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Title
Political Activism, Candidate Position and Valence, and Representation: Theory of Political Transaction

Permalink
https://escholarship.org/uc/item/5pp026jd

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Publication Date
2011-11-29

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Introduction

In this paper, I present a theory of political transaction that views political competition as an integrated system of players, institutional arrangements, and normative ideas.[1] In this theory, I argue that the essential features of political competition are collective decision making and forced consumption of political products that necessarily incur conformity costs.[2] A concern about conformity costs motivates political consumers to influence policymaking by offering electoral resources. The concern about conformity costs also provides normative justification for creating and sustaining institutional arrangements regulating political consumptions and advertisements. I elaborate these ideas into a single spatial model that explains candidates' asymmetric incentives for convergence.

While previous spatial models specify citizens as voters following Hotelling's consumer-seller model (1929), citizens in my model not just passively vote but also actively participate in policymaking to lessen conformity costs that they have to pay for collective decisions. Once we treat citizens not just as passive consumers but also as active investors, political activism becomes a major driving force in my spatial model. Due to an incentive to influence policy outcomes, political activists contribute human and financial resources that candidates use to advertise their valences. Thus, candidates want to please political activists to obtain more resources by adopting the policy that is preferred by the activists. However, voters around the center prefer a more moderate policy. Facing this dilemma, candidates seek an equilibrium that balances these competing pressures.

A comparative statistics analysis of the model yields a result that two candidates diverge from each other. The divergent result does not require assumptions employed by other spatial models such as policy-motivated politicians (Calvert 1985; Wittman 1983), a possibility of a third-party entry (Palfrey 1984), or abstention from voting due to alienation (Adams and Merrill 2003; Hinich and Ordeshook 1970). While all these factors might provide candidates with centrifugal incentives, the model in this paper highlights the factor that necessarily results from political transaction: political activism.

An incorporation of political activism and candidate valence together into the model yields a unique result that differs from those of the other spatial models that omits political activism. Previous studies predict either moderate policy taking by a candidate with a valence advantage (Adams, Merrill, and Grofman 2005; Groseclose 2001; Moon 2004; Stone and Simas 2010) or the advantaged candidate's extreme policy taking (Adams and Merrill 2009;

Burden 2004). The analysis of the model in this paper, however, reveals that the advantaged candidate converges or diverges depending on the types of resources he spends to advertise his valence. If the advantaged candidate can afford exogenous resources that are independent of his policy, he converges toward the center. By contrast, if the candidate relies more on endogenous resources that vary with his policies, he diverges from the center. This finding explains why challengers tend to adopt more extreme policies than incumbents. Since it is more difficult for challengers to obtain exogenous resources that are available to incumbents, they adopt more extreme policies to receive endogenous resources from political activists.

The findings in this paper have a normative implication on theories of representation. According to Powell (2000), there have been two contrasting views on representative democracy. The majoritarian vision advocates representation of the majority winner whereas the proportional influence vision pursues representation of the general public or the median citizen. This paper finds that the winner's policy is located between the median citizens and a majority in equilibrium. This result implies that an equilibrium occurs at the policy that reconciles the two visions. This paper also finds that an equilibrium moves toward either the majority's preferences or the median's preferences depending on political activism. If citizens actively respond to their candidates' policy adjustment with their resource contributions, two candidate's policies move outward and the winner's policy approaches the majority's preferences. In particular, citizens who support a candidate with a valence advantage need to invest endogenous resources if they want to get a policy close to their ideal point. Otherwise, the advantaged candidate will move toward the preference of the median citizens at the expense of the majority. In short, a majority is more represented if citizens are responsive political activists whereas the general public is more represented if citizens act as voters.

The paper is organized as follows: first, I review previous spatial theories; second, I present my theory of political transaction; third, I specify the ideas of the theory into a spatial model and report the findings based on the analysis of the model; fourth, I discuss normative implications of the findings regarding representation; last, I conclude with a discussion of the empirical applicability of the model of this paper.

Literature Review

In his seminal book, *An Economic Theory of Democracy*, Downs (1957) presented one of the most elegant theoretical results in political science. With assumptions that information is complete and costless, there is no cost of voting, and voting is not future-oriented, Downs showed that two parties competing to win an election on a one-dimensional policy space would converge to the ideal point of the median voter. Downs' work became a touchstone for formal electoral theories at least in two respects. First, Downs offered explanations deducible from explicit assumptions about the motivations of political players and their political environments. Due to this deductive nature of Downs' theory, subsequent studies have been able to modify or extend Downs' standard model with assumptions that are different from those employed by Downs. Second, Downs treated politics very differently from the way previous studies had done. According to Downs, politicians are not simple agents of voters but rational actors pursuing their own interests. Just as consumers and producers aim to maximize their utility in market transactions, politicians and voters also want to maximize

their utility. This view enables electoral studies to account for the strategic behaviors of politicians and voters to which socio-psychological theories had paid little attention.

Despite these contributions, Downs' convergent result is not supported by empirical reality. Empirical studies find divergent policy platforms among parties or candidates (Sullivan and Minns 1976; Poole and Rosenthal 1984, 1997). While Downs himself recognizes possibilities of divergent platforms with different assumptions,[3] subsequent spatial theories have presented models yielding divergent results by relaxing some assumptions in the standard Downsian model. These studies focused on policy-motivated politicians (Calvert 1985; Wittman 1983), a possibility of a third-party entry (Palfrey 1984), the role of nomination process (Aldrich 1995; Burden 2004), the influence of party activists (Aldrich 2010; Moon 2004; Schofield 2003, 2006), abstention from voting due to alienation (Adams and Merrill 2003; Adams, Merrill, and Grofman 2005; Hinich and Ordeshook 1970), and the role of electoral laws (Cox 1990, 1997).[4]

Empirical studies also disagree with the Downsian assumption that electoral competition revolves only around policy positions. According to Stokes, the factors that affect the voters' decision are not only policies but also valence (non-policy) factors that "involve the linking of the parties with some condition that is positively or negatively valued by the electorate" (1963, 373). Valence factors are not readily accommodated within the spatial frame, but politicians try to sway voters' ideological voting decision with their valence advantages or with opponents' valence disadvantages. Recognizing the significance of valence factors in electoral competition, spatial theorists have incorporated valences in their models (Dixit and Londregan 1996; Enelow and Hinich 1981; Feld and Grofman 1991; Macdonald and Rabinowitz 1998; Ansolabehere and Snyder 2000). More recent spatial theorists propose that candidates' valences have an asymmetric effect on candidate position taking. On the one hand, some scholars argue that a candidate with a valence advantage diverges from the center since he is more immune from district pressures (Burden 2004). On the other hand, other scholars argue that the advantaged candidate takes a more moderate policy in order to make his policy less distinguishable from the other candidate's, thereby making his valence advantage more effective in garnering votes (Adams, Merrill, and Grofman 2005; Ansolabehere and Snyder 2000; Groseclose 2001; Moon 2004).

While most spatial models focus on valence factors that are specific to candidates, Adams, Merrill, and Grofman (2005) analyze the effect of "voter-specific" valence advantages. Unlike candidate-specific valences that are usually assumed to be identical across voters, voter-specific valences vary across voters. These include citizens' partisanship and other psychological attachments resulting from demographic characteristics (gender, race, and the like). Incorporation of the socio-psychological factors in their spatial model implies more than a simple expansion of the spatial theory. Electoral studies have been divided into two major schools of thought: the formal theory tradition of spatial models and the behavioral tradition of socio-psychological models. The former assumes voters' rational calculation of policy utilities whereas the latter emphasizes the persisting role of partisanship and socioeconomic/demographic factors in voters' voting decision. In this respect, Adams, Merrill, and Grofman (2005) call their model incorporating both policy factors and voters' non-policy motivation as a "unified" theory.

Yet, the recent spatial models including the unified theory do not fundamentally question the relevance of Hotelling's (1929) framework to the study of electoral competition.

In Hotelling's framework, the relationship between voters and candidates is equivalent to that between customers and sellers in the market. A customer's preference between two stores is determined by the transportation cost or the distance between a customer's place and a store's location, and the only way the store can attract more customers is to change its location. Similarly, the only way a party can attract more voters is to change the location of its policy. In this framework, electoral competition is specified as a sale and purchase of policy products, but a specification of production process is missing.

The relationship between voters and candidates is not only a customer-seller relationship but also a principal-agent relationship. In theories of representation, voters delegate policymaking power to politicians (Lupia and McCubbins 2003). That is, voters (principals) hire politicians (agents) to produce policies representing their interests. Elections are an institutional instrument for the principals to prevent agency loss by penalizing their agents with poor performance (Powell 2000). The principals also try to control their agents by organizing parties, participating in policymaking process, or contributing electoral resources. In this view, voters are not passive consumers but more active producers or investors.

Although there are a few studies that emphasize the role of party activists in policymaking (Schofield 2003; Moon 2004), the standard spatial theorists do not view political competition in terms of a principal-agent relationship. In addition, while some spatial models analyze the effects of electoral institutions on policy outcomes (Cox 1990, 1997), there has been no spatial model that theorizes political competition as an integrated system of players, institutions, and normative ideas. In the following sections, I offer a theory that explains political competition as an integrated system of players, normative ideas, and institutional arrangements.

Theory of Political Transaction

Political transactions, like market transactions, involve producers (parties or candidates) who sell and advertise (campaign) political products (policy proposals and non-policy benefits) and consumers (voters) who pay transaction mediums (votes) to buy the political products. Political players are constrained by institutional arrangements such as electoral laws or campaign finance laws. However, unlike market transactions, political transactions involve two essentially different types of products: one similar to economic products and the other being properly political. The first type of political products is valence products or "valence issues" (Stokes 1963). There are different kinds of valences. First, there are "character valences" such as integrity, competence, and diligence that voters "intrinsically value in office holders" (Adams, Merill, Simas, and Stone 2011, 17). Second, there are "campaign valences" (Stone and Simas 2010) or "strategic valences" such as name recognition, fundraising ability, and campaigning skills that are "instrumental to winning elections" (Adams, Merill, Simas, and Stone 2011, 17). Third, there are voter-specific valences or non-policy biases toward candidates such as partisanship or other psychological attachments (Adams, Merrill, and Grofman 2005).

The second type of political products is policy products or "position issues," which involve "advocacy of government actions from a set of alternatives over which a distribution

of voter preferences is defined" (Stokes 1963, 373). One of the essential features of political transactions is that they involve these policy products. When a political consumer consumes a valence product, her utility changes in a way that is equivalent to the way a consumer consumes a market product; that is, her utility increases monotonically as a function of a quality of the product. By contrast, the utility of a policy product is essentially different from that of a market product: it is single-peaked. A political consumer's utility of a policy decreases as the policy deviates from her ideal policy.

Another feature that distinguishes political transactions from economic transactions is that consumption of policy products involves collective actions and forced consumption. In economic transactions, consumers can individually purchase and consume what they want to consume. If consumers do not want to consume a certain good, they can choose not to consume. In political transactions, however, consumers (voters) purchase policy products collectively and are forced to consume regardless of their intentions to consume. Some consumers have to consume what the others prefer. In other words, political transactions impose conformity costs on consumers who fail to win their preferred policies.

Political transactions imposing citizens conformity costs have become more prevalent as governments expanded to the areas that had been considered to be private previously. As Fiorina clearly points out, in the 1950s, the "idea that a developer could not fill in a swamp because of the presence of a salamander would have seemed ludicrous, let alone the notion that a citizen could petition government for a smoke-free environment" (2010, 192). Whereas political transactions "revolved around such weighty matters as voting, hosing, and employment" in the 1950s, "aggrieved citizens now assert rights to exercise their dogs in public spaces, to be free of cigarette smoke out of doors, and to breast-feed in public" (192–93). According to Fiorina, "Once a feminist rallying cry, 'the personal is the political' . . . become a general call for consistency between one's private behavior and public principles. But that consistency could be achieved . . . by demanding that the public sector enforce one's personal principles" (193).

Since political transactions impose citizens conformity costs in their everyday life, citizens create and sustain institutional arrangements to protect them from unfair conformity costs. For example, to prevent the rich from purchasing policy products that they prefer, unequal purchasing power is not institutionally allowed in political transactions. In market transactions, too, there exist institutional arrangements for consumption goods, such as prohibition against cornering of the market in foods. However, since cornering the market to impose costs on other consumers is too expensive under normal economic conditions, the regulations are rarely implemented. In the political market, by contrast, policy consumption always incurs conformity costs to some or all consumers. Therefore, every individual has to exercise equal political power in order to prevent a few citizens from exerting excessive power. Based on this normative idea, democratic institutions stipulate that every individual has the same amount of transaction media (votes) to purchase policy products. In democratic institutions, a minority cannot purchase votes to obtain their preferred policies against the will of a majority.

Political transactions are also constrained by advertising institutions just as market transactions are regulated by advertising institutions. In the United States, the Federal Trade Commission (FTC) runs a regulatory committee to prevent false and exaggerated advertisements. The FTC also regulates advertisements of products thought to be harmful to a

certain group. For example, alcohol or cigarette advertising on TV or radio is prohibited. While advertising institutions in the economic market regulate the content or format of advertising, those in the political market regulate not only the content or format but also other aspects such as contribution limits, campaign expenditures, financial disclosure, duration of official campaigns, contribution sources, and the like.

The major reason for such disparity in restrictiveness of advertising institutions between economic and political markets is that principles underlying the advertising institutions in the two markets are different. In the economic market, the underlying principle is efficiency. Unless an advertisement does serious harm to public interest, the content, financial sources, and expenditures of the advertisement are left to the discretion of the profit-maximizing seller. In contrast, political advertising is subject to a normative concern about "an inappropriate transfer of power from the private (economic) sphere to the public (political) sphere" (Steen 2006, 147). Due to this concern, different countries regulate political advertisements with various legal and regulatory provisions. For example, the source and amount of a direct contribution to a candidate or a political party is regulated by law in the United States. Campaign financing system limits the expenditure of political parties in the United Kingdom. In France, contributions from corporations are prohibited. Australia regulates the format and presentation of political advertising.

However, the principle of equal political right sometimes conflicts with another normative principle: freedom of expression. The U.S. Supreme Court's decision in *Buckley v. Valeo* upheld a federal law that set limits on campaign contributions, but ruled that spending money to influence elections is a form of constitutionally protected freedom of expression. In the United Kingdom, there are no limits on the amount of donations that political parties may receive. Australia and Germany do not have restrictions on contribution amounts or expenditures limits. The conflict between the two principles generates a variation in advertisement institutions across countries. As the principle of freedom of expression carries more weight, advertisement institutions resemble those in the market.

Forced consumption in the political market also leads political consumers to participate in political activities in order to alleviate their conformity costs. Rather than passively consuming political products, political consumers have an incentive to produce their preferred policies by themselves or at least influence policymaking. Whereas political purchasing power is institutionally restricted to the same level due to the normative principle of equal political rights, a considerable variation in political activism is institutionally allowed due to the normative principle of the principle of freedom of expression. Embedded with the institutional arrangement and normal principle, citizens who expect to pay more conformity costs participate in policymaking more actively by expending their time, energy, and other resources.

However, direct policymaking by ordinary citizens incurs enormous transaction costs. To decrease the costs, political activists delegate policymaking authority to an agent (political parties). Political activists instead influence their agents' policymaking by engaging in lobbying or campaigning, organizing grassroots movements, or contributing campaign resources. A typical example of political activism in the United States is a 527 group, a type of tax-exempt organization that is created to influence the selection, nomination, election, or defeat of candidates to federal, state, or local public office. Therefore, citizens and politicians are in not only a consumer-seller but also principal-agent relationship. In Hotelling's

framework, however, a store owner only sells his products, and a buyer only purchases a product without being involved with production. In the standard spatial theory relying on this seller-buyer framework, citizens passively choose from alternative policies. However, the theory misses the essential feature of a political transaction: citizens' involvement with policy production, that is, political activism.

The fact that citizens are not only consumers but also investors puts candidates into a decision-making situation that is essentially different from the standard spatial theory. In market transactions, if an agent maximizes profit, the principal's utility is maximized too. In political transactions, however, if a political agent maximizes votes, the principal's utility is not always maximized. Moreover, the ultimate goal of the political agent is not identical to that of the principal. In the political market, a candidate wants to win an election to garner perquisites from winning office whereas voters want their candidate to win to implement their preferred policies. A candidate's selection of a policy to maximize votes could increase the conformity cost of his principal.

Facing this dilemma, the principal and the agent need to find a solution to reconcile their interests: the principal provides his agent with campaign resources while the agent, rather than deviating from the policy preferred by the principal, spends the resources to advertise non-policy issues or to engage in negative campaigns. Incorporating political advertisement into the spatial theory is a significant departure from the conventional spatial models in which citizens just vote. In empirical studies, campaigning, that is, candidates' persuasive efforts to sway citizens' ideological voting decisions, is one of the most important elements of political competition. As advertisement in the market enhances the values of market products; political campaign increases the values of candidates. However, the standard spatial models include political consumption (voting) and omits political advertising (investing). The Theory of Political Transaction (TPT, hereafter), which I present in this paper, recognizes this important reality.

In the TPT, candidates want to adopt more moderate policies to win an election while political activists are ideological extremists who want to mitigate their conformity costs that would be incurred by the moderate policies. If the candidates are able to raise campaign funds independent of their policy positions, they are less constrained by the preferences of political activists. By contrast, candidates who lack exogenous resources have to rely on endogenous resources provided by political activists. Political activists are more willing to invest in a candidate who represents their extreme position but citizens prefer centrist positions. In other words, candidates need activist resources (investment) as well as voter support (purchase), but there is a trade-off between resources and votes. If a candidate pleases the activists, he obtains more resources, but he loses more votes. Facing this dilemma, candidates seek an equilibrium that optimally balances these competing pressures.

In sum, as Figure 1 illustrates, the TPT views political competition as an integrated system of players, institutional arrangements, and normative ideas, whereas the standard spatial theory views political competition as a game played by isolated players (consumers and producers). Figure 1 also demonstrates various approaches in electoral studies. First, an approach from the behavioral tradition focuses on voter specific valence factors such as partisanship and socioeconomic status of voters. Second, an approach from the spatial theory tradition analyzes candidate position taking in equilibrium. Third, the unified theory offered by Adams, Merrill, and Grofman (2005) attempts to integrate these two traditions. Fourth, the

recent spatial models, indicated by a box on the right side, analyze the effect of electoral rules on policy positions (Cox 1990, 1997). Lastly, empirical studies at the bottom analyze the effects of candidate-specific non-policy factors such as constituency services, incumbency advantages, or campaign spending on electoral outcomes.[5] While these approaches have contributed to the study of electoral competition, there has been no spatial theory that specifies political competition as an integrated system in a single, coherent model. In the next section, I present a model that incorporates the electoral mechanism demonstrated in Figure 1.

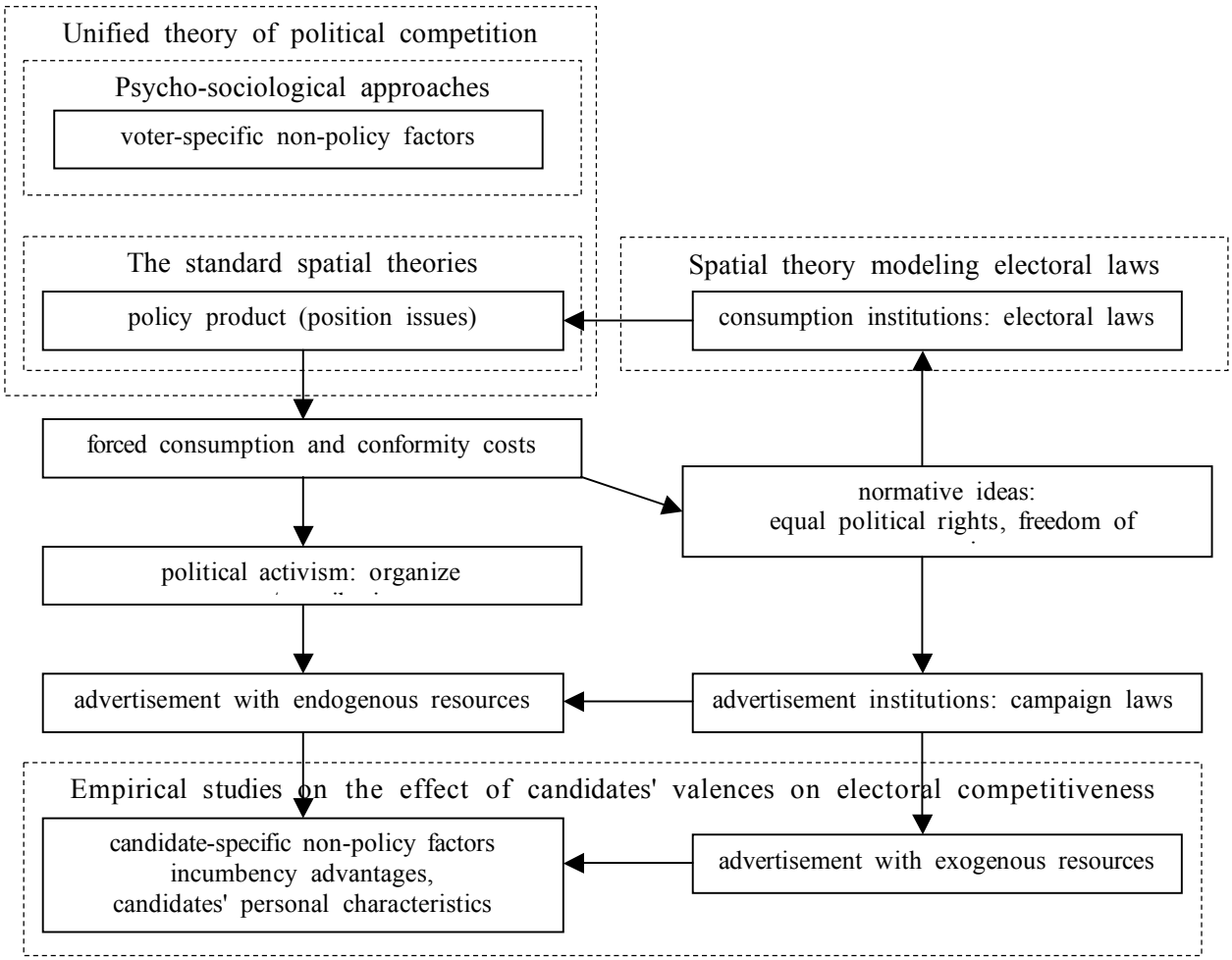


Figure 1. Theory of Political Transaction

Political Transaction Model

Model Specification

The basic idea of the TPT is that candidates optimize votes by selecting a policy subject to a resource constraint determined by activist preferences. Candidates sway citizens' voting decisions by advertising their non-policy merits with endogenous resources provided by

political activists and exogenous resources independent of the candidates' policy. Moon (2004) theorizes this idea in his "resource constrained electoral model" (RECEM). The model that I present in this paper, or what I call Political Transaction Model (PTM, hereafter), is different from the RECEM in two respects. First, whereas citizens only vote and party activists contribute resources in the RECEM, citizens both vote and contribute resources in the PTM. Second, the ideal points of activists are exogenously assumed in the RECEM, whereas they are derived endogenously in the PTM.

The basic structure of the PTM is similar to the RECEM. First, I describe the voters. I assume a continuum of citizens' ideal points. I denote a citizen by his ideal point, $\theta \in [0,1]$. I also assume the distribution of citizen preferences, denoted by $\varphi(\theta)$, in the interval [0,1]. Next, I describe the candidates. Two candidates, *L* and *R*, compete for votes by offering his/her policy product, x_L and $x_R \in [0,1]$, respectively. I assume that citizens have complete information about the candidates' policies. I also assume that the candidates also spend campaign resources on their valences to sway voters' ideological voting decision.

I distinguish valences in terms of the degree to which they are known to citizens. First, there is revealed valence, which is well known to voters. For example, incumbents' "character valence" such as integrity, competence, and diligence are well known to voters but challengers do not enjoy such valence. I denote candidate *i*'s revealed valence by $v_i^{rv} \in \square$. Second, there is valence that requires political advertisements for voters to know about the incumbents. It includes incumbents' constituency services and legislative achievements that incumbents want to claim credit for, but constituents do not recognize them. Challengers want to reveal their personal merits that are not yet known to their constituents. This concealed valence also includes negative factors (poor job performance, scandals, incompetence, no experience, and so on) that can hurt the opponents but are less known to voters. I denote candidate *i*'s concealed valence by $v_i^{cn} \in \square$.

I define the utility function of a citizen. First, I assume that the utility of the citizen increases as her ideal point and her candidate's policy become closer. I denote the ideal point of the citizen by θ. Second, I assume that the utility of a citizen is a monotonic increasing function of a candidate's valence that is exogenously given.[6] I further assume that a candidate spends resources to advertise his concealed valence. I denote candidate *i*'s per capita spending by $r_i \in \square$. I also assume that a citizen's utility increases as the candidate's campaign spending for advertising his concealed valence increases. Then, the citizen's utility of candidate *i* is as follows:

$$u_i(x_i, v_i^{cn}, v_i^{rv}, r_i; \alpha, \varepsilon, \theta) = \alpha v_i^{rv} + r_i \cdot v_i^{cn} - \varepsilon(x_i - \theta)^2, \text{ for } i \in \{L, R\} \qquad (1)$$

Here, the parameter α measures a salience of revealed valence or the extent to which the citizen is sensitive to the revealed valence. The parameter ε represents the elasticity of the citizen's utility of candidate *i*'s policy. It measures how fast the utility increases as the candidate's policy and the citizen's ideal point become closer. If candidate *i* is incumbent, the term $-\varepsilon(x_i - \theta)^2$ is interpreted as a conformity cost that a citizen needs to pay. If candidate *i*'s policy position is the same as the citizen's ideal position, the citizen does not pay any cost.

As the two positions deviate from each other, the citizen's conformity cost increases. As ε increases, the conformity cost of an alienated citizen increases faster.

A citizen is indifferent between candidates *L* and *R*, if $u_L = u_R$, or if

$$\alpha v_L^{rv} + r_L \cdot v_L^{cn} - \varepsilon(x_L - \theta)^2 = \alpha v_R^{rv} + r_R \cdot v_R^{cn} - \varepsilon(x_R - \theta)^2 \tag{2}$$

Solving equation (2) for θ, we get the equation for the cutpoint $\hat{\theta}$.

$$\hat{\theta} = \frac{x_L + x_R}{2} + \frac{r_L \cdot v_L^{cn} - r_R \cdot v_L^{cn} + \alpha(v_L^{rv} - v_R^{rv})}{2\varepsilon(x_R - x_L)} \tag{3}$$

The cutpoint is the ideal point of a citizen who is indifferent to both candidates *L* and *R*. Thus, citizens at the cutpoint vote randomly. Citizens to the left of the cutpoint vote for candidate *L* and those to the right vote for candidate *R*.

Next, specify an individual citizen's campaign contribution function. I assume that citizen campaign contribution is affected by alienation and indifference (Riker and Ordeshook 1968). That is, I assume that a citizen's contribution decreases (1) as a candidate deviates from the citizen's ideal position (alienation effect) and (2) as two candidates' policies become less distinct (indifference effect). To model this idea, I define an individual citizen's resource contribution function as follows:

$$c_i(x_i, x_j; \lambda, \theta, \rho) = \left[-\rho(x_i - \theta)^2 \lambda + \left\{ \rho(x_j - \theta)^2 - \rho(x_i - \theta)^2 \right\} (1 - \lambda) \right] \tag{4}$$

Here, the parameter ρ measures the elasticity of resource contribution. As ρ increases, a citizen's resource contribution to candidate *i* increases faster if the candidate's policy becomes close to his ideal point. In other words, as ρ increases, the citizen becomes more responsive to her candidate's policy adjustment by contributing resources. Thus, ρ implies citizens' responsiveness in their resource contribution or their political activism in more general terms. The terms $-\rho(x_i - \theta)^2$ and $\left\{ \rho(x_j - \theta)^2 - \rho(x_i - \theta)^2 \right\}$ respectively capture alienation and indifference effects on resource contribution. The parameter λ measures the salience of alienation effect in relation to indifference effect. If λ is 1, only alienation affects the citizen's resource contribution. If λ is 0, only indifference affects the citizen's resource contribution.

Then, we can define each candidate's endogenous resources as follows:

$$\begin{cases} r_L^{en}(x_L, x_R; \varepsilon, \varphi, \lambda, \theta, \rho) = \displaystyle\int_0^{\frac{x_L + x_R}{2}} c_L(x_L, x_R; \varepsilon, \lambda, \theta, \rho) \varphi(\theta)\, d\theta \\ r_R^{en}(x_L, x_R; \varepsilon, \varphi, \lambda, \theta, \rho) = \displaystyle\int_{\frac{x_L + x_R}{2}}^{1} c_R(x_L, x_R; \varepsilon, \lambda, \theta, \rho) \varphi(\theta)\, d\theta \end{cases} \tag{5}$$

Here, r_i^{en} represents candidate *i*'s endogenous resources. The function $\varphi(\theta)$ represents the distribution of citizen preferences. To simplify the model, I assume that $\varphi(\theta)=1$.[7] According to equation (5), a candidate's endogenous resources are a cumulative function of contributions by individual citizens whose ideal points are closer to the candidate's policy.

In addition to endogenous resources, candidates' resources are also determined by exogenous resources. These resources include financial, human, informational and institutional resources resulting mainly from incumbency advantages such as name recognition, campaigning skills, electoral prospect, fundraising ability (Goodliffe 2005), franking privileges (Mayhew 1974b), and media coverage (Prior 2006). If we denote the exogenous resources by r_i^{ex}, candidate *i*'s resources can be defined as follows:

$$r_i = \beta\ r_i^{ex} + r_i^{en} \tag{6}$$

Here, the parameter β measures the extent to which candidates depend on exogenous resources. While r_i^{ex} represents a candidate specific variable that varies between candidates, there are several factors that affect β. First, campaign finance laws affect β by regulating funding sources, contribution and expenditure limits, and the length of election campaign periods. For example, campaign finance laws could prohibit some exogenous resource contributions like self-financing or limit the amount contributed. Or, a short campaign period could be disadvantageous to challengers who rely more on endogenous resources than incumbents. Various social and political factors that facilitate political activism also affect β. When citizens are politically active, their endogenous resource contributions increase. Thus, candidates become more dependent on endogenous resources.

Next, I define each candidate's payoff function, $\Pi \in [0,1]$. Candidate *L*'s payoff function is

$$\begin{aligned}
&\Pi_L(x_L,x_R)=\Phi(\hat{\theta}) \quad \text{if } x_L < x_R\ . \\
&\left.\begin{aligned}
&\Pi_L(x_L,x_R)=1 \quad \text{if } v_L^{rv}+r_L\cdot v_L^{cn} > v_R^{rv}+r_R\cdot v_R^{cn} \\
&\Pi_L(x_L,x_R)=.5 \quad \text{if } v_L^{rv}+r_L\cdot v_L^{cn} = v_R^{rv}+r_R\cdot v_R^{cn} \\
&\Pi_L(x_L,x_R)=0 \quad \text{if } v_L^{rv}+r_L\cdot v_L^{cn} < v_R^{rv}+r_R\cdot v_R^{cn}
\end{aligned}\right\} \text{ if } x_L = x_R.
\end{aligned} \tag{7}$$

Candidate *R*'s payoff function is

$$\Pi_R(x_L,x_R)=1-\Pi_L(x_L,x_R)\ . \tag{8}$$

Candidate *i*'s optimization problem is to

$$\max_{x_i} \Pi_i(x_L, x_R) . \tag{9}$$

Lastly, I define the equilibrium of the model. An electoral equilibrium of the model is the Nash equilibrium in the game played by two candidates. The equilibrium is a policy pair (x_L^*, x_R^*) such that

$$\begin{cases} \Pi_L(x_L, x_R^*) \le \Pi_L(x_L^*, x_R^*) , \\ \Pi_R(x_L^*, x_R) \le \Pi_R(x_L^*, x_R^*) . \end{cases} \tag{10}$$

Equilibrium Results

In the previous section, I propose eight exogenous factors that affect equilibrium policies. Among those factors, three factors are candidate related: a candidate's revealed valence advantage ($\Delta v^{rv} \equiv v_i^{rv} - v_j^{rv}$), concealed valance advantage ($\Delta v^{cn} \equiv v_i^{cn} - v_j^{cn}$), and exogenous resources advantage ($\Delta r^{ex} \equiv r_i^{ex} - r_j^{ex}$). The other factors are citizen related and institutional: citizens' sensitivity to valence issues (a), elasticity of citizen policy utility (ε), elasticity of political activism (ρ) and the salience of alienation effect relative to indifference effect (λ); and institutional arrangements affecting candidates' dependency on exogenous resources (β).

In this section, I explore how these factors affect equilibrium policies. I also identify policies that maximize campaign resources, and compare equilibrium policies with resource maximizing policies, denoted by $x_i^{\max}$. The comparison is theoretically interesting since each candidate's resource maximizing policy is equivalent to the policy that minimizes the conformity cost of his supporters. Furthermore, a comparison of the winning candidate's equilibrium policy and his resource maximizing policy provides a normative implication about representation. On the one hand, if a winning candidate takes an equilibrium policy close to the median, this implies that the general public's preference is better represented. On the other hand, if the candidate's policy is closer to the resource maximization policy, this implies that the majority's preference is better represented.

Due to the nonlinear complexity of the objective functions, it is not possible to get closed-form solutions for equilibrium policies, but we can study the behavior of the equilibrium by the "hill climbing" iterative refinement method. Figure 2 demonstrates the changes in x_i^* and $x_i^{\max}$ when λ varies.[8] Figure 2 shows that the two candidates converge if indifference only affects contribution (when λ =0). But the two candidates' equilibrium policies diverge from each other as λ increases. This implies that alienation has a centrifugal effect while indifference has a centripetal effect. The reason that indifference generates the convergent result is that indifference affects two candidates' strategies symmetrically. That is, less distinctive policies resulting from a candidate's policy moderation discourage not only supporters of the candidate from contributing resources but also supporters of the opponent. So a covering candidate can garner extra votes around the center without being worried about losing resources from those who withdraw contributions due to indifference. Which factor

between alienation and indifference is more important is an empirical question but empirical studies suggest that λ is close to 1. These studies find that a distance between candidates does not affect financial contributions but a candidate's ideological extremism positively affects the contributions he receives (Ensley 2009; Peress 2010).[9]

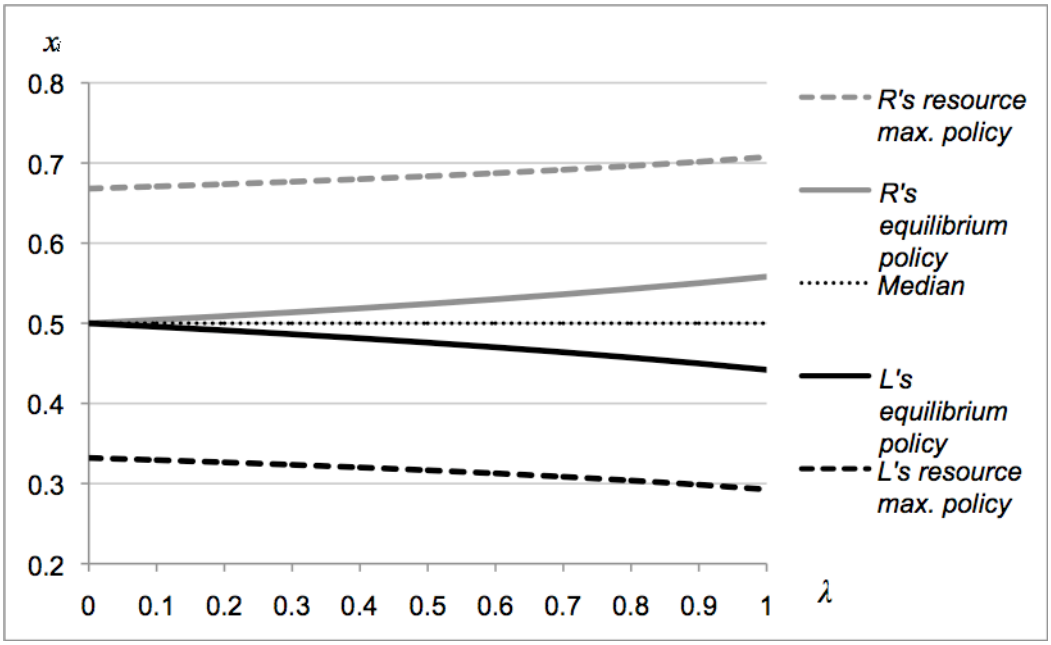


Figure 2. The effects of λ on equilibrium and resource maximizing policies

Figure 2 demonstrates two findings about resource maximizing policies in relation to equilibrium policies. First, unlike the equilibrium policies, two candidates' resource maximizing policies never converge regardless of the value of λ. Second, the resource maximizing policies deviate more from the median than equilibrium policies.[10] In other words, candidates move from their resource maximizing policies toward the center but they do not converge all the way to the median. The reason for the partial convergence is as follows: if the candidates converge to the median in the interest of gaining more votes around the center, they run out of resources to be used for advertisement of their valences. Thus, there exists a trade-off between votes and resources. Facing such a trade-off, the candidates seek equilibrium policies that optimally balance these competing pressures. Figure 2 illustrates that each candidate's equilibrium policy is located between his resource maximizing policy and the median.

Thick lines in Figure 3 display a result that the elasticity of policy utility (ε) has a centripetal effect.[11] In other words, if a citizen's policy utility becomes more elastic, the two candidates converge more. The reason is that when the policy utility is elastic, policy becomes more salient compared to valence. Then, the candidate's incentive to obtain resources becomes weaker since valence becomes less effective to sway citizens' ideological voting decisions. Thus, the candidate converges to garner extra voters around the center. Thin lines in Figure 3 show that the elasticity of resource contribution (ρ) has a centrifugal effect.

As the elasticity of resource contribution decreases, a citizen's contribution decreases faster when her candidate deviates from her ideal policy. The candidate resources also decrease faster if he deviates from his resource maximizing policy. This implies that if citizens respond sensitively to their candidate's policy deviation with their resource contributions, they can attract the candidate's policy toward them. In short, political activism has a centrifugal effect.

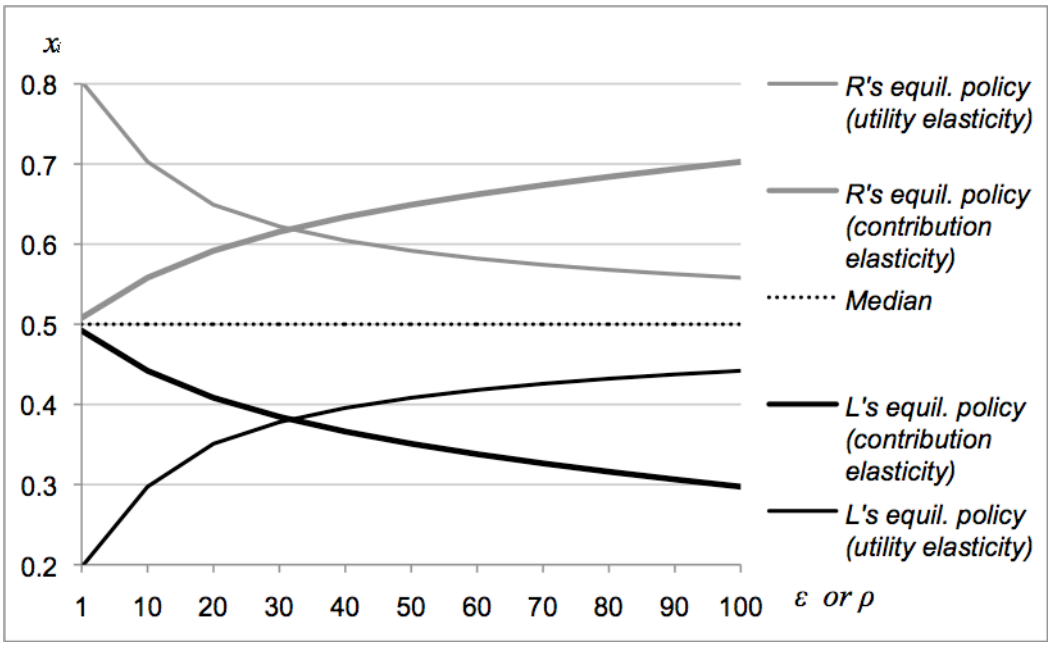


Figure 3. The effects of ε and ρ on equilibrium and resource maximizing policies

The finding in Figure 3 reveals a theoretical significance of the role citizens play in political competition. The standard spatial models, which view citizens as consumers, disregard their roles as investors who endeavor to influence the policymaking process. According to the result in Figure 3, this view is equivalent to an assumption that the elasticity of resource contribution is 0. In the PTM, the PTM specifies citizens as not only consumers (ε>0) but also as investors (ρ>0). In addition, the significance of the role citizens play between consumer and investor varies as a function of the two parameters ε and ρ. The result in Figure 3 implies that equilibrium policies depend on which role citizens play between consumer and investor. If citizens act primarily as consumers (large ε), the equilibrium policies are convergent. By contrast, if citizens' political activism are responsive to candidates' policy adjustment (large ρ), the equilibrium policies are divergent. Therefore, the standard spatial model, which implicitly assumes that ρ is 0, is a special case of a more general PTM.

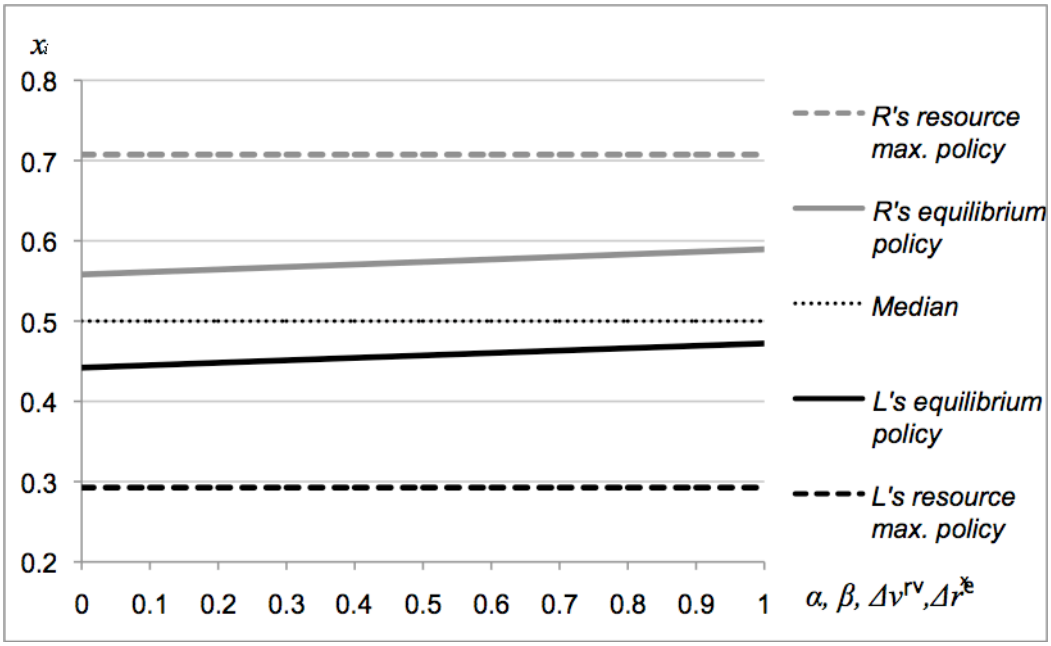


Figure 4. The effects of α, β, Δv^{ex}, and Δr^{ex} on equilibrium and resource maximizing policies

Figure 4 demonstrates the effects of four exogenous variables (α, β, Δv^{rv}, and Δr^{ex}) on equilibrium policies. When α or β varies, candidate L is assumed to be the advantaged candidate.[12] When Δv^{rv} (or Δr^{ex}) is greater than 0, candidate L has a revealed valence (or exogenous resource) advantage.[13] Figure 4 displays that when these factors are greater than 0, candidate L's is closer to the median policy than candidate R's in equilibrium. When these factors increase, candidate L converges toward the center whereas candidate R deviates from the center. In more detail, (1) as citizens become more sensitive to revealed valences (as α increases); (2) as candidates rely more on exogenous resources (as β increases), or (3) as candidate L's revealed valence advantage (Δv^{rv}) or exogenous resources advantage (Δr^{ex}) increases, candidate L converges toward the center.[14] Candidate L has an incentive to converge since he, by making his policy less distinguishable from candidate R's, tries to make his valence advantage a more effective way to sway voters' ideological voting decisions. By contrast, candidate L's valence advantage provides candidate R with a centrifugal incentive. Candidate R wants to make the policy difference greater in order to prevent citizens from being swayed by candidate L's valence advantage.

Figure 5 demonstrates the effect of candidate L's concealed valence advantages (Δv^{cn}) on equilibrium policies.[15] According to Figure 5, candidate L either converges or diverges depending on the value of β. On the one hand, if β is large, a candidate with a concealed valence advantage becomes more dependent on exogenous resources. Then, he can distance himself from the preference of political activists since the advantaged candidate is able to advertise his valence with exogenous resources (Moon 2004). On the other hand, if β is small, even the advantaged candidate moves outward to gain endogenous resources.

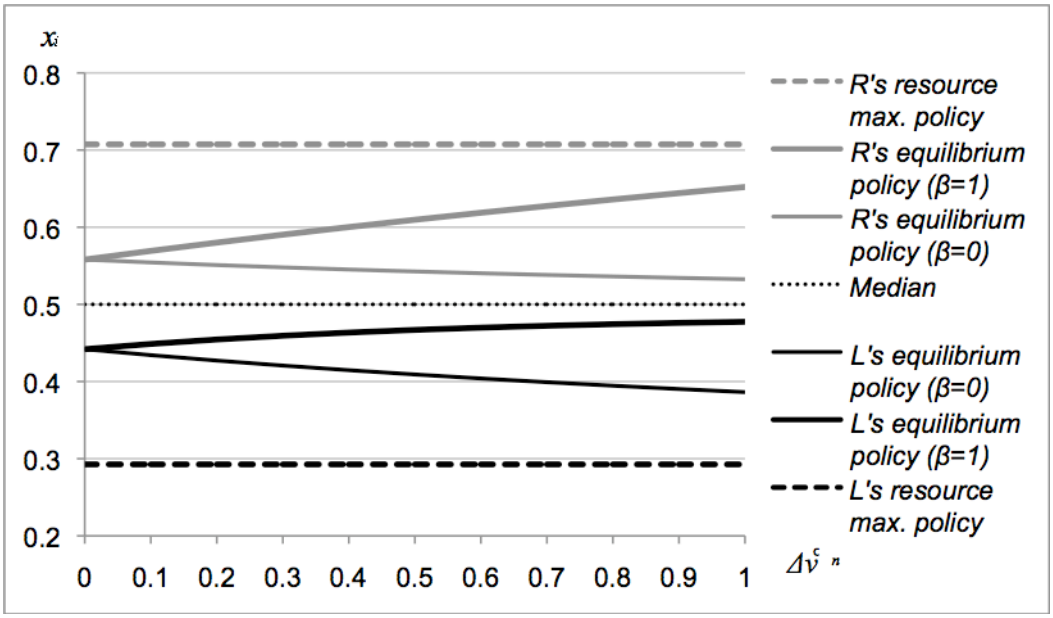


Figure 5. The effects of Δv^{cn} on equilibrium with a small or large β

This result is an important theoretical development in the spatial theory. Although the recent spatial models expand the conventional model by adding candidate valence into their model, they do not view citizens as investors who constrain their candidate by offering endogenous resources. In the recent model, a centripetal or centrifugal effect of a valence advantage depends on its assumption about the candidates' goal. Models with an assumption of office-seeking candidates predict a centripetal movement by a candidate with a valence advantage. By contrast, models with an assumption of policy-seeking candidates predict that valence has a centrifugal effect on the advantaged candidate.[16]

However, once campaign contributions and advertisement of valences—which are the most important elements of electoral competition—are brought into the model, an office-seeking candidate with a valence advantage could take not only a more moderate but also a more extreme policy. The advantaged candidate's position taking depends on the type of resources he primarily uses to advertise his valence. Political activism affects the type of resources on which the candidates depend. If citizens are active political participants, candidates depend more on endogenous resources.

Empirical Implications

The finding in Figure 5 explains why challengers tend to take more extreme positions than incumbents (Adams, Merrill, and Grofman 2005; Moon 2004; Stone and Simas 2010). A reason for centrifugal position taking by challengers is that there exists an asymmetry in valence or resources between incumbents and challengers. First, citizens recognize incumbent valence more than challenger valence. Thus, incumbents enjoy a revealed valence advantage. Second, challengers lack exogenous resources. Since the exogenous resources are usually

available to incumbents,[17] challengers instead rely on endogenous resources. Challengers earn more campaign contributions by taking more extreme policies than incumbents (Ensley 2009; Peress 2010), and such extreme policy taking provides the challengers not only resources but also votes (Moon 2004; Stone and Simas 2010). By moving outward, challengers differentiate themselves from incumbents, thereby making the incumbents' revealed valences less effective. Thus, challengers can reap both electoral and financial rewards by adopting extreme policies.

The relationship between challengers' extremism and their endogenous resources was demonstrated indirectly in Figure 4. In Figure 4, candidate *R*, facing candidate *L* with a revealed valence advantage or an exogenous resource advantage (Δv^{rv} or Δr^{ex}) moves outwards toward her resource maximizing position. Thus, when candidate *R* takes a more extreme position, her endogenous resources increase. Figure 6 demonstrates more directly how the two candidates' endogenous resources change when candidate *L*'s exogenous resource advantage (Δr^{ex}) increases. Figure 6 shows that candidate *L* with an exogenous resource advantage moves inwards at the expense of his endogenous resources. Figure 6 also demonstrates why candidate *L* affords to converge toward the center. The dotted line displays that candidate *L* still enjoys an advantage of total resources despite his convergence due to his exogenous resource advantage. By contrast, candidate *R* moves outward and gains more endogenous resources. Empirical studies' findings of the positive relationship between challengers' campaign contributions and their extremism are consistent with the result shown in Figure 6 (Ensley 2009; Peress 2010).

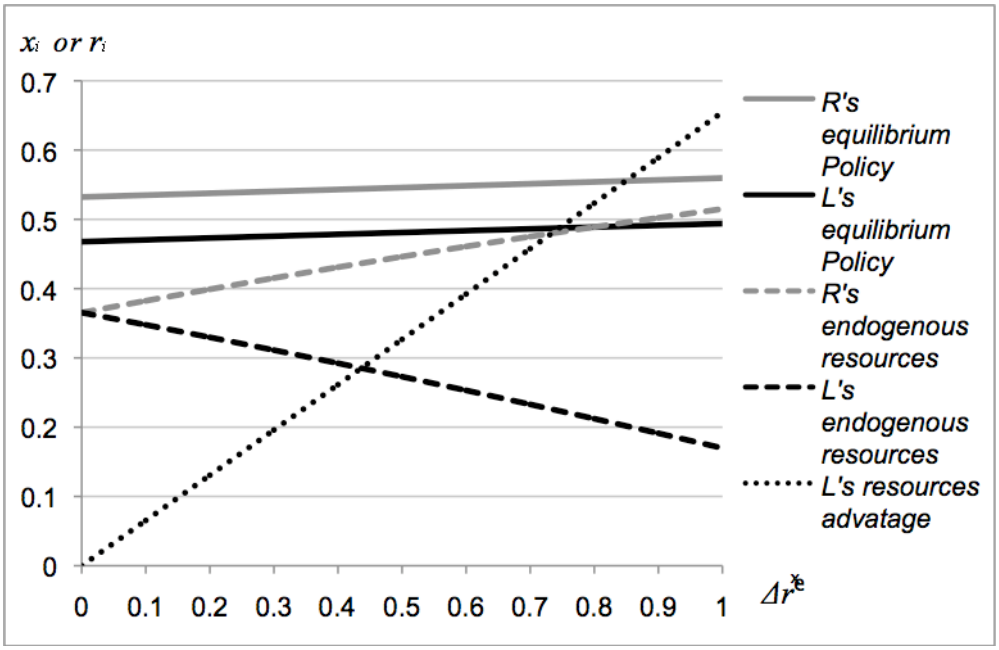


Figure 6. Differences in exogenous and endogenous resources in equilibrium

Normative and Institutional Implications

The analysis of the PTM finds that candidates with revealed advantages, than disadvantaged candidates, take policies that are closer to the median. Similarly, Stone and Simas (2010) find that incumbents with a personal-character advantage are closer ideologically to their district preferences than disadvantaged challengers. From this finding, Stone and Simas hold that high valence and moderate policy "reinforce each other and contribute to electoral victory" (2010, 382). Stone and Simas further suggest that this result has a normative implication on theories of representation. To support this idea, Stone and Simas first posit that voters intrinsically value candidate characters such as integrity, competence, and dedication to public service. Then, they reason that if candidates with such characters also represent citizens' policy preferences better (by adopting a policy around the preferences of the median voters),[18] "constituents' interests in nonpolicy and policy concerns reinforce the quality of representation on both dimensions" (2010, 371). Based on this reasoning, Stone and Simas conclude that "there is cause for optimism" about the "double competition" that revolves around policy and valence (2010, 371).[19]

While Stone and Simas' (2010) reinforcement thesis has a reasonable basis, there are several other issues to consider. The first issue involves a theoretical validity of their finding that the candidate with a valence advantage adopts a more moderate policy. In a paper that treats valence endogenously, Serra claims that "there are theoretical reasons to doubt such [Stone and Simas'] optimism" (2010, 436). According to Serra, "combining competition in the policy dimension with competition in the valence dimension reveals a surprising trade-off: candidates will display high valence or low polarization, but not both" (2010, 436). Adam and Merrill (2009) also find that policy moderation and high valence do not always reinforce each other. According to Adam and Merrill, a policy-seeking party in a multiparty competition has a strategic incentive to moderate its position when its valence deteriorates. The analysis of the PTM also yield a result that a candidate with a valence advantage does not always take a more moderate policy than the disadvantaged candidate. If the candidate depends on endogenous resources, he can take a more extreme policy.

The second issue involves the validity of Stone and Simas' normative idea that double competition, in policy and valence, reinforces the quality of representation. They claim that candidate valence such as competence, experience, credibility, honesty, and dedication to public service are of intrinsic interest to voters. Valences like these, in fact, involve the citizens' expectation that such valences would contribute to their candidate's successful job performances, thereby making them better off. However, citizens also vote based on a different kind of candidate valence such as appearance, attractiveness, eloquence, or other personal images, which are little related to a candidate's job performance. In other words, valence such as competence or experience has substantial values whereas valence such as appearance or attractiveness has superficial values. Many citizens vote based on superficial valence and voting based on this valence could deteriorate the quality of representation. For example, a liberal citizen, being swayed by the pleasant appearance of a Republican candidate, could vote for him even though the candidate proposes conservative policies that incur the citizen a greater conformity cost than the policies of a Democratic candidate. In this case, since the citizen (a principal) voted for (selects) the candidate (an agent) who would not serve better, a delegation problem occurred.

Even when citizens select a candidate based on valence with a substantial value, the citizens' selection could result in delegation failure if they misjudge the candidate's valence or if they are mislead by false advertising of the valence. Moreover, even though citizens are able to judge their candidate's substantial value correctly, a delegation failure could occur. For example, assume a conservative citizen votes for a experienced Democratic candidate with an expectation that the candidate's experience would improve the economic condition better than a Republican candidate. However, in order for the citizen's choice to be correct, his income gain resulting from the Democratic candidate's better job performance should be large enough to compensate for his income loss resulting from the candidate's liberal policies such as tax increases. In general, high valence and moderate policy reinforce the quality of representation only if a candidate's valence generates a Pareto-optimal outcome in which a majority's aggregate utility gain from high valence is large enough to compensate for the majority's aggregate utility loss resulting from policy moderation.[20] Thus, the claim that policy moderation and high valence reinforces the quality of representation is valid only if citizens are able to judge candidates' valence correctly or estimate a tradeoff between a gain in their valence utility and a loss in their policy utility.

The third issue involves a more fundamental question about the quality of representation: which is better- representation of the general public or representation of a majority? According to Powell (2000), there are two visions of representative democracy. On the one hand, the majoritarian vision advocates a view that a winning party of political competition should control policymaking to represent a majority. On the other hand, the proportional influence vision supports a view that policy outcomes should ideally reflect the interests of various groups in proportion to their sizes. In countries with this vision, post-election bargaining among the parties tends to result in a government representing the preference of the median voters (Powell 2000).

The disparity between the two visions is also found in the views of the role played by citizens in electoral competitions. If citizens are viewed as consumers, it is logically derived that the optimal representation is to maximize the utility (or minimize the conformity cost) of the general public. Thus, the convergence to the median policy enhances the quality of representation in this view. By contrast, if citizens are viewed as investors, it is fair to represent the preferences of those who invest more. Since citizens actively participate in electoral competition by investing their energy, time, and money, winners deserve to be better represented in return for their efforts. Thus, policy outcomes that minimize the conformity cost of a majority might be the optimal representation in this view.[21]

An analysis of the PTM reveals that a winning candidate's equilibrium policy is located between the median and the policy that minimizes a majority's conformity cost. In other words, an equilibrium occurs at a policy that represents neither the general public nor the majority. This result implies that the equilibrium policy is located at a position that reconciles the two visions. The analysis of the PTM also shows that if citizens sensitively respond to their candidates' policy adjustment with their resource contribution, they can move the candidate's policy toward their ideal policy. In particular, those who support a candidate with a valence advantage need to invest endogenous resources, if they want their preferences to be represented. Otherwise, the advantaged candidate's policy will move away from their preference toward the median voters' preference.

The finding in Figure 5 has an institutional implication. Figure 5 demonstrates that as

candidates become more dependent on exogenous resources (as β increases), an advantaged candidate adopts a more moderate policy. This result suggests that institutional reforms encouraging exogenous resources enhance representation of the general public. Such institutional reforms might be particularly appropriate in a polarized political system with "adversary politics."[22] However, a couple of caveats must be entered against this suggestion. First of all, as I pointed out above, the reforms will enhance the quality of representation only if citizens are able to correctly judge candidates' valences or estimate the tradeoff between valence and policy utilities. Second, since exogenous resources are usually available to incumbents, institutional reforms that are lenient to exogenous resources might be advantageous to incumbents.[23] Therefore, public funding and other indirect funding to challengers such as publication of election materials or the allocation of free campaign broadcasts might offset incumbents' exogenous resources.

By contrast, institutional reforms encouraging endogenous resources might be more appropriate in a country in which centrist politics dominates, as in the United States during the middle of the twentieth century. If it is difficult for citizens to distinguish competing parties' policies (Δx decreases), valence plays a more important role in citizens' voting decisions.[24] In particular, if citizens are sensitive to valence (a large α), advantaged candidates converge even further. Even worse, if citizens are not able to evaluate candidate valence correctly, delegation failure deteriorates the quality of representation. In this case, institutional reforms that encourage endogenous resource contributions by political activists or restrict exogenous resource contributions might yield more distinctive party platforms.

Empirical Applicability

Scientists prefer parsimonious explanations whereas historians prefer realistic ones. The scientists' preference for parsimony over realism results from their pursuit of general theories. However, a scientist's oversimplification of empirical reality in the pursuit of a general theory could result in misspecification. Downs' median voter theory is one of the most elegant theories in political science. Nevertheless, due to its unrealistic convergence result, subsequent theories have attempted to explain the non-convergence of political parties by modifying Downs' assumptions. Rather than modifying a few assumptions, I claim that Hotelling's seller-buyer framework borrowed by Downs is too parsimonious to the extent that it omits the essence of politics. The theory that I offer in this paper views political competition as an integrated system of players, institutional arrangements, and normative ideas. I specify this view into a formal model called Political Transaction Model (PTM).

Whereas the distribution of citizen preferences only affects equilibrium policies in the Downs' model, various (citizen-related, candidate-related, and institutional) factors affect the equilibrium in the PTM.[25] The analysis of the PTM yields many interesting results, some of which are counter-intuitive. First, the elasticity of citizens' policy utilities has a centripetal effect, which is offset by a centripetal effect of the elasticity of resource contributions. Second, alienation has a centrifugal effect whereas indifference has a centripetal effect. Third, several factors have asymmetric effects on candidates' position taking. A candidate with a revealed valence advantage adopts a more moderate position than the other candidate (1) as citizens become more concerned with valences, (2) as a candidate's revealed valence

advantage increases, (3) as the candidate's exogenous resource advantage increases, and (4) as institutional arrangements encourage exogenous resource contributions. Above of all, the analysis of the PTM yields a result that differs from the other spatial models: a candidate with a valence advantage could take a more extreme policy position if the candidate depends more on endogenous resources.

Given that there are numerous factors in the PTM, it appears that the model is too meticulous and complicated to portray a general electoral mechanism. However, complicated models are not necessarily less general. I believe that politics *is* a complex system in which political players are embedded with institutions and normative ideas. Thus, I believe that political scientists now need to build a model that can realistically explain such complexity. In this context, I try to propose a general but realistic model of political competition.

The theoretical framework of the PTM is comprehensive and realistic enough to be applied to explain the recent important political development in the United States: an intriguing increase in political polarization in the U.S. Congress since the early 1970s. Prominent scholars propose different theories to explain the polarization of the U.S. Congress. Among these scholars, Fiorina and his colleagues first observe that "*partisan* polarization has only a faint reflection in *popular* polarization" (2010, 9 *italics* original). According to Fiorina, Converse's 1960s description of uninformed, uninterested, and non-ideological Americans "still holds up pretty well" after four decades (2010, 19). Given that there has been little change in ordinary Americans' political interests and ideological preferences, polarization of political elites is puzzling. Fiorina claims that elite polarization resulted from "the ascendance of the purists" (2010, 188).

Fiorina (2010) further argues that the rise of participatory democracy contributed to the ascendance of the purists. Since the middle of 1960s, the transformation of the presidential nominating process changed the key nominating player from party professionals to political activists. The change in the presidential nominating process also caused a transition of party-centered elections into candidate-centered elections. Incumbents began to emphasize "their personal characteristics, constituency service, and individual records," and voters put "less weight on their party affiliations" (195–96). Legislatures "opened their heretofore closed deliberative proceedings to the public" and their legislative activities "entered into the public record" (196). According to Fiorina, these changes expanded opportunities for Americans to participate in policy making, but ordinary Americans remained uninterested, non-ideological, and candidate centered. Those who take advantage of these opportunities are purists who "have deep policy, programmatic, or ideological commitments" (2010, 199).

Although Abramowitz (2010) emphasizes less a ideological "disconnect" between the representatives and the represented than Fiorina does (2009),[26] he also highlights the role of political activists or "the engaged public." According to Abramowitz, there exist "vast differences in political interest, knowledge, and activity" between the general public and the engaged public who are campaigning directly, speaking with friends, contributing money, or simply putting up yard signs (2010, 4). Elite polarization reflects polarization of the "engaged public" which has increased since the 1980s. Lastly, McCarty, Poole, and Rosenthal (2006) attribute the causes of polarization to fundamental social and economic changes—most notably, a parallel rise in income inequality.

The PTM provides spatial theoretical grounds to Fiorina's thesis of the purist polarization or Abramowitz's thesis of polarization of the engaged public. According to the PTM, competing candidates adopt more extreme policies if politicians become more dependent on endogenous resources, which are provided by the purists or the engaged public. Fiorina's observation of seemingly unintuitive correspondence between elite polarization and lack of popular polarization is also theoretically explicable in the framework of the PTM. If ordinary citizens are not interested in politics or remain uninformed about candidate policies, their utility is not quite sensitive to their candidates' policy adjustment (the elasticity of their policy utility is small). Then, valence becomes more effective to sway ideological voting decisions, and candidates' incentive to obtain campaign resources to advertise valence becomes more strong. Due to this incentive, candidates take more extreme policies to obtain campaign resources from political activists (recall the result in Figure 3). In short, if citizens are not interested in policies, candidates' personal characteristics play a more important role and their positions become more polarized. This result is consistent with Fiorina's observation of the emergence of candidate-centered elections during the period of elite polarization.

McCarty, Poole, and Rosenthal's (2006) thesis about the relationship between polarization and income inequality can be also explained in the theoretical framework of the PTM. In this paper, I assume that the distributions of citizen preferences and citizen incomes are uniform and independent from each other to simplify model specification. If we instead assume that the two distributions are associated with each other, we can analyze the effect of income inequality on polarization.[27]

The standard spatial models, however, cannot incorporate any of the three theses that explain elite polarization in the United States. In the standard models, legislators become polarized only if the preferences of the public are polarized. More specifically, only if voters in red states become more conservative and those in blue states become more liberal, legislators are polarized. In other words, elite polarization is not possible without polarization of the general public. However, none of the three theses suggested polarization of the general public. In the theoretical framework of the PTM, political elites can be polarized even when the general public is not polarized.

The PTM does not incorporate voter-specific valence such as partisanship or other socio-psychological factors that the behavioral tradition of electoral studies emphasize. Adams, Grofman, and Merrill (2005) propose a model that unifies spatial theories with behavioral electoral studies. I believe such an effort is an important theoretical development toward a more realistic model. The PTM can also incorporate voter-specific valence by treating them as valence that varies across citizen preferences. Given that Adams, Grofman, and Merrill's model specifies an electoral competition as a game played by citizens as a consumer and not as an investor, the PTM incorporating partisanship would present interesting results.[28] In sum, the PTM adds to electoral studies an alternative theoretical framework, which is flexible and general enough to explain various empirical phenomena that the standard spatial models fail to explain.

References

Abramowitz, Alan I. 2010. *The Disappearing Center*. New Haven: Yale University Press.

Adams, James, Jay Dow, and Samuel Merrill III. 2006. "The Political Consequences of Alienation-based and Indifference-based Voter Abstention: Applications to Presidential Elections. *Political Behavior* 28: 65-86.

Adams, James, and Samuel Merrill III. 2003. "Voter Turnout and Candidate Strategies in American Elections." *Journal of Politics* 65: 161–189.

Adams, James, and Samuel Merrill, III. 2009. ‘‘Policy-Seeking Parties in a Parliamentary Democracy with Proportional Representation: A Valence-Uncertainty Model.’’ *British Journal of Political Science* 39: 539–58.

Adams, James F., Samuel Merrill III, and Bernard Grofman. 2005. *A Unified Theory of Party Competition: A Cross-National Analysis Integrating Spatial and Behavioral Theories*. New York: Cambridge University Press.

Adams, James, Samuel Merrill III, Elizabeth N. Simas, and Walter J. Stone. 2011. "When Candidates Value Good Character: A Spatial Model with Applications to Congressional Elections." *The Journal of Politics*, 73: 17–30.

Aldrich, John H. 1995. *Why Parties?: The Origin and Transformation of Political Parties in America*. Chicago: The University of Chicago Press.

Aldrich, John H. 2010. *Why Parties?: A Second Look*. Chicago: The University of Chicago Press.

Ansolabehere, Stephen, and James Snyder. 2000. “Valence Politics and Equilibrium in Spatial Election Models.” *Public Choice* 103: 327–36.

Burden, Barry C. 2004. “Candidate Positioning in US Congressional Elections.” *British Journal of Political Science* 34: 211–27.

Cain, Bruce, John Ferejohn, and Morris Fiorina. 1987. *The Personal Vote: Constituency Service and Electoral Independence*. Cambridge, US and London, UK: Harvard University Press.

Calvert, Randall L. 1985. "Robustness of the Multidimensional Voting Model: Candidates’ Motivations, Uncertainty, and Convergence." *American Journal of Political Science* 29: 69-95.

Carey, John M. and Matthew S. Shugart. 1995 . "Incentives to Cultivate a Personal Vote: a Rank Ordering of Electoral Formulas." *Electoral Studies* 14: 417-39.

Cox, Gary W. 1990. "Centripetal and Centrifugal Incentives in Electoral Systems." *American Journal of Political Science* 34: 903-35.

Cox, Gary W. 1997. *Making Votes Count*. Cambridge: Cambridge University Press.

Dixit, Abinash and John Londregan. 1995 "Redistributive Politics and Economic Efficiency." *American Political Science Review* 89: 856-866.

Downs, Anthony. 1957. *An Economic Theory of Democracy*. HarperCollins Publisher.

Enelow, James and Melvin Hinich. 1982. "Non-Spatial Candidate Characteristics and Electoral Competition." *Journal of Politics* 44: 115-30.

Ensley, Michael J. 2009. "Individual campaign contributions and candidate ideology." *Public Choice* 138: 221–238.

Feld, Scott L., and Bernard Grofman. 1991. "Incumbency Advantage, Voter Loyalty and the Benefit of the Doubt." *Journal of Theoretical Politics* 3: 115–37.

Fiorina, Morris P. 2009. *Disconnected: The Breakdown of Representation in American Politics*. Norman: University of Oklahoma Press.

Fiorina, Morris P., Samuel J. Abrams, and Jeremy C. Pope. 2010. *Culture War? The Myth of a Polarized America*. New York: Longman.

Fenno, Richard F. Jr. 1978 *Home Style: House Members in Their Districts*. New York: HarperCollins Publishers.

Ferejohn, John. 1974. *Pork Barrel Politics: Rivers and Harbors Legislation, 1947-1968*. Stanford: Stanford University Press.

Finer, Samuel E. 1975. *Adversary Politics and Electoral Reform*. London: Anthony Wigram.

Goodliffe, Jay. 2005. "When Do War Chests Deter? " *Journal of Theoretical Politics* 17: 249-277.

Groseclose, Tim. 2001. "A Model of Candidate Location When One Candidate Has a Valence Advantage." *American Journal of Political Science* 45: 862-86.

Hinich, Melvin and Peter Ordeshook. 1970. "Plurality Maximization vs. Vote Maximization: A Spatial Analysis with Variable Participation." *American Political Science Review* 64: 772–791.

Hotelling, Harold. 1929. "Stability in Competition." *The Economic Journal* 39: 41-57.

Jacobson, Gary C. 1978. “The Effects of Campaign Spending in Congressional Elections.” *American Political Science Review* 72: 469-491.

Jacobson, Gary C. 1981. “Incumbents’ Advantages in the 1978 U.S. Congressional Elections.” *Legislative Studies Quarterly* 2: 183-200.

Jacobson, Gary C. 1990. “The Effects of Campaign Spending in House Elections: New Evidence for Old Arguments.” *American Journal of Political Science* 34: 334-362.

Jacobson, Gary C. 2000. “Party Polarization in National Politics: The Electoral Connection.” *American Journal of Political Science* 34: 334-362. In *Polarized Politics: Congress and the President in a Partisan Era*, eds. Jon R. Bond and Richard Fleisher. Washington D.C.: CQ Press. 9-30.

Katz, Richard S. and Peter Mair. 1995. "Changing Models of Party Organization and Party Democracy: The Emergence of the Cartel Party." *Party Politics* 1: 5-28.

Kernell, Samuel, Gary C. Jacobson, and Thad Kousser. 2008. *The Logic of American Politics*. New York: CQ Press.

Lupia, Arthur and Mathew D. McCubbins. 2003. *The Democratic Dilemma: Can Citizens Learn What They Need to Know?* New York: Cambridge University Press.

Macdonald, Stuart E., and George Rabinowitz. 1998. "Solving the Paradox of Nonconvergence: Valence, Position, and Direction in Democratic Politics." *Electoral Studies* 17: 281-300.

Mayhew, David R. 1974a. *Congress: The Electoral Connection*. New Haven: Yale University Press.

Mayhew, David R. 1974b. “Congressional Elections: The Case of the Vanishing Marginals. ” *Polity* 6: 295-317.

McCarty, Nolan, Keith T. Poole, and Howard Rosenthal. 2006. *Polarized America: The Dance of Ideology and Unequal Riches*. Cambridge: The MIT press.

Moon, Woojin. 2004. “Party Activists, Campaign Resources and Candidate Position Taking: Theory, Tests and Applications.” *British Journal of Political Science* 34: 611–33.

Moon, Woojin. 2011a. “Political Activism, Political Institutions, Marketization of Politics, and Political Inequality.” Manuscript.

Moon, Woojin. 2011b. “Electoral Competition with Heterogeneous Voter Specific Valences: Why Do Candidates Sometimes Converge Toward the Ideal Point of Strong Partisans But Diverge from It Other times?” Manuscript.

Moon, Woojin. 2011c. “Representation of the General Public versus Representation of the Majority: An Positive Analysis and Normative Interpretation of the Optimization Problem in Representative Democracy.” Manuscript.

Groseclose, Tim. 2001. “A Model of Candidate Location When One Candidate Has a Valence Advantage.” *American Journal of Political Science* 45: 862–86.

Palfrey, Thomas R. 1984. "Spatial Equilibrium with Entry." *Review of Economic Studies* 51: 139-156.

Peress, Michael. 2011. "Candidate Positioning and Responsiveness to Constituent Opinion in the U.S. House of Representative." Working paper, University of Rochester.

Poole, Keith T. and Howard Rosenthal. 1984. “The Polarization of American Politics.” *Journal of Politics* 46: 1061-71.

Poole, Keith T. and Howard Rosenthal. 1997. *Congress: A Political-Economic History of Roll Call Voting*. New York: Oxford University Press.

Powell, G. B. Jr. 2000. *Elections as Instruments of Democracy*. New Haven: Yale University Press.

Prior, Markus. 2006. “The Incumbent in the Living Room: The Rise of Television and the Incumbency Advantage in U.S. House Elections.” *Journal of Politics* 68: 657-673.

Riker, William, and Peter Ordeshook. 1968. "A Theory of the Calculus of Voting." *American Political Science Review* 62: 25–42.

Schofield, Norman. 2003. "Valence Competition in the Spatial Stochastic Model." *Journal of Theoretical Politics* 15: 371-84.

Schofield, Norman. 2006. ‘‘Equilibria in the Spatial Stochastic Model of Voting with Party Activists.’’ *Review of Economic Design* 10: 183–203.

Serra, Gilles. 2010. "Polarization of What? A Model of Elections with Endogenous Valence." *The Journal of Politics*, 72: 426–437.

Steen, Jennifer A. 2006. *Self-Financed Candidates in Congressional Elections.* Ann Arbor: The University of Michigan Press.

Stone, Walter J. and Elizabeth N. Simas. 2010. "Candidate Valence and Ideological Positions in U.S. House Elections." *American Journal of Political Science*, 54: 371–388.

Stokes, Donald E. 1963. “Spatial Models of Party Competition.” *American Political Science Review* 57: 368–77.

Sullivan, John L. and Daniel R. Minns. 1976. “Ideological Distance Between Candidates: An Empirical Examination.” *American Journal of Political Science* 20: 439-68.

Wittman, Donald. 1983. "Candidates Motivation: A Synthesis of Alternative Theories." *American Political Science Review* 77: 42-157

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Endnotes

[1] Paper prepared for delivery at the 2012 Annual Meeting of the American Political Science Association, New Orleans, Aug 30–Sept 2, 2012.

[2] Kernell, Jacobson, and Kousser (2008) define conformity costs as "the extent to which collective decisions require individuals to do things they wish to avoid."

[3] Downs recognizes that assumptions of incomplete and costly information, costly voting, future-oriented voting, and bimodal distribution of voters could generate a divergent result (1957, 117–19).

[4] Peress (2010) tests four theories that yield divergent results. He finds evidence against the "preference" theory, which emphasizes divided preferences of voters, or the "primary" theory, which focuses on the role of the nomination process. Instead, he finds evidence more supportive of the "policy-motivation" theory and the "resource" theory, which incorporates the role of party activists' resource contributions. By contrast, Butler (2009) attributes polarization of the U.S. Congress since the early 1970s to the distribution of voters who have become ideologically more extreme.

[5] Literature on these topics is too extensive to enumerate here. Representative studies on incumbency advantages include Mayhew (1974a), Ferejohn (1977), and Jacobson (1981). The studies on the effect of candidate spending pioneered by Jacobson (1978, 1990). The studies on personal votes and constituency services include Ferejohn (1974), Fenno (1978), and Cain, Ferejohn, and Fiorina (1987).

[6] Adams, Grofman, and Merill (2005) analyze the effect of voter-specific valence that varies across citizens.

[7] For a study that analyzes the effect of the distribution of citizen preferences, see xxx.

[8] This is a symmetric case in which the two candidates' valences and resources are identical, it is assumed that $(\Delta v^{cn}, \Delta v^{rv}, \Delta r^{ex})$ = (0,0,0). Changes in the values of the parameters do not alter the qualitative result.

[9] This result is consistent with a result of studies that analyze the causes of abstention from voting. The studies found that alienation is more important factor for abstention than indifference (Adams, Merrill, and Grofman, 2005; Adams, Dow and Merrill 2006).

[10] Moon (2004) assumes this result.

[11] Here, $(\Delta v^{cn}, \Delta v^{rv}, \Delta r^{ex})$ = (0,0,0). The values of the other parameters do not affect the result if $\lambda > 0$. Changes in the values of the parameters do not alter the qualitative result

[12] In order to display the effects of all four factors in one graph, I set the parameter values as follows: when α varies, $(\beta, \varepsilon, \lambda, \rho, \Delta v^{cn}, \Delta v^{rv}, \Delta r^{ex})$ = (1,10,1,10,0,0.1,0); when β varies, $(\alpha, \varepsilon, \lambda, \rho, \Delta v^{cn}, \Delta v^{rv}, \Delta r^{ex})$ = (0,100, 1,100,0,0,0.1).

[13] When Δv^{rv} or Δr^{ex} varies, the parameter values are as follows: $(\alpha, \beta, \varepsilon, \lambda, \rho, \Delta v^{cn})$ = (1,1,100,1,100,0).

[14] This result is consistent with of the results of the other studies. Groseclose (2001), Adams, Merrill, and Grofman, 2005, and Adams, Merrill, Simas, and Stone (2011) analyze the centripetal effect of a valence advantage while Moon (2004) deals with the

centripetal effect of incumbency advantage and exogenous resource advantage.

[15] The parameter values are as follows: $(\alpha, \beta, \varepsilon, \lambda, \rho, \Delta v^{rv}, \Delta r^{ex}) = (0,1,10,1,10,0,0)$.

[16] Some policy-seeking candidate models predict extreme position taking by the advantaged candidates (Adam and Merrill 2009; Serra 2010).

[17] According to OpenSecrets.org, financial advantages enjoyed by incumbents are enormous. The data released by the FEC on October 2011 demonstrate that the average amount raised by Senate incumbents and challengers were $6,868,869 and $593,781, respectively. House incumbents and challengers respectively raised $558,939 and $118,258 on average (http://www.opensecrets.org/overview/incumbs.php).

[18] Stone and Simas assume that the median policy represents the interests of the general public. The median policy indeed minimizes the aggregate conformity cost of the general public if the distribution of policy preferences is symmetric. When the distribution is not symmetric, the median is very close to the policy that minimizes the conformity cost of the general public. For details, see Moon (2011c).

[19] The term "double competition" is used by Serra (2010).

[20] Since no one gets worse off under the Pareto-optimal outcome, a majority does not lose by its choice of the advantaged candidate who is ideologically more distant from its ideal point than the other candidate. Yet, a minority's gain is larger than the majority's gain since the minority benefited not only from the candidate's valence but also from his policy closer to its ideal point.

[21] Fiorina (2010) suggests a normative view against this majoritarian view. Fiorina (2010) points out that political activists or "the purists" pulled policy outcomes away from the preferences of the general public towards their preferences. His normative judgment about the purist influence is negative as he calls it "the hijacking of American Democracy" (2010, 198).

[22] Observing the Labour and Conservative parties in the United Kingdom that locked into sterile confrontation of extremisms, Finer (1975) characterizes UK politics as "adversary politics."

[23] One of the exogenous resources available to challengers is self-financed campaign funds. Steen (2006) finds that challengers, especially the inexperienced, tend to self-finance their campaigns. Steen finds that self-financing challengers are less dependent on the pressures from campaign contributors, but self-financing does not give challengers a substantial electoral advantage (2006, 14).

[24] American scholars recognized the problem with indistinctive party platforms. To propose reforms to encourage the parties to take distinctive partisan positions, American Political Science Association's committee was organized by prominent political scientists in 1950 (Butler 2009).

[25] The distribution of citizen preferences is assumed to be uniform in this paper. However, the distribution also affects the equilibrium. See Moon (2011a) for details.

[26] Jacobson also finds that "electoral constituencies have diverged ideologically since the 1970s, with the parties' most active supporters moving the farthest apart" (2000: 22).

[27] Moon (2011a) finds that if citizen preferences are normally distributed and rightist citizens contribute more, an increase in income inequality results in more divergent policy taking by two competing candidates.

[28] Moon (2011b) finds that if a more extreme citizen's partisan bias is stronger, his candidate takes a more moderate position. On the contrary, if a more extreme citizen has a stronger partisan bias and contributions more, his candidate adopts a more extreme policy.