

Leadership and Conflict*

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Abstract

We model the choice of leaders of groups within society, where leaders influence both the mode of interaction between groups (either peaceful compromise or costly conflict) and the outcome of these interactions. Group members may choose leaders strategically/instrumentally or they may choose leaders expressively. We characterize the equilibria of the instrumental choice model and also argue that leadership elections may overemphasise the role of expressive considerations in the choice of leader, and that this may result in increased conflict between groups.

Key words: Leadership, Conflict, Political Process

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1 Introduction

This paper sets out to explore the idea of leadership, and the choice of leaders, in an environment of potential conflict between groups. Groups - whether they be pressure groups, political parties or groups defined by reference to identity, ethnicity, class and so on - invariably have leaders, and these leaders

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significantly influence the social outcome, not least through their interactions with the leaders of other groups. Indeed, the choice of group leaders may influence the nature of the political process itself, rather than merely the outcome of a well-defined political process. For example, the role of the leaders of relevant groups may be crucial in the choice between peaceful, democratic means and violent conflict.

Economic analysis of conflict has become a more prominent feature of political economy in recent years.¹ The focus has been on the rent-seeking nature of conflict since, by choosing to fight, groups invest resources in predation rather than production. This provides for a Pareto inferior outcome compared to the case of no predation. Our model picks up on this theme, but our approach differs in that we view leaders as potentially investing in conflict so as to achieve their preferred point in policy space as the social outcome, rather than to gain resources through predation. Also, in our analysis, the investment in conflict will be related to the type of leader that the group selects (for instance whether they are moderates or extremists within their groups), rather than issues such as the technology of conflict. In this way we place heavy emphasis on the heterogeneity of preferences that typically exists within groups.²

We focus on the democratic selection of leaders by members of the relevant group, and will discuss two different approaches to the selection of a leader. On one approach, individual group members look ahead to the eventual interaction with other groups and act to select the leader that they believe will leave them best off in terms of the final social outcome. This formulation reflects the traditional economic assumption of the instrumental rationality of economic agents. This aspect of the paper relates most closely to models of strategic delegation - which all adopt an instrumental approach. In models of this type, the median voter within a group may not select someone with the same preference as herself as she appreciates that the representative she selects does not directly implement policy, but rather

¹See, for example, Hirshleifer (1988 and 1995), the collection of papers in Garfinkel and Skaperdas (1996) and Moselle and Polak (2001).

²We are interested in all forms of group conflict, though a debate exists on whether ethnic and non-ethnic forms of conflict have significantly different causes (Sambanis (2001), Collier and Hoeffler (1998) and Fearon and Laitin (2003)). Whatever the nature of the groups (ethnic or non-ethnic) and whatever the basis for conflict (economic or political) we suggest that heterogeneity within groups and the implications for leadership and social outcomes are important.

engages in a final-stage game which determines the social outcome. Chari, Jones and Marimon (1997) use strategic delegation to explain the practice of split-ticket voting in the US. They argue that voters elect liberals to Congress to act as lobbyists for their constituency, but also vote for conservatives for President to restrict overall spending. Persson and Tabellini (1992) predict that more liberal representatives would be elected to counter the effect of the tax base being reduced through increased tax competition in Europe following the increased integration of 1992. McGann, Grofman and Koetzle (2002) provide an analysis of why leaders may be more extreme than the median group member that hinges on a particular voting procedure.³ In this paper, we use a reduced form of the citizen candidate model (Osborne and Slivinski (1996) and Besley and Coate (1997)) to endogenize leadership selection within potentially conflictual groups. Our model focuses on two key parameters that reflect the relative power of the groups and the cost of conflict respectively; the median voter in each group will generally choose a leader with preferences different to her own, and the possible equilibria of the model will be characterized across parameter values in terms of both the nature of the chosen leaders (extreme or moderate) and the nature of the interaction between leaders (conflict or compromise).

While this aspect of the paper is of considerable interest in itself, our purpose goes beyond presenting a model of instrumental leadership choice in terms of strategic delegation. In particular, we believe that the indecisiveness of individual group members in determining the social outcome may trigger expressive rather than instrumental choice in leadership contests. Our second approach to the question of the selection of leaders then revolves around expressive behavior by group members. There is a growing literature on expressive choice, particularly as applied to democratic elections⁴. This approach starts from the familiar public good problem of voting in mass elections, where voters rationally know that their vote is highly unlikely to have any impact upon the overall outcome of the election. In this setting, the idea that individuals vote for the strategic/instrumental benefit of bringing about a favorable political outcome is open to the criticism that rational individuals will not engage in costly activity when they correctly see that their action is ineffective. Instead, the expressive approach to voting

³For more examples of models of strategic delegation see the references in Persson and Tabellini (2000) and a recent paper by Besley and Coate (2003).

⁴See Brennan and Lomasky (1993), Brennan and Hamlin (2000a), Schuessler (2000) and Copeland and Laband (2002).

emphasizes the direct benefit of expressing support for a particular candidate or position.⁵

In the discussion presented here, group members, when selecting a leader, recognize that their individual input has no significant effect upon the outcome of the overall political game, and so act expressively to support the candidate for leadership who most clearly fits with their view of the group. In short, they ‘cheer’ for the candidate that they identify with most strongly, regardless of any calculation of the instrumental benefits. But what is the basis for expressive choice? Some attention has been given to expressiveness as a moral choice (Goodin and Roberts (1975), Brennan and Hamlin (1999) and Tyran (2004)). Another possibility is to view expressive choice as an emotional choice. Brennan and Hamlin (2000b) discuss this in the context of European integration and Glazer (1992) in the context of strikes. An analysis that combines moral and emotional choice is provided by Blamey (1998) who discusses expressive responses in the context of contingent valuation surveys. The approaches of Brennan and Hamlin (2000b) and Glazer (1992) most clearly reflect the conflictual setting of the present paper.

We argue that the basis for an expressive choice in a leadership election with potential inter-group conflict is likely to be emotional. We will discuss this in more detail in Section 4 but for now we appeal to the simple idea that a choice made out of emotional group attachment may lead to a quite different choice than would be made under cool instrumental calculation. We will argue that, for at least some plausible parameter values, this will cause more conflict than would arise under instrumental choice. The basic idea is that if individual group members operate expressively, they ignore the potential instrumental costs of conflict that may be associated with their emotionally preferred leader, and one consequence of this will be more (and higher cost) conflict between groups than would be the case under instrumental choice. In addition to offering a specific example of the comparative analysis of instrumental and expressive models of a particular aspect of political behavior, we also stress the general importance of adopting such a comparative approach.

The remainder of the paper is organized as follows: in section 2 we will lay out the setting for the model, section 3 analyses the choice of leader under instrumental choice. Section 4 considers the expressive choice of leaders and

⁵For a paper which surveys instrumental and expressive theories for voter turnout see Dhillon and Peralta (2002). For a recent paper on the paradox of voting that focuses on group-based models, see Feddersen (2004).

both the particular argument for seeing emotion as the basis for expressively selecting leaders and the more general argument for a comparative approach. Section 5 offers some concluding comments.

2 The Model

We build on Hamlin and Jennings (2004) which focussed on the endogenous formation of groups under instrumental and expressive motivations. The earlier paper neglected two related issues that form the focus of the present study. First, leaders played no role in the earlier model - groups formed around founders and the preferences of these founders identified the policy stance of the group forever. We now relax this assumption to allow the selection of leaders from within the group once formed. Second, social outcomes were determined in a setting where conflict was exogenous; the only escape from conflict lay in equilibria in which just one group formed. We also relax this assumption to endogenize the choice between conflict and peace as dependent upon the preferences of the leaders selected by groups.

In order to address these further questions, we simplify other aspects of the earlier model. We assume that all members of a population have joined one of two groups that have formed out of a population whose ideal points in policy space are distributed uniformly on $[0, 1]$. We will use a reduced form (to be discussed later) of a three-stage, citizen candidate game to depict leadership selection under instrumental and expressive motivations. In stage 1 of the game candidates for leadership emerge within each group - individual members face the choice of whether or not to put themselves forward as a potential leader. In stage 2, given the candidates for leadership, the members of each group choose their leader - taking the choice of leader by the other groups as given. In stage 3 leaders choose their mode of interaction and the social outcome is determined. As usual, it is appropriate to consider these stages in reverse order to find subgame perfect equilibria of the overall game.

Stage 3 - The Game of Political Interaction Whichever leaders emerge in each group, and however they emerge, they will each find themselves playing a final stage game against the opposing leader which will determine the overall outcome for members of both groups. We endogenize the choice of the form of the interaction between groups - so that each leader chooses between violent conflict (con) and peaceful compromise (com). If both leaders

choose conflict, we assume that the political outcome is exactly the same as it would have been if they both chosen to compromise - a weighted sum of the two leaders policy preferences - but both groups carry an additional cost of conflict - indicated by v . This reflects the idea that conflict may not be decisive in determining the political outcome, but is always costly. The cost of conflict, v , is one of the two key parameters of our model.

The game of political interaction is played by leaders, and since it is played by decisive individuals, the analysis of this stage of the game is independent of whether we adopt an instrumental or expressive approach to the choice of leaders in earlier stages of the game. L_1 and L_2 are the locations of the ideal points of the leaders of group 1 and 2 respectively and, without loss of generality, we take L_1 to be to the left of L_2 , so that $0 \leq L_1 < L_2 \leq 1$. At this stage of the game, L_1 and L_2 are fixed, having been chosen at an earlier stage.

The population shares of groups 1 and 2 are k and $(1 - k)$ respectively, and we take these population shares to measure the relative strengths of the two groups, so that the value of k - our second key parameter - determines the outcome of mutual compromise or mutual conflict between leaders⁶. We will also assume, for presentational convenience only and without loss of generality, that when the two groups are of unequal size, group 1 will be the larger, so that $\frac{1}{2} \leq k \leq 1$.

The political outcome of mutual compromise is assumed to be a weighted average of the leaders' ideal points, where the relevant weights are k and $(1 - k)$. The 'payoff' to each leader is indicated in terms of departures from that leader's ideal point - so that we will work in terms of the loss made by leaders relative to their ideal outcome. For example, in the mutual compromise case, the 'payoff' to the leader of each group simply reflects the distance between the leader's ideal point and the political outcome given as the weighted average of L_1 and L_2 . Thus the loss to leader 1 from mutual compromise is given by:

$$kL_1 + (1 - k)L_2 - L_1 = (1 - k)(L_2 - L_1) = (1 - k)L \quad (1)$$

⁶Note that, given the assumption of a uniform distribution of the population over the policy space, k also identifies the frontier between group 1 and group 2, so that all individuals with ideal points in the range $0 - k$ are members of group 1, and the remaining individuals are members of group 2.

similarly, the loss to leader 2 from mutual compromise is given by:

$$L_2 - (kL_1 + (1 - k)L_2) = k(L_2 - L_1) = kL \quad (2)$$

where, for convenience, we define $L = (L_2 - L_1)$.

As already noted, the exogenous cost of conflict is indicated by v . To hold v exogenous runs contrary to the general spirit of rent-seeking models of conflict, where interest has focused on the level of investment in predation rather than production. To justify the assumption of exogeneity used here, we argue that while it is true that investment in conflict is continuous, conflict only becomes violent beyond a certain threshold. The decision to engage in violent conflict means accepting this threshold cost and this is given by the value v . Alternatively, v can be viewed as an expected cost of conflict, but one that is symmetrically perceived.

In the case of mutual conflict v simply adds to the loss for each leader. In the asymmetric cases where one group chooses conflict and the other chooses compromise, we stipulate that the cost of conflict is borne by the aggressive leader who also realizes his ideal point, while the passive leader suffers the imposition of an outcome that takes no account of his ideal point.

Given these assumptions, the basic structure of the game of political interaction is shown in Table 1⁷. As usual, the losses arising in each cell are shown in the form: loss to leader 1, loss to leader 2. Recall that, since the Table shows losses as positive quantities, each leader aims to minimize the realized value.

		Leader 2	
		com	con
Leader 1	com	$(1 - k)L, kL$	L, v
	con	v, L	$(1 - k)L + v, kL + v$

Table 1 *Game of Political Interaction*

We consider the Nash equilibria of this stage game that will form part of the subgame perfect equilibria of the overall game. Recalling that $\frac{1}{2} \leq k \leq 1$,

⁷We have also considered a rather more general version of this stage game where the cost of conflict in the case of mutual conflict is larger than in cases of one-sided conflict, and where the relative strengths of the two groups varies with the mode of interaction. The introduction of additional parameters complicates the model without adding any substantial new insight, and so we present only the basic model.

a prisoner's dilemma will emerge, with conflict as a dominant strategy for each player, if:

$$(1 - k)L > v \tag{3}$$

Similarly, compromise will be the dominant strategy for both players if:

$$kL < v \tag{4}$$

The game will lack a dominant strategy equilibrium when:

$$(1 - k)L \leq v \leq kL \tag{5}$$

and conflict may then arise as part of a mixed strategy equilibrium.

Taking each variable in isolation, conflict is more likely to emerge as a dominant strategy equilibrium the greater is L , the lower is v , and the closer k is to $\frac{1}{2}$. Thus, the more widely separated are the ideal points of the two leaders, the smaller the exogenous cost of conflict, or the more equal is the distribution of power between the two groups, the more likely is mutual conflict as a dominant strategy equilibrium. However, we can also see that the scope for mixed strategy equilibria increases as k increases.

This simple structure then sets up the basic trade-offs inherent in the selection of a leader. With v and k known, the key instrumental trade-off facing the members of a group in choosing between a more extreme candidate and a more moderate candidate lies in the fact that while a more extreme leader will typically generate more favorable outcomes under either conflict or compromise, such an extreme leader will also increase the probability of costly conflict.

Decision Theoretic for Group Members Given the game to be played in stage 3, group members select the leader they would prefer in stage 2. As already noted, we will discuss instrumental and expressive bases for the choice of leader separately - but it is important to note that the two approaches can be combined. Following Brennan and Lomasky's (1993) formulation (also used in Blamey (1998)), an individual a will prefer candidate m over candidate n as leader of the group if:

$$I_{ma} + X_{ma} > I_{na} + X_{na} \tag{6}$$

where I refers to net instrumental benefits and X refers to net expressive benefits, and both are indexed to refer to the individual and the candidate in question. In the present context we interpret instrumental benefits (the I terms) in terms of impact on political outcomes - that is the impact on the outcome of the stage 3 game of political interaction. If group members select their leader instrumentally, they seek to obtain a policy outcome as close as possible to their own ideal point (net of any conflict costs). In the next section we will analyze the choice of group leaders where group members select leaders instrumentally.

An expressive choice may, however, be quite different. In the present context we interpret expressive benefits (the X terms) in terms of emotional response and ideas of group identity which operate independently of any consideration of the policy outcome. We will discuss this approach to the choice of group leaders in section 4 below.

Where there are both expressive and instrumental considerations, instrumental considerations might be expected to dominate expressive consideration; and we would agree if the situation is one in which the individual is decisive. But where the individual is not decisive the relevant balance between instrumental and expressive considerations may be reversed. This is the basic force of the expressive argument; in any large group setting of collective, democratic decision making, the probability of being decisive is effectively zero. In cases of this sort, the simple model of a 's choice between m and n must be revised to reflect the probability of decisiveness:

$$hI_{ma} + X_{ma} < hI_{na} + X_{na} \tag{7}$$

where h is the probability of a 's vote being decisive, effectively discounting the instrumental benefits. To take the argument to its limits - while in the case where individuals are fully decisive ($h = 1$), expressive considerations may be virtually irrelevant; in the case of voting in a large group $h \rightarrow 0$, and instrumental considerations may be virtually irrelevant. Of course, there is no reason to suppose that expressive considerations will always and everywhere produce different choices from those that would be made on instrumental grounds, but we believe that there are good reasons to suppose that expressive and instrumental forces will pull in different directions in at least some cases of interest - and the argument presented below is intended to support this claim.

We will analyze the instrumental case and the expressive case separately

for two reasons. First, we want to set up the contrast between the predictions of a more conventional, instrumental political economy model and one that allows for a quite different source of motivation, holding other aspects of the model constant. Second, while the proposition that instrumental reasoning should be based on the impact of policy on material well-being is well established, there is no such common agreement on the relevant drivers for expressive choice. This paper will posit emotional attachment as a source of expressive benefit relevant to the choice of group leaders, but other approaches to expressive choice are possible and may be more in line with instrumental choice. For instance, Riker and Ordeshook (1968) see duty as a motivation for voting in modern democratic elections, but nevertheless argue that voters will choose instrumentally between candidates once in the polling booth. In effect the expressive motivation relating to duty overcomes the problem of turnout, without affecting the interpretation of votes for particular candidates. Clearly, in that setting, the introduction of duty as an expressive benefit would not lead to a different choice of leader than if we had assumed that each voter acts as if he is decisive. We prefer to integrate the motivation to vote with the motivation of how to vote, but do not deny that other models of behavior that might be termed expressive can be constructed. Our point is that they need to be seen against the backdrop of the instrumental case, with the basic question being whether they contribute to our understanding of the political process.

3 Selecting Leaders Instrumentally

This section provides a model of strategic delegation where the choice of leader depends upon the values of v and k . Group members will be assumed to vote for the leader who would make them best off in terms of the eventual social outcome. This is the standard notion of instrumental choice. We assume that all group members know the full structure of the game of political interaction to be played as stage 3, and the values of v and k .

Our method is based on the citizen candidate approach for endogenizing the candidates who will stand for election in a representative democracy - particularly as developed in Besley and Coate (1997). There are, however, several key differences between their approach and the approach adopted here. First, in our model, the process of choice of leaders will occur separately and simultaneously within the two groups. As such, a political equilibrium

will contain two leaders, and the final outcome determined via the game of political interaction already described. Second, the policy rule used here is different to that in Besley and Coate (1997). The compromise outcome here is a weighted average of the two leaders' positions, so that, for example, if two extremists emerge as leaders, they will, to some extent (determined by the relative strength of the groups) cancel each other out so that a more moderate outcome will arise. In the Besley and Coate paper, the *actual* outcome with two extreme candidates would be an extreme outcome (since one and only one would win the final election).⁸ Third, we do not focus on the effect of differing entry costs upon the equilibrium of the game. This is essentially what we have in mind when referring to our model as a reduced form of the citizen-candidate model - this will be discussed in the next subsection. The fourth and final difference here is that the emergence of the Condorcet winners as leaders in each of the two groups does not necessarily imply good overall outcomes in normative terms.

Stages 1 and 2 - Choosing the Leader We take stages 1 and 2 of the game together since we concentrate on the reduced form of the citizen-candidate model that focuses on equilibria in which exactly one potential leader emerges within each group at stage 1 (the entry stage). That candidate must be the Condorcet winner - that is, the candidate who would win in a straight contest with any other candidate from within the group - and thus the choice of the median member of the group. We adopt this reduced form approach of concentrating on the relationship between the position of the selected leader and the position of the median member of the group partly because this is the focus of most models of strategic delegation, but also because it picks up the main thrust of the idea of a democratically selected leader in a manner that is both clear and tractable. In what follows we will also focus mainly on pure strategy equilibria in the overall game, the detailed analysis of mixed strategy equilibria substantially complicates the presentation of the argument, without offering any additional basic insight.

Our strategy will be to build up a map of the v, k parameter space that allows us to characterize the nature of the overall equilibria of the game for

⁸However, see Hamlin and Hjortland (2000) where a proportional representation rule under the citizen candidate approach leads to moderate outcomes with extreme candidates. In a related paper, Bulkeley, Myles and Pearson (2001) discuss the decision to join committees subject to an entry cost and find that in equilibrium extremists have most incentive to join.

each combination of parameter values. Note first that there exists a region of the v, k parameter space such that mutual compromise is the assured dominant strategy equilibrium of the stage 3 game regardless of the locations of the leaders. From condition (4) above, noting that the maximum possible value of L is 1, this region is defined by $v > k$. In this region, the choice of leaders can have no impact on whether conflict or compromise occurs, and so relatively extreme leaders will be chosen. To see this, recall that the final social outcome under mutual compromise is given by $kL_1 + (1 - k)L_2$. Furthermore, the chosen leader of group 1 will be the best response to the leader selected by group 2, and *vice versa* and, clearly, the median member of each group would like to choose their leader such that the final policy outcome is located at the median member's own ideal point. Consider the choice facing the median member of group 1 who, given our assumptions, is located at $\frac{k}{2}$. From her perspective the optimal outcome would arise if:

$$\frac{k}{2} = kL_1 + (1 - k)L_2 \quad (8)$$

and this implies that the optimal value of L_1 , from the perspective of the median member of group 1 is:

$$optL_1 = \frac{1}{2} - \frac{(1 - k)L_2}{k} \quad (9)$$

subject to the constraint that the chosen L_1 must lie within the set of members of group 1 - i.e. that $0 \leq optL_1 \leq k$. A similar calculation, from the perspective of the median member of group 2, who is located at $\frac{(1+k)}{2}$, shows that her optimal value of L_2 is:

$$optL_2 = \frac{(1 + k) - 2kL_1}{2(1 - k)} \quad (10)$$

subject to the constraint $k < optL_2 \leq 1$.

Two points should be emphasized. First, and most obviously, it is not possible for the median members of both groups to achieve their optimal outcomes simultaneously - indeed in general neither median member will achieve her optimal outcome. Secondly, at least one of the two groups will always select the most extreme leader possible. To see this, start from the

case of equal sized groups ($k = \frac{1}{2}$) where equation (9) reduces to:

$$optL_1 = \frac{1}{2} - L_2 \tag{11}$$

and, since $L_2 \geq \frac{1}{2}$, $optL_1 = 0$. A similar calculation, together with the fact that $L_1 \leq \frac{1}{2}$ implies that $optL_2 = 1$. In this case then, both groups will select the most extreme leader possible. As we move away from the case of equal sized groups, the smaller group 2 will continue to select a leader located at 1, but the larger group 1 will eventually be able to select a leader located at a point other than 0. Indeed, this occurs when the right hand side of equation (9), taking $L_2 = 1$, is equal to 0, which yields $k = \frac{2}{3}$. Thus, the point at which the larger group will depart from the most extreme leader possible is the point at which it becomes twice as powerful as the smaller group. Put another way, faced with a dominant strategy of mutual compromise, a group will only select a leader who is not located at the relevant end point if the median member of that group can fully achieve their optimal policy outcome by that means, and this is possible for group 1 if and only if $k > \frac{2}{3}$. For example, if $k = 0.8$, so that the median member of group 1 is located at 0.4, she could select a leader located at 0.25 so that compromise with L_2 located at 1 will yield the desired weighted outcome of 0.4.

It is important to recognize the relevance of this critical value of $k = \frac{2}{3}$. Under the assumption of a pure strategy equilibrium of mutual compromise, for $\frac{1}{2} \leq k \leq \frac{2}{3}$ the choice of leader of group 1 is effectively constrained to be a corner solution - ideally, the median voter would prefer a leader located outside of the set of members of the group. Only when $k > \frac{2}{3}$ does an interior solution emerge. We will return to the significance of this critical value of k repeatedly below.

It is also important to recognize that the argument employed here crucially reflects the fact that the identity of the median member of the group changes endogenously with k . In the limit, if group 1 encompasses the whole population ($k \rightarrow 1$) then the median member will be located at 0.5 and will be able to select herself as leader - reflecting the standard median voter theorem in this limiting case.

Figure 1 below depicts the v, k parameter space. In this Figure our first critical boundary $v = k$ is identified as v_1 . For combinations of v and k above this line, the cost of conflict is simply too high to be borne, and compromise is the dominant strategy for all possible leaders. We have also

argued that $k = \frac{2}{3}$ provides a critical value by marking the boundary where extreme leaders cease to be optimal when compromise is assured. Thus, the area labelled A in Figure 1 identifies a set of values of v and k which support both the selection of extreme leaders and mutual compromise, while the area labelled B identifies values of v and k which support the choice of a more moderate leader of group 1 while still supporting compromise as a dominant strategy for both chosen leaders.

We now need to explore the remainder of the parameter space. The logic developed above concerning the case of $k > \frac{2}{3}$, gives us a further result directly. When $k > \frac{2}{3}$, the median voter of the larger group can effectively preempt the stage 3 game for a wider set of parameter values than shown in area B . By choosing a leader located at $optL_1$ as defined in (9) above, the median voter will effectively ensure that compromise is the mode of interaction, and thereby ensure her ideal outcome. This follows from taking the value of L given by $L_1 = optL_1$ and $L_2 = 1$ and plugging it back into equation (4), which yields:

$$k\left(1 - \frac{1}{2} + \frac{1-k}{k}\right) < v \quad (12)$$

or

$$1 - \frac{k}{2} < v \quad (13)$$

as the condition for compromise to be the dominant strategy. So that $v = 1 - \frac{k}{2}$ is a further critical value when $k > \frac{2}{3}$, and this is shown on Figure 1 as v_2 . For all parameter combinations in area C , the overall equilibrium of the game will be similar to that in area B , in that there will be compromise with the median voter of group 1 achieving exactly their optimal outcome as a result of selecting a non-extreme candidate. The key difference between areas B and C is that while the no-conflict result for area B is driven entirely by the underlying parameters, so that conflict could not result under any leadership regime, in the case of area C the result arises precisely as a result of strategic delegation by the median voter in group 1. Technically, there exist other equilibria to the stage 3 game in this region - in particular, mixed strategy equilibria involving more extreme leaders - but these are ruled out at the earlier stage of the game by the strategic interests of the median voter.

We now turn our attention to the lower half of Figure 1, where conflict costs are lower and so conflict is more likely in equilibrium. It will be useful to illustrate the region of parameter space which includes all combinations of v

and k that can support a pure strategy equilibrium involving mutual conflict for at least some values of L . The relevant region is defined by equation (3) which provides the critical value $v = (1 - k)$ shown on Figure 1 as v_3 . In particular, if $L = 1$ the whole region below this line will support only equilibria of this type. The v_3 line provides an upper bound on the region of parameter space that can support a pure strategy equilibrium of mutual conflict. Thus, in the region marked D the only equilibria that can arise are either mixed strategy equilibria or pure strategy equilibria of mutual compromise. Any pure strategy equilibria of mutual compromise in this region will necessarily involve at least one non-extreme leader.

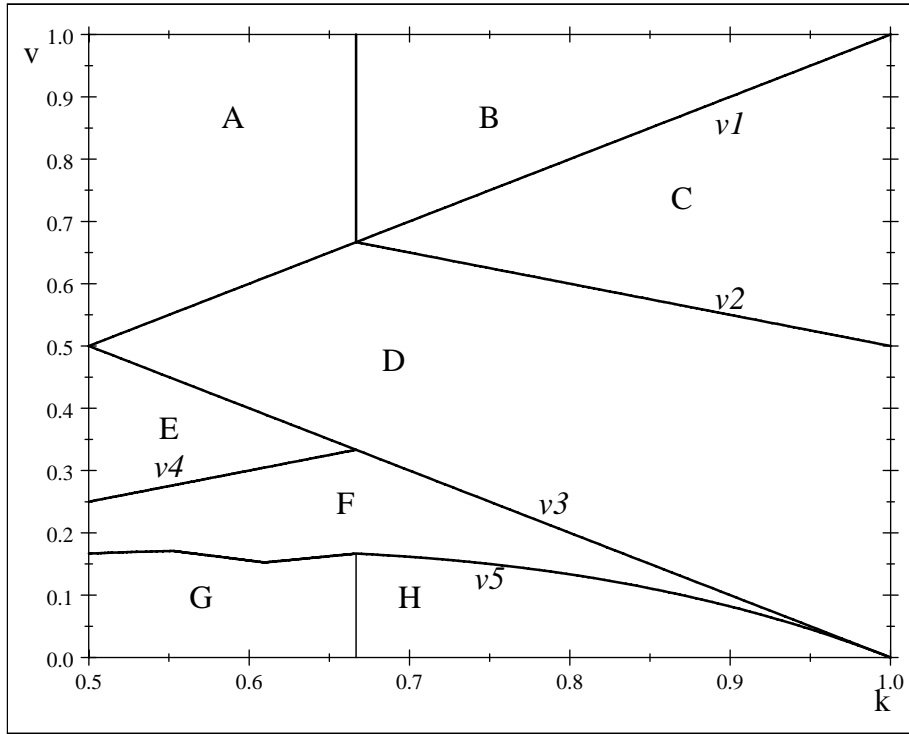


Figure 1. The v, k parameter space under instrumental choice.

Although v_3 provides an upper bound on the region that can support mutual conflict, a tighter bound is available in the case where $\frac{1}{2} \leq k \leq \frac{2}{3}$. As in the case of region C discussed above, this arises precisely because of the nature of strategic delegation. The relevant critical value for v arises when the median member of the larger group 1, faced with a leader of group

2 located at 1, is just indifferent between selecting the best available leader who would imply conflict, and selecting the best available leader who would compromise. For values of v greater than this critical value, mutual conflict will never arise as a pure strategy equilibrium.⁹ As we have already seen, for $\frac{1}{2} \leq k \leq \frac{2}{3}$ the best available leader implying conflict is constrained to lie at 0, and in this case the median voter in group 1 will be indifferent between the best conflictual leader and the best compromise leader when:

$$(1 - k) - \frac{k}{2} + v = kL_1 + (1 - k) - \frac{k}{2} \quad (14)$$

and when L_1 satisfies (4) so that $L_1 = (k - v)/k$. This then provides the relevant critical value for v as:

$$v = \frac{k}{2} \quad (\text{if } \frac{1}{2} \leq k \leq \frac{2}{3}). \quad (15)$$

and this is shown as v_4 in Figure 1. Thus, in the region marked E the strategic interests of the median voter rule out the possibility of mutual conflict as a pure strategy equilibrium. Of course, in this region we have the prospect of multiple equilibria, but none of the equilibria will be pure strategy equilibria involving mutual conflict and, furthermore, all will involve at least one non-extreme leader. To see this, take the example of $k = \frac{1}{2}$ and $v = 0.4$ and consider the possibility of a pair of extreme leaders, yielding a conflictual outcome of 0.5 (together with the cost of conflict) so that the total loss for the median voter in each group is 0.65. This cannot be an equilibrium since the median voter in each group would face an incentive to unilaterally defect. For example, for the median voter of group 1, the unilateral shift to a leader located at 0.2 will produce a pure strategy equilibrium of mutual cooperation in the stage 3 game with an outcome of 0.6 and, therefore, a total loss to the median voter of group 1 of only 0.35. Clearly there are many such equilibria which just avoid conflict (in this case, any combination of L_1 and L_2 such that $L = 0.8$), but all of them must involve at least one non-extreme candidate.

In the region below the lower of the v_3 and v_4 lines, a pure strategy equilibrium of mutual conflict would be the assured outcome of the overall game only in the limiting case where $v = 0$. For any strictly positive value of

⁹We focus on Group 1 in determining this critical value since the larger group will always be willing to compromise for lower values of v than the smaller group given the structure of losses in Table 1.

v it is always the case that there exists a value of L small enough to induce compromise. The question here is whether the median voters in each group would choose leaders that would give rise to such low levels of L . Intuitively, it should be clear that there will be a region of the v, k parameter space where the answer to this question is a clear no. In this region, the cost of conflict will be small relative to the locational advantage to be gained from electing more extreme leaders.

This intuition can be formalized, although we must be careful to identify a range of cases that differ depending upon which, if any, constraints on the choice of leaders actually bind. Our strategy is to identify the ‘best’ conflict leader and the ‘best’ compromise leader in each group, and thus delimit the area of parameter space in which only leaders who will mutually conflict will be chosen.

In some cases, the ‘best’ conflict or compromise leader in a particular group will be constrained by the fact that the leader must be a member of the relevant group. For group 2 it should be clear that the best conflict candidate is always constrained to be located at 1 (that is, ideally the median member of group 2 would like to appoint a leader still further to the right). But, as already noted, it will not always be the case that the best conflict leader in group 1 is located at 0. In particular, for any given leader in group 2, the best conflict leader in group 1 will be either a non extremist chosen such that the political outcome is identical with the ideal point of the median member, or the extremist located at 0.

Similarly, it should be clear that the best compromise leader in group 1 will always be internal to the group. However in group 2, the choice of compromise leader will be constrained to the point k - the left-most member of the group - for larger values of k . This simply reflects the power of the larger group which can ensure that any compromise outcome is as favorable as possible to the median member of group 1.

With these ideas in mind, we now derive a frontier (v_5 in Figure 1) that separates the region of parameter space which supports mutual conflict as the only pure strategy equilibrium (the region below v_5) from the region in which compromise is at least a possible pure strategy equilibrium. For expositional ease we first consider the case of $k = \frac{1}{2}$. In this fully symmetric case of equally sized groups, a pair of extremists leaders always provide one equilibrium - generating a political outcome at $\frac{1}{2}$ and, since when v is low such leaders will always conflict, a conflict cost of v . The question then is whether any compromise equilibrium can also exist when v is low? It might

seem that a pair of leaders arranged symmetrically around $\frac{1}{2}$ and sufficiently close to each other to produce a value of L that would support compromise would constitute an equilibrium, and one that would dominate the conflict equilibrium with extreme leaders since it offers the same political outcome and avoids the cost of conflict. But the possibility of such equilibria will be undermined if either median group member has a unilateral incentive to defect. And this will be the case when v is small - each median member would unilaterally shift to an extreme leader so gaining a major benefit in terms of the political outcome at the expense of the minor cost of conflict. This story tells us that the existence of a compromise equilibrium depends upon the cost of conflict being sufficiently high to prevent such unilateral defection. We now formalize this idea. We denote the best compromise leader in each group by L_1^o and L_2^o respectively. From the perspective of the median member of group 1 (located at $\frac{1}{4}$), facing a leader of group 2 located at L_2^o , the relevant comparison is between an extreme leader and conflict, and a more moderate compromise leader. This is shown in the following inequality which identifies the condition for compromise to be (weakly) preferred:

$$\frac{L_2^o}{2} - \frac{1}{4} + v \geq \frac{L_1^o}{2} + \frac{L_2^o}{2} - \frac{1}{4} \quad (16)$$

The same logic is applied to group 2, to yield the following condition for compromise to be (weakly) preferred:

$$\frac{3}{4} - \frac{L_1^o}{2} - \frac{1}{2} + v \geq \frac{3}{4} - \frac{L_1^o}{2} - \frac{L_2^o}{2} \quad (17)$$

From (16) and (17) we find that $L_1^o = 2v$ and $L_2^o = 1 - 2v$. To find the minimum value of v at which a compromise equilibrium can exist we substitute these values into (4), taken as an equality, which, when $k = \frac{1}{2}$, yields $v = \frac{1}{6}$ which in turn implies that $L_1^o = \frac{1}{3}$ and $L_2^o = \frac{2}{3}$.

So, in this very specific case, the cost of conflict has to be at least $\frac{1}{6}$ for it to deter unilateral defection from a compromise equilibrium, if $v < \frac{1}{6}$ the only pure strategy equilibrium that can exist will involve conflict. Thus, in Figure 1, when $k = \frac{1}{2}$ the value of the v_5 line is $\frac{1}{6}$.

Note that in this derivation, group 1 is constrained in choosing 0 as the best conflict leader. As k increases and group 1 becomes more powerful a point will emerge for which 0 will no longer be the best conflict leader for group 1 given L_2^o . Instead an interior leader will be selected such that

the outcome under conflict will be exactly equal to the location occupied by the median voter in group 1. Similarly, as k increases there will come a point where L_2^o is constrained to lie at k . These facts make the detailed computations to fully specify the v_5 line in Figure 1 rather tedious, and we relegate them to an appendix, but the basic idea is always that the v_5 line pinpoints the lowest value of v that can support a pure strategy compromise equilibrium, given the optimal choice of leaders and the constraints on the choice of leaders.

Our earlier point on the relevance of the critical value of k applies within the region below v_5 , so that the area marked G on Figure 1 represents parameter values such that extreme leaders are selected and mutual conflict results, while the area marked H represents parameter values such that group 1 will select a more moderate leader, although mutual conflict will still result.

This leaves the region of parameter space marked F in Figure 1. In this area, multiple pure strategy equilibria exist which include both mutual conflict and mutual compromise, and may also involve either extreme or moderate leaders. For example, if $v = 0.2$ and $k = \frac{1}{2}$, it is straightforward to check that a pair of leaders located at 0.3 and 0.7 form an equilibrium which supports a mutual compromise outcome at 0.5. However, it is equally straightforward to check that a pair of extreme leaders at 0 and 1 form another, if Pareto inferior, equilibrium which supports a mutual conflict outcome. In this region, then, the problem of equilibrium selection arises and a degree of coordination between the two groups when choosing leaders is required if conflict is to be avoided. It might also be suggested that, given the incentive to avoid wasteful conflict at no loss in terms of the policy outcome, such coordination should be forthcoming.

Despite the simplicity of the model, and our focus on pure strategy equilibria, the pattern of results is relatively complex. Even though conflict is entirely wasteful in this model, conflict will arise in at least some equilibria. To recap and summarize:

- In region A - all equilibria will be pure strategy equilibria of mutual compromise regardless of leaders, all leaders will be extreme, the outcome of mutual compromise will lie to the right of the ideal choice of the median voter in group 1.
- In region B - all equilibria will be pure strategy equilibria of mutual compromise regardless of leaders, the leader of group 2 will be extreme

while the leader of group 1 will not be extreme, and the outcome of mutual compromise will be exactly the ideal choice of the median voter in group 1.

- In region C - all equilibria will be pure strategy equilibria of mutual compromise, but in this case the result depends on the strategic choice of a non-extreme leader in group 1 which rules out mixed strategy equilibria involving the risk of conflict. The leader of group 2 will be extreme, the outcome of mutual compromise will be exactly the ideal choice of the median voter in group 1.
- In region D - the only pure strategy equilibria that can arise will involve mutual compromise, although mixed strategy equilibria which involve the risk of both mutual conflict and one-sided conflict are also possible. The pure strategy equilibria of mutual compromise require at least one leader to be non-extreme.
- In region E - the only pure strategy equilibria that will arise will involve mutual compromise, although mixed strategy equilibria which involve the risk of both mutual conflict and one-sided conflict are also possible. But in this case the result depends on the strategic choice of a non-extreme leader in group 1. The pure strategy equilibria of mutual compromise require at least one leader to be non-extreme.
- In region F - pure strategy equilibria involving mutual conflict exist alongside pure strategy equilibria involving mutual conflict (and mixed strategy equilibria), so that the issue of equilibrium selection arises. Given that the compromise equilibria will Pareto dominate the comparable conflict equilibria, coordination seems possible. The pure strategy equilibria of mutual compromise require at least one leader to be non-extreme.
- In region G - The only pure strategy equilibria that will arise will involve mutual conflict, and the choice of extreme leaders in both groups.
- In region H -The only pure strategy equilibria that arise will involve mutual conflict and the choice of a non-extreme leader in group 1.

Mutual conflict can arise in pure strategy equilibrium for parameter values below the v_4, v_3 frontier, where the shape of this frontier is itself kinked as

a result of the endogenous choice of leaders. However, we also note that with some reasonable (but unmodelled) coordination between leaders, mutual conflict in pure strategy equilibrium may be restricted to the area below v_5 . Furthermore, it is important to note that it is precisely the strategic choice of leader that plays a crucial role in avoiding conflict within the regions identified as C and E .

Finally, the model also gives us some insight into the circumstances when extreme leaders will be chosen - and here again the result is more complicated than might have been imagined. When the cost of conflict is either high or low (above v_1 or below v_5) extreme leaders will always be chosen if the two groups are of roughly equal strength, with a more moderate leader only being chosen in a group that is sufficiently dominant to ensure that it can effectively control the social outcome (whether through compromise or conflict). When the cost of conflict is medium to low, extreme leaders may emerge in equilibrium but will be associated with conflict, even when alternative equilibria exist in which more moderate leaders would achieve compromise. And when the cost of conflict is medium to high, at least one non-extreme leader will emerge precisely to avoid conflict in equilibrium.

4 Selecting Leaders Expressively

We now turn to the case in which the choice of leader is essentially expressive. Formally, each individual faces a choice of leader by reference to equation (7) where h is virtually zero, and there is no reason to expect this choice to be strategic, since no individual can rationally expect to influence the social outcome through their choice. While the stage 3 game of political interaction will continue to be played by leaders, it will not provide the basis on which individual group members vote for their leader. This is not because group members are in any sense ignorant of the leader's role in the game of political interaction, or because they mistakenly think that they will not be affected by the outcome of the game of political interaction, but simply because they see that game as essentially irrelevant to their behavior in voting for a leader, given the indecisiveness of their vote.

If instrumental considerations are removed, to be replaced by broadly expressive considerations, we immediately confront the question of the content of these expressive considerations. If group members do not vote instrumentally, they might simply vote for a leader like themselves - if so, and if the

relevant notion of ‘like themselves’ relates to the position in policy space, this would point towards a leader located at the median of the group in policy space. Since the detailed substantive content of expressive aspects of motivation are not generally agreed, this is a possibility, and one that operationalizes the core idea of the expressive approach in this context - the breaking of the strategic link between the election of leaders and the specific role of leaders in the stage 3 game. We will return to this possibility below, but for now we want to argue for what we consider a more striking possibility, and one that seems consistent with reality, is that leaders may often be selected for reasons associated with group identity and emotional attachment.

As already noted, Glazer (1992) and Brennan and Hamlin (2000b) use emotional response and group identity as bases for expressive choice. The awareness of the role of emotions in social science has expanded considerably in recent years - see papers by Elster (1998), Kaufman (1999) and Loewenstein (2000) and the papers in Barbalet (2002), and Goodwin, Jasper and Polletta (2001). In economics, a common finding is that an emotional reaction, such as anger, may act to make individuals willing to incur costs to punish those who have treated them unfairly, in a manner that would be strictly ruled out by narrowly instrumentally rational calculation. Examples of this are clear from experiments using games such as the ultimatum game or the power-to-take game (see Bosman and Van Winden (2002)). While emotions have been shown to play a significant role in individual interactions, their effect would seem to be potentially even greater in group interactions. The expressive account fits neatly with Rabin’s (1993) point that emotional responses are more likely when the costs are low.¹⁰ Clearly, in large group settings the cost of voting for an extremist leader is extremely low, since no individual group member can actually bring such a leader into power simply by voting for him.

Economists are also paying increasing attention to the role of group identity (see Sen (1985) and Akerlof and Kranton (2000)), and an emerging theme here is that incorporating group identity into the analysis may lead to very different decision-making than would be expected in its absence. Social psychologists frequently find what Brown (2000) calls a ‘maximizing difference strategy’ where group members prefer doing relatively better than opposing group members even if this comes at an absolute cost to themselves. In the

¹⁰This point is also made forcefully by Romer (1996) in his analysis of the debate regarding welfare reform in the U.S. in the 1950’s.

context of this paper, this might be reflected in choosing an extremist as leader simply to distance your group from the other group - regardless of any impact on social outcomes or the probability of conflict. A recent paper by Colaresi (2004) provides evidence that hawkish policies are often pursued by leaders responding to the desires of electorate.

These points serve to establish that issues of identity and emotional attachment can provide powerful sources of motivation that are essentially expressive. A further element of the expressive approach would revolve around the role of rhetoric in determining the outcome of leadership contests within groups, where we would suggest that the rhetorical nature of electioneering would tend to reinforce emotional and identity based motivations. The rhetorical aspect of electioneering is relatively neglected in the political economy literature. An exception to this general neglect is Riker (1990) who writes:

In order to understand and generalize about persuasion, one should be able to describe how rhetorical appeals actually work on individual psyches to move them from one ideal point to another on dimensions in the outcome space. (p.57).

We believe that the logic of expressive choice goes some way to incorporating the effectiveness of rhetoric without having to present underlying preferences as being endogenous. An individual's preferences for political outcomes may be distinguished from their preferences for the 'language of politics'. Models of political competition that only allow for instrumental choice on political outcomes ignore this non-policy dimension. But, if individuals choose expressively, they might be encouraged to cheer for particular expressions in the language of politics as opposed to actual political outcomes. Equally, candidates may be encouraged to supply rhetoric that is extreme in policy terms in order to appeal to the more emotional and identity based concerns of voters. The potential significance of political rhetoric in the context of voting for redistribution in democracies is discussed by Brennan (2001). It is particularly significant in the present context because voting for a leader may be seen as booing or cheering for a particular candidate after hearing the candidates debate, rather than voting for political positions where the only (instrumental) role for any debate would be the clarification of the position taken. In an alternative example of obvious relevance, Glaesar (2002) develops the idea of a market for hatred where political entrepreneurs have

an incentive to supply hatred where there is a demand for it. In our context, the most successful suppliers of hatred will be those at the extremes of the distribution. We therefore conceive the rhetorical nature of political debate and particularly the debate surrounding the election of leaders as reinforcing the emotional basis for group identity. Even though all members of a group are fully aware that the game of political interaction will be played out following the election of leaders, they may nevertheless focus their expressive choice on which potential leaders provide the strongest rhetorical argument for the identity of the group.

So, the combination of group identity, rhetoric and emotion may, in at least some relevant cases, push the selection of leaders towards extremes in a manner that is independent of the costs of conflict. This in turn will tend to generate more conflict, and more costly conflict, in equilibrium than would be the case under instrumental voting.

We can use Figure 1 above to be rather more precise as to the possible impacts of recognizing expressive rather than instrumental behavior in the choice of leaders. Clearly, in the regions of the parameter space in which mutual compromise is the dominant strategy equilibrium for all possible leaders in the stage 3 game of political interaction (those areas of Figure 1 labelled *A* and *B*), the shift from instrumental to expressive models of leadership election can have no impact on the incidence of conflict or compromise. In these regions of the parameter space the only consequential impact of a shift from instrumental to expressive choice, beyond any change on the identity of the leaders themselves, will be the impact via the policy point chosen in the stage 3 game. And to the extent that any shift in the position of the leaders in the two groups might be symmetric, this impact might be expected to be small. More specifically, in region *A* in Figure 1, the shift to the expressive choice of leaders cannot have the effect of making leaders more extreme. Here expressive choice (depending on the detailed specification of the expressive motivation) might render leaders less extreme, but without significant impact on either the outcome of bargaining between leaders or on the incidence of conflict. Similar points might be made about the regions *G* and *H*. In *G*, instrumental choice yields extreme leaders despite the fact that they will conflict. Again, expressive choice cannot select more extreme leaders, but could, in this case, select more moderate leaders who, if moderate enough, might avoid certain conflict. In *H*, instrumental choice yields a non-extreme leader but conflict as the only possible pure strategy equilibrium,

In all other areas of Figure 1 we can identify a more significant potential

impact of moving to an expressive choice of more extreme leaders. Most obviously in the regions labelled *C* and *E* in Figure 1 - where we saw that it was precisely the strategic nature of the instrumental choice of leaders that ruled out the possibility of conflict in equilibrium. Under expressive choice this effect would not be present and we would, therefore, expect conflict to re-emerge as an equilibrium possibility under expressive choice despite the relatively high costs of conflict in these regions. Similarly, in regions *D* and *F* we saw that extreme leaders were associated with conflict in equilibrium (whether pure strategy or mixed strategy), while more moderate leaders were associated with compromise, so that any shift towards the choice of more extreme leaders on expressive grounds would also carry with it the implication of greater conflict.

The comparative method We now return to the more basic possibility that expressive voting for leaders results in the election of leaders who reflect the median members of their group. As we noted above, this might be seen as a sort of *de minimus* version of the expressive hypothesis since it breaks the strategic link between the stages of the game, without offering any particular or novel account of the expressive election itself. But this alternative, minimal, version of the expressive hypothesis allows us to display an important aspect of our method.

Our main line of argument has been that the shift from an instrumental to an expressive account of the election of leaders may have significant implications not just for the immediate choice of leaders, but also for the mode of interaction between groups and in particular the incidence of conflict. Now, in pursuing this argument so far we have also taken a particular line on the content of expressive choice - so as to be able to develop a specific comparative analysis in which the instrumental and expressive accounts can be studied alongside one another. And it is this comparative stance that we want to emphasize here. Even if the particular account of expressive behavior offered here is not taken as fully persuasive (and we agree that it is not) we do want to stress that an appropriate way to test out any specific expressive hypothesis is by subjecting it to the test of comparing its implications to those that derive from an otherwise similar instrumental model.

To demonstrate this, it is a relatively simple exercise to review the impact of adopting the *de minimus* version of the expressive account. The election of the median member of each group as leader implies that $L_1 = \frac{k}{2}$, and

$L_2 = \frac{1+k}{2}$ so that, $L = \frac{1}{2}$.

Substituting this into conditions (3) and (4) above we see that the parameter space may be mapped into just three areas as in Figure 2. When $v < \frac{1-k}{2}$, as in the area marked X in Figure 2, the elected leaders will face dominant strategies of conflict so that all equilibria will involve mutual conflict. When $v > \frac{k}{2}$, as in the area marked Z in Figure 2, all equilibria will be pure strategy equilibria involving mutual compromise, while in the remainder of the parameter space (marked Y in Figure 2) all equilibria will be mixed strategy equilibria involving some risk of both mutual and one-side conflict.

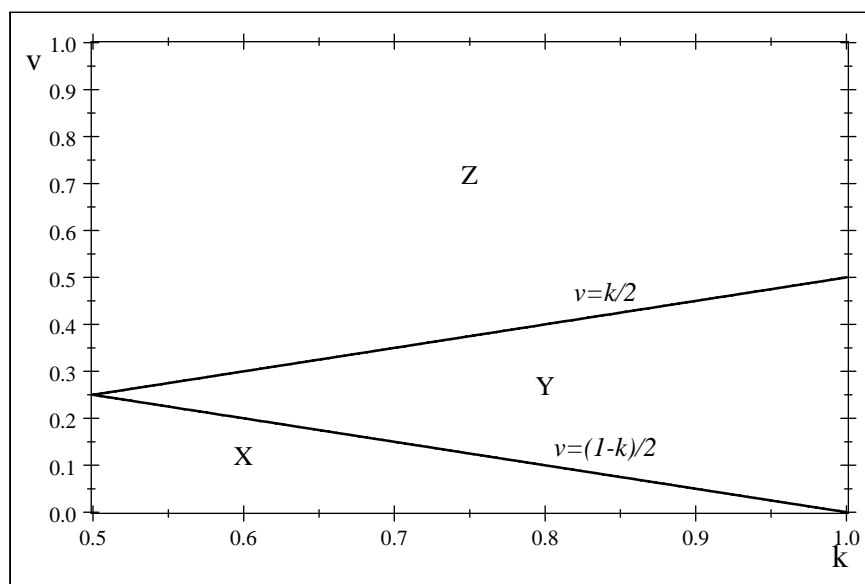


Figure 2 The v, k parameter space with median leaders.

We will not pursue the comparative detail here beyond noting that the adoption of median leaders considerably expands the region in which mutual compromise is guaranteed, while also expanding the region in which mutual conflict will arise for $k < 2/3$ and reducing it for $k > 2/3$. (To see this note that $\frac{1-k}{2}$ is above the v_5 line for $k < \frac{2}{3}$ and below it for $k > \frac{2}{3}$). Our main point here is the more general one that this sort of comparative analysis - which requires the reasonably detailed specification of both an instrumental and an expressive model, is the only means by which the consequential impact of the idea of expressive political behavior can be studied.

5 Conclusion

Leadership clearly plays a considerable role in the determination of political outcomes, including the nature of the interaction between groups. We have provided a simple model of the political interaction between groups that allows for both the endogenous choice of leaders and the endogenous emergence of conflict between groups. We have characterized the properties of this model under the assumption of instrumental behavior by all political actors, and provided an account of the impact of introducing the idea of expressive behavior on the part of group members when voting for their leaders. Rather than attempting to summarize the various detailed points made, we close by offering some more general comments.

We see the election of leaders by their fellow group members - rather than their emergence by some other means - as a process that will tend to encourage expressive behavior. Simply because the popular election of a single leader in a large group will almost automatically generate a situation in which individual group members are asymptotically indecisive while also creating a situation in which attention will focus on characteristics of potential leaders other than their strategic positions. To the extent that expressive behavior in the election of leaders increases the risk of costly conflict in at least some situations, this is a matter of some concern in the design of democratic institutions.

We also see the particular case studied here as reflecting a more general tension operating with respect to groups - the tension between the internal and external constituencies, between the members of the group and the role of the group in the more general social landscape. In cases where groups are small so that individuals have reason to act instrumentally, this tension will give rise to the issues associated with strategic delegation - the strategic trade-off of internal values against overall external impact. In cases where groups are large and expressive considerations can be expected to play a considerable part, the finely tuned instrumental logic of strategic delegation may be preempted by something rather simpler and more emotional. The impact of such expressive behavior may vary from case to case, but we suggest that it is important to take such impacts seriously. Our final point is that the style of comparative analysis that we exemplify here seems to us to be the appropriate way to take the implications of expressive behavior seriously.

Appendix - The v_5 line in Figure 1.

To generalize the results already found in the text for $k = \frac{1}{2}$ to the region of k where 0 is the best conflict leader for group 1, we rewrite (16) and (17) in terms of k , recalling that $\frac{k}{2}$ and $\frac{1+k}{2}$ are the median members of the groups:

$$(1 - k) L_2^o - \frac{k}{2} + v \geq kL_1^o + (1 - k) L_2^o - \frac{k}{2} \quad (\text{A1})$$

$$\frac{1 + k}{2} - kL_1^o - (1 - k) + v \geq \frac{1 + k}{2} - kL_1^o - (1 - k) L_2^o \quad (\text{A2})$$

From (A1) $L_1^o = \frac{v}{k}$ and from (A2) $L_2^o = \frac{1-k-v}{1-k}$. Putting these values into (4), taken as an equality, we find:

$$v = \frac{k(1 - k)}{2 - k} \quad (\text{A3})$$

This identifies v_5 in the range where 0 is the best conflict leader that group 1 could select. This will be the case so long as the locational outcome under conflict in a game played by leaders located at 0 and L_2^o is to the right of the location of the median voter in group 1. As soon as the outcome would be to the left of $\frac{k}{2}$, the median member of group 1 would do better by selecting a leader interior to the group who would provide an outcome under conflict exactly equal to $\frac{k}{2}$. We locate the value of k at which this switch occurs by solving $(1 - k) L_2^o = \frac{k}{2}$. We know that $L_2^o = \frac{1-k-v}{1-k}$, and we have v from (A3), so we can solve for k , giving the value $k = 1 - \frac{1}{5}\sqrt{5}$. So, for $\frac{1}{2} \leq k < 1 - \frac{1}{5}\sqrt{5}$ (approximately 0.553) (A3) will give the appropriate value for v_5 .

When $k > 0.553$ the ‘best’ conflict leader and group 1 will no longer be constrained to lie at 0, and the median member will be free to choose a leader from the interior of the group. We now have to take account of the fact that there will be no locational loss for the median member of group 1 when the best conflict leader is interior to the group. Therefore, the only loss in choosing conflict is the conflict cost itself. So, we rewrite (A1) as:

$$v \geq kL_1^o + (1 - k) L_2^o - \frac{k}{2} \quad (\text{A4})$$

(A2) is unaltered. Therefore, it is still the case that $L_2^o = \frac{1-k-v}{1-k}$, but L_1^o is

now given by:

$$L_1^o = \frac{1}{2} + \frac{v}{k} - \frac{(1-k)L_2^o}{k} \quad (\text{A5})$$

By substituting L_2^0 in to (A5) we obtain $L_1^o = \frac{1}{2} + \frac{v}{k} - \frac{(1-k-v)}{k}$, so that $L = \frac{(1-k-v)}{k(1-k)} - \frac{1}{2} - \frac{v}{k}$. Putting this value of L into (4), taken as an equality, we derive the critical value of v :

$$v = \frac{(1-k)(2-k)}{6-4k} \quad (\text{A6})$$

This is then the relevant formulation of the v_5 line over the range from $k = 0.553$ until the next change in the regime of constraints which, this time, concerns group 2's best compromise leader. As indicated in the text, at some value of k the constraint that this leader can be no further to the left than k will bind. This value of k may be computed by plugging the value of v from (A6) into $L_2^o = \frac{1-k-v}{1-k}$ and solving for $L_2^o = k$. We find that the constraint binds at $k = \frac{9}{8} - \frac{1}{8}\sqrt{17}$ (approximately 0.609). Thus (A6) identifies the v_5 line for $0.553 < k < 0.609$.

For $0.609 < k < 0.666$ we must set $L_2^o = k$ and recalculate the critical value of v . In this case, (A4) still captures the relevant comparison for group 1 (since it can still select a leader to ensure the median member's ideal outcome when $L_2^o = k$), given $L_2^o = k$ this now yields $L_1^o = k - \frac{1}{2} + \frac{v}{k}$. Putting these values into (4) we find:

$$v = \frac{k}{4} \quad (\text{A7})$$

So that (A7) identifies $0.609 < k < 0.666$.

We now turn to the case of $\frac{2}{3} < k \leq 1$. Up to $k = \frac{2}{3}$, it is the case that the LHS of (A1) and (A4) were valid in that the optimal leader of group 1 (whether that be 0 or an interior member) would in fact conflict in pure strategies against L_2^o . This is no longer true for $k > \frac{2}{3}$, to see this note that conflict will occur when

$$(1-k)(L_2^o - L_1) > v \quad (\text{A8})$$

Given that $L_2^o = k$, from (9) we know that $L_1 = \frac{1}{2} - (1-k)$ and we have

$v = \frac{k}{4}$. When we put these values into (A8) we find that conflict will exist if

$$(1 - k) \left(k - \frac{1}{2} + (1 - k) \right) > \frac{k}{4} \quad (\text{A9})$$

and this can only be true for $k < \frac{2}{3}$. Therefore, so that we continue to compare pure strategies, we need to find which member of group 1 is the best conflict leader in pure strategies when $k > \frac{2}{3}$, we shall label this location L_1^{con} . This value is found by solving:

$$(1 - k) (k - L_1^{con}) = v \quad (\text{A10})$$

Which gives $L_1^{con} = k - \frac{v}{1-k}$. A leader located at L_1^{con} in conflict with a leader of group 2 located at k would lead to an outcome to the left of $\frac{k}{2}$. We therefore have to amend the nature of the comparison facing the median member of group 1. Compromise is preferred to conflict if:

$$\frac{k}{2} - k \left(k - \frac{v}{1-k} \right) - (1 - k) L_2^o + v \geq k L_1^o + (1 - k) L_2^o - \frac{k}{2} \quad (\text{A11})$$

Note that the LHS of (A11) takes account of the fact that the outcome under conflict would be less than $\frac{k}{2}$. Solving (A11) for L_1^o and using this and $L_2^o = k$ in (4) we find:

$$v = \frac{k(1 - k)}{2 - k} \quad (\text{A12})$$

And this identifies the v_5 line over the range $\frac{2}{3} < k \leq 1$. Note that this is identical to (A3) above.

So, the v_5 line in Figure 1 is made of of four sections:

$$v = \frac{k(1 - k)}{2 - k} \text{ over the ranges } \frac{1}{2} \leq k < 0.553 \text{ and } 0.666 < k \leq 1$$

$$v = \frac{(1 - k)(2 - k)}{6 - 4k} \text{ over the range } 0.553 < k < 0.609$$

$$v = \frac{k}{4} \text{ over the range } 0.609 < k < 0.666$$

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