	27	78	56
20	27	56	73	22	44	73	44	27	78	56
21	27	56	73	22	44	56	44	27	73	62
22	22	62	73	27	38	78	38	27	73	62
23	27	56	73	22	44	73	44	27	78	56
24	27	56	73	22	44	73	44	27	78	56
25	22	62	73	27	38	78	38	27	73	62
26	27	56	73	22	44	73	44	27	78	56
27	44	62	73	27	38	56	38	27	73	62
28	22	62	73	27	38	78	38	27	73	62
29	44	62	73	27	38	56	44	27	73	62
30	44	62	73	27	38	56	44	27	73	62
31	27	56	73	22	44	73	44	27	78	56
32	22	62	73	27	38	78	38	27	73	62
33	22	62	73	27	38	78	38	27	73	62
34	27	56	73	22	44	73	44	27	78	56
35	44	62	73	27	38	56	38	27	73	62
36	44	62	73	27	38	56	38	27	73	62
37	10	56	90	22	44	90	44	10	78	56
38	10	56	90	22	44	90	44	10	78	56
39	10	56	90	22	44	90	44	10	78	56
40	10	56	90	22	44	90	44	10	78	56

C.4 Screen shot

Figure C.9: Screen shot of subjects' decision between Alternative A and Alternative B

