INVESTIGACIONES ECONÓMICAS. vol XXIV (3), 2000, 501-543

POLITICIANS, VOTERS AND ELECTORAL PROCESSES: AN OVERVIEW

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This paper surveys the literature on the most fundamental institution in a democracy: the appointment of the policymakers through democratic elections. Elections perform at least three different functions: (i) to discipline the elected officials by the threat of not being reappointed; (ii) to select competent individuals for public office; and, (iii) to aggregate and represent the voters' conflicting preferences. These functions are analysed and developed along the paper. The essay is not meant to be just a review of what has been done in the past, although that is a part of the motivation and development. Rather, it is meant to describe a series of productive and useful lines of research that are likely to expand our understanding of the underlying relationship of political parties and voters through elections.

Keywords: political economy, representative democracy, electoral competition, voting, political parties.

(*JEL* D72, D78, D82)

1. Introduction

At a village level, *participatory* democracy may well work. But almost everyone accepts that at a more extensive mode, democracy requires some form of political *representation*. It is impossible for all individuals to present their own views, even rather briefly, on every issue. Either because of the fear of the possible chaos of direct democracy, or because of the impossibility of persuading millions of voters to pay attention to the minutiae of decision making, the electorate must choose political agents to act on their behalf. The basic constitutional structure of any

This paper is a revised version of a chapter of my thesis written at CEMFI. I specially wish thank my advisor, Rafael Repullo, for his excellent supervision. I have also greatly benefited from the comments and suggestions of Raquel Carrasco, Jorge Padilla. Javier Suárez and two anonymous referees. Financial support from CEMFI and Fundación Caja de Madrid is gratefully acknowledged. The usual disclaimer applies.

democratic system defines the rules of the game played by politicians and voters. As such, this constitutional structure has two levels: the *governmental level* defines a set of political offices and allocates powers to these offices, and *the electoral level* establishes the procedures by which candidates are elected to these offices. This survey, as well as one complementary approach by Myerson (1998)[1], focuses on analysis of the electoral level[2].

Thus the question is how to select individuals (policymakers) to represent the various positions most members of the polity are likely to hold (de Jouvenal, 1961). This is solved in a democracy through elections. But apart from aggregating and representing the voters' conflicting preferences, elections perform at least two other different functions: (i) to discipline the elected officials by the threat of not being reappointed; and (ii) to select competent individuals for public office.

The purpose of this paper is to revise the major results in the literature regarding the relationship between political parties and voters through elections. Since this issue is a very broad one, the explanations are brief and the reader is referred to the original works or to other more specific surveys for more complete treatment. Despite the differences in the areas of research included in the paper, we adopt a unified approach: all the decisions by citizens as voters, candidates, and policymakers are derived from optimizing behaviour. We also attempt to provide guidance about future developments in the literature on elections properties.

The main body of the survey is divided into three sections. The division reflects the three main functions of elections. Sections 2 and 3 focus on the conflicts of interest between the voters and the incumbent. In Section 2 we study how repeated elections are used by voters to control the elected officials: by holding them accountable to the citizens and by motivating them to behave well. We also analyse how the elected officials can be controlled by other different ways: electoral systems, the media, separation of powers, etc. Section 3 considers how

[1] He discusses how game theory is used by economists and political scientists to analyse incentives and rational behaviour in any social institution or political arena (electoral systems and voting rules, Duverger's law, electoral barriers to entry and incentives to reduce corruption in different electoral systems, legislative bargaining, party structure, etc.).

[2] An on-going book by Persson and Tabellini (1999) is mainly concerned with the governmental level.

voters select the most competent politicians for public office through elections and shows how electoral business cycles are signals of competence. This section also describes some models that take into account this function of elections together with the one studied in Section 2.

Section 4 focuses on disagreement among different groups of citizens. In this section, we study how elections serve to choose the policymaker whose ideological preferences are closer to those of the majority of the voters. The structure of a democratic political system consists of the citizens who become *candidates*, the procedures by which candidates are elected to the different public offices (*electoral systems*), the participation or not in the elections by the voters (*abstention*), the intermediaries that make up the voters' informational deficit (*political parties*) and the *electoral campaigns* through which parties fight for votes. All these issues are studied in this section. Furthermore, this section is concerned with the predictions of the voting theory when the parties are worried about the policies implemented (*partisan parties*) or care only about winning per se (*opportunistic parties*).

2. Disciplining the incumbent

In this section we study the question of to what extent repeated elections may provide incentives for public officeholders to act on the interests of the electorate rather than on their own objectives, and to reduce the rents captured by politicians. The seminal investigation on the control of politicians is Barro (1973). When citizens elect their leaders, they temporarily delegate the exclusive decision-making authority over policymaking to the holders of public office. Real world political constitutions are *incomplete contracts* in the sense that elected politicians are not offered an explicit incentive scheme associating well defined payoffs with actions in all states of the world. The mechanism to punish the incumbent is *ex-post*: to deny him[3] the right to make those decisions in the future, that is, to throw him out of office. This creates scope for abuse of power between elections. Most of the conclusions drawn from this simple model of repeated elections are in accord with intuition. Barro finds that voters have more control over officeholders when the value of holding office is relatively high and when the future is less heavily discounted. In both cases the incumbent is induced to be more self-restrained while in office. Moreover, it increases the level of competition for office among nonincumbents.

[3]I use male pronouns for both voters and candidates.

Built on Barro's model, which is formulated in a world of perfect information, Ferejohn (1986) focuses on the voters' control of the incumbent performance, in the tradition of principal-agent theory but in a model which also contains an informational asymmetry in favour of officials (the electorate is not able to observe the actions of politicians directly) and is formulated in an infinite horizon in order to avoid last-period effects[4]. This also creates scope for potential abuse by the holders of public office which is greater the more difficult the access of voters to information on the alternative policies carried out by policymakers. Electors are only able to assess the effects of governmental performance on their own well-being, which is known to depend jointly on the activities of officeholders as well as on a variety of exogenous and essentially probabilistic factors. In other words, the officeholder is an agent of the electorate whose behaviour is imperfectly monitored through elections. The result is that if the policymaker's performance is disappointing, he will not be reelected although this performance may be the consequence of bad luck and not of his actions[5].

Another result of Ferejohn's paper comes from the fact that the model does not contain one *representative* voter. If the voters disagree in their ratings of government performance, the equilibrium breaks down and the incumbent can get away with no effort. This happens, for instance, if the incumbent chooses both effort as well as how to distribute the payoffs of his performance among the voters. In this case, the incumbent can play one principal against another, and gain the support of a majority of the voters simply by distributing in their favour while exerting no effort. In this case, the only way for the voters to regain control over the incumbent is to vote according to a retrospective rule based on an aggregate measure of performance, rather than on their personal payoffs. Naturally, this may require an unreasonable amount of cooperation among the voters.

Although almost all work on political agency is theoretical, a paper

[4]Barro assumes that officeholders have a finite and commonly known horizon. The mechanism suggested by Barro to overcome the last-period problem is that political parties might offer future appointment to office as an inducement for good last-period performance.

[5]Austen-Smith and Banks (1989) extend Barro and Ferejohn's analyses of political accountability to allow for *incumbency effects* which emerge in equilibrium in an electoral model in which the incumbent and the challenger are identical in all respects Their results suggest that the electoral accountability issue and the reason for the incumbency effect are intimately related

by Besley and Case (1995) shows empirically that gubernatorial term limits in the US *do* have a significant effect on economic policy choices: when governors are *lame ducks*[6], taxes and expenditures are higher. Governors reduce the effort expended to keep them low. This is consistent with a model where officials who care to run again for office must act sufficiently often in the voters' interest to merit reelection.

With a totally different approach with respect to the previous papers of political agency, Myerson (1993)[7] develops a theoretical model to predict the relative effectiveness of multiparty legislative electoral systems for eliminating elected officials who are known to be corrupt. Difficulty in removing corrupt officials can arise because voters also care about the government policy. Under some electoral systems, it may be the case that in order to maximize the probability of achieving their desired policy, voters must give support to corrupt candidates who are committed to their preferred policy. These profits to the parties taken from the broader public (corruption) can be interpreted as analogous with the long-term profits in a market with oligopolistic producers.

However, the electoral system is only one of many structural factors that can affect the level of political corruption in a country. Freedom of the press, competitive nomination procedures in parties, campaign financing systems, separation of powers, and political systems can also be significant determinants of the corruption level. Stromberg (1998) predicts that mass media will monitor more closely the corruption and the inefficiencies in the public sector in a duopolistic than in a monopolistic media market. He also suggests as a feasible empirical project to relate some measure of government inefficiency to the media market structure.

Persson, Roland and Tabellini (1997) analyse why separation of the legislative and executive powers is considered essential to avoid abuse of power. They treat the interaction between the executive and the legislative powers as a decision-making process over public budget. Their model is closely related to Ferejohn (1986)[8]. The main differen-

[6] A lame duck is an elected official in his final period in office.

[7] His model is a highly simplified abstraction He ignores problems of moral hazard, by simply assuming that every politician's level of corruption is given as a publicly known function of his party affiliation.

[8] Both papers rely on the assumption that there is an *implicit* contract between politicians and voters: reelection takes place if and only if *current* performance is above a threshold, and effort is selected given this reelection rule These papers do not say where this implicit contract comes from but it is an optimal contract

ce is that they fully endogenize the utility from holding office (there is no value of holding office *per se*) and that they add a second policymaker directly appointed by voters (Congress). The central result of their paper is that voters benefit when the constitution splits the decisions over the budget into two separate stages and gives each body full agenda-setting power over his part of the decision. The extreme distribution of bargaining power implied by agenda-setting serves to align the interest of the weaker party in the decision with the interests of voters. The key condition to make separation of powers work in favour of voters is that no policy can be implemented unilaterally, *i.e.,* without the consent of both bodies. If public bodies with opposing interests could make independent claims on government resources without any joint decision-making, the voters would suffer disastrous consequences. Separation of powers would then worsen accountability by creating a *common pool problem.*

Another result of their paper points to another determinant of the corruption level in a country: the difference between Presidential and Parliamentary democracies to keep the executive accountable to the voters. The procedure for appointing the executive is direct in a Presidential system, but indirect, through the legislature, in a Parliamentary system. Direct control by the voters keeps the executive more accountable, as it minimizes the danger of collusion between the legislature and the executive over reappointment of the latter. Intuitively, when executive reappointment is decided by the legislature, it becomes harder for the voters to control it. Their model indicates that in order to break such collusion, the executive must be forced to step down after any legislative elections, a feature observed in every parliamentary democracy.

3. Selecting a competent candidate

In the previous section the candidates were all alike, so the voters' problem were to control moral hazard, and not to elect the most com-

from the voters' point of view if attention is restricted to Markov-perfect equilibria in pure strategies Voters (the principals) cannot reduce diversion below a certain threshold if they tried to do so, the executive would prefer to divert everything he could today and be thrown out If either the voters or the incumbent have strictly concave utility, the voters' welfare would be higher with a voting rule dependent on the history of past performance, and not only on events in the current period. Such a voting rule would complicate the analysis without changing the basic trade-offs identified in the papers

petent candidate. In this section we study the relationship between politicians and voters through elections from an *adverse selection* perspective: elections enable voters to select the most competent politician for public office. The problem faced by the voters is simply to learn which of the potential candidates for public office will provide them with the highest (discounted) sum of benefits over their time horizon. A paper by Banks and Sundaram (1990) places *retrospective voting*[9] in an optimal learning framework, where the voters can use all previous realized outcomes to project if the agent employed in the previous period (the *incumbent*) or else an untried agent (the *challenger*) is better from their point of view. Their model is therefore closely linked to the extensive work on *optimal Bayesian learning* in economic environments (Rothschild, 1974; Easley and Kiefer, 1988). They show that voters decide at each point between retaining or not the incumbent in favour of a challenger for one more period by solving a family of two-armed bandit problems where each candidate is associated with an arm of the bandit[10].

The role of elections as a way to select more competent policymakers is also studied by Rogoff (1990). A body of empirical evidence indicates that just before elections governments tend to stimulate aggregate demand through monetary or fiscal policy. The question analysed by Rogoff is why rational voters would compensate a government for engaging in a preelectoral cycle (see Fair, 1978 and 1988). The early literature on political business cycles (Nordhaus, 1975) evaded this question by assuming that voters had adaptive expectations. The answer suggested by Rogoff is that an electoral cycle is a signal of *competence.* A competent administrator is able to provide a given level of public goods at a lower level of taxes than an incompetent one can. In his paper, competence is not observed by the voters, along with some policy choice. All the voters observe is a boom (an expansion in output, or in current government spending)[11]. They cannot observe whether

[9] Fiorina (1981) introduces the notion of retrospective voting, where voters attempt to infer which candidate will provide higher benefits in the next term as a function of the realized outcome from the previous term.

[10] See Berry and Fristedt (1985) for a comprenhensive study of finite-armed bandit problems.

[11] Other models of *opportunistic* political business cycles in the literature are those of Cukierman and Meltzer (1986), Rogoff and Sibert (1988) and Persson and Tabellini (1990). The competence of the policymakers is defined as their ability in reducing waste in the budget process (Rogoff and Sibert. 1988), in promoting growth without inflation (Persson and Tabellini, 1990), or in insulating the economy from random

this is due to a deliberate policy action, or to having a highly competent incumbent, or both. They do know, however, that a competent incumbent is more likely to engage in a boom than an incompetent one, because an artificial boom is less costly for the competent incumbent. As a result, the boom becomes a signal of competence and it is rewarded by the voters. In equilibrium[12], the voters realize perfectly well that there is also an artificial (policy-induced) component in the electoral boom. They reward the incumbent nonetheless, because by doing so they will have a better (more competent) government tomorrow. Given this behaviour by the voters, it clearly pays a competent incumbent to engage in an electoral boom. Failing to do so would cost him the election, since he would be mistaken for an incompetent government.

Here elections do indeed distort the policymaker's incentives and create an inefficiency. It is not clear, however, how to get rid of the distortion. The reason is that the electoral cycle conveys information to the voters. Trying to suppress it through constitutional limits may be counterproductive: the voters would choose an incompetent government too often. One interesting alternative electoral structure with an *endogenous* timing of elections (Terrones, 1989) can mitigate political business cycles but with the cost of having more frequent elections. Another approach to mitigating the cycle is to analyse whether there are ways for society to channel preelection signalling into dimensions that primarily impact on the incumbent and not on society at large, for example, by requiring any incumbent who wants to run for election to pay a fee (Rogoff, 1990). The problem is that it is very difficult in practice to find a rule for setting the fee, since candidates differ greatly in wealth and future earning power.

The previous research on repeated elections in the presence of informational asymmetries has studied the voters' decision problem from

shocks (Cukierman and Meltzer, 1986).

[12] As is typically the case in signalling models, there is a multiplicity of sequential equilibria, including both *separating* and *pooling* equilibria. In a pooling equilibrium, the incompetent type might mimic the competent type. However, by requiring that voters' beliefs reflect a certain minimal level of sophistication (by excluding *dominated* strategies), it is possible to rule out all but one of the separating equilibria. By further refining the equilibrium concept, using the *intuitive criterion* of Cho and Kreps (1987), one can also rule out pooling equilibria. In the unique equilibrium which survive both refinements, competent types set taxes too low and government spending too high before elections compared to their full information policy.

either the moral hazard or the adverse selection[13] perspective. But the two dimensions of elections considered separately in the previous literature have also been studied together. Banks and Sundaram (1993) use the concept of sequential equilibrium to formally model a retrospective voting rule in a sequence of elections. Candidates once selected can work hard, though this is costly for them, while more able candidates find the task less onerous. Although candidates know their true type (or ability), voters do not. Voters update their beliefs concerning the types of candidates who succeed in obtaining office, and will discard an incumbent if the expected reward from the challenger is higher. On the other hand, if high enough rewards are observed from the incumbent, then the voter would forgive an occasional lower reward and continue to employ the incumbent. Banks and Sundaram simplify the analysis by considering an electorate that consists of only one voter, but this assumption precludes any comparison of different electoral systems.

Banks and Sundaram (1997) is close in spirit and structure to their previous paper, with the principal difference being that term limits are postulated for the agents. They show that a retained agent's productivity is necessarily declining over time, but that retained agents are more productive on average than untried agents due to *selection effects.* They also study the special case of pure moral hazard, *i.e.*, all agents are of the same known type and show that agents are more productive in the presence of adverse selection than when there is pure moral hazard (adverse selection attenuates the effect of moral hazard). Nonetheless, the principal can never benefit from the introduction of uncertainty about agent-types if those are of the worse type.

Berganza (1999) is a particular case of Banks and Sundaram's models but allows to draw some economic intuitions which were not possible in their model and derives some key results in a more transparent manner. He shows that incomplete information of the voters of the (economic) competence of the incumbent does not prevent the lame duck effect of a government with foreseeable end but reduces the risk of suffering from an incompetent government. A second finding of his paper is that economic performance strongly influences the reelection of the incumbent. In particular, in equilibrium, if economic performance is bad, the incumbent will not be reelected. He also proves that having the possibility of reelecting the government increases the welfare of

[13] Another example from this perspective is Reed (1994).

voters with respect to the no reelection benchmark.

More research should follow on to extend Persson, Roland and Tabellini's analysis on the benefits from the separation of powers in this framework where elections have the functions of the control of moral hazard and the selection of competent candidates. In this framework, the scope for a fruitful, formalized comparison between parliamentary and presidential systems is considerable.

4. Representation and aggregation

The voting mechanism constitutes a commonly used mechanism to allocate resources, whose efficiency properties are usually questioned by economists and other social theorists. Several authors have thought of using the market mechanism (vote-trading) to mitigate the presumed inefficiency of the voting mechanism[14]. The basic argument is that a market for votes would allow the intensity of preferences to be expressed; that is, a majority prefer x to y although everybody could be better off if y was implemented and the proponents of y could compensate the proponents of x by buying their votes. However, vote trading is not observed in the real world. One reason for that is offered by Piketty (1994): whenever private information about collective welfare is to be aggregated, the market can result into substantial destruction of socially-useful information; and, conversely, the voting mechanism is ill-suited to aggregate private information about private welfare.

In this section we study how elections serve to choose the policymaker whose ideological preferences are closer to those of the majority of the voters. Most of the work in this section actually separates from economics and it is in the broad field of electoral politics. Different issues which we shall cover are: (i) which citizens present themselves as candidates for public office; (ii) the way policymakers are chosen: the *electoral systems*; (iii) the participation or not in the elections by the voters: *abstention*; (iv) the predictions of the voting theory when the parties are worried by the policy enacted (*partisan parties*) or not (*median voter theorem*); and, (v) institutions of the electoral processes such as *electoral campaigns* and *political parties*.

[14]The market mechanism has been viewed for a long time as an efficient way to aggregate decentralized information: in the Arrow-Debreu model, individual agents only need to know their own preferences and to observe the equilibrium price system, and the resulting allocation cannot be (Pareto-)improved even if a single agent knew everybody's preferences at the same time.

4.1 Which citizens become candidates?

Recent models of spatial competition suggest that the set of candidates arises endogenously as the result of citizen entry decisions. Osborne and Slivinski (1996) develop a model of electoral competition in which citizens choose whether or not to run as candidates. It is a conceptualization of a pure form of representative democracy in which government is by, as well as of, the people. Each citizen chooses whether to become a candidate in the election with the benefit of implementing his most desired policy but running as a candidate is costly. This model provides an explanation for the great variation observed across different electoral systems in the number of candidates and the dispersion in the candidates' policy positions.

Besley and Coate (1997) develop an independent and complementary approach. They consider a more general version of the model (multidimensional issues) and explore positive and normative issues about the performance of representative democracy[15]. Concerning the strategies of the citizens, the authors consider strategic voting inasmuch as Osborne and Slivinski assume sincere voting. The key positive issues concern the number and policy preferences of candidates who choose to run. There is no clean empirical prediction regarding this issue because rationality alone does not typically pin down equilibrium play with complete precision. Regarding the normative implications, their analysis identify some reasons why representative democracy may not produce Pareto efficient selections when citizens differ in their policy-making abilities. Rivière (1998) adds that the cost of candidancy is generally too high to be paid by an isolated individual and so political parties are defined as cost sharing organizations.

4.2 Electoral systems

The only truly representative assembly which represents the preferences of all the citizens would have to include all of the citizens. It, obviously, cannot be formed and representatives must be selected by some means. In this subsection we are going to study and compare two electoral systems: the *proportional representation* and the *plurality rule.*[16]

[15] Besley and Coate (1998) extend the citizen-candidate model of democratic policymaking to a dynamic environment

[16] For a broader survey of electoral systems that are used in legislative elections, see Taagapera and Shugart (1989).

The key feature of *proportional representation* systems is that the individual parties receive votes in the national assembly in rough proportion to the percentage of the votes they receive in the national election. Proportional representation is a way of generating a legislature that is a mirror of the people, giving seats proportionately to each bloc of voters that has an organized party to express its interests. The number of seats in the assembly required to represent all individuals depends on the number of different sets of preferences. This number can be large or small, and differs across countries and perhaps within countries over time. But there is no obvious optimal number that would hold for all countries.

However, in countries such as Canada, the United Kingdom, and the United States, representatives to the national assembly are elected from local districts using the *plurality system*: the candidate receiving the most votes in a district is its representative in the assembly. Under proportional systems, each citizen votes for a party that win seats in the assembly (only citizens who vote for parties with very little support go unrepresented). Thus every citizen is represented by a party for which he voted. Under the plurality rule, many citizens may be represented by someone they did not vote for. It can induce voters to abstain[17] or to switch to one of the larger parties, which has a greater chance of winning. Under the plurality rule, minority parties whose support is evenly distributed across the country do not win seats[18]. Over time, the continual lack of success of these parties can be expected to dry up their financial support and discourage both their members and leaders. Thus, under the plurality rule one expects minority parties to disappear, unless their supporters are concentrated in particular geographic areas. The reverse hypothesis, that proportional systems leads to multiparty systems that win substantial representation in the legislature, also receives considerable empirical support. And it frequently happens that no single party holds a majority of the seats.

Political scientists have done a lot of work comparing electoral systems. But this work has been typically confined to how the electoral rule affects the number of parties or how the regime type affects the

[17] We shall consider the issue of abstention in the following subsection.

[18] Myerson (1993) showed that barriers of entry of new parties and barries to consolidation increase incentives for a political corruption. As a result, with the plurality rule the political corruption may be a more widespread problem than in the proportional systems.

frequency of political crises or protests by the citizens. This will be discussed in the following subsections. From a different point of view, Persson and Tabellini (1998) ask whether and how different electoral rules affect the size and composition on government spending.

Plurality rule: Duverger's Law

The empirical regularity that single-member-district electoral systems in which winners are decided by simple plurality rule produce two-party systems is known as *Duverger's Law* (Duverger, 1951). According to this law[19], voters should not waste their votes on losers[20] when elections are run under the system of winner-takes-all plurality voting. Since Duverger's time, the Duverger's Law has been subjected to a good deal of rigorous empirical testing (Lijphart, 1994; Rae, 1971; Taagepera and Shugart, 1989) and has emerged with impressive approbation.

The tendency towards two party systems can be explained by strategic considerations by exogenous voters and political parties[21]. Voters make calculating decisions that weigh the chances of affecting the outcome given how other voters vote (*strategic voting*). With more than two candidates, voters may be better off voting for a candidate other than their first choice, if it appears that their first choice stands no realistic chance of victory (Gibbard, 1973). On the other hand, Brams and Straffin (1982), Palfrey (1984) and Greenberg and Shepsle (1987) investigate in a dynamic setting whether two established parties will be able to adopt issue positions to prevent the successful entry of any third party. They show in a simple one-dimensional spatial model with intertemporal factors that an equilibrium configuration of the two established parties in a winner-takes-all system will have one leftist party and one party right of center, which are jointly situated so that no third party can enter the competition and win. The intuition is that by positioning themselves neither too close together nor too extreme, the two established parties are located so that there is no room for

[19] See Rae (1971) and many of the references in Riker's (1982) excellent survey of Duverger's Law. An essay by Palfrey (1989) offers a mathematical proof of this law

[20] In a two-round system where the first round is seen as a separate election meant to elect two candidates by plurality rule, Duverger's Law suggests that only three main candidates should receive votes in the first round

[21] Riviére (1998) proposes an alternative explanation for the Duvergerian phenomenon taking into account the formation process of political parties itself and the strategic choice of their sizes by the citizens

an entrant. Thus, given the two established parties, additional parties are not viable.

Although some observations in the real world conflict with a literal interpretation of Duverger's Law[22], such observations do not imply its irrelevance as a benchmark. It could simply be that one or more of the assumptions necessary for the result to hold are violated. Yet, casual observation suggests that the votes for losers influence mainstream parties' platforms. Piketty (1995) shows that in repeated elections with uncertainty on the preferences of voters, they trade-off two different motives when deciding how to vote: they care about current decision-making (they are *strategic*), but they also care about communicating their views about their most-preferred candidate (they are *sincere*). Such communicational use of elections may induce a violation of Duverger's Law in equilibrium. In this framework, Castanheira (1998) demonstrates that some voters (mainly extremists) may vote for sure losers in order to communicate information about the distribution of voters and, in particular, about the position of the median voter. In this case, parties would adapt their platforms (which are endogenous) in future elections to come closer to the median voter.

Fey (1997) also focuses on the *wasted vote* phenomenon and shows that in a Bayesian model of strategic voting, there do exist non-Duvergerian equilibria in which all three candidates receive votes in the limit. These equilibria require extreme coordination, however, and any variation in beliefs leads voters away from them to one of the Duvergerian equilibria. Thus, non-Duvergerian equilibria are unstable while two-party equilibria are not. In addition, he describes how preelection polls provide information to voters about the viability of candidates and thus can be used by voters to coordinate on the viable candidates in the election (the Duvergerian outcome).

[22]The most well-known exception is Canada, where provincial party systems are bipartisan, but not all provinces have the same two dominant parties This produces a national party system that is a conglomeration of strong regional parties, but in which there are still two dominant national parties The contradiction to the law is that the minor parties do not completely disappear. A second historical exception was India (see Weiner, 1957), where there was only one dominant party, but third parties seemed to be able to survive. Riker (1982) argues that this can happen when historical circumstances produce a consensus party that was centrally located on the political spectrum and had wide popular appeal the Congress Party of India

Proportional systems: coalition governments

As a proportional system usually leads to coalition governments because no party gets a majority of the votes, we have to face the question of which set of parties will succeed in forming a coalition and creating a government. The development of models which help to understand this crucial postelection event is complicated both by the incentives that may motivate the political agents and by the tendency of bargaining games to have multiple equilibria. Voters' behaviour in the election depends on their perception of how the winners will behave in the postelection processes of government. Conversely, the behaviour of elected officials in legislative voting and coalition formation is largely determined by their perceptions of how decisions in government will affect behaviour of voters in future elections.

Political science emphasizes two theories in coalition formation. The first theory is called *size theory* and was originated by Riker (1962). It asserts that parties want to have a maximal influence in the decision making and therefore want to team with a party whose score is as small as possible. The second important theory is *policy theory or minimal range theory*, which says that a party wants to belong to a coalition whose policy is as close as possible to its own position. This theory was developed separately by Leiserson (1966) and Axelrod (1970) and surveyed by Laver and Schofield (1990). It is based on cooperative game theory: coalitions are formed according to ideological considerations, and the winning coalition is the coalition reaching more than 50% whose ideological distance between the different parties (i.e. whose range) is as small as possible. This theory is empirically the most satisfying (see Taylor and Laver, 1973, and de Swaan, 1975 for a demonstration), and is in line with recent emphasis on the partisan behaviour of parties (see Subsection 4.5)[23].

Another interesting line of research is the analysis of dynamic coalition formation. It blends cooperative and non-cooperative game theory. Preelection campaigning and postelection governing are interconnected phases of the overall political process. A model due to Austen-Smith and Banks (1988) looks at these two phases of politics in an integrated way. Their paper enables us to see that voters should be concerned

[23] A recent paper by Myerson (1998) offers a different approach to the coalition formation problem In a world where most parties are very corrupt, a new small party of corruption-fighters would probably be among all parties the least likely to be invited into the government coalition

about which major party will get to lead the post-election bargaining. This concern may cause a voter, even in a proportional representation system, to rationally vote for a party other than the one whose policy position he most prefers. This line of research also seems well suited to analyse how changing coalitions between existing political parties and exit and entry of parties.

In a parliamentary system, the government survives only as long as it can preserve its support from a majority of the members of the parliament. When there are only two parties this task is relatively easy, as the majority party's leadership must only maintain the support of the members of his own party. But when a coalition of parties forms the government, the task becomes more difficult. The different parties have different views as to what the government's program should be, and perhaps different views as to the costs, or benefits, from having a government fall and either a new coalition of parties take over or a new election called. There exists a stability trade-off across the different types of political system. The plurality rule favours two-party systems and provides disproportional power to the largest party. These systems are more stable when one defines stability in terms of the life expectancy of the government (Powel, 1981; and Schofield, 1987). But they induce greater alienation in the citizens. Proportional systems allow minorities a greater opportunity to voice dissent regarding political outcomes, and thus channel this dissent out of the streets and into the national assembly. However, one expects multiparty systems to have more difficulty forming stable governments.

Before closing this subsection, it is important to mention that one can detect similarities between the United States and coalition governments when a *divided government* (control of the Presidency, the House and the Senate is not in the hands of the same party) exists in the United States. Some of the effects of divided government on achieving not only moderation in policy making but also fiscal deadlocks are strikingly similar to our discussion concerning the trade-off between single-party and coalition governments in parliamentary democracies. Related to this, there is a peculiar regularity in American elections known as the *midterm cycle*: the party holding the White House loses votes and seats in each midterm congressional election, relative to the previous, on-year election. Alesina and Rosenthal (1995) argue that this effect is part of the balancing effort of the electorate, who face two polarized parties. The difference between the on-years, in which

legislative elections are held under uncertainty about the identity of the president, and midterms, in which the uncertainty is removed, is the key to the midterm cycle.

4.3 Abstention

Abstention is a feature of elections and a challenge to positive political theory. The basic problem facing the scholar is to understand why a voter who is rational may want to participate in a large election in which his weight is extremely small. The main finding of the literature is still summarized in the so-called *paradox of voting.* Riker and Ordeshook (1968) were the first to identify the influence of a voter in an election. They showed that a voter alters the outcome of an election only in the case he breaks or makes a tie between the leading candidates. Hence, in expected terms, one has to assess the *probability of a tie,* which is called the *pivot probability.* However, knowing that the influence of a voter on an election is proportional to his pivot probability still does not answer the question of rationality of participation. Voters have to carry out a cost-benefit analysis. The expected benefit from voting is the probability that a single individual's vote is instrumental in bringing about the victory of the voter's preferred candidate (pivot probability or P) multiplied by the difference in expected utility from the policies of the candidates (B) plus the satisfaction of some sense of civic duty (D). The cost of voting (C) is incurred when gathering information and going to the poll. Therefore, the cost-benefit analysis can be summarized by the following condition: $P * B + D - C \geq 0$. That is, a voter casts a ballot if the expected return of voting is non-negative. According to the assertions behind the voting paradox, P is almost zero. So, some types of arguments have been proposed to reconcile the observations of the real world with the assumption of voter's rationality.

The first argument is to consider the rational voter as a *minimax-regret strategist* (Ferejohn and Fiorina, 1974). Voters may not be able to assess probabilities accurately and turn out if $B + D - C > 0$. But this idea has been almost unanimously rejected. The reason is twofold. First, there are few situations in everyday life in which individuals routinely employ minimax-regret strategies. Second, would someone who cannot assess P implicitly put a probability one on the least likely event: a tie between the two main candidates?[24]

[24] Another explanation is given by Harbough (1996): the D and B terms are co-

A different way to reconcile voter rationality with the act of voting is to posit the existence of a higher benefit stemming from the act of voting itself than the cost of going to the polling booth ($D - C > 0$). But if the voter is carried to the polls by a sense of civic duty, what motivation guides his actions once there? His selfish interests or the general interests? Why are politicians and bureaucrats not moved by civic duty then? It provides an *ex post* rationalization for the act[25].

Empirically, it can also be observed that aggregate turnout varies. Firstly, it increases in the importance of the election (*e.g.*, presidential elections drive higher turnouts than legislative elections). More important elections generate more incidental information which reduces the cost of voting. Possibly, candidates influence the level of information to increase the turnout when the election is more important to them (Aldrich, 1993). Secondly, the aggregate turnout varies with the personal characteristics of the voter: better educated and informed individuals are more likely to participate than the less educated and informed (Wolfinger and Rosenstone, 1980; Teixeira, 1987; Leighley and Nagler, 1992; Shields and Goidel, 1997). That is, the probability of turning out is correlated with wealth and education. But this stylized fact is counterintuitive: more educated people should be aware of the fact that pivot probabilities are negligible. Richer people should also have higher opportunity cost of time, leading to higher costs of voting and consequently to lower turnout rates. The reasons motivating this bias are not well understood. Mueller (1989) thinks that the bias simply reflects the teaching of social rules. Aldrich (1993) feels that more educated people receive more incidental information.

From a different perspective, Feddersen and Pesendorfer (1996a,b) demonstrate that informational asymmetries about the realization of a state variable that affects the utility of all voters may also influence both participation and vote choice regardless of voting costs and pivot probabilities. They show that less informed indifferent voters strictly

rrelated But that is another way to state that voters follow a minimax-regret strategy

[25] One additional and important criticism to rational voting is the following. Usually, one argument of why people behave rationally is the *evolutionary story*: perhaps individuals are not rational but they have learned to play rationally (those who have not learned have "disappeared"). However, this story has some problems· given the tiny likelihood that the behaviour of a particular individual has an impact on the outcome, if individuals are not rational, it is unlikely that over time they learn to play rationally

prefer to delegate their vote via abstention to more informed voters even when voting is costless ($C = 0$). They also demonstrate that in equilibrium a substantial fraction of the electorate will abstain even though all abstainers strictly prefer voting for one candidate over voting for another. The reason for this result is that strategic voting and abstention may lead to an informationally superior election outcome[26].

Castanheira (1997) focuses on the random component of an election instead of guessing preferences from voters' behaviour. His essay considers a voting population whose size is a random variable drawn from a *Poisson* distribution (Myerson, 1994). Once the pivot probabilities for any turnout are computed with this distribution, he shows that the expected margin of victory is a bad indicator of the importance of a voter in a large election. As soon as the margin departs from 0 (that is, the main two candidates being exactly tied in the polls) pivot probabilities become much too small to match any positive cost of voting (C). The benefit of changing the outcome cannot influence turnout[27]. This is why he proposes a model where the distribution of preferences and voting costs of voters is itself random (Poisson)[28]. In that case, vote margin may not be the relevant statistic for computing pivot probabilities. Possibly, the truth about the *paradox of voting* lies somewhere between all the approaches mentioned in this subsection.

4.4 The median voter theorem

Standard[29] voting theory makes the prediction that parties should converge to the median of the distribution of tastes in the population. This is the *median voter theorem* (Hotelling, 1929; Black, 1958; Downs, 1957) which requires that: (i) political parties are only motivated by maximizing the probability of winning the elections and know with certainty the distribution of voters' preferences; (ii) voters are rational and have preferred points on a compact subset of the real line (single dimension); (iii) there is no noise in the signals from parties to voters;

[26] On the contrary, McKelvey and Ordeshook (1985) present a rational choice election model where inferences drawn without cost from the behaviour of informed voters permit uninformed voters to act as if they possess the same, costly information acquired by informed voters

[27] Another result of his paper is that a variation of the importance of the election (B) can strongly influence attendance.

[28] It must be noted that there is a technical problem associated to the Poisson distribution: the size of the population is unbounded.

[29] This subsection is partly based on Osborne (1995).

(iv) voters choose the party with the nearest declared position; and, (v) elections are of the single-winner type.

The median voter theorem established a venue for bringing mathematical argument to politics and for injecting game theoretic reasoning in a serious way. That model played the same role in political theory as did the neoclassical model of perfectly competitive markets. Hotelling first presented the median voter theorem as an outcome of two-party representative democracy in 1929, and this paper is a clear intellectual antecedent to both Downs's and, more directly, Black's work. In the Hotelling-Downs model, political opinion is depicted along a single left-right dimension. Each voter is assumed to have a most preferred position along this dimension. The further the candidate is from this position, the less desirable his election is to the voter. Candidates care only about winning and thus want to attract a majority of the voters. This means that they need to get the vote of the median voter, as he is the one that separates the electorate in two halves. Hence, parties will compete to propose a platform he prefers to that of the other parties and full convergence of policies results (both parties adopt the same policy) as the unique Nash equilibrium in the electoral game.

The assumptions underlying the median voter theorem are unrealistic and many researchers have examined the consequences of relaxing them.

a) Multidimensional policy space

Davis and Hinich (1966) extended Downs's model to include another competitive dimension. Hotelling's main idea that in a two-candidate competition each candidate has an incentive to move towards the other applies to the case in which the policy-space is multidimensional. However, in this case there is not in general a position that is an analog of the median in the one-dimensional case: only exceptionally there is a position with the property that every hyperplane through it divides the distribution of ideal points into two equal parts. If such a position exists then there is an equilibrium in which both candidates choose that position (Davis, DeGroot, and Hinich, 1972). If it does not, then there is no equilibrium because for any point there is always another point that attracts more than half of the votes.

Nonetheless, Piketty and Spector (1997) show that competition between candidates will, in equilibrium, be in a one-dimension space. Candidates will agree about all policy dimensions except one, or their

beliefs are perfectly correlated across dimensions.

b) Non single-peaked and non symmetric preferences

The assumption that the citizens' preferences are single-peaked is essential. It seems that small deviations from single-peakedness may allow equilibria to exist in which the candidates adopt significantly different positions. We do not know any systematic analysis of this case. On the contrary, the assumption in Hotelling's proposition that the citizens' preference relations are symmetric can be replaced by an assumption that the degree of asymmetry is bounded across citizens.

c) Variations in timing

Suppose that, rather than choosing their positions simultaneously, the candidates either move in a fixed order or may choose positions whenever they wish. Each of these games has a unique equilibrium that coincides with that of the simultaneous-move game. both candidates choose the median ideal point.

d) Electing a legislature

In Hotelling's model each candidate is concerned only about winning the single election in which he is involved. In many cases, however, a single election is only part of a collection of elections that determines the composition of a legislature. Consider the case of a legislature composed of different members, each of whom is elected in a separate district; and suppose that the distribution of the citizens' ideal points is not the same in all districts.

If it is assumed that there are two parties, each of which selects a candidate in each district and that all the candidates of each party must adopt the same position. the basic insight of Hotelling's model survives: the pressure on parties to win leads the parties to adopt the same positions (Hinich and Ordeshook, 1974). The position adopted is equal to the median of the collection of medians of the distributions of ideal points in the districts. This is also the unique equilibrium in the case in which each candidate is free to choose any position he wishes and the policy that is carried out by the party in the event that it wins a majority of the seats is some aggregate of the candidates' positions.

Another case, examined by Austen-Smith (1984), is that in which each candidate cares exclusively about his own fortunes. If in this case each candidate is free to choose any position and the party position is some aggregate of the candidates' positions, then it is not an equilibrium

for all candidates to adopt the median of the median ideal positions. There are differences in candidates' positions at the district level.

e) Candidates care about the policy enacted

The basic idea behind Hotelling's model holds even if each candidate, like each citizen, cares about the policy enacted, rather than about whether or not he wins[30]. If we assume that the candidates care about the policy enacted and modify also the informational assumption of Hotelling's model by assuming that the candidates are uncertain of the distribution of the citizens' ideal points, however, then we find that equilibria in which the candidates take different positions are possible as will be discussed later (Subsection 4.5). We must also remember that the candidates' preferences in Hotelling's model are specified exogenously; they are unrelated to the preferences of the citizens who may support them. New issues arise if the candidates are drawn from the set of citizens (see below).

f) Abstention

The natural extension of Hotelling's model is the extensive game in which first the candidates simultaneously choose positions, then, knowing these positions, every citizen chooses whether to vote, and, if so, for which candidate. This model was first studied by Ledyard (1981, 1984). If voting is costly and citizens' voting costs differ and are not known with certainty by the candidates, then an entirely different picture may emerge.

To consider the extent to which the basic idea captured by Hotelling's model survives, suppose that the two candidates' positions are different and the voting game has an equilibrium in which some citizens vote. Consider the effect of candidate 1's moving his position a little closer to 2's. By doing so, he reduces the amount that any citizen gains by voting for him in the event the citizen's vote is decisive. On this account he diminishes his support: given the fraction of citizens who vote for each candidate, some of them who previously voted for him will now find it not worthwhile to do so. However, this effect is mitigated by another factor. In reducing the difference between his platform and that of the other candidate, he also reduces the incentive for citizens

[30] Some authors make a distinction between professional politicians or candidates who only care about winning the elections and parties which care about the policy enacted This problem is parallel to the question of the objective of the firm manager's goals differ from those of the shareholders.

to vote for his rival and hence reduces the support for the rival too. Further, by moving closer to candidate 2's position, candidate 1 gains the votes of some of those citizens who previously voted for candidate 2. Moreover, even if a small move towards his rival reduces his support relative to that of the rival, a large move to exactly the same position as the rival leads to an equilibrium of the voting subgame in which he ties for first place (no one votes, since the positions are the same). No example exists in the literature of an equilibrium in which the candidates choose different positions and it is not clear that there is one that is robust. On the other hand, even when the incentive for the candidates to converge is still dominant, however, the common position that the candidates choose in equilibrium no longer bears any necessary relation to the median of the distribution of ideal points as in the standard Hotelling model.

g) More than two candidates

If there are more than two candidates, then the players' incentives in the Hotelling model change. A candidate may no longer increase the number of votes that he receives by moving his position closer to that of some other candidate. In addition, it may no longer be a dominant strategy for a citizen to vote for his favourite candidate For example, if the winner of the election is very likely to be either candidate 2 or candidate 3 then a citizen who prefers the position of candidate 1 to the other two positions is better off voting for either candidate 2 or candidate 3 (whomever he prefers).

In Hotelling's model where each citizen is merely a machine who votes for his favourite candidate (*sincere voting*), there is no Nash equilibrium in pure strategies under a wide range of circumstances when we assume that there are more than two candidates (Osborne, 1993). Presumably the game has mixed strategy equilibria. However, it is unlikely that these equilibria are tractable. Therefore, we can conclude that a straightforward extension of Hotelling's model to the case of more than two candidates gives us little insight into the outcome of multi-candidate competition

A further step away from Hotelling's assumptions is taken by Palfrey (1994), who studies a three-candidate model in which the third candidate chooses his position after observing the simultaneous choices of the other two. The equilibrium in which both candidates choose the median ideal position, is highly vulnerable to entry. a third can-

didate can enter at any point close enough to the median and win outright. This suggests that candidates have an incentive to separate their positions in order to minimize the effect of the entry of further candidates.

Feddersen, Sened and Wright (1990) modify Hotelling's model by allowing candidates to choose whether or not to enter and by having citizens vote strategically. They find that all entering candidates adopt the median position and that the cost of entry provides an upper bound on the number of entrants.

h) Incomplete information

Downs's model assumes that candidates and voters possess complete information concerning candidate positions and voter preferences, assumptions at odds with existence and relevance of public opinion polls, reporters, and interest-group endorsements in an election campaign and indeed this campaign itself. Calvert (1986) and Coughlin (1990) survey the literature on models where candidates lack some information concerning the voters' preferences; and Ledyard (1989) extends this to an environment where candidates are differentially informed about voter preferences. Information asymmetries may or may not cause outcomes to differ from those predicted by the models with completely informed players depending on the institutional structure that is in place. If one candidate must move before the other then that candidate loses any informational advantage. For example, if one candidate knows the median voter's ideal point then this candidate chooses the median as his platform. But the uninformed candidate will know, after observing that choice, exactly what the median position is and by choosing that median will ensure a tie with the informed candidate.

McKelvey and Ordeshook (1985) relax the assumption of voters having complete information by modelling a subset of voters as uninformed about the positions of two candidates in a policy space represented by the real line. These voters acquire information by observing the outcomes of a sequence of *polls* taken prior to the election. *Endorsements* are assumed to provide additional information; they allow voters to identify the candidate whose position is further to the left or the right. The endorsement process is left implicit in the paper by McKelvey and Ordeshook, but is treated explicitly by Grofman and Norrander (1990). In their model, two candidates have fixed positions

on the real line. These positions are obscure to the single voter. The voter takes his cues from two knowledgeable *endorsers* whose preferences are known to him. Each endorser is assumed to support his favourite candidate[31],either invariably, or in the event that the candidate's position lies within some maximum distance from his own ideal point. The voter updates his beliefs based on his observation of these (non-strategic) endorsements[32].

i) Sincere electoral announcements

A strong assumption implicit in the Hotelling-Downs model is that the positions the candidates announce prior to an election will be the positions they subsequently enact once in office. Since voters typically have preferences defined over policy outcomes and not over electoral announcements *per se*, but their only information at the time of voting consists of these announcements, the equivalence of announced position and policy outcome appears to be one of analytical tractability at the expense of realism[33].

If voters are uncertain and risk averse about the outcomes that would occur upon the election of any candidate, their expectations, and in particular the variance of their priors, can be expected to be important determinants of their vote choices. By incorporating these factors into a standard spatial model, Benhardt and Ingberman (1985) derived results consistent with the facts that candidates in electoral competition do not appear to converge, and second, *incumbents* tend to win. As voters prefer the less risky alternative and the incumbent is perceived as less risky than the challenger, the candidates never adopt identical positions.

j) Proportional representation and divided government

An essential assumption in this literature which highlights the principle of minimum differentiation is that the party that obtains more than half of the total number of votes has the power to implement its announced policy. Recently, some authors have challenged this as-

[31] Grossman and Helpman (1997) allow two political parties to compete for endorsements. That is, the parties consider how their positions will affect the endorsers' pronouncements and factor this in when choosing their platforms.

[32] Lupia (1992) and Cameron and Jung (1995) consider the role of endorsements in referendum voting. In the first paper the endorser follows a mechanical rule and in the second is a strategic agent.

[33] Overwhelming anecdotal evidence suggests that politicians often promise more during an election campaign than they are willing or able to deliver once elected

sumption. Ortuño-Ortín (1997) does not accept this as a realistic and satisfactory way to model the outcome of the political competition in many modern democratic societies. In a *proportional representation* case, the implemented policy will be a convex combination of the parties' proposals and the weight associated to a proposal is proportional to the vote share. Under proportional representation, parties' proposals do not converge toward centrist platforms. Furthermore, there is an incentive to become radical, i.e., to put forth proposals that are more extreme than the parties ideal policies. The intuition behind this result is clear. A move toward more extreme positions produces two effects. On the one hand, the number of votes in favour of this party decreases. On the other hand, this weight is now put on a more extremist policy. The net effect can go either way and it will depend on the distribution of the voters.

Alesina and Rosenthal (1996) develop a model of political spatial competition with the distinctive feature that the implemented policy depends upon not only the executive but also upon the composition of the legislature. Voters act strategically with respect to their simultaneous choices in the two contests. Even though most of their work concentrates on the United States system, they also claim that the outcome of the political competition in parliamentary countries can generally be seen as a compromise between the different political forces. With respect to the United States, the model predicts: (i) split-ticket voting[34]; (ii) for some parameter values, a divided government with different parties controlling the executive and holding a majority in the legislature; and, (iii) the midterm electoral cycle.

k) Voters care about position and redistribution issues

Dixit and Londregan (1996) consider how political competition takes place in a setting in which both redistribution and position issues are considered. Voters are heterogeneous in their ideological affinity and face a trade-off between this affinity and their own transfer receipts. If the parties are equal in their abilities to allocate redistributive benefits to all voters, then the outcome of the process conforms to the *swing voter* theory: both parties favour the groups of voters that are politically central and most willing to switch their votes in response to economic favours. If voters have party affinities and each party is

[34] Split-ticket voting arises when the executive and the legislature are elected simultaneously That is, some voters support different parties in the two elections to counterbalance a president on the right with a legislature on the left

more effective in delivering favours to its own support group, then we can get an outcome in which each party favours its core support group and there is no competition for the moderate voters.

To sum up, in this section we have seen that the insight afforded by Hotelling's model cannot be underestimated. At the same time, most of the ideas designed to explain the stylized facts of political competition rely on features that are absent from his model. It seems likely that future work, even if it is rooted in Hotelling's spatial framework will continue to incorporate features like these, with the result that its implications differ significantly from those of Hotelling's model.

4.5 Partisan policies

A different view of party competition holds that political parties, as well as the voters, care about policy outcomes, in addition to winning *per se* (Wittman, 1977, 1983, 1990; Calvert, 1985; Roemer, 1992 and Ortuño-Ortín, 1997). In a Downsian model where parties only care about winning, the parties choose policy in order to win elections, whereas in a partisan model the parties want to be elected in order to choose policies. Wittman (1977, 1983) provides considerable evidence that candidates' pronouncements remain remarkably consistent over time[35], which he interprets as support for his hypothesis that candidates have policy preferences in addition to a desire to hold office: candidates view winning an election also as a means of implementing a better policy for their respective constituencies[36].

This view of political parties representing the interests and values of different constituencies is not only more realistic, but also more general because it can incorporate the case of pure Downsian candidates[37] as a particular (and extreme) case of the broader model. Each party has an incentive to adopt a platform that is truthful to its policy preferences. However, since these preferences cannot be translated into

[35] Empirical evidence from American politics (Poole and Rosenthal, 1984a, b, 1985, 1991) and economically developed democracies (Laver and Schofield, 1990) support the fact that politicians are polarized and show strong signs of policy motivation.

[36] Bernhardt and Ingberman (1985) intepret the same observations as evidence that candidates are led through competition to remain consistent over time so as to allow voters to predict their actions in office more efficiently and win elections, not because they necessarily care about the actual policies enacted.

[37] Castanheira (1998) shows that divergence of political parties may be optimal even if they are opportunistic as a way to capture voters that try to signal their preferences.

policy unless the party wins, each party also has an incentive to move towards the middle in order to increase its chances of winning. These conflicting incentives (policy goals and electoral needs) generate the basic insight of the partisan model: *politically motivated* (not purely Downsian) candidates may not propose fully convergent platforms to the voters; the two parties propose platforms that are closer to each other than their most preferred policies, but that are, nevertheless, distinct.

Alesina (1988a), however, has shown that these results of partial (or complete) convergence are time inconsistent in a two-party system since candidates cannot credibly precommit to electoral platforms. While candidates have an incentive to announce convergent platforms to increase their chances of winning an election, once in office the winning candidate is not committed to his announced platform. Indeed, he has every incentive to follow his most preferred policy. Rational, forward looking voters would account for this *ex post* incentive and vote accordingly. Thus, if the candidate's tenure in office is finite, the only time consistent electoral equilibrium is one in which no convergence is possible and the two candidates follow their most preferred policies when in office. Complete or partial policy convergence can be the outcome of political competition if the interaction between the parties and the voters is modelled as an infinitely repeated game. However, this cooperative policy, may or may not be sustainable as a subgame perfect equilibrium depending on parameter values; in particular, it depends on the discount rates of the two parties, the degree of polarization of their preferences, the frequency of the alternation in office and the relative popularity of the two parties. Thus, the repeated interaction of political parties can reduce the magnitude of policy fluctuations[38] which are suboptimal since both parties would benefit from a reduction of this volatility.

The previous results hold if the voters are fully informed about the objective functions of the two parties. The analysis is more complex in the case of asymmetric information of the voters about the preferences of politicians (see Alesina and Cukierman, 1990). Politicians may prefer to be ambiguous and hide, at least up to a certain extent, their

[38] The effects of these policy fluctuations (partisan politics) on the economic cycle are studied by Alesina (1987, 1988a, b) and Alesina, Roubini and Cohen (1997). In order to avoid overlap with these works, we do not discuss the literature on *partisan political business cycles* in this survey

true preferences making it more difficult for voters to pinpoint their preferences with absolute precision[39]. This ambiguity grants the incumbent more latitude in his strategic choice on the trade-off between moderate and ideological policies.

Incumbent politicians also normally have better information than the general public about the likely outcomes of alternative policies. In order to implement a policy, the party in office has to elicit support which depends on the policymaker-policy pair. Cukierman and Tomassi (1998) identify conditions under which an incumbent party's electoral prospects increase the more atypical the policy it proposes. A necessary, but not sufficient, condition for such reversals is that the uncertainty about the preferred policy position of parties be sufficiently large compared to the uncertainty about the state of the world. Let us see an example. Depending on external circumstances, a right-wing policy may or may not be desirable from the point of view of a majority of the population. Suppose that it is, and that the incumbent party is fully informed about this. In order to implement a policy, the party in office has to elicit support. To that end, it has to transmit to the public its private information about the relative desirability of, in this case, right-wing policies. When the incumbent is a recognized left-winger, his ability to do so and implement the required policies is greater than the ability of a right-wing incumbent. The reason for this apparent incongruity is that the public has less reason to suspect that the right-wing policy is proposed solely because of the natural ideological tendencies of the party in office, *i.e.*, it may be perceived as an objectively motivated policy.

4.6 Electoral campaigns

Electoral campaigns have received little attention in the strategic voting literature although they are one of the institutional features with greatest impact in electoral outcomes. Political parties, their candidates, and their contributors are involved in a complex relationship in which policy positions are taken by parties, candidates campaign

[39] Aragonés and Postlewaite (1999) also constructs a model which analyses the strategic use of ambiguity by candidates or parties in electoral competitions and reconciles it with models based on rational voters with standard preferences. Ambiguous strategies arise as equilibrium outcomes because they provide voters with different preferences with the hope that their most preferred outcome might be implemented

for votes and for campaign contributions, interest groups and individuals make campaign contributions, elections are held, and successful candidates take actions some of which may benefit their contributors. Electoral competition thus involves both parties and their candidates, and competition takes place both in policy positions and in services provided to constituents and interest groups.

The relationship between candidates for office and the contributors to their election campaigns is central to the understanding of elections. Some interest groups make contributions to influence the outcome of elections, but others are interested in obtaining something more tangible from the winner in exchange for their contributions. Baron (1989a) presents a model in which candidates compete for an elected office by raising funds to finance their campaigns by promising to provide, conditional on winning the election, access and services to interest groups that contribute to their campaign. Once elected, however, the incumbent may have an incentive to shirk on those promises, since the provision of services and the granting of access is costly. Another paper by Baron (1989b) addresses the role of contributions to an incumbent's reelection campaign as a means of discouraging shirking on promised services.

The market for campaign contributions can be categorized by the nature of the good exchanged (constituency services *–private good–* or policy positions *–collective good–*) and the distribution of the power in the market. In the case of private constituency services that can be supplied by either candidate, if the market power is on the demand side then competition between the candidates would be expected to drive the contributions down. If the power is on the supply side, however, the candidates would be expected to extract surplus from contributors in exchange for services. Snyder (1990a, b) assumes that candidates have power and hence can generate contributions from contributors.

With the specification of a collective good[40] being represented as a position in a unidimensional policy space, if the power is on the demand side and the good is collective, contributions would be expected to pull party positions toward those desired by the contributors supporting that party's candidates. If, however, power is on the supply side, then parties would be expected to move towards the median to attract more contributors- those who would otherwise contribute to the candidate of the other party.

[40] Models of campaign contributions in the collective good case are studied by Edelman (1989) in her thesis dissertation.

Existing research on the impact of campaign spending on voter choice between candidates has typically taken one of two approaches. The first presumes that voters are paid implicit or explicit bribes to participate, and choose between candidates or parties based only on a comparison of the contingent wealth positions (Becker, 1983). The second includes expenditures directly in the function aggregating votes across individual voters (Ben-Zion and Eytan, 1974; Bental and Ben-Zion, 1975; Denzau and Munger, 1986). If voters were ignorant, and neither candidate possessed some additional advantage in credibility, then the candidate spending the most must win, and elections become fund-raising contests. The fundamental question, then, is precisely how money matters in electoral campaigns.

Austen-Smith (1987) presents a partial answer. In his theory of electoral competition, interest groups compete for political favors by contributing to candidates. Candidates in turn spend money to affect the vote The role of campaign contributions/expenditures is to reduce the variance of voters' perceptions of candidate positions. Austen-Smith does not fully develop this insight, because he restricts the focus of each candidate's expenditure to reducing his own variance. Hinich and Munger (1989) consider an explicit game in which an increase in campaign expenditures, apart from reducing a candidate's variance, also increases the opponent's variance. Their model implies that electoral competition can result in extremely close races at either high or low levels of expenditure, but that the individual incentive to spend more will create an upward spiral of spending and response spending. To respond to it, most Western countries have introduced forms of campaign regulation.

Prat (1998) introduces a microfounded model of campaign finance with office-seeking politicians, rational voters and multiple lobbies. Under reasonable parameter assumptions, restrictions on spending or contributions tend to benefit incumbents, reducing competition and insulating officials from the electoral forces that assure accountability. The intuition for this result does not have to do with the fact that campaign spending is a wasteful activity. This would be one extra reason to ban campaign finance. Rather, it is akin to other negative welfare results in signalling games. The existence of campaign spending may bring the median voter more cost in terms of biased policy than benefit in terms of information on candidate competence. Therefore, the negative welfare is due only to the policy bias that money from lobbies bring about.

Carrillo and Mariotti (1999) focus on electoral campaigns as a way of eliciting public information about the characteristics of competing candidates. They show that the discrepancy between the objective of parties (caring only about their own candidate winning the election) and the objective of the electorate (interested in electing the best candidate available) leads to inefficiencies when there is incomplete but symmetric information about the ability of the candidate. If voters could select the candidates who run for election, they would replace incumbent candidates more often than parties do. Thus, electoral competition leads to an excessive conservatism of parties.

Candidates also make announcements in the electoral campaigns about their policy position which do not coincide with their true position. It has to do with *signalling* as shown by Banks (1990). Voters do not know the true position of the parties and candidates can only convince voters of their true position if they send a costly signal consisting of misrepresenting one's true position (any left-wing candidate will make a promise that is to the right of his real position, while every right-wing candidate will make a promise that is to the left of his real position). Upon observing election promises, they can rationally infer the true position of each candidate. Nevertheless, politicians still have an incentive to promise more than they will deliver since, in equilibrium, voters expect them to do so. Therefore, in welfare terms, the equilibrium derived is worse than that in the case in which voters are able to observe the true policy position of a candidate (no necessity for candidates to incur the cost of lying about their policy position).

4.7 Political parties

Most voters are too ill-informed to compare alternative policy choices. Indeed, voters free-ride much more along this dimension than with respect to electoral participation, which as we have seen is the form of free-riding most emphasized in the literature (see Subsection 4.3). A democratic political system must therefore rely on the emergence of intermediaries, such as parties and medias, that make up the voters' informational deficit. Public opinion and voting outcomes are shaped by those parties whom voters trust. Many voters are willing to go along with the policies that are endorsed by politicians who, they feel, stand for their interests.

Carrillo and Mariotti (1999) represent parties as unitary actors in order to better focus on the electoral aspect. The cost to pay for this gain in

realism is a reduced-form representation of inter-party competition. In a realistic model of elections, therefore, one would expect intra-party competition to play as great a role as inter-party competition because a party is formed by many members with possibly different preferences. The question is then how they solve the preference aggregation problem so that the party has well defined preferences.

In this vein, Caillaud and Tirole (1997a) analyse a model where parties regulate competition among like-minded politicians in order to build a collective reputation for a given political orientation. A party's reputational capital is therefore its main asset. The party's internal organization must protect it against its factions' incentives to exploit the party's brand name for their private interest; that is, factions must have individual incentives to maintain the collective reputation as voters are willing to vote for the party's candidate partly because of the party's collective reputation for screening and monitoring reliable candidates.

Much research effort has consequently been devoted to understanding how parties screen and discipline their members through committee assignments, staff and budgetary discretion, and above all the nomination/endorsement process. Shepsle and Nalebuff (1990) use Crémer's (1986) framework of cooperation in organizations with overlapping generations of members to show how the seniority system may help the party enforce cooperation, with the junior representatives paying their dues while senior-most members fully enjoy the perks of office. In fact, a party is formed of overlapping cohorts of individual members and candidates. Alesina and Spear (1988) consider the party as a sequence of candidates politically active in different periods, accounting explicitly for the fact that individual policymakers hold office, and that officeholders live finite political lives. The existence of a last period for the individual policymaker generates a potential conflict between the interests of the individual and those of the party. Through a scheme of intergenerational transfers[41], it is possible that finitely-lived policymakers follow far-sighted policies, that is, policies which do not maximize their short-run benefits, but maximize the long-run benefits of the party or even of society as a whole. Cain *et al* (1987) argue

[41] By making the transfers to lame duck politicians a function of their behaviour when in office. A lame duck receives his transfer only if he behaves in a way that does not compromise the future electoral prospects (the reputation) of his own party.

that compliance is more easily obtained when representatives have no local ties, as in the proportional representation systems, and are therefore more dependent on the party; Diermeier and Feddersen (1998) formalize the idea that the government can impose more discipline on its party's Congressmen if it can link the passage of a bill to the government's survival.

The fact that politicians make up the voters' informational deficit by designing platforms and recommending voting behaviours does not *per se* provide a rationale for the existence of parties. The politicians could be the bearer of their own reputations and might have no incentive to join forces in the electoral competition. But parties regulate competition. Its benefit (following Caillaud and Tirole, 1997b) is that it results in a better selection of politicians to represent the cause and ultimately in a better selection of elected officials. The idea is that a party is more homogeneous than the electorate so that the aggregation of information is less likely to be biased by electoral considerations within a party. In addition, the proportion of informed voters is more likely to be high within a party than in general elections. However, competition may be wasteful because it takes the form of short-termist political behaviour.

Other theories of the existence of parties have been proposed. In the previous papers, the authors abstract from any ideological consideration within the party. Sometimes, parties (especially those which are unlikely to gain power) are viewed as agencies for the propagation of distinctive political viewpoints. Party activists are typically not middle-of-the-road voters and have more extreme views than the mass electorate. Party platforms, as a result, tend to reflect relatively extreme views. And parties are also viewed as organizations promoting the professionalization of politicians through the training and advising of candidates by party professionals.

A common criticism for all the literature described in this subsection is that it assumes the existence of political parties. Therefore, a clear suggestion for a future line of research can be made: it would be very important to facilitate the modelling of the formation of parties endogenously.

We should also note that parties are not the only intermediaries in the political process. Medias, experts and intellectuals, the Courts (through their opinions on government matters) and lobbies all play

a role in the formation of public opinion. Grossman and Helpman (1994, 1996) have investigated the biases introduced by lobbies on the political debate. Helpman and Persson (1998) show the importance of the interaction between lobbying and legislative bargaining for policy formation.

The media play a unique role in transmitting information to mass audiences and supply most of the information people use in voting. Academic research of mass media's role in politics (Graber, 1984; Iyengar and Kinder, 1991; Bartels, 1993) has mainly been concerned with the effects on voting intentions and public opinion. The empirical findings have shown that the effects are minimal. However, Stromberg (1998) argues that mass media may well have significant effects on public policy without changing either voting intentions or public opinion and analyses who will gain and who will lose from the provision of information by mass media firms. His paper argues that economic incentives will force mass media to provide less news to small groups of voters -because of increasing-returns-to-scale- and voters who are not valuable to advertisers. This news bias will translate into a bias in public policy. Small groups and groups that are not valuable to advertisers will receive less favourable policies.

5. Concluding remarks

Elections are the prominent feature of modern democratic societies. It is therefore quite natural that much theoretical and empirical attention has been devoted to study their properties. However, the most important message we have tried to convey in this survey is the relatively recent approach to study them. Voters, political parties, political institutions, governments and groups with well-specified objectives (lobbies) are all rational, interact strategically and their behaviour is the solution to a well-defined optimization problem.

Particular suggestions for further research and some speculation on where the literature is headed are included throughout the survey. Nonetheless, in general, we can say that Parliamentary models, disequilibrium perfect information models, and political macromodels are likely to produce interesting results in the near future. More complex institutional models involving different policymakers, possibly in different economies, are also likely to be a growth area in the policy preferences literature.

Lastly, I would like to suggest that a historical approach may be needed to understand existing institutions. On one hand and from a positive point of view, institutions are the result from the design of policymakers but are also shaped by history and custom and they evolve gradually over time. However, on the other hand, there is some scope for normative analysis to suggest gradual reform, so as to improve upon history.

Referencias

Aldrich, J. (1993): "Rational vote and turnout", *American Journal of Political Science* 20, pp. 713-734.

Alesina, A. (1987): "Macroeconomic policy in a two-party system as a repeated game", *Quarterly Journal of Economics* 102, pp. 651-678.

Alesina, A. (1988a): "Credibility and policy convergence in a two-party system with rational voters", *American Economic Review* 78, pp. 796-806.

Alesina, A. (1988b): "Macroeconomics and politics", *NBER Macroeconomic Annual* Cambridge: MIT Press, pp. 13-52.

Alesina, A and A. Cukierman (1990): "The politics of ambiguity", *Quarterly Journal of Economics* 105, pp. 829-850.

Alesina, A. and H. Rosenthal (1995), *Partisan Politics, Divided Government and the Economy,* Cambridge University Press, Cambridge.

Alesina, A. and H. Rosenthal (1996): "A theory of divided government", *Econometrica* 64, pp. 1311-1341.

Alesina, A., N. Roubini and G. Cohen (1997), *Political Cycles and the Macroeconomy,* The MIT Press: Cambridge, Massachusetts.

Alesina, A. and S. Spear (1988): "An overlapping generations model of political competition", *Journal of Public Economics* 37, pp. 359-379.

Aragonés, E. and A. Postlewaite (1999): "Ambiguity in election games", mimeo, Universitat Pompeu Fabra.

Austen-Smith, D. (1984): "Two-party competition with many constituencies", *Mathematical Social Sciences* 7, pp. 177-198.

Austen-Smith, D. (1987): "Interest groups, campaign contributions, and probabilistic voting", *Public Choice* 54, pp. 123-140.

Austen-Smith, D. and J. Banks (1988): "Elections, coalitions, and legislative outcomes", *American Political Science Review* 82, pp. 405-422.

Austen-Smith, D. and J. Banks (1989): "Electoral accountability and incumbency", in P. Ordeshook (ed.), *Models of Strategic Choice in Politics.* University of Michigan Press, Ann Arbor.

Axelrod, R. (1970), *Conflict of Interest,* Markham, Chicago.

Banks, J. (1990): "A model of electoral competition with incomplete information", *Journal of Economic Theory,* pp. 309-326

Banks, J. and R. Sundaram (1990): "Incumbents, challengers, and bandits: bayesian learning in a dynamic choice model", RCER Working Paper 235, University of Rochester, New York.

Banks, J. and R. Sundaram (1993): "Adverse selection and moral hazard in repeated elections", in Proceedings of the Seventh International Symposium in Economic Theory and Econometrics Cambridge University Press, pp. 295-311..

Banks, J., and R. Sundaram (1997): "Optimal retention in agency problems", mimeo, California Institute of Technology.

Baron, D (1989a): "Service-induced campaign contributions and the electoral equilibrium", *Quarterly Journal of Economics* 104, pp. 45-72.

Baron, D. (1989b): "Service-induced campaign contributions, incumbent shirking, and reelection opportunities", in P. Ordeshook (ed.), *Models of Strategic Choice in Politics.* University of Michigan Press, Ann Arbor.

Barro, R. (1973): "The control of politicians: An economic model", *Public Choice* 14, pp. 19-42.

Bartels, L. (1993): "Messages received: the political impact of media exposure", *American Political Science Review* 87, pp 267-284.

Becker, G (1983): "A theory of competition among pressure groups for political influence", *Quarterly Journal of Economics* 98, pp. 371-400.

Bental, B. and U. Ben-Zion (1975): "Political contribution and policy: some extensions", *Public Choice* 24, pp 1-12.

Ben-Zion, U. and Z. Eytan (1974): "On money, votes, and policy in a democratic society", *Public Choice* 15, pp. 19-42.

Berganza, J C. (1999): "Two roles for elections: disciplining the incumbent and Selecting a Competent Candidate", forthcoming in .
Public Choice

Bernhardt, M. and D. Ingberman (1985): "Candidate reputations and the incumbency effect", *Journal of Public Economics* 27, pp. 47-67.

Berry, D. and B. Fristedt (1985), *Bandit problems: Sequential Allocation of Experiments,* Chapman and Hall, London.

Besley, T. and A. Case (1995): "Does electoral accountability affect economic policy choices? evidence from gubernatorial term limits", *Quarterly Journal of Economics* 110, pp. 769-798.

Besley, T. and S. Coate (1997): "An economic model of representative democracy", *Quarterly Journal of Economics* 112, pp. 85-114.

Besley, T. and S. Coate (1998): "Sources of inefficiency in a representative democracy: a dynamic analysis", *American Economic Review* 88, pp. 139-156.

Black, D. (1958), *The Theory of Committees and Elections,* Cambridge University Press, Cambridge..

Brams, S and Straffin, P. (1982): "The entry problem in a political race", in P. Ordeshook and K. Shepsle (eds.) .
Political Equilibrium, Nijhoff Publishers, The Hague, Netherlands

Caillaud, B. and J. Tirole (1997a): "Parties as political intermediaries", mimeo, CERAS and IDEI.

Caillaud, B. and J. Tirole (1997b): "Voter homogeneity and the aggregation of information", mimeo, CERAS and IDEI.

Cain, B., Ferejohn, J. and M. Fiorina (1987), *The Personal Vote,* Harvard University Press, Cambridge.

Calvert, R. (1985): "Robustness of the multidimensional voting model: candidates motivations, uncertainty and convergence", *American Journal of Political Science* 29, pp. 69-95.

Calvert, R. (1986), *Models of Imperfect Information in Politics,* Chur: Harwood Academic.

Cameron, C. and J. Jung (1995): "Strategic endorsements in hidden offer bargaining", mimeo, Stanford University.

Carrillo, J. and T. Mariotti (1999): "Electoral competition and politicians turnover", forthcoming in .
European Economic Review

Castanheira, M. (1997): "Should I stay or should I go? poisson games and the paradox of voting", mimeo, ECARE.

Castanheira, M. (1998): "Why vote for losers?", IGIER Working Paper No. 125.

Cho, I. and D. Kreps (1987): "Signalling games and stable equilibria", *Quarterly Journal of Economics* 102, pp. 179-221.

Crémer, J. (1986): "Cooperation in Ongoing Organizations", *Quarterly Journal of Economics* 101, pp. 33-49.

Coughlin, P. (1990): "Candidate uncertainty and electoral equilibria", in J. Enelow and M. Hinich (eds.), *Advances in the Spatial Theory of Voting*, Cambridge University Press Cambridge.

Cukierman, A. and A Meltzer (1986): "A positive theory of discretionary policy, the cost of democratic Government, and the benefits of a constitution", *Economic Inquiry* 24, pp. 367-388.

Cukierman, A. and M. Tommasi (1998): "When does it take a Nixon to go to China?", *American Economic Review* 88, pp. 180-197.

Davis, O., M. DeGroot and M. Hinich (1972): "Social preference orderings and majority rule", *Econometrica* 40, pp. 147-157.

Davis, O. and M. Hinich (1966): "A mathematical model of policy formation in a democratic society", in J. Bernd (ed.), *Mathematical Applications in Political Science, II,* Southern Methodist University Press. Dallas.

de Jouvenal, B. (1961): "The chairman's problem", *American Political Science Review* 55, pp. 368-372.

Denzau, S. and M. Munger (1986): "Legislators and interest groups: how unorganized interests get represented", *American Political Science Review* 80, pp. 89-106.

de Swaan, A. (1975): "A classification of parties and party systems according to coalitional options", *European Journal of Political Research* 3, pp. 361-375.

Diermeier, D. and T. Feddersen (1998): "Cohesion in legislatures and the vote of confidence procedure", *American Political Science Review* 92, pp. 611-621.

Dixit, A. and J. Londregan (1996): "The determinants of success of special interests in redistributive politics", *Journal of Politics* 58, pp. 1132-1155.

Downs, A. (1957), *An Economic theory of Democracy,* New York: Harper and Row.

Duverger, M. (1951), *Political Parties* Muethen Press, London..

Easley, D. and N. Kiefer (1988): "Controlling a stochastic process with unknown parameters", *Econometrica* 56, pp. 1045-1064.

Edelman, S. (1989): "Campaign contributions and political action", Dissertation, Stanford University.

Fair, R. (1978): "The effect of economic events on votes for president", *Review of Economics and Statistics* 60, pp. 159-173.

Fair, R. (1988): "The effects of economic events on votes for president: 1984 update", *Political Behaviour* 10, pp. 168-179.

Feddersen, T. and W. Pesendorfer (1996a): "The swing voter's curse", *American Economic Review* 86, pp. 408-424.

Feddersen, T and W. Pesendorfer (1996b): "Abstention and common values", mimeo, Northwestern University.

Feddersen, T., Sened, I. and S. Wright: "Rational voting and candidate entry under plurality rule", *American Journal of Political Science* 34, pp. 1005-16.

Ferejohn, J. (1986): "Incumbent performance and electoral control", *Public Choice* 50, pp. 5-26.

Ferejohn, J. and M. Fiorina (1974): "The paradox of not voting: a decision theoretic analysis", *American Political Science Review* 68, pp. 525-536.

Fey, M. (1997): "Stability and coordination of duverger's law. a formal model of preelection polls and strategic voting", *American Political Science Review* 91, pp. 135-147.

Fiorina, M. (1981), *Retrospective Voting in American National Elections,* Yale University Press, New Haven.

Gibbard, A. (1973): "Manipulation of voting schemes: a general result", *Econometrica* 41, pp. 587-601.

Graber, D. (1984): "Mass media and american politics", Congressional Quarterly, Washington DC.

Greenberg, J. and K. Shepsle (1987): "The effect of electoral rewards in multiparty competition with entry", *American Political Science Review* 81, pp. 525-537.

Grofman, B. and B. Norrander (1990): "Efficient use of reference group cues in a single dimension", *Public Choice* 64, pp. 213-227.

Grossman, G. and E. Helpman (1994): "Protection for sale", *American Economic Review* 84, pp. 833-850.

Grossman, G. and E. Helpman (1996): "Electoral competition and special interest politics", *Review of Economic Studies* 63, pp. 265-286.

Grossman, G. and E. Helpman (1997): "Competing for endorsements", mimeo, Princeton University and Tel Aviv University.

Harbough, W. (1996). "If people vote because they like to, then why so many of them lie?", *Public Choice* 89, pp. 63-76.

Helpman, E. and T. Persson (1998): "Lobbying and legislature bargaining", mimeo.

Hinich, M. and M. Munger (1989): "Political investment, voter perceptions, and candidate strategy: an equilibrium spatial analysis", in P. Ordeshook (ed.), *Models of Strategic Choice in Politics*, University of Michigan Press, Ann Arbor.

Hinich, M. and P. Ordeshook (1974). "The electoral college: a spatial analysis", *Political Methodology* 1, pp. 1-29.

Hotelling, H. (1929): "Stability in competition", *Economic Journal* 39, pp. 41-57.

Iyengar, S. and D. Kinder (1991), *News that Matters: Television and American Opinion,* University of Chicago Press.

Laver, M. and N. Schofield (1990), *Multiparty Government,* Oxford University Press, Oxford.

Ledyard, J. (1981): "The Paradox of Voting and Candidate Competition: a General Equilibrium Analysis", in George Horwich and James P. Quirk (eds.) *Essays in Contemporary Fields of Economics*, Purdue University Press.

Ledyard, J. (1984): "The pure theory of large two-candidate elections", *Public Choice* 44, pp. 7-41.

Ledyard, J. (1989): "Information aggregation in two-candidate elections", in P. Ordeshook (ed.), *Models of Strategic Choice in Politics*, University of Michigan Press, Ann Arbor .

Leighley, J. and J. Nagler (1992): "Socioeconomic class Bias in Turnout, 1964-1988: the voters remain the same", *American Political Science Review* 86, pp. 725-736.

Leiserson, M. (1966): "Coalitions in politics", unpublished dissertation, Yale University.

Lijphart, A. (1994), *Electoral Systems and Party Systems,* Oxford University Press, Oxford..

Lupia, A. (1992): "Agenda control versus the power of information", *American Political Science Review* 86, pp. 390-403.

McKelvey, R. and P. Ordeshook (1985): "Elections with limited information: a fulfilled expectations model using contemporaneous poll and endorsement data as information sources", *Journal of Economic Theory* 36, pp. 55-85.

Mueller, D. (1989), *Public Choice II* Cambridge University Press, Cambridge.

Myerson, R. (1993): "Effectiveness of electoral systems for reducing government corruption: a game-theoretic analysis", *Games and Economic Behaviour* 5, pp. 118-132.

Myerson, R. (1994): "Population uncertainty and poisson games", Center for Mathematical Studies in Economics and Management Science Discussion Paper 1102R, Northwestern (revised June 1997).

Myerson, R. (1998): "Theoretical comparison of electoral systems", Schumpeter Lecture, 1998 meetings of the European Economic Association.

Nordhaus, W. (1975): "The political business cycle", *Review of Economic Studies* 42, pp. 169-190.

Ortuño-Ortín, I. (1997): "A spatial model of political competition and proportional representation", *Social Choice and Welfare* 14, pp. 427-438.

Osborne, M. (1993): "Candidate positioning and entry in a political competition", *Games and Economic behaviour* 5, pp. 133-151.

Osborne, M. (1995): "Spatial models of political Ccompetition under plurality rule: a survey of some explanations of the number of candidates and the positions they take", *Canadian Journal of Economics* 28, pp. 261-301.

Osborne, M. and A. Slivinski (1996): "A model of political competition with citizen candidates", *Quarterly Journal of Economics* 111, pp. 65-96.

Palfrey, T. (1984): "Spatial equilibrium with entry", *Review of Economic Studies* 51, pp. 139-156.

Palfrey, T. (1989): "A Mathematical Proof of Duverger's Law", in P. Ordeshook (ed.), *Models of Strategic Choice in Politics*, University of Michigan Press, Ann Arbor.

Persson, T., Roland, G. and G. Tabellini (1997): "Separation of powers and accountability", *Quarterly Journal of Economics* 112, pp. 1163-1202.

Persson, T. and G. Tabellini (1990), *Macroeconomic policy, credibility and politics* Harwood Academic Publishers, London.

Persson, T. and G Tabellini (1998): "The size and scope of government: comparative politics with rational politicians", forthcoming in .
European Economic Review

Persson, T. and G. Tabellini (1999): "Political economics and public finance", prepared for the Handbook of Public Economics, vol. III.

Piketty, T. (1994): "Information aggregation through voting and vote-trading", mimeo, MIT

Piketty, T. (1995): "Voting as communicating", mimeo, MIT and CEPREMAP.

Piketty, T. and D. Spector (1997): "Rational debate leads to unidimensional conflict", mimeo, MIT.

Poole, D. and H. Rosenthal (1984a): "US. presidential elections 1968-1980: a spatial analysis", *American Journal of Political Science* 28, pp. 283-312.

Poole, D. and H. Rosenthal (1984b): "The polarization of american politics", *Journal of Politics* 46, pp. 1061-1079.

Poole, D. and H. Rosenthal (1985): "The political economy of roll-call voting in the 'multi-party' congress of the United States", *European Journal of Political Economy* 1, pp. 45-58.

Poole, D. and H. Rosenthal (1991): "Patterns of congressional voting", *American Journal of Political Science* 35, pp. 228-278.

Powell, G. (1981): "Party Systems and political system performance: voting participation, government stability and mass violence in contemporary democracies", *American Political Science Review* 75, pp. 861-879.

Prat, A. (1998): "Campaign spending with office-seeking politicians, rational voters and multiple lobbies", mimeo, Tilburg University.

Rae, D. (1971), *The Political Consequences of Electoral Laws,* Yale University Press, New Haven .

Reed, R. (1994): "A retrospective voting model with heterogeneous politicians", *Economics and Politics* 6, pp. 39-58.

Riker, W. (1962), *The Theory of Political Coalitions,* Yale University Press, New Haven.

Riker, W. (1982): "The two party system and duverger's law", *American Political Science Review* 76, pp. 753-766.

Riker, W. and P. Ordeshook (1968): "A theory of the calculus of voting", *American Political Science Review* 62, pp. 25-42.

Rivière, A. (1998): "Citizen candidancy, party formation and duverger's law", mimeo, ECARE.

Roemer, J. (1992): "A theory of class differentiated politics in an electoral democracy", University of California Working Paper 384.

Rogoff, K. (1990): "Equilibrium political budget cycles", *American Economic Review* 80, pp. 21-36.

Rogoff, K. and A. Sibert (1988): "Elections and macroeconomic policy cycles", *Review of Economic Studies* 55, pp. 1-16.

Rothschild, M. (1974): "A two-armed bandit theory of market pricing", *Journal of Economic Theory* 9, pp. 185-202.

Schofield, N. (1987): "Coalitions in West European democracies: 1945-1986", mimeo, Washington University, St. Louis.

Shepsle, K. and B. Nalebuff (1990): "The commitment to seniority in self-governing groups", *Journal of Law, Economics and Organization* 6, pp. 45-72.

Shields, T. and R. Goidel (1997): "Participation rates, socioeconomic class biases, and congressional elections: a crossvalidation", *American Journal of Political Science* 41, pp. 683-691.

Snyder, J. (1990a): "Campaign contributions as investments: the US. House of Representatives 1980-1986", *Journal of Political Economy* 98, pp. 1195-1227.

Snyder, J. (1990b): "The market for campaign contributions: evidence for the U. S. Senate 1980-1986", *Economics and Politics* 5, pp. 219-240.

Stromberg, D. (1998): "Mass media competition, political competition and public policy", mimeo, Princeton University and Institute for International Economic Studies.

Taagepera, R. and M. Shugart, *Seats and Votes. The Effects and Determinants of Electoral Systems,* Yale University Press, New Haven.

Taylor, M. and M. Laver (1973): "Government coalitions in western Europe", *European Journal of Political Research* 1, pp. 205-248.

Teixeira, R. (1987), *Why Americans Don't Vote: Turnout Decline in the United States,* 1960-1984, Greenwood, New York.

Terrones, M. (1989): "Macroeconomic policy under alternative electoral structures", mimeo, University of Western Ontario.

Weiner, M. (1957), *Party politics in India: the development of a multiparty system* Princeton University Press, Princeton.

Wittman, D. (1977): "Candidates with policy preferences: a dynamic model", *Journal of Economic Theory* 14, pp. 180-189.

Wittman, D. (1983): "Candidate motivation: a synthesis of alternatives", *American Political Science Review* 77, pp. 142-157.

Wittman, D. (1990): "Spatial Strategies when candidates have policy preferences", in J. Enelow and M. Hinich (eds.), *Advances in the Spatial Theory of Voting*, Cambridge University Press, Cambridge.

Wolfinger, R. and S. Rosenstone (1980), *Who Votes?*, Yale University Press, New Haven.

Resumen

Este trabajo presenta un panorama de la literatura sobre la institución más importante en una democracia: el nombramiento de gobernantes mediante la celebración de elecciones. Éstas desempeñan, al menos, tres funciones diferentes: (i) disciplinan a los gobernantes elegidos mediante la amenaza de no reelegirlos de nuevo; (ii) seleccionan a individuos competentes para la función pública; y, (iii) agregan y representan las preferencias de los votantes que, normalmente, entran en conflicto. La revisión de la literatura que se ha centrado en estas tres funciones constituye una de las motivaciones del artículo. Además, se sugieren posibles líneas de investigación futuras en estos campos y se especula sobre en qué dirección se encaminarán los trabajos académicos que estudian los procesos electorales.

Palabras clave: Economía política, democracia representativa, competencia electoral, votaciones, partidos políticos

Recepción del original, diciembre de 1997
Versión final, enero de 1999