Follow the Majority? How Voters Trade off Individual- and Group-level Benefits*

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Abstract

In a laboratory experiment, I model an election where voters favor one alternative because they would benefit individually but may coordinate their support with members of their social group on another alternative in exchange for policies targeting their group. Experimental treatments induce group identity salience to investigate how and when voters trade-off expected group-level benefits tied to targeted policies individuals enjoy as members of a particular social group against expected individual-level benefits corollary from policies that affect voters through their individual characteristics. I find that with greater intra-group heterogeneity, beliefs about other individuals' behavior become more influential in determining individual choice and social identity groups may coordinate on an electoral alternative that entails a loss in individual benefit for a majority of group members but that secures the group-level benefit. The results contribute to the understanding of group identities as political identities, census voting in ethnic politics, and beliefs-driven coordination effects.

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1 Introduction

Salient identities matter in elections and often lead to an electorate divided along group lines (Michelitch, 2015; Eifert, Miguel and Posner, 2010; Huddy, 2001). Intuitively, the mechanism by which individuals with the same salient group identity align in behavior entails a shift in their emphasis from individual to group-related considerations, such as a heightened concern for group status, group conformity, or group-regarding preferences (Akerlof and Kranton, 2000; Dickson and Scheve, 2006). In the context of voting, the exact target of joint group action is set by the election-specific context – in-group candidates on the ballot, salient issues, or the distribution of preferences. What is also part of elections with salient groups, however, is competition for the groups' support in exchange for group-targeted policies.[1] How and when voters trade-off expected *group-level benefits*, tied to targeted policies individuals enjoy as members of a particular social group, against expected *individual-level benefits*, from policies that affect voters through their individual characteristics, produces sometimes surprising electoral outcomes.[2]

Consider the 1997 mayoral election in Los Angeles, in which Republican businessman Richard Riordan was pitted against State Senator Democrat Tom Hayden. In their campaigns, both appealed heavily to Latino voters for their support by offering group-targeted benefits. Riordan pushed for massive transfers to Los Angeles'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 previous mayoral race, on the election day in 1997, 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. His success with Latino voters was largely attributed to his ability to convince them that he would

[1] The relationship between politicians and voters in many societies is frequently characterized as clientelistic, a trade of beneficial policies for electoral support (Kitschelt and Wilkinson, 2007); examples can be found from New Haven, Connecticut (Dahl, 2005) to Zambia (Posner, 2005).Such 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 also 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).

[2] The *group-level benefit dimension* of political competition is characterized by benefits individual voters receive because they are members of a particular social group. The *individual-level benefit dimension* contains policies affecting voters' utility qua their individual-level characteristics irrespective of the voter's identity group membership.

continue to strengthen the public education system (Kaufmann, 2003, 162) even though he may promote economic policies that would be to the detriment of many members of that sub-population, who are "more likely to be working class" (Sonenshein, 2004, 95).

While many features of this particular race may determine why so many Latinos voted for Riordan, observers were surprised by how individual voters traded-off individual benefits implied by the candidates' position on redistribution against group-targeted benefits implied by their position on education. With salient identities, one may have expected the group to coordinate on voting for the alternative that is most beneficial for the majority of group members, following the "head count" heuristic suggested in the ethnic politics literature on voter coordination (Chandra, 2004). Such *group-majoritarian coordination* did not occur; instead, salient identities deflected voters away from the electoral alternative that initially may have seemed to be the obvious choice given group members' preferences over individual benefits.

In this paper, I provide an account of how voters trade-off gains and losses in the individual and group-level benefits dimensions in a group-salient election and experimentally identify the mechanism behind different possible coordination outcomes. I suggest that a salient group identity encourages joint group action because it implies not only a strengthening of individuals' identification with the group, as argued elsewhere, but also the increased awareness of (and responsiveness to) preferences of fellow group members and other groups. In the interaction implemented in the laboratory, subjects in the role of voters of one social group favor a particular electoral alternative given the benefits they would receive individually but may jointly coordinate their electoral support on any of the alternatives in exchange for benefits from a club good voters receive as member of a group. Experimental treatments pinpoint which electoral alternative members of one social group flock to when their group identity is made salient. The baseline treatment operationalizes the main dimension of political conflict as a distribution of income with a majority identity group comprised of mostly wealthy members, a minority identity group that is mostly poor, and two candidates, one proposing the redistribution of income and the other a status-quo distribution. The group-targeted benefit is represented by a club good that the group can secure for all of its members.[3] To mimic group identities, I induce minimal groups that have been shown to trigger relevant cognitive effects

[3] The exact distribution of wealth in society is not meant to be descriptive of a particular real-world instantiation but to create conflicting preferences over individual- and group-level benefits.

of group categorization in the laboratory, i.e. awareness of group membership and formation of identity-contingent beliefs about others' behavior.[4] While a tightly controlled experiment abstracts away from many elements of real elections, it helps isolate the mechanism of interest.

Experimental results I report describe how and when voters shift their focus from individual-level benefits to considering group-level benefits from joint group action. Group-majoritarian coordination happens in a more homogenous group because it is easier to sustain confidence that fellow group members act consistently with the preferences of the majority of group members. In line with the mechanism described above, with more heterogeneous groups, we see greater convergence of groups' vote choice on a different electoral alternative than with group-majoritarian coordination, imposing costs on a majority of group members through lower individual benefits from the electoral winner but securing for them group-level benefits from the group-targeted policy.

Returning to the example of the Riordan-Hayden race with these results in mind, we may hypothesize that Latinos' support was deflected away from Hayden – who promised redistribution policies individually beneficial to most Latinos – to Riordan because Riordan's campaign lead to greater awareness on the part of Latino Voters of three related factors: fellow group members' strong preference for policies supporting education, the possibility that they could enjoy as club good higher investment into education if they supported Riordan in strong numbers, and the high likelihood of Hayden's electoral defeat.

By delineating a mechanism by which electoral coalitions form when group identities are salient, this study makes three contributions: it adds to the political behavior literature that investigates group identities as political identities (for an overview see Huddy (2013)). Second, it extends the literature on ethnic politics investigating the mechanisms behind census voting (Chandra, 2004; Posner, 2005; Eifert, Miguel and Posner, 2010) and how to ensure that voters' coordination to support clientelistic and/or in-group candidates does not hinder electoral accountability (Lieberman, Posner and Tsai, 2014; Adida et al., 2017). Third, the study provides a micro-foundation for the

[4] Throughout this paper I discuss *group identity* that requires individuals subjective awareness of group membership but may not rise to the level of being a social identity. The latter goes beyond awareness of membership and demands the individual to attach value and emotional significance to the membership (Tajfel, 1981). It is debatable whether I am able to induce a social identity with its complex cognitive and emotional underpinnings in the laboratory while the treatment clearly succeeds in creating a group identity (See manipulation checks presented in Section 4: experimental design).

utility relevant effect of salient group membership, going beyond the seminal framework of Akerlof and Kranton (2000) for conceptualizing group identity. Whereas studies employing that framework conceive of group identity as an added term in voters' utility function, capturing group-related concerns such as group norms and group status, group identity in the analysis below emerges contingently, affecting individual behavior through a conditional coordination mechanism.

2 The effect of group identity salience on coordination

Changes in preferences are the most commonly considered mechanism underlying the effect of group identity salience on individuals' decision-making.[5] When their group identity is salient, individuals give more weight to group-related concerns than they otherwise would; this shift is attributed to general warm-glow in-group favoritism (Andreoni, 1989; Chen and Li, 2009), emotional gains from conforming to group norms (Goette, Huffman and Meier, 2006; Bernhard, Fehr and Fischbacher, 2006; Suhay, 2015), group status (Shayo, 2009; Klor and Shayo, 2010), or acting in conformity with fellow group members (Bernheim, 1994; Hogg, 1996), but also to emotional losses from failing to give in to peer pressure (White, Laird and Allen, 2014). Akerlof and Kranton (2000) prominently introduced such group-driven preferences into models of individual decision-making as an additive term in agents' utility function (for a first application of the model to voting, see Dickson and Scheve (2006) and in a voting experiment see Bassi, Morton and Williams (2011)).

Some of these effects on preferences are psychological, driven by cognition or emotion. When a group identity becomes salient, as social identity and social categorization theory argues, individuals will categorize themselves in terms of that identity (Tajfel and Turner, 1979; Turner et al., 1987). They become aware of their group membership and build an understanding of who they are and who others are (Jenkins, 2014). Shifting from personal to group identity triggers the heightened adherence to group norms. Some of the preference-driven effects of salience are material: groups share common interests and fellow group members act to protect those (Bobo, 1983), which is arguably more likely if group membership is primed. For cohesive group behavior, then, a shared belief of common fate is necessary (Simon and Klandermans, 2001).[6]

[5] A group identity is salient if it is acting to "increase the influence of one's membership in that group on perception and behavior" Turner et al. (1987, 118).

[6] See Huddy (2013) for a extensive review of the political psychology literature on the mechanism behind political

All these effects of salient group identity have in common that they provide rationales to do what is "best" for one's group or to vote in conformity with one's group. However, groups are often heterogeneous, inter-group competition is complex, and what political alternative one should vote for to do what is "best" for the group or to follow a group norm is not obvious. Group decision-making, where outcomes have consequences with respect to individual- *and* group-level benefits, presents a coordination problem (Bornstein, 2003). Intuitively, faced with that problem, individuals as group members may align their vote choice with what fellow group members are most likely to do. In the context of ethnic politics, Chandra (2004) articulates an important argument that provides a starting point for guiding our thinking about how identities may serve as such group coordination device: we see coordination of vote choice along ethnic lines when co-ethnics represent a large enough electoral coalition to help the candidate win.[7] We may expect group members in such circumstances to coordinate by aligning with and supporting the apparent policy preferences of the group's majority, assessing those preferences by considering which alternative would give most group members a higher utility. The *GROUP-MAJORITARIAN COORDINATION HYPOTHESIS* follows accordingly:

> *increasing group identity salience increases the group's support for the electoral alternative that is preferred by a majority of group members.*

Such straightforward group-majoritarian coordination mechanism may plausibly arises as consequence of an increase in the awareness of incentives and circumstances of fellow group members and of the constellation of social groups (Walsh, 2004).

Preferred by a majority of group members means that most group members receive a higher individual-level benefit from supporting an electoral alternative than supporting the other.

Suppose, for example, that the identity of a group whose membership consists mostly of wealthy individuals but also some poor individuals becomes salient. According to group-majoritarian coordination, all members of the group should vote against redistribution regardless of whether the

cohesion. The coordination effects I describe are certainly an instantiation of such cohesive group behavior but sustained by the salience-triggered prominence of certain sets of beliefs that drive how voters' trade-off individual and group preferences.

[7] Among 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), and Malawi (Ferree and Horowitz, 2010).

individual voter is poor.[8] A vote for a wealth-preserving status quo policy against redistribution would generate higher individual-level benefits for a majority of group members than voting for redistribution.

The example of the Los Angeles mayoral election suggests, however, the existence of a rationale that could justify the group attempt to coordinate on the electoral alternative that leads to a loss in individual-level benefits of a majority of group members. In contrast to the predictions of group-majoritarian coordination, voters may want to support jointly (as a group) a candidate who is most likely to be the electoral winner (and so, be in a position to deliver the group-level benefits) *given the preferences of non-members and broader incentives of fellow group members.* On such strategic grounds, it may turn out that members of the group may coordinate on voting for an alternative that would generate an overall lower welfare for a majority of identity group members.

Consider the following mechanism: suppose the majority of a society would benefit from redistribution (the median income is below the mean income) but most members of the majority identity group are disproportionately wealthy. Increasing the salience of group identities raises members' awareness of the preferences of that particular group as a group, but it also serves to highlight the existence and preferences of the minority identity sub-group; the members of the majority identity group will subsequently be more aware of the fact that the poorer minority identity group prefers redistribution.[9] One could envision this as a two step process. In the first step, the poorest member of the majority identity group considers the potential actions of the richer members and realize that they could secure the group-level benefit by voting against redistribution together with the richer members, but that securing the group-level benefit is not enough for making up for the loss in individual-level benefit. This recognition may become influential in altering the voting calculus of those poorest members of the majority identity group by increasing the likelihood that they vote for redistribution. At this point, given that the minority identity group together with the poorer

[8] Such 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, leading poor voters to at least partially ignore their pocketbook interests (Roemer, 1998; Scheve and Stasavage, 2006).

[9] Choices by members of the minority identity group in the experimental data, in fact, indicate the prevalence of the belief that voting for the wealth-preserving candidate is, indeed, not worth the attempt; they almost unanimously vote for the redistributive candidate independent of particular income and treatment (See Section 5).

members of the majority identity group represent a majority of votes in this society, the politician who offers a higher level of redistribution becomes a viable candidate for winning the election. In the second step, the wealthier members of the majority identity group may come to realize the appeal of voting for more redistribution, since voting jointly with other members of their identity group coordinating on the redistribution candidate, allows them to secure the club good for their group.

The *EQUILIBRIUM COORDINATION HYPOTHESIS* follows accordingly:

> *when the group is sufficiently heterogeneous, increasing group identity salience leads the group to support the electoral alternative that may not be beneficial to the majority of group members.*

The model and experiment that follow characterize how voters trade off individual-level and group-level benefits when group identities become salient and the coordination mechanism by which electoral outcomes come about.

3 A simple model of electoral competition

Electoral competition is modeled in a complete information environment and I provide equilibrium predictions accordingly. The primary purpose of the model is to illustrate the set of incentives underlying behavior in a complex collective choice problem with benefits distributed at the individual- and group-level.

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 group identity attribute (e.g., social group membership), which, given N odd, induces a division of citizens into two identity groups, orthogonal to the income distribution. Thus, with respect to the distribution of this second attribute, agent i is either a member of the *majority identity group* MJ ($N_{\text{MJ}} = 3$) or of the *minority identity group* MI ($N_{\text{MI}} = 2$).

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 the existing income levels without redistributive public good provision.[10] Agent i chooses which of the

[10] I assume throughout that candidates are committed to implementing their respective platforms if elected and

candidates to vote for, $a_i \in \{P, R\}$. Agent i's utility has two components. One component, denoted U_i^C, is *individual-level benefit* induced 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 a *group-level 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,

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

where n_{MJ} is the number of voters in the majority identity group who voted for the winning candidate, n_{MI} is the number of voters in the minority identity group who voted for the winning candidate, and $\mathcal{I} > 0$. Agent i's is 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 forms the core/majority support for 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 non-universal groups are examples of the second type. Politicians allocating resources to discernible social groups make each voter pivotal in the fight for such a targeted benefit.[11]

abstract away from the reasons they might have for running. The 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).

[11] This 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 appear to make choices that run counter to their obvious economic interests to secure a prize for their identity group (Morton, 1991; Schram and Sonnemans, 1996; Smith and Bueno De Mesquita, 2012).

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 strategy 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^{MJ}, $i = \{1, 2, 3\}$, are the pure strategies chosen by the three members of MJ and a_j^{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. I will distinguish *income-independent* equilibria consisting of strategy profiles where all agents vote for the same candidate independent of their income and *income-dependent* equilibria with strategy profiles where actions are contingent on agents' income.

To see that the strategy profiles $(P, P, P; P, P)$ and $(R, R, R; R, R)$ are income-independent Nash equilibria in pure strategies, 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 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-level benefit.[12]

To simplify the characterization of *income-dependent* equilibria, note that 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/τ as *moderately poor*, those between V/τ and ω_H as *moderately rich*, and those above ω_H as *very rich*.

The following proposition characterizes income-dependent equilibria.

Proposition 1 *In income-dependent equilibria, all members of MJ vote for*

1. *P if they are not very rich, i.e. if their incomes are lower than $\omega^H = \frac{V+I}{\tau}$*

[12] Note, for the same reason, the strategy profiles $(P, P, P; P, R)$, $(P, P, P; R, P)$, $(R, R, R; P, R)$, and $(R, R, R; R, P)$ are also income-independent Nash equilibria in pure strategies. In the appendix I show that no other Nash equilibria in pure strategies exist.

2. R if they are not very poor, i.e. if their incomes are higher than $\omega^L = \frac{V-I}{\tau}$.

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. 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-level benefit.[13]

This simple model illustrates gains or losses in the payoff for the individual agent given her level of income – very poor, moderately poor, moderately rich, or very rich (individual-level benefit). 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 MJ votes for R and MI votes for P. The experiment below tests whether making the group identity, here the group-level benefit, salient affects equilibrium coordination.

With respect to behavioral expectations, the *group-majoritarian coordination hypothesis* describes the behavior equivalent to the strategy profile of the income-dependent equilibria in which all members of the majority identity group MJ vote for R and the income-independent equilibria in which all voters vote for R (Proposition 1). The *equilibrium coordination hypothesis* predicts a unanimous vote for P, which is also an income-independent equilibrium. Following group-majoritarian coordination, voting for R, imposes a cost on the individual-level benefit dimension on all moderately poor or poor voters but allows the moderately poor voter in MJ to make up for that cost

[13] From the equilibria described above it is immediate that ω_L and ω_H are two of these cut-points. $\omega_i = V/\tau$ is relevant only insofar since $lim_{I\to 0}\omega_H = lim_{I\to 0}\omega_L$. 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. There are three sets of strategy profiles not characterized so far; all of these profiles are not a Nash equilibrium in pure strategies (See Section B in the SI for a proof of this claim).

with benefits reaped from the group-level benefit. Following equilibrium coordination, voting for P, imposes a cost on the individual-level benefit dimension on all moderately rich and rich voters but allows the moderately rich voter in MJ to make up for that cost with group-level benefits from the club good.

4 Experimental design

Following the interaction modeled in Section 3, the experiment simulates vote choice between two electoral alternatives and experimentally varies group identity salience. If chosen by majority, one alternative implements redistribution, while the other a status-quo distribution (individual-level benefit dimension). Additionally, the winning alternative rewards the group that constitutes a majority of voters among those who support it by implementing a policy that will disproportionally allocate a scarce resource to that group (group-level benefit dimension). Voters are characterized by two attributes: individual income and membership in a social group. Because the focus is on increasing the salience of group identity, I will refer to membership in a social group as *group identity* (and to the group sharing that attribute as an *identity group*), and to the other as individual-level attribute (assigned *income*).

I implement different distributions of income that correspond to the existence of different equilibria in the model. In the *No appeals* treatment condition there is no priming and in the *Appeals* treatment condition the subjects' group identity is made salient as shown below. I will refer to those two treatments as the *rich majority identity group treatments*. In those 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.

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

Group identity inducement stage At the beginning of each experimental session, subjects are shown 5 pairings of paintings, one by Paul Klee and one by Vassily 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* and subjects engage in a collaborative

quiz within their painter identity group.[14] In the subsequent voting game stage, the identities of all subjects with whom individual subjects interact are displayed for them on the screen. The design does not attempt to manipulate something "seemingly immutable" (Sen and Wasow, 2016) but induces minimal groups (Tajfel and Turner, 1986), which allow subjects to fill these group labels with their own experiences of group life while they help avoid that uncontrolled associations influence the choices available to the subjects.[15]

Voting game stage The voting game proceeds as follows:

1. Subjects are randomly assigned to a 5-person *decision group* 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.[16]
3. Subjects are informed about income and identity group membership of all subjects in their decision group.
4. Subject are randomly assigned to either receive the *No appeals* or *Appeals* treatment condition (description below).
5. Subjects are asked to make a choice between two alternatives, P and R. Whichever alternative is chosen by a majority of participants in their decision group becomes the *winning alternative* of that decision group.[17]
6. The majority winning alternative is announced to the members of the decision group and subjects are privately informed about their round payoffs.

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 comprehendible cut-points in the income space separating those subjects whose individual-level benefit is higher when voting for P from those whose individual-level benefit is higher when voting for R.

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

[14] See Tajfel and Billig (1974), Chen and Li (2009), and Landa and Duell (2015) for examples of the use of painter-preferences to induce identities.

[15] Considerable 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 (Eckel and Grossman, 2005; Goette, Huffman and Meier, 2006; Charness, Rigotti and Rustichini, 2007; Chen and Chen, 2011).

[16] See Supporting Information (SI) section C.3.

[17] See SI section C.4 for an illustration of what subjects see on their computer screen while making this decision.

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

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

$$payoff_i(\text{R wins}) = \begin{cases} income_i \,+ 10 & \text{if } i\text{'s identity group holds a majority among all voters who vote for } R \\ income_i & \text{otherwise} \end{cases}$$

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

The list of feasible income values potentially assigned to each subject contains 10, 22, 27, 38, 44, 56, 62, 73, and 90. In what follows (but not on the subjects' screen within the experiment), voters are defined as "very poor" if they are assigned the three lowest possible values of income (10, 22, or 27), "moderately poor" if they have the next two income values (38 or 44), "moderately rich" if they are assigned the two following values (56 or 62), and "very rich" if they have one of the two highest income values (73 or 90). The payoffs in the game are structured in such a way that the loss in individual-level benefit for a moderately poor voter when R wins is more than offset when her identity group secures the group-level benefit. Similarly, the loss in individual-level benefit for a moderately rich voter when P wins is more than offset when her identity group secures the group-level benefit. But the very rich and the very poor voters would prefer receiving the more preferred individual-level benefit to the more preferred group-level benefit if only one is to be had.

In the *rich majority identity group* treatments, I implement three different income distributions that vary the level of income heterogeneity in the majority identity group. In all three distributions, there is a poor minority with one very poor and one moderately poor voter and in which the majority identity group consists of 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. In the distribution in which the poorest member of the majority is very poor only income-independent equilibria exist; for brevity, I will refer to this distribution as *baseline* income distribution. In the *more heterogenous* income distribution the very poor member in the majority is assigned an extremely small income value of 10 and the richest member is extremely rich (income 90).

The same equilibrium prediction applies for the *more heterogenous* as well as for the *baseline* income distribution but the potential loss in individual-level benefit when voting for R as poorest member as well as

the the potential loss in individual-level benefit when voting for P as the richest member increases substantially. FIX

Finally, the *more homogenous* income distribution allows for the existence of income-dependent equilibrium as well as income-independent equilibria characterized in Section 3: it features two rich voters and one moderately poor voter in the majority.

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 induces 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.

Salience treatments and summary of treatment conditions Apart from the *rich majority identity group* treatments, I implement three supporting treatments for robustness checks with the explicit purpose to clarifying the effect of increasing the salience of group identity on behavior – that is the difference in behavior in *appeals* and *no appeals* treatment – observed in the *rich majority identity group* treatments. In one treatment, I prime voters' individual-level attribute income (*Income priming* treatment). In a second, I repeat treatments that resemble *appeals* and *no appeals* treatment now with a mostly poor majority identity group and a mostly rich overall society (*poor majority identity group* treatments). In the final supporting treatment all members of the minority identity group are assigned a high income (*All rich minority identity group*).[18]

[18] The number of independent observations in the study is equal to the number of decision groups and accounted for in the statistical analysis accordingly.

Table 1: Summary of treatment conditions and treatment statistics

Treatments		Subjects	Observations	Decision groups
Rich majority identity group	No appeals	70	2800	14
	Appeals	80	3200	16
	Income priming	40	1600	8
Poor majority identity group	Poor-No appeals	40	1600	8
	Poor-Appeals	55	2200	11
All rich majority identity group	All rich	10	300	2
Total		295	11700	59

Appeals are shown to subjects on their computer screens. In the experiment, candidate P is referred to as *Alternative A* and candidate R as *Alternative B*. The statement representing an identity appeal, depending on Klee [Kandinsky] group membership, reads: *Remember you are a KLEE [KANDINSKY]! Should you vote with other Klees [Kandinskys], you may receive a higher identity payoff.*

And the *income priming* treatment is: *Remember your income is below 50! Should you vote for Alternative A, you may receive a higher decision payoff.*[19]

The treatments are subtle but are perceived by subjects to influence behavior.[20] There is balance in treatment conditions compared to the *no appeals* baseline of the rich majority treatments. In particular, the distributions of a variable that records subjects' "closeness" to their identity group are undistinguishable across conditions.[21]

[19] This appeal is shown when the subject is assigned an income below 50. When it is assigned an income above 50, it is shown the statement: *Remember your income is above 50! Should you vote for Alternative b, you may receive a higher decision payoff.* Note, the individual-level benefit was referred to as "decision payoff" in the experiment.

[20] 89% of subjects in appeals conditions responded to the exit-survey question whether appeals affected their decisions with an answer that is not "I have not recognize any appeal." Further, 79% responded they have seen the appeal when asked directly (in 3 out of 12 sessions).

[21] Out of the five comparisons between treatment condition and *no appeals* baseline over seven balance variables (age, Germans origin, attitudes towards welfare state, attitudes towards being taxed for increasing education spending, attitudes towards being taxed for welfare spending, feeling close to identity group, and whether subject remembered group identity), one returned a difference in distribution significantly different from zero at $\alpha = .05$: *no appeals* vs *all rich* in feeling close to identity group ($p = .03$).

5 Results

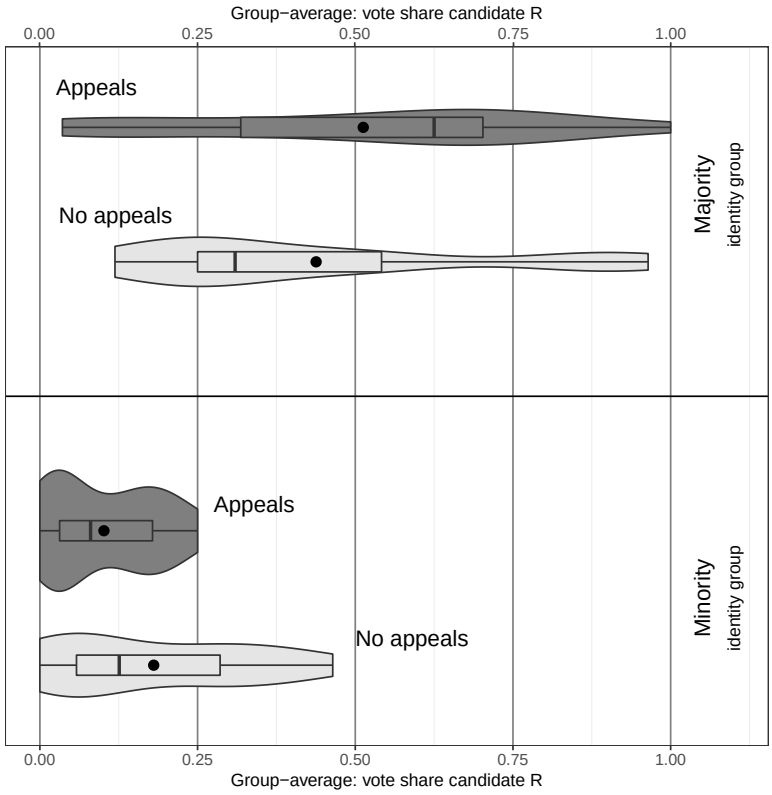
I find that group-majoritarian coordination is a prominent decision mechanism when group identities are made salient. It implies a vote choice dividing society along group lines. Voters also make decisions according to equilibrium coordination following two different mechanism: (1) They consider the group-level benefits from joint group action in a way that leads to coordination of vote choices on the redistribution alternative P that, counterintuitively, imposes a loss in individual-level benefits on most members of the majority identity group. (2) Members of the majority identity group consider the loss in individual-level benefit to the poorest member of the group to assess whether the group is likely to coordinate on the wealth-preserving alternative R. That is, they coordinate in a way observationally equivalent to the behavior described by group-majoritarian coordination but driven by beliefs about other voters' behavior.

I first illustrate voting patterns across treatment groups. For a complete assessment of which coordination mechanism prevails, however, the interaction between voters' behavior and beliefs about other voters' behavior need to be taken into account; I do so in Section 5.3.

5.1 Effects of group identity salience on vote choice

To illustrate the effects of salient group identity, I consider the overall average vote share of candidate R as well as time trends in R's vote share vote share in minority and majority identity group within each decision group in *no appeals* and *appeals* treatment (*rich majority identity group* treatments, *baseline* income distribution). Figure 1 illustrates two main effects of salient identities on the overall average vote share of candidate R. With salient identities, (1) the majority identity group is more likely to vote for candidate R while the minority identity group is more likely to vote for candidate P and (2) more variation arises with respect to coordination of vote choices within majority identity groups. (1) indicates the existence of *group-majoritarian coordination* but (2) hints at that other effect of salient identities: *equilibrium coordination* on either candidate R or candidate P.

Figure 1: Distribution and density of average vote share of candidate R in majority and minority identity group within decision groups in the *no appeals* and *appeals* treatments (*rich majority identity group* treatments, *baseline* income distribution). The box plot shows the median and inter-quartile range, the dot indicates the mean of average vote share.



The average vote share of candidate R in the majority identity groups of the *no appeals* treatment is .44 but only .18 in the minority identity groups. The difference of .26 (.14, .37) is significant.[22] In the *appeals* treatment, the majority identity group votes for candidate R at a rate of .52 while the minority identity group does so only at a rate of .10, difference .41 (.31, .51). The difference-in-difference, that is the treatment effect of salient identities, is .15 (.00, .30) indicating that the difference in behavior in minority and majority identity group becomes larger in the *appeals* treatment in contrast to the *no appeals* treatment. The effect of group salience realizes in the minority identity group's lower average rate of votes for candidate R as well as the majority identity group's higher average propensity to vote for candidate R in the *appeals* treatment in contrast to

[22] When means and difference in means are presented throughout the result section, 95% confidence bounds are provided in parenthesis obtained from a subject-level clustered bootstrap of the relevant statistic. Whenever a difference is deemed significant, the appropriate difference-in-means test and difference-in-distribution test (Wilcoxon) leads to a rejection of the null hypothesis of no difference at $\alpha = .05$.

the *no appeals* treatment. The weight of the distribution of average rates of voting for R shifts to the right in the majority identity group with identity appeals but to the left in the minority identity group. While we do not see a significant overall positive effect of identity appeals on the majority identity group, $.07\,(-.06, .20)$, there is a significant negative effect in the minority identity group, $-.08\,(-.15, -.01)$.[23] In the minority identity groups, the *appeals* treatment significantly lowers the average vote share and the spread of average vote shares across decision groups is significantly compressed. While the range of average vote share of candidate R in the minority groups of the *no appeals* treatment is $.46\,(.36, .57)$, it is $.25\,(.20, .30)$ in the *appeals treatment* (the significant difference is $.21\,(.09, .33)$).

The comparison of group averages is hiding variation in the majority identity group. In both treatments, the median and the mean of average vote share of R is rather different pointing towards non-symmetric distributions of average vote share. In fact, the majority identity groups in the *appeals* treatment that show a low average vote share of R are different from majority identity groups that show a higher average vote share of R. In particular, salient group identities affect the time trends observed within decision groups differently depending on whether the majority identity group converges towards voting for R or P. I find significantly more majority identity groups in the *appeals* treatment with significant reduction of vote share of candidate R over round of play than in the *no appeals* treatment. In particular, in 38% of majority identity groups in the *appeals* treatment, the vote share of candidate R decreases significantly while that only happens in 17% of the majority identity group sin the *no appeals* treatment. The difference in percentage of majority identity groups showing a significant convergence towards candidate P is $16\%\,(-3\%, 37\%)$ with a p-value of .11 in a hypothesis test of no difference.[24] Salient identities do not affect the strength of time trends in majority identity groups more likely to coordinate on candidate R. No majority

[23] The overall effect of identity appeals on the vote for candidate R is $.08\,(-.03, .18)$, the difference is not significant ($p = .14$).

[24] The difference in the number of majority identity groups in *appeals* and *no appeals* treatment is significant: 6 out of 16 majority identity groups in the *appeals* treatment but only 3 out of 14 in the *no appeals* treatment show a negative time trend in the vote share of candidate R; that is, the difference is $3\,(.20, 5.8)$ with a p-value of .04 in a hypothesis test of no difference. The test statistics, difference in percentage and difference in number of majority identity groups with a negative time trend in vote share of candidate R are generated by a subject-level clustered bootstrap.

identity groups with a robustly positive time trend in vote share of candidate R exist in either *appeals* or *no appeals* treatment.

Summarizing the observations on identity salience treatment effects on average vote share of candidate R and time trends in vote share of candidate R, I find a *positive* shift in the overall average vote share of candidate R when group identity is salient but an increasingly *negative* time trend in vote share of candidate R as well. These two treatment effects work on the majority identity group in different decision groups. There is a subset of decision groups where the majority identity group responds to salient identities by significantly increasing the vote share of candidate R and do so constantly across round of play. And, there is another subset where the majority identity group responds by decreasing the vote share of candidate R over round of play and that decrease is significantly larger in the *appeals* than the *no appeals* treatment.

Let's define the *propensity to coordinate on* R when a majority identity group shows an average rate of voting for candidate R that is *higher* than the average in the majority identity groups of the *no appeals* treatment. And, call *propensity to coordinate on* P when a majority identity group displays an average vote share of candidate R that is *lower* than the average in the majority identity groups of the *no appeals* treatment. While more majority identity groups in the *appeals* treatment show a propensity to coordinate on R (63%, 10 of 16), the top panel of Figure 1 shows that some display a propensity to coordinate on P as well (38%, 6 of 16). Majority identity groups that show a propensity to coordinate on R are, on average, by $.27\,(.07, .47)$ significantly more likely to vote for candidate R than the majority identity groups in the *no appeals* treatment. Majority identity groups that show a propensity to coordinate on P, in contrast, are on average less likely to vote for candidate R ($.25\,(-.01, .51)$, $p = .06$) than the majority identity groups in the *no appeals* treatment. This pattern of group behavior implies a shift from a more unimodal distribution of average votes share as observed in the *no appeals* treatment towards a more uniform or even bimodal distribution in the *appeals* treatment.[25]

Summarizing,

Result 1 *making group identities salient introduces a stronger split in vote choice between a mi-*

[25] Indeed, the bimodality coefficient (Pfister et al., 2013) yields .33 for the *no appeals* treatment but a .63 for the *appeals* treatment. A uniform distribution would be indicated by a bimodality coefficient of about .55, a unimodal distribution of a lower, and a bimodal distribution of a higher coefficient.

nority identity group that is now more likely to support the redistribution candidate and a majority identity group that is now more supportive of the wealth-preserving candidate. Different majority identity groups also show larger variation in which of the candidates they coordinate on with observed convergence on either candidate across groups.

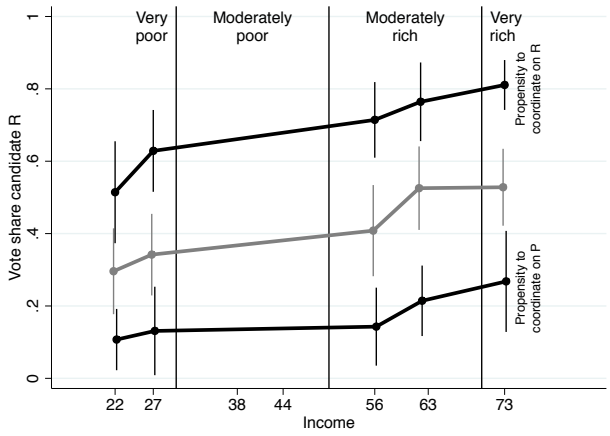
5.2 Robustness of identity salience effects

The effect of salient identities, the occurrence of group-majoritarian and equilibrium coordination, is robustly identify independent of (1) income assigned to the individual subject and (2) round of play. Also, (3) coordination on voting for the redistribution candidate P is not explained by identity salience triggering increased preferences for within-group or overall income equity and (4) the distribution of coordination mechanism across decision groups is similar when average vote share is estimated by a multi-level random effects regression model.

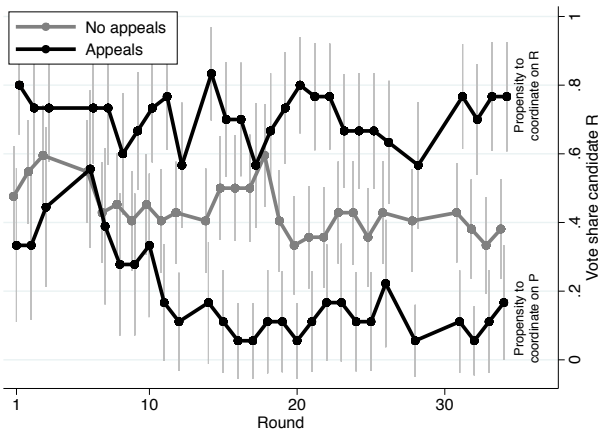
First, while the propensity to vote for candidate R certainly varies with assigned income, the treatment effect of identity salience is constant across income. Figure 2.A shows a steady increase in the propensity to vote for candidate R by income and a constant difference between *no appeals* and majority identity groups that follow group-majoritarian coordination as well as a stable negative difference between *no appeals* treatment and majority identity groups that follow equilibrium coordination. Second, Figure 2.B shows that majority identity groups in the *no appeals* treatment and those that follow group-majoritarian coordination (top black line), converge to a stable average effect from round 1. Majority identity groups in the *appeals* treatment that follow equilibrium coordination converge at about round 10.

Figure 2: Average vote share of candidate R by *income* and by *round* in majority identity groups in *no appeals* treatment and in majority identity groups in the *appeals* treatment that follow majoritarian (top black line) or equilibrium coordination (bottom black line; *rich majority identity group* treatments, *baseline* income distribution). 95% confidence bounds are computed based on a subject-level bootstrap.

A. Average vote share of R by income



B. Average vote share of R by round



Third, making identities salient could simply mean heightened other-regarding preferences in the form of increased inequity aversion (Fehr and Schmidt, 1999). In other words, convergence of minority identity groups and those majority identity groups that follow equilibrium coordination on the redistribution candidate P is just a sign of a stronger preference for redistribution emerging with salient identities. To show that identity appeals triggers coordination among voters, and does not change preferences, I reverse the income distribution (*poor majority identity group* treatments) creating a mostly poor majority identity group and a rich minority identity group. Now, the target of group-majoritarian coordination in the minority identity group and of equilibrium coordination in the majority identity group is shifted to the wealth-preserving candidate R, and we should see effects of identity appeals accordingly. Conversely, if the preferences for redistribution account has bite, appeals should still lead to an increase in vote share of P.

Overall, when reversing the income distribution, the vote share of candidate R increases. When it was .34 (.24, .43) in the *no appeals* treatment and .35 (.26, .44) in the *appeals* treatment with a rich majority identity group, it is now .75 (.65, .87) and .65 (.51, .80), respectively, with a poor majority identity group. Also 55% (6 out of 11) of majority identity groups in the *appeals* treatment when

the majority identity group is poor now follow equilibrium coordination. The average rate of voting for candidate R among those majority identity groups is $.86\,(.79, .93)$.[26] While the overall increase in vote share for candidate R when the majority identity group is mostly poor and the prevalence of majority identity groups that follow equilibrium coordination with salient group identities speak against the preference for redistribution account, some evidence for the argument exits. Salient identities create a shift of $.11\,(-.01, .22)$ towards voting for candidate P with the reversed income distribution even though most voters in each decision group are now rich (members of the minority identity group and one member of the majority identity group).

Finally, the distribution of dominant coordination mechanism across decision groups is also robust once unobserved group effects, minority vs majority identity group idiosyncrasies, and temporal effects are accounted for in a multi-level random effects regression model (see Figure A.10 in the SI).

5.3 Identifying majoritarian and equilibrium coordination

Making identities salient by appealing to voters to consider the group-level benefit, increases the division on vote choice between minority and majority identity group but also generates a stronger propensity for the majority identity groups to either coordinate on voting for candidate R or candidate P. Which decision-making heuristic underlie coordinating on either of the two candidates? I argued that when identities become salient, voting is either driven by *group-majoritarian coordination* or *equilibrium coordination*; this section provides evidence to assess which coordination mechanism prevails and under what conditions.

Equilibrium coordination on the candidate that provides lower individual-level benefit to most members of the majority identity group (i.e., candidate P in the *rich majority identity group* treatment) requires members of the majority identity group to form complex expectations about the behavior of other voters. In particular, the majority identity group not only acts on beliefs about what the poorest member of the majority identity group will do but also about the minority identity group's reaction to a salient identity as well as about the response of the majority identity group's poorest member's to those expectations about the minority identity group's behavior. Sev-

[26] For completeness, the other 5 out of 11 majority groups that follow group-majoritarian coordination in the *appeals* treatment with a poor majority identity group vote for candidate P at an average rate of $.21\,(.03, .38)$.

eral pieces of evidence support this interpretation. First, Figure 2.B shows that majority identity groups with a propensity to vote for candidate R converge on that alternative earlier than majority identity groups with a propensity to vote for candidate P, which is the target of equilibrium coordination in the *rich majority identity group* treatment; this hints at a mechanism involving more complex beliefs in the latter case. Second, priming subjects considerations of their individual-level attribute, income, as it is implemented in the *income priming* treatment, should directly induce the expectation of rich majority identity group members that the poorest member is likely to side with the poor minority identity group in voting for candidate P. In turn, rich voters in the majority identity group responding to that expectation should be more likely to vote for candidate P as well given that P is now more likely to be the vote winner. Indeed, very poor and moderately poor voters in minority and majority identity group vote for candidate P throughout, and rich voters in the majority identity group converge to voting for candidate P as the experiment proceeds with incomes primed (see Figure A.15 in the SI). Further, exit-survey responses indicate that majority identity groups with a propensity to vote for candidate P (the target of coordination according to the *equilibrium coordination* hypothesis) are more likely to consider whether others are affected by salient identity, i.e. the minority identity group. 69% of subjects in the majority identity groups with a propensity to vote for candidate P, in line with the behavior prescribed by equilibrium coordination, are significantly more likely to report that they believed appeals did not only affect them but also others while only 56% did so in majority identity groups with a propensity to vote for candidate R, difference in proportions: $.13\,(.02, .24)$.[27] Finally, the all rich minority identity group treatment strips away any foundational belief that the minority identity group is voting for candidate P by creating a scenario in which all subjects are wealthy. Here, the wealth-preserving candidate receives support at a rate of .92. The poorest member of the majority identity group now sees no reason to expect the minority identity group to vote for candidate P, and, in turn, the richer members of the majority identity group group are more certain the poorest member coordinates with them on candidate R.

All this implies that with a majority identity group that is more heterogeneous in income, equilibrium coordination on the redistribution candidate P becomes more frequent. The conditions

[27] Among all subjects in the *appeals* treatment, 55% said the appeals mattered to them and 61% believed the appeals mattered to other participants.

for such equilibrium coordination are most favorable, then, when the poorest member is very poor (assigned income of 10, 22, or 27 as in the *baseline* and *more heterogenous* income distribution) instead of moderately poor (assigned income of 44 as in the *more homogeneous* income distribution). And, indeed, the average rate of vote for candidate P in the majority identity group under the *baseline* and *more heterogeneous* income distribution is significantly higher than in majority identity groups under the *more homogeneous* income distribution (difference in proportions is .33 (.22, .44)).

This leads me to highlight a first result about which mechanism prevails:

Result 2 *When the majority identity groups is less homogeneous, equilibrium coordination on the candidate that imposes costs on most members of the majority identity group in individual-level benefit is the most frequent coordination mechanism.*

Equilibrium coordination arises because moderately rich and rich members of the majority identity group lose confidence that the poorest member of the group will also support R. This loss in confidence comes from the primed expectation that the poor minority identity group most likely supports candidate P.

When does *group-majoritarian coordination* arise? In *group-majoritarian coordination* voters follow the simple heuristic of voting for the candidate who delivers higher individual-level benefit to most members of the group. In the *rich majority identity group treatments* presented above that is candidate R. Indeed, in the experiment, I find evidence that with salient identities (*appeals* treatment), many majority identity groups show an increased propensity to vote for candidate R in contrast to majority identity groups in the *no appeals* treatment. This finding, however, does not immediately imply that *group-majoritarian coordination* drives this result. An unbiased identification of the use of the individual-level benefit consequences as decision-heuristic for vote choice, as described by *group-majoritarian coordination*, can only be achieved when studying treatment effects in decisions under the *baseline* or *more heterogeneous* income distribution. It is under such income distributions, that the loss in individual-level benefit of the poorest member is not offset by the group-level payoff when voting for the candidate that delivers higher individual-level benefits to most members of the identity group. Here, the richer members of the majority identity group cannot expect the poorest member is likely to vote for R in an attempt to offset individual-level benefit losses with the group-level benefit. If the poorest member still votes for R, it must be driven

by the group welfare heuristics behind *group-majoritarian coordination.* Above, I showed that 63% of the majority identity groups show a propensity to vote for R in the *appeals* treatment under the *baseline* income distribution (that is with a poorest member of the majority identity group that is very poor). This is the evidence in support of my next result:

Result 3 *When the majority identity groups is less homogeneous,* group *coordination yields a convergence of vote choice of the majority identity group on candidate R.*

For this kind of mechanism that yields coordination on candidate R, vote choice is determined by the majority identity group's expectations about the behavior of its poorest member. I find that different behavior described by the two coordination mechanism is driven by variation in how the majority identity group reasons about what their optimal behavior should be in relation to how they expect fellow group members and the minority identity group to trade-off their preferences over individual- and group-level benefits.

The willingness of the poorest member of the majority identity group to coordinate with richer fellow members and these richer members belief about the poorest member's willingness to coordinate is largest when the group-level benefit offsets the loss in the individual-level benefit that is tied to individually assigned income.

This is the evidence in support of my next result:

Result 4 *In more homogenous identity groups, equilibrium coordination yields a convergence of vote choice of the majority identity group on candidate R.*

Majoritarian coordination arises because of the confidence of rich and moderately rich members of the majority identity group that the poorest member of the group will also support R.

group-majoritarian coordination, In fact, only in decision groups that is not more homogenous can the propensity to vote for R be explained by the decision-heuristic described in *group-majoritarian coordination.*

Equilibrium coordination is the more interesting case of how preferences over individual- and group-level benefits are traded off. While most members of the majority identity group have a preference to vote for candidate R given their individual-level benefit tied to their assigned income, how electoral competition and voters' expectations about what is going to happen played out,

generates a very different outcome: coordination of members of the majority identity group on candidate P. The majority identity group acts that way to at least secure the group-level benefit because P is the most likely winner given the expected behavior of the minority identity group and the behavior of the poorest member of the majority identity group generating a loss in individual-level benefit for rich members of the majority identity group with high probability.

The division in vote choice along group lines in decision groups where group-majoritarian coordination is prevalent is not an equilibrium of the simple model of electoral competition given the distribution of the individual-level benefit associated with subjects' assigned income. The poorest member of the majority identity group is very poor and has an incentive to side with the minority identity group and vote for candidate P because the group-level benefit does not offset the loss in individual-level benefit. Equilibrium coordination, on the other hand, is an income-independent equilibrium.

It is also with a *more homogeneous* income distribution that the division in vote choice between minority and majority identity group is an income-dependent equilibrium in the simple game of electoral competition.

6 Discussion and Conclusion

Do the coordination mechanism travel outside the laboratory? In this experiment, I demonstrate the existence of two mechanism by which group identity salience drives vote choice of members of a social group. The core of the mechanism is individual voters' increased awareness from salient identities about the expected behavior of fellow group members and other groups. Voting has redistributive consequences but is also characterized by the opportunity to secure group-targeted benefits, where individuals are required to make reasonable guesses about the responses of others. This is a strategic interaction that features uncertainty about optimal behavior; and this is exactly the realm of behavior in which a laboratory experiment can make valid predictions.

Individuals usually rely on focal points in decision situations with uncertainty. Salient social group markers generate common knowledge about such focal points among the members of a group allowing for successful coordination similar to other more context-rich public signals like rituals (Chwe, 2013), symbols (Schnakenberg, 2014; Ridgeway et al., 2009), or information about political

outcomes (Mebane, 2000; Mebane and Sekhon, 2002).[28] Group-majoritarian coordination provides such a cue to rally the group around an alternative by parameterizing a strategic problem where individuals maximizing group utility are guided towards a clear coordination target (Guala, Mittone and Ploner, 2013). Group identities function as frame, as a body of information enabling a decision, in particular in interactions that imply a trade-off (Guala and Filippin, 2017), serve as a low-cost informational cue in complex decision-making environments (Lupia and McCubbins, 1998), and are most valuable to individuals who are otherwise more ignorant (Bassi, Morton and Williams, 2011).

The uncertainty about how *other groups* will behave, however, seems to be sufficient to steer some voters away from this easily recognizable focal point. A group rationality now needs to emerge so that the group finds an optimal strategy vis-a-vis the other group and that is more easily done when identities are salient (Bornstein, Gneezy and Nagel, 2002). As instance of such rationality, decision makers follow a mechanism – equilibrium coordination – by which joint group action emerges from far less obvious considerations of the preferences 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 I implement – members of a mostly wealth majority identity group respond to their expectation about the behavior of a poor minority identity group that sees no chance in winning the group benefit and thus sticks to a strategy profile strictly supporting the candidate that is most individually beneficial to them – the mechanism by which subjects arrive at this electoral outcome is driven by a more fundamental response to salient group identities. With salient identities, 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 uncertainty[29] the individual is unsure whether others will act purposefully

[28] In 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 (Bornstein, Gneezy and Nagel, 2002; Charness, Rigotti and Rustichini, 2007; Croson, Marks and Snyder, 2008; Chen and Chen, 2011).

[29] Strategic 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).

(Brandenburger, 1996; Weizsäcker, 2003). 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. A rational agent can exploit such information she infers from her own actions and subsequently impose it on others (Grafstein, 1995).

A salient group identity helps to create common conjecture; it serves 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 with salient group identities by counterfactual: coordination fails in experimental conditions with appeals in the individual-level benefit dimension (*income appeals*) the content of the common conjecture is muted and the resulting coordination changes with a different income distribution (*poor majority identity group* treatments) where the targets of the group's joint action is shifted.

Apart from the general argument that electoral competition with group-targeted benefits is a fundamentally strategic decision situation and a laboratory experiment well-suited to describe motivations and behaviors, the Riordan-Hayden race further illustrates that the mechanism I identify may also exist in large-scale elections outside of the abstract world of the laboratory. Further, for another recent example, consider 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 support of minorities for the incumbent President.[30] 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 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. One could argue that the fear of group-majoritarian coordination, a division of the electorate along race lines, led the Obama campaign to try to not further increase the salience of race.

[30] As 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.

Ethnic politics provides further interesting applications. My results generalize the finding that ethnic voting exists because ascribed identities allow politicians to not have their winning coalition diluted by members of other groups (Fearon, 2006). I allow for a dilution of the winning coalition, members of any identity group can join in support of the winning electoral alternative, but incentives are such that individuals still often sort along group lines. And, as example for how salient identities trigger a coordination mechanism that seems unexpected at first, Wilkinson (2004) 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 because it also positively affects the willingness of the Hindu majority to bandwagon and vote for the minority-appealing candidate.

Generally, my study shows that even weak, context-free identities, as implemented in the laboratory, affect individuals' beliefs and behaviors in group-driven political competition similar to what has been found outside of the laboratory (e.g. Eifert, Miguel and Posner (2010); Michelitch (2015)). The treatment effect, however, mostly speaks to effects of salient group identity on individuals' beliefs. In my account, convergence of members of one social group on a particular electoral alternative should be seen as information-driven herding (Goeree and Yariv, 2015), as bandwagoning (Bartels, 1988), and not so much as a result of a saliency-triggered shift from personal to collective identity and an increased adherence to group norms (Huddy, 2013). What makes the mechanism I identify, nevertheless, different from bandwagoning is that it does not need the sequential nature of voting and the information provided in such a process for voters to engage in it (Morton and Williams, 1999, 2001; Morton et al., 2015; Morton and Ou, 2015).

Are treatment effects properly identified? The identification of causal effects of group identity salience on voting behavior rests on four pillars implemented in the laboratory: (1) complete information, (2) selection into and priming of one single, controllable group-level attribute (group identity), (3) varying the salience of different components of individuals' utilities: individual-level benefit or group-level benefit, and (4) random assignment of income according to particular distributions of income across identity groups.

(1) Complete information implies that we can set aside interpretative complexities due to information asymmetries and possible perceptual biases. Attribute (2) mitigates threats to identification by the existence of multiple group 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 group identity (Shih, Pittinsky and Ambady, 1999; Benjamin, Choi and Strickland, 2010). Restricting the range of available group 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 group identities. Inducing artificial group identity also means that stereotypes will not guide behavior. Feature (3) manipulates salience as appeals that appear as a simple sentence on subject's computer screen. In this way, the appeal is far weaker than the implications that stem from identity-driven factors like peer pressure and/or the strength of social norms outside of the laboratory. As a result, if a weakly induced identity and simple appeal to those identities is enough to shape behavior, contextualized and consequential naturally occurring identities should have even stronger effects. Of course, that pattern will be sometimes magnified or reduced by actually existing group identities, therefore biasing the estimation of causal effects. The amount of abstraction does not allow me to speak to other well known mechanism that run from salient group identity like motivated reasoning, perceptual biases, stereotypes, or implicit attitudes (Lodge and Taber, 2013), or favoring in-group candidates. I also do not model effects of subjective meanings, strength, choice, or stability of group identities (Huddy, 2001).

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 salient identities on voters' choices. The basic interaction implemented 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-level benefit. Assigning low or high income to voters without group identity salience (*no appeals* treatment) and appealing to voters' income (*income appeals* treatment) primes subjects to ignore these group complementarities and to instead make a choice based on considering individual-level benefits (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 *appeals* treatment allows the elicitation of different coordination mechanisms.[31]

[31] Aspect (4) actually has a second effect: random assignment to income helps rule out subject-level effects in the

Conclusion This paper began by recognizing that when group identity becomes salient, the implications for the vote choice of members of one social group are not immediately obvious. Previous work on group 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 individuals' decision-making calculus and, reasonably, should be more important with salient group identities. Still other potential mechanisms by which behavior is linked to salient group identities exist.

A central contribution of this paper is to show how group identity salience functions as coordination mechanism in the context of elections: voters respond to the salience of a group identity by changing their behavior in response to how they expect the salient identity to shape the actions of others. Indeed, group identity salience does 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 expected behavior of others and how everyone else might respond to their choice. In more heterogenous groups, salient group identity hastens the coordination on the candidate most likely to be the electoral victor, leading some voters to abandon their "natural" electoral alternative given their preferences over individual-level benefits. Mostly, though, salient group identities have the intuitive effect to divide society along group lines but that division may, as I show here, also emerge from a strategic rationale.

Whether a candidate is able to increase her electoral support from a particular social group by making the group's identity salient depends on many features of the political environment and social structure. What my experiment shows is that such appeals raises group awareness in a way that may decrease the likelihood that an electoral alternative, which is reasonably seen as the obvious choice of a group, finds the support of that group. Although this laboratory experiment, with its clearly defined decision structure, does not point to the directionality of the effect of that results from raising the salience of group identities in all circumstances, it generates specific predictions about the strategic nature of group 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

sample statistics.

how the societal structure and group-competition affects electoral chances of candidates.

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Supporting Information

A Summary statistics and additional analysis

A.1 Summary statistics

Table A.2: Summary statistics of main variables by treatment. Statistics are pooled across all subjects and rounds within one treatment.

Variable		**Rich majority treatments**		**Income appeals t.**	**All rich t.**	**Poor majority treatments**			
		No Appeals	**ID Appeals**	**Income Appeals**	**ID Appeals**	**No Appeals**	**ID Appeals**		
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Min	Max
vote R	All	.38 (.49)	.38 (.49)	.39 (.49)	.92 (.27)	.71 (.45)	.61 (.49)	0	1
	Very poor	.23 (.42)	.24 (.43)	.24 (.43)	.75 (.44)	.47 (.50)	.44 (.50)	0	1
	Moderately poor	.30 (.46)	.20 (.40)	.24 (.43)	.90 (.31)	.56 (.50)	.46 (.50)	0	1
	Moderately rich	.54 (.50)	.58 (.49)	.61 (.49)	.93 (.26)	.80 (.40)	.66 .(47)	0	1
	Very rich	.59 (.49)	.65 (.48)	.63 (.48)	.98 (.16)	.86 (.34)	.76 (.43)	0	1
voteWinner	All	.35 (.47)	.37 (.48)	.38 (.48)	1.0 (.00)	.83 (.38)	.58 (.49)	0	1
income	All	45 (20)	45 (20)	45 (20)	60 (17)	54 (19)	54 (20)	10	90
Number of Observations		2800	3200	1600	300	1800	2200		
Number of Subjects		70	80	40	10	45	55		

A.2 Distribution of income values in each treatment for all income distributions

Figure A.1: Rich majority treatments / Income appeals treatment

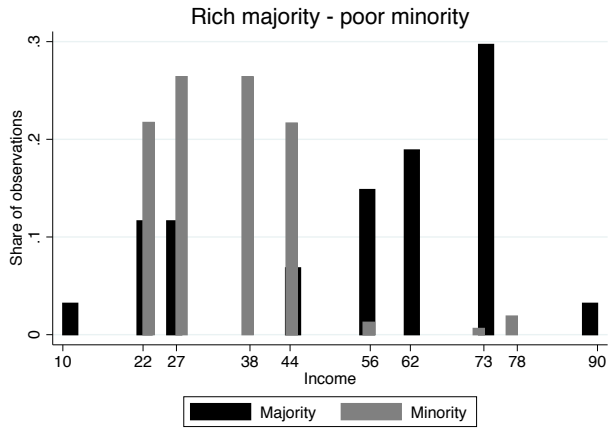


Figure A.2: Poor majority treatment

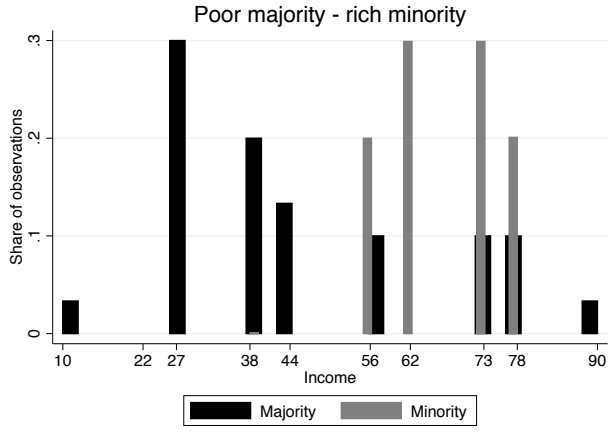
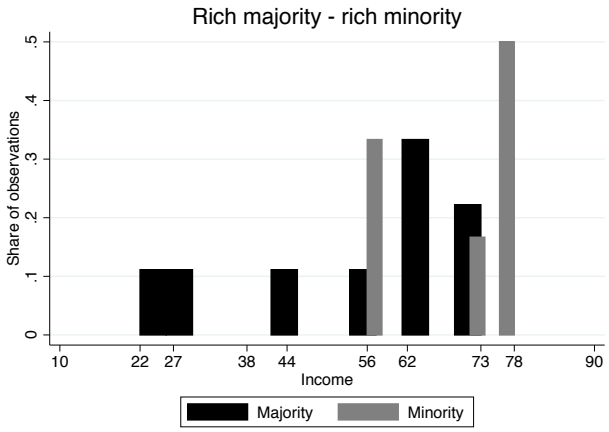


Figure A.3: All rich treatment



A.3 Group level vote share of candidate R over round of play

Figure A.4: Rich majority, no appeals treatment

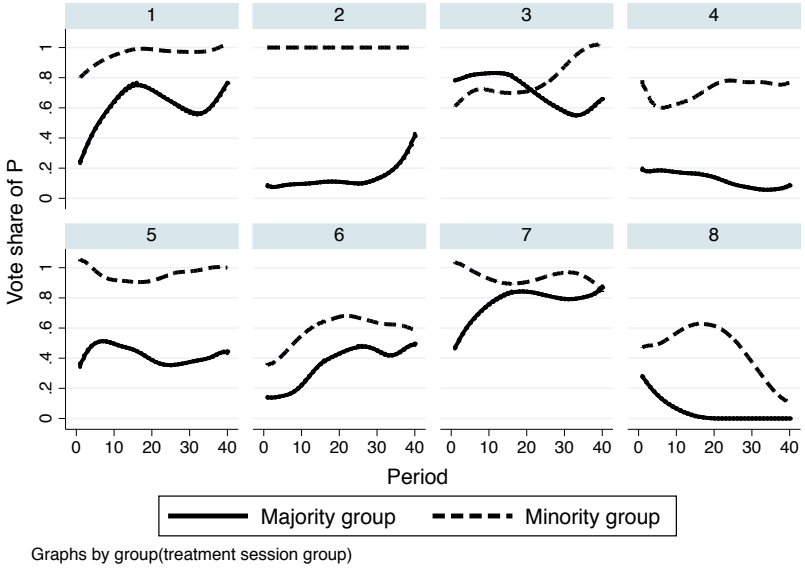


Figure A.5: Rich majority, appeals treatment

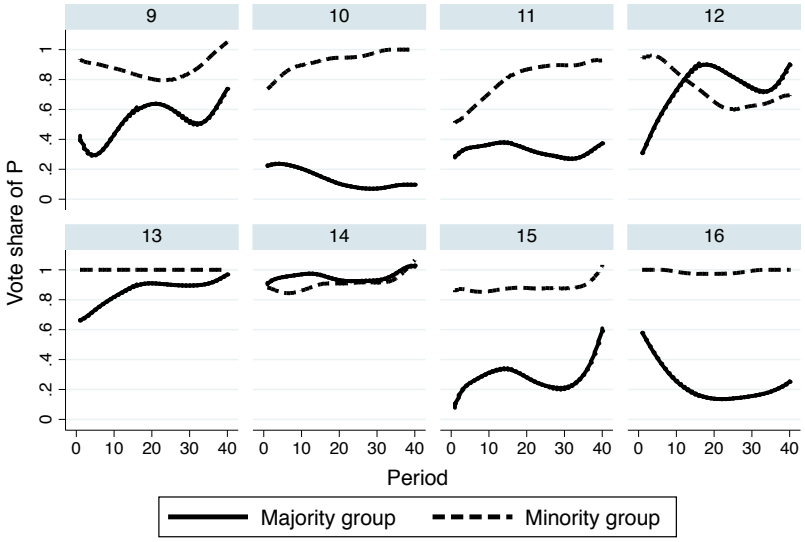


Figure A.6: Poor majority, no appeals treatment

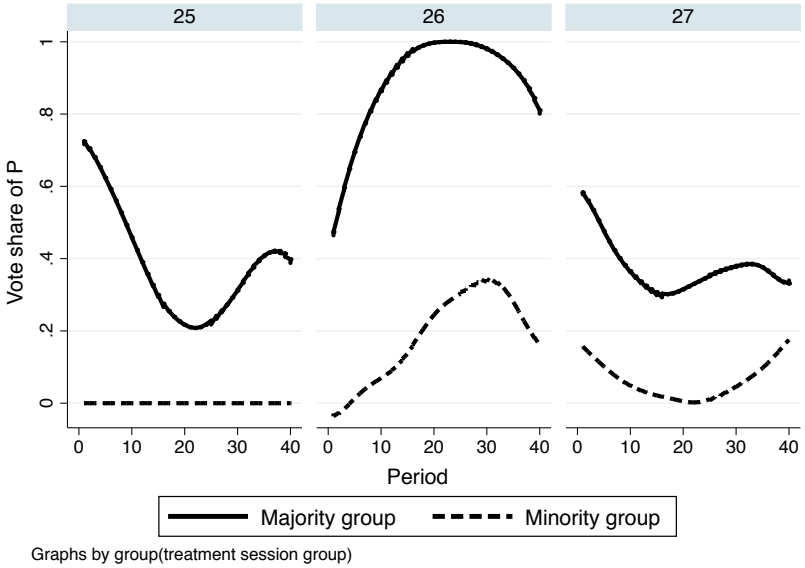


Figure A.7: Poor majority, appeals treatment

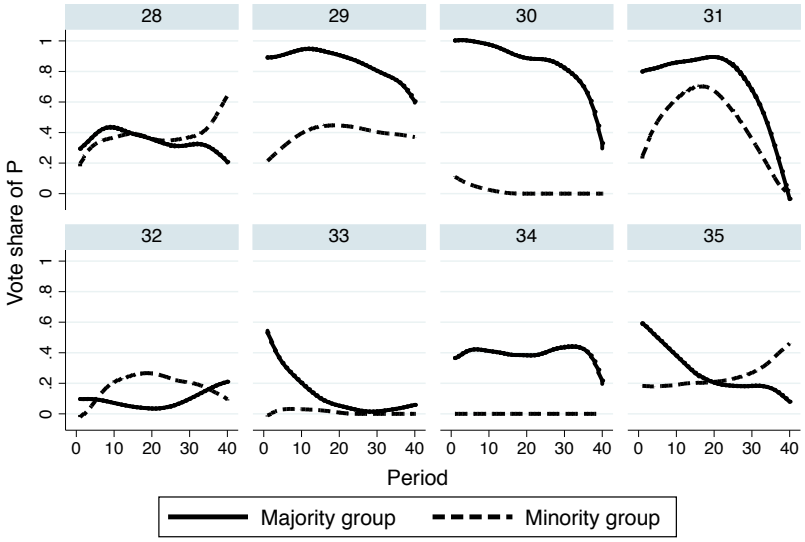


Figure A.8: Rich majority, income appeals treatment

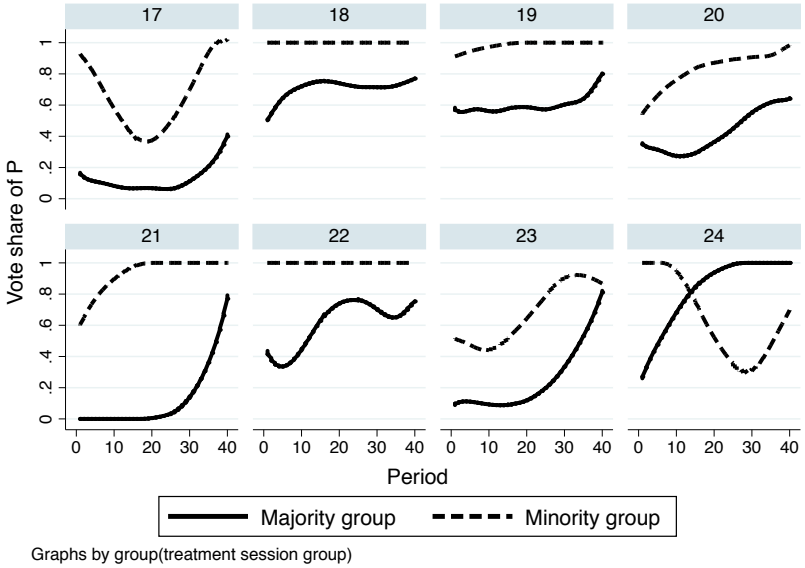
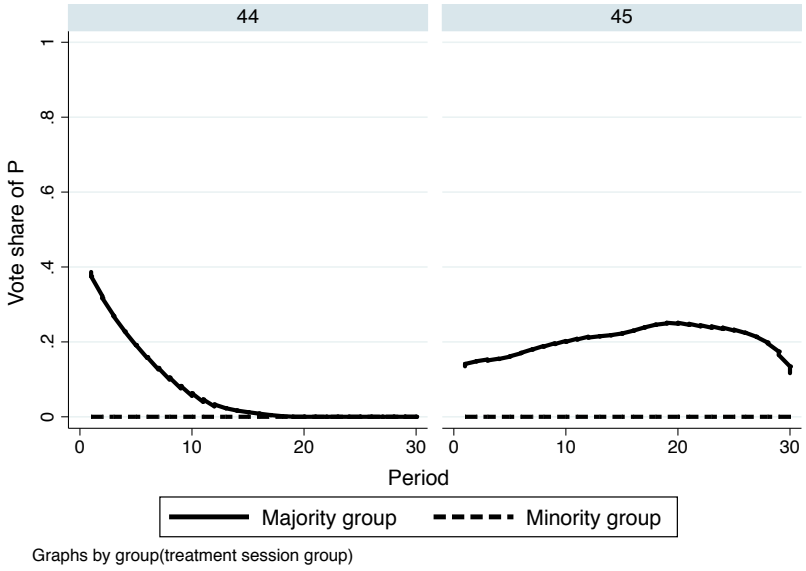


Figure A.9: All rich, appeals treatment



A.4 Regression analysis: coordination effects

Table A.1: Multi-level random effects regression of vote share of candidate R on income, being a member of the majority group, and round of play including random intercepts for decision group and/or majority group as well as random slopes for round of play at the decision group- and/or majority group-level. Observations for *rich majority* treatments and *baseline* income distribution. Decision groups are fully nested in treatment conditions (*no appeals* and *appeals* treatments), to illustrate treatment effects, it is sufficient to estimate decision group-specific effects and plotting them separately by treatment condition (See Figures A.10 and A.11). Likelihood ratio tests show that model 5 provides the best fit. Unstructured covariance matrix assumed.

	Vote for candidate R				
VARIABLES	1	2	3	4	5
income	0.0038***	0.0038***	0.0038***	0.0038***	0.0038***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
majority group	0.2657***	0.2658***	0.2657***	0.2658***	0.3142***
	(0.015)	(0.055)	(0.014)	(0.055)	(0.050)
round	-0.0026***	-0.0026***	-0.0026**	-0.0026**	-0.0023**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
constant	0.0593	0.0595	0.0593	0.0595	0.0311
	(0.038)	(0.043)	(0.037)	(0.043)	(0.043)
Random-effects parameters					
σ_{residual}	0.4017	0.3752	0.3985	0.3716	0.3696
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
$\sigma_{\text{decision group}}$	0.1775	0.0557			
	(0.024)	(0.080)			
with random slope on *round*			0.1742	0.0568	0.1062
			(0.026)	(0.084)	(0.044)
$\sigma_{\text{majority group}}$		0.2075		0.2076	
		(0.028)		(0.028)	
with random slope on *round*					0.1726
					(.029)
Observations	4,200	4,200	4,200	4,200	4,200
treatment groups	2	2	2	2	2
decision groups	30	30	30	30	30
majority/minority groups	60	60	60	60	60
Log-Likelihood	-2178.6038	-1936.7251	-2162.4793	-1915.5738	-1903.6573

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure A.10: Distribution of predicted average vote share of candidate R across decision group in majority and minority groups of the rich majority treatments the baseline income distribution. Estimates are taken from Model 5 in Table A.1 and averaged by decision group.

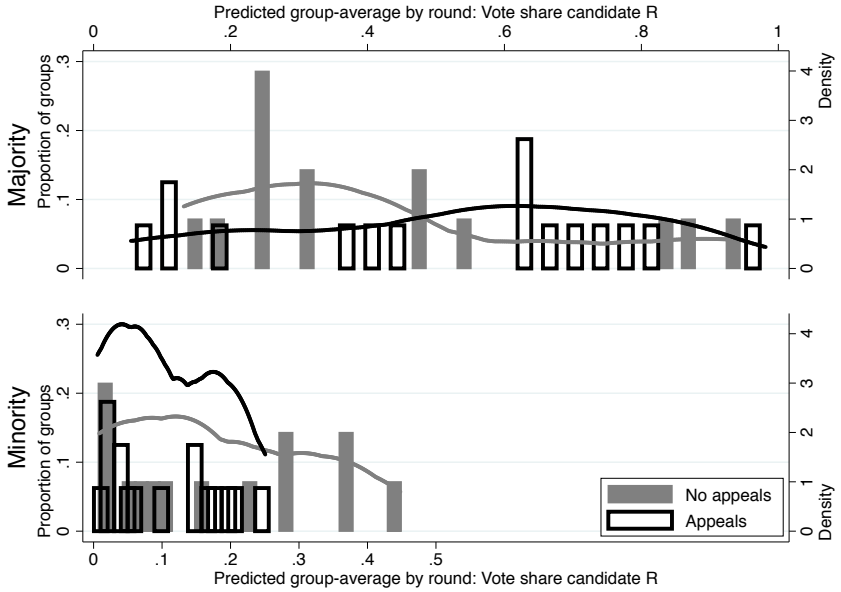
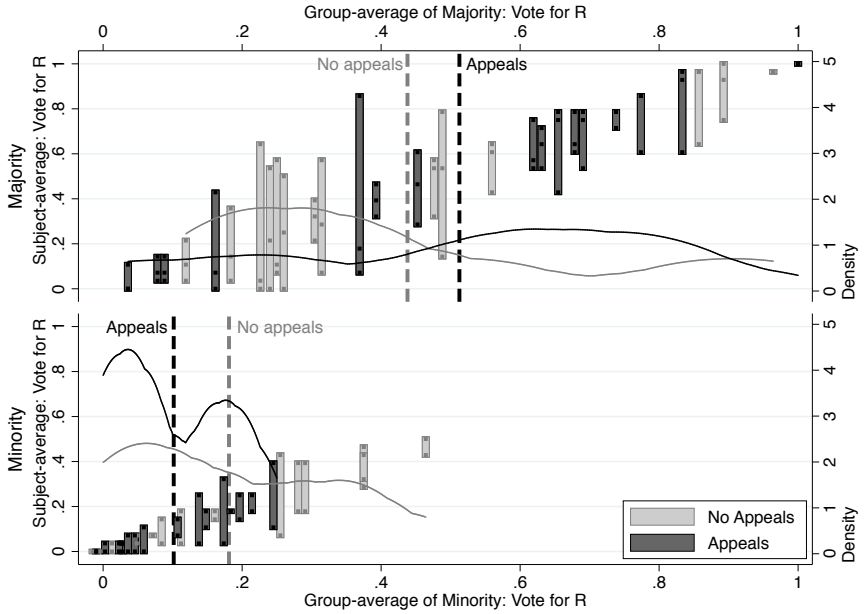
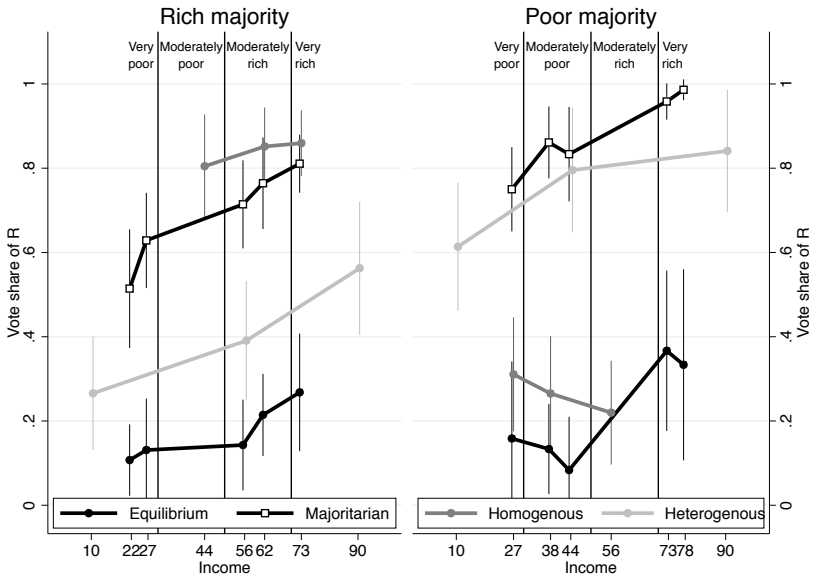


Figure A.11: Distribution of predicted average vote share of candidate R across subject and decision group in majority and minority groups of the rich majority treatments and the baseline income distribution. Estimates are taken from Model 5 in Table A.1 and averaged by decision group (x-axis) or averaged by subject in each decision group (y-axis).



A.5 Coordination effects by income distribution

Figure A.12: Average vote share of candidate R by income across income distributions and coordination mechanism in the appeals treatment (rich majority). 95% confidence bounds are computed based on a subject-level bootstrap.



A.6 Coordination effects in poor majority treatments

Figure A.13: Distribution and density of average vote share of candidate R in majority and minority identity group within decision groups in *no appeals* and *appeals* treatments (poor majority treatments, *baseline* income distribution).

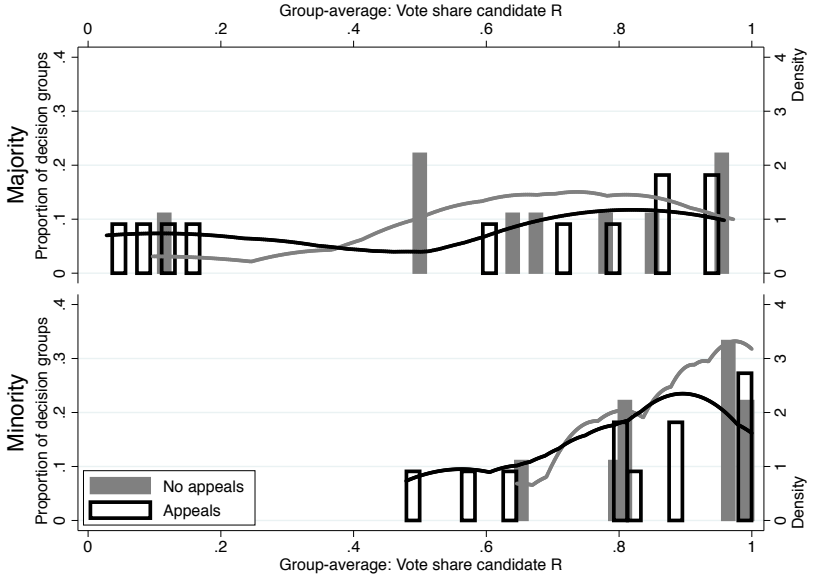
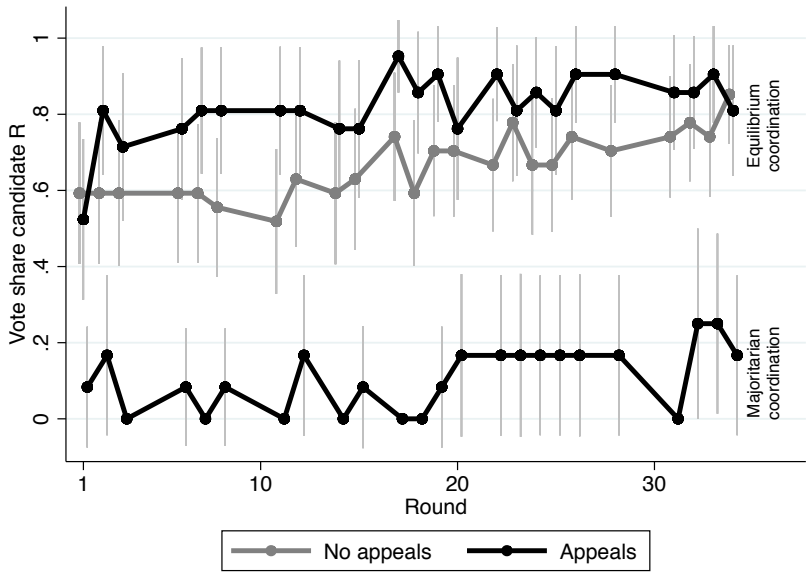
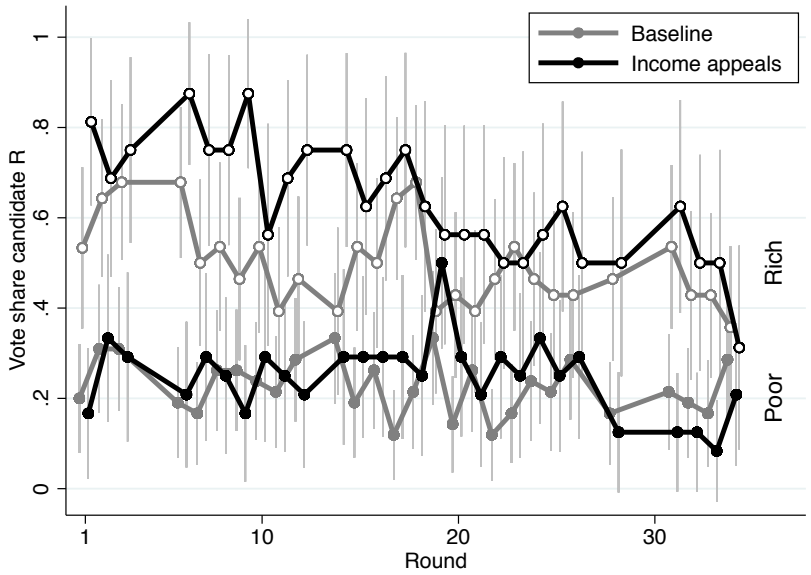


Figure A.14: Average vote share of candidate R by *round* in the majority group in *no appeals* treatment and in majority groups in the appeals treatment that follow majoritarian (top black line) or equilibrium coordination (bottom black line) (*poor majority* treatments, *baseline* income distribution). 95% confidence bounds are computed based on a subject-level bootstrap.



A.7 Coordination effects in the income appeals treatment

Figure A.15: Average vote share of candidate R by round in the majority group in *no appeals* and *income appeals* treatments for poor (income¡50) and rich (income¿50) voters (*rich majority* treatments, *baseline* income distribution). 95% confidence bounds are computed based on a subject-level bootstrap.



B Theoretical appendix

In the main text (see section 3) I claimed that there are three sets of strategy profiles not characterized so far; all of these profiles are not a Nash equilibrium in pure strategies. To see why this statement is true, first, consider profiles where both members of MI and one member of MJ vote for the same alternative. These are the profiles $(P, P, R; R, R)$, $(P, R, P; R, R)$, $(R, P, P; R, R)$, $(R, R, P; P, P)$, $(R, P, R; P, P)$, and $(P, R, R; P, P)$. Here any of the two other members of MJ who voted for the other alternative have an incentive to deviate to secure to share I with the members of MI; otherwise members of MI would enjoy I exclusively. Second, consider profiles where both members of MI and two members of MJ vote for the same alternative. These are the profiles $(P, R, R; R, R)$, $(R, R, P; R, R)$, $(R, P, R; R, R)$, $(R, P, P; P, P)$, $(P, P, R; P, P)$, and $(P, R, P; P, P)$. Here the other member of MJ who voted for the other alternative has an incentive to deviate to secure I for MJ exclusively instead of sharing it with the members of MI. Third, consider any profile where members of MI are evenly split over alternatives P and R and members of MJ split one-to-two. These are the profiles $(P, P, R; P, R)$, $(R, P, P; P, R)$, $(P, R, P; P, R)$, $(P, P, R; R, P)$, $(R, P, P; R, P)$, $(P, R, P; R, P)$, $(R, R, P; P, R)$, $(P, R, R; P, R)$, $(R, P, R; P, R)$, $(R, R, P; R, P)$, $(P, R, R; R, P)$, and $(R, P, R; R, P)$. For such profiles the member of MI who is not voting for the winning alternative has an incentive to deviate to secure for MI sharing I with MJ; otherwise members of MJ would enjoy I exclusively. These three sets of strategy profiles, together with equilibrium strategy profiles described above, exhaust the set of strategy profiles of the game presented in Section 3.

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 where taken from the higher round-payoff from two randomly selected rounds.

Minimal group identities have been frequently employed in social psychology, economics, and political science to model social identity. 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; 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.

Table C.2: Treatment balance: summary statistics of exit-survey responses

	No appeals					Appeals				
Variable	Obs	Mean	Std. dev	Min	Max	Obs	Mean	Std. dev	Min	Max
Age	68	24.47	5.06	18	50	79	24.25	5.47	18	49
German	63	.59	.50	0	1	6	.71	.46	0	1
Welfare	68	2.26	.89	1	5	80	2.56	1.13	1	5
Taxed for education	68	.59	.50	0	1	80	.59	.50	0	1
Taxed for welfare	68	.18	.38	0	1	80	.11	.32	0	1
Feel close to group	68	5.54	2.95	0	10	80	5.41	3.06	0	10
Klee	70	.50	.50	0	1	80	.50	.50	0	1
Remember group ID	29	1	0	1	1	0	.	.	.	.

	Income appeals					No appeals – poor majority				
Variable	Obs	Mean	Std. dev	Min	Max	Obs	Mean	Std. dev	Min	Max
Age	37	25.76	5.43	20	45	41	25.39	4.86	18	43
German	31	.65	.49	0	1	40	.68	.47	0	1
Welfare	38	2.29	.98	1	5	45	2.58	1.18	1	5
Taxed for education	40	.68	.47	0	1	45	.71	.46	0	1
Taxed for welfare	40	.18	.38	0	1	45	.13	.34	0	1
Feel close to group	40	5.95	2.84	0	10	44	4.89	3.20	0	10
Klee	40	.50	.51	0	1	45	.49	.51	0	1
Remember group ID	40	1	0	1	1	45	1	0	1	1

	Appeals – poor majority					Income appeals – poor majority				
Variable	Obs	Mean	Std. dev	Min	Max	Obs	Mean	Std. dev	Min	Max
Age	52	24.75	3.85	18	39	37	26.54	5.27	18	45
German	40	.68	.47	0	1	33	.52	.51	0	1
Welfare	53	2.32	.92	1	5	39	2.54	1.00	1	5
Taxed for education	55	.60	.49	0	1	39	.59	.50	0	1
Taxed for welfare	55	.22	.42	0	1	39	.18	.39	0	1
Feel close to group	54	6.19	2.51	0	10	40	5.93	3.08	0	10
Klee	55	.51	.50	0	1	40	.50	.51	0	1
Remember group ID	39	1	0	1	1	40	1	0	1	1

	Appeals, all rich				
Variable	Obs	Mean	Std. dev	Min	Max
Age	8	24.38	2.50	21	28
German	8	.63	.52	0	1
Welfare	9	2.89	1.27	1	5
Taxed for education	9	.78	.44	0	1
Taxed for welfare	9	.11	.33	0	1
Feel close to group	10	7.70	2.79	2	10
Klee	10	.50	.54	0	1
Remember group ID	10	1	0	1	1

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 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

round payoff = decision payoff + 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.3: **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

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

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

$$27 \textit{ Tokens}$$

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.4: Income distributions by round

	Main treatments					Supporting treatments 1				
	Rich majority - poor minority					Poor majority - rich minority				
Period	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.16: Screen shot of subjects' decision between Alternative A and Alternative B