

INTEREST GROUP BEHAVIOR AND INFLUENCE

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1 Introduction

During the last two decades economics has witnessed a remarkable upsurge in theoretical as well as empirical studies of the behavior and political influence of interest groups. Recent books by Sloof (1998), Drazen (2000), Persson and Tabellini (2000), and Grossman and Helpman (2001) refer to a wealth of evidence of the significance of organized interests in the political arena, besides presenting surveys of theoretical studies. Political economics definitively seems to move away from the common assumption of atomistic demand in ‘political markets’ (the median voter model) towards a more realistic framework. In a sense it is picking up and deepening some older strands of literature inspired by classical writers on political economy (like Marx and Pareto), the so-called pluralists in political science (like Bentley and Truman), and others, who were concerned with the political impact of particular social groups under the label of ‘factions’, ‘classes’, or ‘elites’ (see e.g. Bottomore 1970, Moe 1980). The modern political economic literature to be surveyed in this paper, however, is characterized by much greater rigor, through the use mathematical modeling, and keener attention for individual incentives. Strict adherence to methodological individualism would require the modeling of the following chain of events regarding the interaction between policymakers and interest groups: group formation/adjustment → group decision making → group activity → political decision making → government policies (plus other relevant events) → group formation/adjustment. Due to the complexity involved, group formation and adjustment (influenced by policy outcomes) are typically neglected by taking the existence of interest groups as given, thereby sidestepping the thorny issue of the individual incentives for participation in collective action (Olson 1965). In addition, interest groups are commonly assumed to act as single (unitary) actors. Nevertheless, our conclusion will be that there has been substantial theoretical progress, opening up many promising paths for important and exciting research.

In this paper we will focus on formal theoretical models of interest group behavior and influence, with emphasis on the positive aspects.¹ Early modeling of interest groups, during the 1970s and the beginning of the 1980s, had difficulty in dealing simultaneously with the

¹ The (field) empirical literature is surveyed in Potters and Sloof (1996). Van Winden (2002) discusses the relatively small number of experimental studies. In this paper we draw on Potters and van Winden (1996) and van Winden (1999). For an earlier survey of models, see Mitchell and Munger (1991). Hillman (1989), Morton and Cameron (1992), Nitzan (1994), and Austen-Smith (1997) provide more specific reviews.

behavior of interest groups and policymakers. In response short cuts were taken in the form of higher levels of abstraction or by focusing on one side of the interaction between the agents. The former short cut is used in the cooperative game and compromise function models described in section 2, the latter by the so-called influence and vote function models discussed in section 3. In the wake of the rise of non-cooperative game theory in the 1980s the modeling of interest group behavior became much more general and sophisticated. Two strands of literature will be highlighted. Section 4 discusses common agency models of contributions offered to policymakers in exchange for policies or to help finance electoral campaigns, while section 5 deals with models of strategic information transmission. Section 6 is concerned with extended models investigating the multiple means and channels of influence that are in general available to groups. Section 7 concludes.

2 Cooperative games and compromise functions

Characteristic of cooperative game models is the focus on coalitions rather than individual agents, and outcomes (reasonable compromises) rather than strategic moves. Although less explicit, it avoids problems of arbitrariness in the specification of moves. By requiring collective rationality, policy outcomes of these models are (constrained) efficient, that is, they are in accordance with the maximization of a weighted representation of the utilities of the players involved. More formally, suppose that n interest groups can be meaningfully distinguished for the policy x , and that $v^i(x)$ represents the related net benefits or utility of group i ($i = 1, \dots, n$). Let μ^i denote the ‘political influence weight’ of the group. Then, the behavioral assumptions underlying the models imply that x follows from the maximization of the function $P(x) = \sum_i \mu^i v^i(x)$. Although this function looks like a social welfare function, it should not be labelled such because the influence weights are based on a positive instead of normative (ethical) analysis. We will therefore call it a *political welfare function*. Two types of models will be discussed: the *power to tax* model (Aumann and Kurz 1977) and the *interest function approach* (van Winden 1983). These models differ in the assumptions underlying the function $P(x)$ and the nature of the influence weights.

The *power to tax* model concerns a redistribution game where the so-called Harsanyi-Shapley-Nash value is used as solution concept. The income distribution is determined by majority voting. Players in the game are all n individuals in society (making up the set N), who are endowed with a pre-tax income y^i . Redistribution is constrained by the requirement

that total after-tax income ($\sum_i x^i$) equals total pre-tax income ($\sum_i y^i$). Groups enter the picture because a majority coalition is required for redistribution. Any majority coalition, C , can redistribute all income from those outside the coalition, $M\setminus C$, to itself. The crucial point is that the outside coalition $M\setminus C$ can threaten to destroy its own pre-tax income, leaving nothing to be redistributed to C . The outcome of this game is determined by using the Nash Bargaining Solution (which assumes that players can make binding agreements, committing themselves to carry out threats if no agreement is reached). Proceeding in this way for all possible coalitions, an individual's 'power' (Shapley value) can be derived from the individual's (expected) contribution to all possible coalitions. They show that this power over the *resulting* income distribution ($x = x^1, \dots, x^n$) corresponds with $\mu^i = 1/v_x^i$, that is, an individual's influence weight equals the reciprocal of her or his *ex post* marginal utility v_x^i . Since commitments are possible threats are never carried out, because they are anticipated by the players, preventing inefficient outcomes. Furthermore, no coalitions (interest groups) actually form. Thus, one could say that x results from the anticipation of pressure activities that could but do not actually occur. The model has been extended in several directions. For example, Aumann, Kurz, and Neyman (1983) apply a similar analysis to public goods, Gardner (1981) introduces a government as player, Osborne (1984) studies the differential taxation of goods that can (like labor-time via strikes) or cannot (like land) be 'destroyed', while Peck (1986) takes incentive effects of taxation into account.²

The *interest function approach* takes a less abstract perspective on policymaking. It is argued that in capitalist economies, analytically, four basic social groups can be distinguished, based on their position with respect to production in the economy: capitalists, private sector workers, public sector workers (politicians and bureaucrats), and dependants (unemployed, disabled, retired). The political interests of a group are represented by an 'interest function' $v^i(x, y)$. The value of x is determined by the public sector workers, while $y = (y^1, y^2)$ stands for the actions taken by the capitalists and private sector workers, respectively. The latter two groups play a non-cooperative game, where each group takes the actions of the government and the other group as given. This determines their actions as a function of x : $y = (y^1, y^2) = y(x)$. The crucial assumption is that public sector workers, when deciding on x , will to some extent take account of the interests of the other groups. The extent to which they will do so is related to the potential influence of 'ideology' (including altruism), multiple positions

² Dougan and Snyder (1996) present another cooperative game model of income redistribution. Zusman (1976) deals with consumer and producer groups in a regulated market.

(simultaneous membership of different groups), mobility (probability of becoming a member of a different group), and pressure (influence attempts by private sector groups).³ The resulting policy x is assumed to have the character of a compromise (a generalized Nash Bargaining Solution), equivalent to the maximization of the ‘complex interest function’ $P(x)$ above, where the influence weights are determined by the aforementioned factors. No explicit behavioral model is provided, though, for the relationship between these weights and the proposed determinants of pressure (threat potential, group cohesion, and an information factor). Later models, discussed below, do provide such a microfoundation.⁴ The approach has been theoretically as well as empirically applied in several ways. For example, dynamic models including elections – showing politically induced economic cycles of various lengths – are analyzed by van Winden (1983) and van Winden, Schram, and Groot (1987). Borooah and van der Ploeg (1983) and van Velthoven (1989) study macroeconomic models with endogenous government behavior (see also Przeworski and Wallerstein 1988). Van Velthoven and van Winden (1985) and Verbon (1989) focus on social security. Renaud (1989) presents (empirical) analyses of fiscal federalism and public sector growth. Mazza and van Winden (1996) study the impact of labor migration, and Drissen (1999) analyzes a computable general equilibrium model with redistribution and public production. Also, with some empirical support (Renaud and van Winden 1988, van Velthoven 1989) the relative numerical strengths of these groups have been used to study with a theoretical model the dynamics of endogenous influence weights (van Velthoven and van Winden 1986).

Another strand of literature, with roots in Stigler’s (1971) theory of regulation and its formalization by Pelzman (1976), simply postulates a compromise function to endogenize

³ Mobility can be an important reason why the interests of dependants are taken into account (see Renaud and van Winden 1988). Another reason why social groups may count is ‘structural coercion’, that is, the systematic reactions by private sector agents to government policies when these are taken as given. In that case policymakers may be induced to sort these agents into groups (which need not be organized). In this way interest groups play a role in *probabilistic voting models*, for example (see Coughlin, Mueller, and Murrell 1990, Coughlin 1992, Hettich and Winer 1999). To illustrate, suppose an incumbent party has to choose its platform x in a forthcoming election. The electorate comprises N groups, where each member of a group (say, group i , with n_i members) derives the same utility $v_i(x)$ from the party’s policy. In addition, member j has a personal utility ‘bias’ b_{ij} in favor of (> 0) or against (< 0) this party, where b_{ij} is uniformly distributed over the interval (l_i, r_i) . Let utility from the challenging party be zero, then voter ij votes for the incumbent if $v_i(x) + b_{ij} > 0$. Interestingly, maximization of expected plurality (assuming $l_i < v_i(x) < r_i$) implies that $P(x)$ above is maximized, with $\mu_i = n_i/(r_i - l_i)$. Thus, numerical strength and group homogeneity determine the influence weights.

⁴ See the common agency model in section 4. Further support is provided by the (pressure) model of strategic information transmission of Potters and van Winden (1990). See also the probabilistic voting model discussed in the previous note.

policy, using as arguments typically the weighted surpluses of consumers and producers. Maximization by the policymaker is usually (implicitly) justified by the presumed goal of maximal electoral support. However, as noted by Hirshleifer (1976), policymakers (regulators) themselves constitute an interest group with an interest in wealth, implying that political support can only be an instrumental and partial aim.

3 Influence and vote functions

Policies can be affected by interest groups in two ways: directly, by influencing the behavior of policymakers, and indirectly, by influencing the behavior of voters. The influence function and vote function models discussed next are concerned with these two channels of influence. Characteristic is the focus on interest group behavior, whereas the impact on policymaking or voting behavior is simply assumed. Furthermore, while the precise nature of the activity is often left obscure in the first type of models, campaign contributions are focused on in the latter.

Influence functions

Political decision making is often modeled as a kind of all-pay-auction. Policymakers offer certain policies (public goods, transfers, regulation), while demand comes from interest groups. The 'price' the latter have to pay is determined by the resources spent on the acquisition of the goods. Let x represent the policies, y^i the resources spent by interest group i , and $v^i(x, y^i)$ its net benefits. Many studies assume a fixed positive relationship between policies and resources spent, an *influence function*: $x = I(y; z)$, where both y and z are vectors and z represents exogenous variables (like group sizes). Examples are Findlay and Wellisz (1983), Cairns (1989), and Coggins, Graham-Tomasi, and Roe (1991). In one part of the literature, based on the pressure model of Becker (1983), x represents the amount of a transfer or public good. In the rent seeking literature, originating with Tullock (1967, 1980), x usually denotes the probability that a particular good (a monopoly license, for instance) is obtained. The equilibrium level of the resources spent by the groups are determined under the assumption of non-cooperative (Cournot-Nash) behavior. In both literatures the resources spent by the interest groups typically entail a pure social cost, that is, their activity has no productive aspect. Competition has a better side in Becker's model, where efficiency costs of

the policies (transfers) as such are taken into account. Under some reasonable assumptions, an increase in the efficiency cost of taxes (subsidies) induces an increase (decrease) in the resources spent by the taxed (subsidized) group, leading to a fall in the tax and subsidy level. Another interesting result follows if an increase in group size induces free riding. If the negative free riding effect is sufficiently strong, this will lead to fewer resources being spent. The implication is that "groups can more readily obtain subsidies when they are small relative to the number of taxpayers" (Becker 1983, p. 395).⁵ This second result qualifies the importance of sheer numbers in politics. However, this result only bites if influence via elections (votes) is dominated by interest group pressure.⁶ If not, larger groups can be expected to focus relatively more on pressuring politicians interested in votes than bureaucrats. Also, larger groups will be relatively more inclined to produce pressure in the pursuit of group-specific public goods (like a trade tariff), because of the fewer spoils to the individual member in case of private goods (like transfers).⁷

An important issue that rent-seeking models are concerned with is the extent to which the benefits of the rent (x) are dissipated in the competition among groups to obtain the rent. Other issues explored are the effects of: risk attitude, nature of the rent (private or public good), groups versus individuals as players, intergroup mobility, multiple rents (prizes), endogeneity of the order of moves, asymmetry of information (e.g. regarding valuation or capabilities), budget constraints, and sharing rules (for surveys, see Nitzan 1994, Tollison 1997).⁸

Although competition among interest groups may be less detrimental to efficiency than the rent seeking literature suggests, in the Becker model "all groups could be made better off by reduced expenditures" (Becker 1983, p. 387), because of the assumed wasteful character of these expenditures. This brings us to an important limitation of influence function models. Since the influence of expenditures (pressure) is assumed but not explained, it is not clear why policymakers would behave this way. The government is a 'black box', and there is

⁵ This result also follows if the efficiency cost to taxpayers decreases when the tax per individual falls due to an increase in the number of taxpayers. The opposition by taxpayers to subsidies decreases in that case.

⁶ According to Becker this happens via the persuasion of 'rationally ignorant' voters.

⁷ The last two results concerning group size are demonstrated in Potters and van Winden (1996).

⁸ Neary (1997) compares rent seeking models with economic models of conflict. For a recent rent seeking model incorporating a constitutional stage, see Sutter (2002).

no benchmark showing the consequences of having no interest group activity. It is also not clear on what kind of activities resources are spent by the (exogenously given) interest groups.

Vote functions

More specific regarding interest group activity are models focusing on campaign contributions. Although the importance of this type of activity is not undisputed, for the US at least, a relative abundance of data makes this focus attractive.⁹ Two types of models can be distinguished. In *exchange models* contributions to a candidate are assumed to elicit a preferred policy response (e.g. Welch 1980).¹⁰ Because of the simply assumed positive relationship between contributions and policies (platforms) these models are similar to the models just discussed. One interesting outcome is that groups will generally split contributions between candidates, while contributions will rise with the probability of electoral success (assumed to be given).

In contrast, *support models* of campaign contributions assume that interest groups take policies as given but try to increase the number of votes for the favored candidate (e.g. Brock and Magee 1980, Hillman and Ursprung 1988, Pedersen 1995, Persson and Tabellini 2000). In this case, the probability of electoral success is assumed to be positively related to contributions. Under some plausible additional assumptions the following results are obtained (see Potters and van Winden 1996): (a) groups will only contribute to the favored candidate, (b) the more preferred the policy of the favored candidate the higher the contribution, (c) no contributions are made if platforms are identical, and (d) contributions are higher the 'closer' the election. Regarding the optimal behavior of the candidates it is typically assumed that (informed) voters will punish candidates for adjusting policies in the direction favored by the campaign donors. Consequently, candidates may on balance (at some point) start to lose votes when (further) catering to interest groups to raise campaign contributions (Denzau and Munger 1986).¹¹

⁹ According to Wright (1990) the ratio of campaign contributions to lobbying expenditure is about 1 to 10.

¹⁰ In some models contributions are exchanged for services which are assumed to be independent from policies (e.g. Baron 1989). Apart from the fact that it is difficult to visualize such services (cf. Morton and Cameron, 1992), these models are of little help in analyzing the influence of interest groups on policies (for more discussion, see Austen-Smith 1997).

¹¹ Usually, candidates are assumed to play Nash amongst each other and to act as Stackelberg leaders with respect to the interest group(s). Edelman (1992) reverses the latter assumption.

Compared to influence function models, a strong point of these models is not only their explicitness regarding interest group activity but also that they open up the ‘black box’ of policymaking by introducing candidates. The assumption of a vote function introduces another ‘black box’, however, concerning the nature of the mechanism through which money buys votes.¹²

4 Common agency models of contributions

One approach actually explaining why influence occurs is the common agency or menu auction model of Bernheim and Whinston (1986), which got widely applied through the influential work of Grossman and Helpman (1994, 2001). To illustrate, suppose that part of the electorate is organized in n interest groups or lobbies. Let the joint welfare of the members of interest group i be denoted by $v^i(x)$, and that of the unorganized by $v^u(x)$, where x represents government policy. Before the policy is determined, the lobbies offer contributions to the policymaker contingent on the value of x , denoted by the contribution schedules $c^i(x)$. The net welfare of group i equals $w^i(x) = v^i(x) - c^i(x)$. The policymaker is assumed to care about total contributions $c(x) = \sum_i c^i(x)$ (for campaign spending or other reasons) and aggregate welfare $v(x) = \sum_i v^i(x) + v^u(x)$ (due to re-election concerns, for instance; see below). More specifically, it is assumed that the policymaker's objective is to maximize $c(x) + \gamma v(x)$, with $\gamma \geq 0$.¹³ The game between the lobbies and the policymaker consists of two stages: first, the interest groups simultaneously commit to a contribution schedule, followed by the policymaker committing to a policy. In equilibrium, contribution schedules $\{c^i(x)\}$ are such that each lobby maximizes the net joint welfare of its members, given the schedules of the other groups and the anticipated policy response of the policymaker, while the policy x is such that it maximizes the policymaker's objective, taking the contribution schedules as given. Focusing on ‘truthful

¹² Austen-Smith (1987) assumes that campaign expenditures enable a candidate to clarify her or his policy position, which is appreciated by risk-averse voters because it reduces the variance of the perceived policy. This reduction is exogenously given, though, and only bites out of equilibrium. See also Coate (2001).

¹³ A similar function holds if the policymaker cares about net (of contributions) welfare, given that contributions are higher valued than the same amount in the public's purse.

Nash equilibria'¹⁴, this model has the interesting property that the policymaker sets policy x in accordance with the maximization of $(1+\gamma)\sum_i v^i(x) + \gamma v^u(x)$, which is clearly a function of the form $P(x)$ above. Thus, it provides a microfoundation for such a political welfare function and an explicit behavioral model for the link between influence weights and pressure in the interest function approach. Note that the welfare of individuals represented by the lobbies has a larger weight, and that the numerical strength of social groups plays a role (since v^i and v^u denote joint welfare). Not surprisingly, competition by other groups can dramatically affect the benefits from lobbying. Only a single (monopolistic) lobby can capture all the surplus from lobbying – by just compensating the policymaker for selecting a different policy – because it leaves no alternative for the policymaker.

Applications of the model concern international trade policies (Grossman and Helpman 1994, 1995), electoral competition (Grossman and Helpman 1996, Prat 2000), public goods (Besley and Coate 2001), redistribution (Dixit, Grossman, and Helpman 1997, Grossman and Helpman 1998), local public goods and fiscal federalism (Mazza and van Winden 2002a, Persson 1998, Persson and Tabellini 1994), capital taxation (Marceau and Smart 2002), environmental policies (Aidt 1998), labor market policies (Rama and Tabellini 1998), and legislative bargaining (Persson 1998, Dharmapala 1999a).

Extensions are presented by Dixit, Grossman, and Helpman (1997) who allow for preferences that are not quasi-linear¹⁵, Bergemann and Välimäki (1998) who extend the model to a multi-period game, and Prat and Rustichini (1999) who consider a multi-agent setting. Variants of the model include sequential lobbying (Prat and Rustichini 1998), and so-called ‘natural equilibria’ where principals offer contributions for at most one instead of all possible policy alternatives (Kirchsteiger and Prat 2001).

Interestingly, Grossman and Helpman (1996) demonstrate that the function maximized by the policymaker can be endogenously obtained in an electoral competition model where parties maximize their seat shares in a legislature and where contributions can influence

¹⁴ Bernheim and Whinston (1986) show that the set of best responses to any strategies played by opponents includes a strategy that is ‘truthful’, which means that it reflects the true preferences of the interest group; moreover, such equilibria are ‘coalition proof’, in the sense that players cannot improve their lot through costless pre-play communication which carries no commitment.

¹⁵ Quasi-linear preferences imply constant marginal utility of income which frustrates a concern for redistribution (via money transfers).

platforms as well as voting behavior (through campaign expenditures).¹⁶ Dixit, Grossman, and Helpman (1997), furthermore, show that more efficient policy instruments will be used in equilibrium when they are available, which supports the argument of Becker (1983). However, in contrast with Becker's 'black box' model, interest groups may prefer the government to be institutionally restricted to inefficient redistributive policies, because distortions (accompanied by welfare losses) make it more difficult to exploit them.

Although providing an explicit behavioral model of interest group influence, which is a major achievement, existing common agency models rely on some strong assumptions. For example, interest groups are exogenously given, of fixed size, and assumed to behave as unitary actors. Also, players are supposed to stick to their choices, which may be due to reputation concerns in a repeated game (Harrington 1993), but is simply assumed here. Moreover, essentially complete information is assumed, a major restriction which is relaxed in the models discussed next.

5 Information transmission models

An important kind of interest group activity neglected in the models discussed so far is the transmission of information. Think of the endorsement of electoral candidates or the information conveyed to candidates regarding issues that are important to electoral groups. Not restricted to elections, moreover, is the essential role they play in informing policymakers of the likely consequences of policies. Interest groups are often better informed about issues that are relevant to them. Due to conflicts of interests, strategic behavior (dissembling) by interest groups may be expected, however, which makes the study of this topic not at all trivial. To illustrate, I will discuss the basic signaling model of lobbying of Potters and van Winden (1992). Suppose that a policymaker has to choose between two policies, x_1 and x_2 . The payoffs of these policies to the policymaker and an interest group are determined by the 'state of the world', which is either t_1 or t_2 , in the following way:

	t_1	t_2
x_1	$a_1, 0$	$0, 0$
x_2	$0, b_1$	a_2, b_2

¹⁶ Note that this microfoundation of a political welfare function hinges on the sorting of individuals into organized interest groups, and not on the grouping of individual voters by policymakers because of their shared

with a_i (b_i), denoting the normalized payoff to the policymaker (interest group), assumed to be positive ($a_i, b_i > 0$, $i = 1, 2$).¹⁷ Thus, the policymaker prefers x_i if the state is t_i , while the interest group always prefers x_2 : there is a partial conflict of interest.¹⁸ Which state prevails is assumed to be private information to the group; that is, the group knows its ‘type’, which is either ‘ t_1 ’ or ‘ t_2 ’. The policymaker only knows the probability, p ($1-p$), that the group is of type t_2 (t_1). Assuming that $p < a \equiv a_1/(a_1+a_2)$ the policymaker will pick x_1 on the basis of her prior belief p . However, before the policymaker decides, the group can either send a message (m) against a fixed cost ($c > 0$), or no message (n), which is costless. Let s_i denote the probability that type t_i sends a message (m), and $r(s)$ the probability that the policymaker responds with x_2 after signal $s = m, n$. Then, the following (sequential) equilibrium of this signaling or sender-receiver game is obtained: (1) if $b_1 < c < b_2$: $s_1 = 0$, $s_2 = 1$, $r(n) = 0$ and $r(m) = 1$; (2) if $c < b_1 < b_2$: $s_1 = p(1-a)/(1-p)a$, $s_2 = 1$, $r(n) = 0$ and $r(m) = c/b_1$.¹⁹ In regime (1) lobbying costs are prohibitive for the ‘bad’ type t_1 (who wants to dissemble), but not for the ‘good’ type t_2 (who wants to convey the truth). Consequently, only the latter sends a message, enabling the policymaker to make fully informed decisions. If lobbying costs are not prohibitive, regime (2), the good type (with the larger stake) again always lobbies, whereas the bad type does so only from time to time. Fully mimicking the good type would induce the policymaker to stick to x_1 , because she would not be able to distinguish between the types. By sometimes responding to a message with this policy, however, the policymaker discourages the bad type from doing so. Since a message may come from both types, lobbying is clearly less informative in this regime. Note that lobbying increases with p (reflecting the inclination of the policymaker to choose x_2), with lower costs, and higher stakes (via a switch from regime (1) to (2)). The influence of lobbying, $r(m)$, increases with higher costs, and lower stakes (b_1). In this equilibrium (with $p < a$) lobbying can never be detrimental to the

characteristics (as in probabilistic voting models).

¹⁷ In terms of payoff functions $v^i(x)$, with the policymaker (interest group) denoted by $i = 1$ (2), it is assumed that: $v^1(x_1; t_1) - v^1(x_2; t_1) > 0$, $v^1(x_2; t_2) - v^1(x_1; t_2) > 0$ and $v^2(x_2; \cdot) - v^2(x_1; \cdot) > 0$.

¹⁸ If $b_1 < 0 < b_2$, there is no conflict of interests and no problem for information transmission, since the group has no incentive to dissemble. Even costless messages can be effective, then. If $b_2 < 0 < b_1$, there is a full conflict of interests with no scope for information transfer, because the group always wants to dissemble which is anticipated by the policymaker. The fact that ‘cheap talk’ (costless messages) can be informative if the sender’s preferences regarding the receiver’s actions are dependent on the former’s private information is shown more generally in the seminal paper by Crawford and Sobel (1982).

¹⁹ Note the condition that $b_2 > b_1$. If the reverse of this ‘sorting condition’ would hold, the ‘bad’ type t_1 has a larger stake in persuading the policymaker. Since the latter will then be inclined to interpret a message as coming from t_1 rather than t_2 , no messages will be sent in that case.

policymaker or the interest group (*ex ante*, that is). In case that $p > a$ an equilibrium exists, however, where the group, irrespective of its type, always lobbies, although the response of the policymaker (x_2) remains the same as with no lobbying. This shows that lobbying may be a pure social waste.

The model illustrates that lobbies should somehow be able to distinguish themselves in order to influence policies through information transfer. Fixed lobbying costs provides one such opportunity. The model can be extended in several directions, generally increasing the scope for information transfer (for surveys, see Austen-Smith 1997, Sloof 1998, Grossman and Helpman 2001). Consider, for instance, endogenous lobbying costs. If the interest group can determine the cost, a full revelation equilibrium can always be obtained by having the good type profitably outspend the bad type (in the example, by choosing c at least equal to b_j ; Potters and van Winden 1992). However, also the policymaker can make lobbying costly, by demanding a fee or contributions for access (Austen-Smith 1995, Lohmann 1995). The reason may be a time constraint, the intrinsic valuation of contributions, or to screen the lobbies. Also in this way the scope for information transfer increases, by forcing lobbies to reveal their preferences. Other extensions, with a similar outcome, include multiple senders (Potters 1992, Austen-Smith and Wright 1992), multiple receivers (Ainsworth and Sened 1993), multidimensional policies (Battaglini 2002), receiver uncertainty about whether the sender is informed (Austen-Smith 1994), auditing and verification by the policymaker or an intermediary agent (Potters and van Winden 1992, Austen-Smith and Wright 1992, Rasmusen 1993), and persuasion games (Lagerlöf 1997, Bennedsen and Feldman 2000). In a persuasion game the sender can transmit or withhold evidence, but cannot ‘lie’. This assumption is sometimes justified by referring to reputational concerns in a repeated game.²⁰ In the above example, the interest group would only be able to reveal its type (t_i) or to abstain from lobbying. This obviously increases the scope for information transfer. Actually, a persuasion game can be seen as one extreme of a more general static model with exogenous cost of lying (which are infinite, then), and the basic signaling game (where lying is costless) as the other extreme. These costs can be endogenized in a repeated signaling game model, where an interest group may want to report truthfully to build up or maintain its reputation. Moreover, apart from costly messages (‘words’), sanctions through the enforcement of threats (‘deeds’)

²⁰ This may also justify the (exogenous) cost of lying in the model of Austen-Smith and Wright (1992). In this model (two) interest groups have to pay a cost to get informed (observed by the policymaker) but can subsequently send a costless message (which would be uninfluential ‘cheap talk’ were it not for the anticipated cost of lying).

become available then as a means of influence. See the integrated model of Sloof and van Winden (2000).

Applications concern: fiscal policies and regulation (Potters and van Winden 1992, Lohmann 1998, Esteban and Ray 2000), legislative voting and its institutional features (Austen-Smith and Wright 1992, Ainsworth 1993, Austen-Smith 1993, Bennedsen and Feldman 2000, 2002), international trade negotiations (Milner and Rosendorff 1985), the emergence of lobbyists (Ainsworth and Sened 1993), legislative control of bureaucracy (Epstein and O'Halloran 1995, Sloof 2000), and issues related to political campaigning, like contributions and endorsements (Cameron and Jung 1992, Austen-Smith 1995, Lohmann 1995, Potters, Sloof, and van Winden 1997, Grossman and Helpman 1999, Sloof 1999, Prat 2000a, b).

Models of information transmission also typically assume that interest groups are of fixed size and behave like a unitary actor.²¹ Their comparative strength relates to the fact that they deal with a crucial problem in actual politics, the lack of information. Furthermore, often no (exogenous) commitment assumption is relied on. However, this is bought with simplicity in terms of issues and institutions investigated, which restricts their usefulness. Another worrisome feature concerns the strong rationality assumptions (see Sadiraj, Tuinstra, and van Winden 2001, 2002). Nevertheless, as a benchmark these models serve a useful purpose. For one thing, due to the relationship between lobby expenditures and influence – qualified by the incentives of interest groups – an informational microfoundation is provided for the use and possibly the specification of an influence function (Lohmann 1995) as well as a political welfare function (Potters and van Winden 1990).

6 Multiple means and channels

So far attention has been focused on one means of influence (contributions or information transmission) and one channel of influence (mostly the nexus with politicians). In practice, however, interest groups can use multiple means and multiple channels. Drawing conclusions from studies focusing on just one means or channel can be treacherous, because the use and

²¹ An exception is Sadiraj, Tuinstra, and van Winden (2002). In this dynamic 'bounded rationality' model the participation of voters in interest groups is endogenous. The fees paid by those who join are (conditionally) supplied to political candidates to finance polling (for learning the preferences of voters).

impact of these different instruments is not likely to be independent. For instance, common agency models predict that contributions buy policies. However, if contributions simultaneously transmit information on the lobby's type or only serve to gain access, signaling models suggest that this relationship is much more subtle and may even be absent. We now turn to the relatively few models dealing with this multiplicity.

Multiple means

The following means of influence can be distinguished²²: (1) lobbying, (2) pressure, (3) structural coercion, and (4) representation. Models of lobbying – the use of ‘words’ – typically involve costly messages in the transmission of information. However, if preferences are sufficiently aligned cheap talk messages may also be informative and influential. Austen-Smith and Banks (2002) focus on the consequences of adding the option for a sender to inflict self-imposed utility losses and demonstrate that the scope for information transfer and influence increases. In case of pressure – the use of ‘deeds’ – (opportunity) costs are inflicted on the policymaker. Contributions in common agency models are one example, where in general contributions may stand for anything that is valued by the policymaker and costly to the interest group (campaign contributions, bribes, ghost writing, etc.). Another example is punishment (instead of reward) through the enforcement of a threat, like a labor or investment strike or a terrorist act. Bennedsen and Feldmann (2001) combine a common agency model with a persuasion game to allow an interest group the choice between lobbying and pressure via contributions. According to their analysis contributions are a more effective means of influence, which may crowd out the search for and transmission of information. Sloof and van Winden (2000) investigate the choice between lobbying and pressure via the enforcement of threats in a repeated signaling game. It turns out that pressure – in contrast to lobbying – only occurs when the interest group's reputation is ‘low’ (think of a new group). Moreover, (repeated) lobbying cannot completely substitute for pressure, but may be necessary to maintain a reputation. It is concluded that pressure is typically exerted to build up a reputation while lobbying is used to maintain a reputation.

Structural coercion refers to constraints on the behavior of a policymaker which are not related to influence attempts. The behavior of voters (with negligible individual influence)

²² See van Winden (1983, in particular pp. 16 and 94). Pressure is here distinguished from lobbying.

forms a constraint of this type. Through the use of endorsements, or campaign contributions after policies have been determined, interest groups may affect voting and thereby influence the political process. Potters, Sloof, and van Winden (1997) investigate an interest group's choice between endorsement and contributions, using a signaling game, and show that the group may prefer contributions (indirect endorsements) when the preferences of the group and the voter are not sufficiently aligned. This model also provides a microfoundation for the impact of campaign expenditures on voting.

In case of 'representation', finally, interest groups try to get their interests directly represented among the policymakers.²³ This may be achieved in different ways: through 'multiple positions' (a form of penetration where, for example, via an election a position of policymaker is obtained), 'revolving doors' (offering future career opportunities), and the development of 'social ties' (affective bonds; see Harsanyi 1962). To our knowledge, there are no models yet incorporating this means of influence. Extension of the so-called citizen-candidate model of representative democracy (Osborne and Slivinsky 1996, Besley and Coate 1997) may be helpful, though, to deal with penetration, while the model of van Dijk and van Winden (1997) may be useful for social ties.

Multiple channels

In practice, interest groups have many different channels of influence available. For example, they can choose between different legislators, bureaucrats²⁴, or political candidates (at home, but also abroad²⁵). They may also approach several of them to expand supportive coalitions. Moreover, policymakers may be targeted at different tiers within a single governmental body (e.g. the legislative and the bureaucratic tier) as well as at different governmental levels (like the municipal, state, or national level). In addition, an interest group can go for it alone, hire professionals, form an alliance with others, or support an intermediary organization.

²³ Interestingly, the empirically often observed lobbying of friendly legislators instead of opponents may be related to a bias in representation, since committees tend to share the same biases as the interest groups surrounding them (Kollman 1997).

²⁴ Relatively few studies focus on the influence of interest groups on the bureaucracy; see e.g. Spiller (1990), Laffont and Tirole (1991), and Banks and Weingast (1992).

²⁵ See Hillman and Ursprung (1988), Hillman (1989).

Austen-Smith (1993) studies the lobbying of legislators at the agenda setting stage (committee) and the voting stage (House). His signaling model predicts that only agenda stage lobbying is generically influential. Dharmapala (1999a, b) demonstrates with a common agency model the impact of legislative committee structure on policy outcomes when interest groups can offer contributions to different legislators. Prat (2001) provides a microfoundation for split contributions to candidates (cf. section 3), using a common agency model. Models concerning the efforts of interest groups to expand supportive coalitions are lacking (cf. Hojnacki and Kimball 1998).

Several studies investigate the choice between legislators and bureaucrats. Moore and Suranovic (1992) look at the case where import-competing industries can pursue import relief via administered protection or via lobbying politicians directly (assuming exogenous probabilities of success). Their analysis suggests that reform restricting one of these options may cause welfare losses through substitution effects. Mazza and van Winden (2000, 2002a), using a common agency model, look at various issues related to the interaction between a legislator (deciding on a budget) and a bureaucrat (deciding on the allocation of the budget) when both can be offered contributions by interest groups. Their results show that competition between interest groups may function as a substitute for legislative control, while the budget may be used as a second-best instrument of control (a smaller government being the legislative response to bureaucratic capture). Sloof (2000) studies a politician's decision whether or not to delegate policy authority to a bureaucrat when both can be lobbied. His signaling game analysis shows that politicians may prefer a biased bureaucracy and an interest group with a large stake, because the informational gains may outweigh the distributional losses. Moreover, interest groups would typically lobby politicians to further delegation.

Hoyt and Toma (1989), using an influence function model, consider the choice between state and local governmental levels as targets for interest groups, when states mandate expenditure and revenues of local governments. Their analysis suggests that payoffs from influence at the state level generally will exceed that at the local level.

Interest groups may also delegate the influencing of decision making at another level to a policymaker. Mazza and van Winden (2002b) investigate this issue with a common agency model where a local policymaker may transfer part of the contributions received to a higher level policymaker. In fact, using policymakers as an intermediary also occurs when campaign contributions are offered to candidates to affect voting behavior. The choice between working alone and hiring a lobbyist is modeled by Johnson (1996), while van Winden (1983) addresses the budget allocation decision regarding the alternative of joining an

alliance (like a trade organization); both authors use influence functions. These choices clearly relate to the internal organization of an interest group, a neglected topic in the literature (see e.g. Moe 1980, Rothenberg 1988).

7 Concluding remarks

An important achievement of the literature surveyed in this paper is the successful incorporation of interest group behavior and influence in the formal positive analysis of political decision making. It has helped to redress the imbalance in Public Choice created by a disproportional attention for the electoral nexus between policymakers and voters. Interest groups impact government policies also outside elections by employing resources that are valuable in both contexts (particularly, money and information). Gradually, a more rigorous and also more positive view of the functioning of interest groups has been established.

Notwithstanding the progress made, there are still many blind spots in our understanding of the political economic role played by interest groups. Firstly, notwithstanding the huge number of empirical studies there are relatively few ‘stylized facts’, basically showing that contributions and lobbying, the size of organized membership, and an interest group's stake are positive determinants of influence, whereas the presence of an oppositional force in the political arena, electoral pressures, and the presence of a well-informed electorate are negative determinants (Potters and Sloof 1996). The main problems are a serious lack of data and a shortage of hypotheses derived from theoretical models that provide structure and a base for embedding. Laboratory experimentation forms an important complementary research method, because of the opportunity it offers to study behavior under controlled conditions and to check the robustness of findings through replication. However, until now only few experiments have been carried out, with mixed success for the models (see van Winden 2002). Also, to compensate for the extreme simplicity of many formal models, which may lead to a distorted view of the multi-faceted interaction between interest groups and policymakers (cf. Saint-Paul 2000), computer experiments (simulations) allowing for greater complexity and dynamics should receive more attention (examples are Fafchamps, De Janvry, and Sadoulet 1999, Sadiraj, Tuinstra, and van Winden 2001, 2002).

Secondly, existing models typically assume a level of rationality which seems unrealistic, though useful as a benchmark. There is mounting evidence that people are quite myopic, use rather simple adaptive rules of decision making, and concentrate on issues at

hand (e.g. Ortoni, Clore, and Collins 1988, Kagel and Roth 1995). A related issue concerns the impact of emotions and feelings. Although investigated in a few studies of political behavior²⁶, the subject has been neglected in the literature on interest groups. Interestingly, allowing for affective social ties in the interaction between a policymaker and an interest group would not only imply that the former may be willing to benefit the latter without compensation, but also that the interest group may care about the interests of the policymaker.²⁷

Thirdly, research needs to go beyond the common assumption of exogenously given groups that are of fixed size and behave as unitary actors. The formation, dynamics, and internal politics of interest groups are badly neglected topics.²⁸ Why do only some interests get organized, or are induced to do so by policymakers? Why, for instance, are the retired in the US well organized in the intergenerational 'redistribution game' while there is no comparable organization for the younger people (Lohmann 1998)? Furthermore, what is the nature, cause, and impact of the decision-making procedures maintained by organized interests? And how do government policies feed back into the development of groups?

The considerable theoretical progress made in recent years will serve as a fresh source for the derivation and testing of competing hypotheses and for structuring the search for new data. In addition, it has helped developing a framework for the interpretation, coordination, and planning of future research. Notwithstanding the substantial progress, much remains to be done.

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²⁶ A theoretical example is the 'minimax regret strategy' (Ferejohn and Fiorina 1974) to explain voting in large-scale elections. For empirical studies, see Abelson, Kinder, Peters, and Fiske (1982), Marcus and Mackuen (1993), and Bosman and van Winden (2002).

²⁷ See van Dijk and van Winden (1997) for a theoretical model and van Dijk, Sonnemans, and van Winden (2002) for experimental support.

²⁸ Some recent attempts to endogenize group formation include Dougan and Snyder (1996), Mitra (1999), and Damania and Fredriksson (2000). Felli and Merlo (2001) focus on the opportunity for a policymaker to select lobbies to bargain with.

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