1995

Cumulative Voting and Single Member Districts in Industrial Organization

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Economics Research Honors

May 10, 1995

> The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. (cited from Holcombe 1994, 386)
>
> J.M. Keynes

> I am inclined to believe that monopoly and other imperfections are at least as important, and perhaps substantially more so, in the political sector as in the market place. (Becker 1976, 37)
>
> G. Becker

I. Introduction

In 1993 Bill Clinton nominated Lani Guinier to head the civil rights division of the Department of Justice. Soon after, Guinier's nomination became embroiled in controversy when the media and conservative legislators began to examine her writings on electoral remedies to Voting Rights Act violations. Almost immediately, Lani Guinier became known as the "quota queen" and her writings were derided as undemocratic and racially preferential. Still smarting from "nanny-gate," President Clinton quickly moved to avoid further attacks and withdrew Guinier's nomination. Foremost among the charges raised against Guinier was that her advocation of cumulative voting as an alternative to districting as a remedy for minority voting strength dilution represented an affront to democracy and was designed to unfairly advantage minorities. Unfortunately, the truth was somehow lost in the fury of political maneuvering and press sensationalism.

Lani Guinier's proposals were neither radical nor undemocratic. In fact, cumulative voting (CV) is more efficient, democratic, and fair than the plurality rule single member district (SMD) arrangement currently in use in most of the United States that Guinier's critics held up as the paragon of democracy. The importance of these qualities, especially to minorities in a pluralistic democracy, cannot be overstated. Efficient,

democratic, and fair electoral systems prevent government from ignoring minority rights and interests by turning mere enfranchisement into empowerment, which in turn, affords minorities the same access to and proportionate power in America's social, economic, and political institutions.

Evidence to support the claimed superiority of cumulative voting can be found in the literature on voting theory, comparative politics, public choice, and voting rights, but this study will focus on a relatively unexplored approach to electoral systems. Single member district, plurality rule will be compared to cumulative voting within the industrial organization paradigm,[1] in order to examine each system's effects in terms of efficiency, democracy, and fairness. It will be argued that cumulative voting, among other things, better reflects consumer preferences, induces more and better competition in elections, and prevents majority "monopolization" of the political process. As the United States and other nations begin to recognize the pluralistic nature of their societies, and as new nations embrace democracy and individual liberty, cumulative voting is an alternative that should be, and increasingly is, considered for use. Therefore, this study is important in that it sheds light on cumulative voting and adds to the evidence supporting the system's use.

First, in Section II, efficiency, democracy, and fairness, the criteria for evaluating the merits of an electoral system will be described and elaborated upon in order to clarify the bases for judgements about cumulative voting and single member districts. Then, in Section III, electoral systems will be discussed, both generally, with respect to their composition, importance, and role in politics, and specifically, with

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[1]Industrial organization is the branch of economics dealing with the structure, conduct, and performance of markets and the firms within those markets.

respect to the nature and operation of cumulative voting and single member districts. Next, Section IV will proceed to the study's central focus, conceptualizing the government, CV, and SMD within the industrial organization paradigm to assess each system's implications for the criteria. Section V will go on to consider the issues raised by the industrial organization model, as well as the examine other arguments and considerations concerning the electoral systems. Then, in Section VI, the evidence surrounding cumulative voting and single member districts generated by a unique voting experiment, as well as that discovered in a review of the real world uses of cumulative voting, will be examined. Finally, Section VII will draw some overall conclusions about how cumulative voting and single member districts measure up to the criteria and which system would be preferable.

II. Criteria

Efficiency, democracy, and fairness are the fundamental, and many times competing, values that the modern liberal state strives to embody. Nevertheless, these concepts are less than rigorously defined and consequently often confused or misapplied. Since evaluation of my hypothesis rests on claims about electoral systems and political representation in relation to these fundamental values, it is necessary to attempt to provide a better explanation of what is meant by these concepts and a way to more easily measure the degree to which an electoral system furthers efficiency, democracy, and fairness. Once defined, the essential qualities of the criteria will be distilled for use in systematically evaluating CV and SMD throughout the study.

An efficient representative system promotes processes that result in a well functioning government where political consumers' desires are met in the political marketplace at a low cost. More to the point, efficiency is Pareto optimality. In essence, democracy is popular rule.

Merely having elections, however, is not a full commitment to democracy. A true democracy strives to realize the Madisonian conception of good government through careful deliberation of proposals supported by the many interests that constitute society. Fairness is the just and proper treatment of individuals and other entities with respect to the division of social goods. Thus, in essence, the criteria of fairness attempts to measure how justly[2] a system of representation treats those under that system. Together the criteria mark out the values that determine the nature of social decision making. In terms of the traditional example of the economic pie, the criteria work in the following way: efficiency governs the size of the pie, fairness governs how the pie is divided, and democracy governs who decides these questions.

To operationalize the criteria for use in evaluating SMD and CV, it is helpful to distill the essential qualities of efficiency, democracy, and fairness as they pertain to electoral systems. Six qualities, each one promoting one or more of the criteria, will be used to measure the attributes of each system. Two of the qualities, competition and representation, promote a pair of criteria, thus having dual significance. First, competition describes the number and quality of alternatives available. In terms of efficiency this is valuable because providing what consumers want at the lowest possible price is one of its commonly recognized by-products. For democracy, competition assures that the political arena is open to a multitude of viewpoints and that minority

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[2]Justice, despite the best efforts of philosophers, is still a concept that lacks any kind of consensus, in the way that efficiency and democracy have one. Thus, there are varying and competing concepts of justice, most famous among them divine right, utilitarianism, communitarianism, and egalitarianism, Marxism but for the most part I will adopt a Rawlsian conception of justice. For those unfamiliar with Rawls' conception it is laid out in his A Theory of Justice and supplemented by his Political Liberalism. Briefly, his theory posits principles of justice that in the special conception claims each person is to have an equal right to the most extensive basic liberty compatible with a similar liberty for others and social and economic inequalities are to be arranged so that they are both reasonably expected to be to everyone's advantage, and attach to positions and offices open to all (Rawls 1971, 3-16).

interests, broadly speaking, are involved in the electoral and political systems. Second, representation describes the relationship between the people and their interests, and the government and its makeup.[3] Representation for democracy means that those in charge of the government will be a reflection of the will of the citizens. Implicit in this statement are two concepts, majority rule and effective society wide representation. Fair representation, in a sense, goes above and beyond democratic representation. It attempts to ensure that all relevant interests are adequately provided for in the representative system.

The last four qualities describe only one criteria a piece: stability and responsiveness for efficiency, participation for democracy, and policy outcomes for fairness. Stability reflects the strength of a society's political institutions as well as the degree to which power is concentrated over time in particular interests. Responsiveness describes the degree to which a representative system is truly interactive in the sense that consumer desires are manifested in the political system in a timely and accurate fashion.[4] Participation serves to ensure the involvement of the citizens in their government. Finally, fairness measured through policy outcomes requires the examination of policy outputs to determine if they uphold the principles of justice for all of society. Thus, throughout this study efficiency will be measured by competition, stability, and responsiveness, democracy by representation, competition, and participation, and fairness by representation and policy.[5]

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[3] A large amount of literature in political science deals with this conception and it many facets. For simplicity sake I am not going to deal with controversies such as the delegate trustee problem, nor with interpretations such as elite theory.

[4] Stability and responsiveness, although they many times do work in opposite directions and can be related, are not two ends of the same continuum where an increase in stability also by definition decreases responsiveness. It is conceivable that a government may be very stable and very responsive as in the case of a benevolent aristocracy.

[5] In evaluating electoral systems, improvement in one criteria or quality often cause a worsening in another. In these cases, it must be remembered that not all criteria and qualities have the same value. In other words, some criteria and qualities are more important. In

III. Electoral Systems

Electoral systems are not a simple matter of reflection, abstracted from politics. They are completely interactive, in the sense that they can be altered by the manipulation of certain variables and can themselves alter a wide range of behavior. Thus, the type of system used has a profound effect on how the entire political environment is constituted.

A. Aspects of Electoral Systems

Electoral systems generally have three aspects that are open to variation; balloting, districting, and electoral formula (Rae 1967). Balloting is the "specification of the voter's role in deciding the election" (16). In other words, balloting instructs the voter how to vote in terms of the number of votes cast, the way the votes can be arranged, and whether voters vote for parties or candidates.

Districting produces "the units within which voting returns are translated into distributions of parliamentary seats" (19). The importance of the districting process is that the magnitude of districts, or number of seats per electoral unit, determines the degree of proportionality of representation from the district (20). Generally, the more seats available in a district, the more proportional the district's representation will be. A closely related concept is that of exclusion threshold, because it is a function of the number of seats available in a district.[6] The exclusion threshold is the percentage of votes needed to assure victory, thus the more seats available the lower the threshold (Still 1992; Guinier 1994; Rae 1995).

Electoral formulae provide the method of translating votes into outcomes, in essence deciding who won and who lost. There are primarily

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addition, which these are depends on the nature of current circumstances. For instance, responsiveness may be more valuable than stability in a very unresponsive, yet very stable government, whereas it may be otherwise in a different government situation.

[6]In both CV and SMD plurality the exclusion threshold is $1/(1+S)$, where S is the number of seats available in the district.

two types of formula in use,[7] the plurality rule, and proportional representation (PR). The plurality system elects the person or party with the most votes, regardless of what portion of the total that is, as the only winner from a field of candidates. Proportional representation, conversely, elects multiple candidates or parties according to their proportional strength in the electorate and the percentage needed to gain a seat. Because different concepts, approaches, and combinations of approaches can alter each variable of an electoral system there is no limit to the number of possible electoral systems (Lijphart 1990).

If an electoral system merely served as a mirror reflecting voter preferences without manipulation, the fact that there are many possible systems wouldn't really matter. But in reality, perfect translation is impossible primarily because outcomes of elections cannot reflect the complicated and multidimensional nature of voter preferences. Thus choosing an electoral system requires making a choice from a number of imperfect alternatives. Each of these alternatives manipulates the three electoral system variables, producing different results by emphasizing or privileging different ways of reflecting voter preferences.[8]

B. Electoral Phenomena

It may be recognized that electoral systems do matter, but to actually determine the effects of different systems, it is important to explain how systems matter. The ways in which systems matter, referred to here as electoral phenomena, are the aspects of a political system that can change when electoral systems are altered. And its is differences in

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[7]A third formula is the majoritarian system which requires that the winner be able to beat all other candidates or parties combined, meaning the winner has to garner at least fifty percent of the votes. The difficult of achieving this feat has made majoritarian systems rare, and thus it has been left out.

[8]A caveat may be needed here to clarify my argument. I am arguing that electoral systems matter in a number of ways to society and its institutions, but I am not claiming that electoral systems are the only variable. Many political, social, and economic factors particular to each society interact with electoral systems to influence how the political system works.

these electoral phenomena that this study attempts to measure. In other words, while the criteria are how electoral systems are evaluated, the electoral phenomena are what are being evaluated.

The electoral phenomena are the tangible effects of altering aspects of the electoral system in the public policy arena and the political culture. Each of the electoral phenomena is important because it can manipulated in such a way as to help achieve desired political, social, economic, or other outcomes. Electoral phenomena, such as competition, minority representation, stability, political behavior, accurate representation, districting, strategy, and participation, have significant consequences in the public policy arena and the political culture.

Competition is the number and quality of contenders, and influences the representativeness and responsiveness of political structures, as well as contributing to participation in the political realm. Minority representation describes the degree to which the voices of those not in the majority are heard in the political system. It serves to reduce the effective power of the majority by making it more difficult to enact proposals that exclude minorities from benefits or place inordinate costs on minorities, encourages coalitions to form more consensual policies as the non-anonymous character of law making bodies makes legislators more likely to compromise, allows minorities to be involved and gain political experience, and is symbolic of a commitment to pluralism and opposition to social polarization. Stability is the degree to which political institutions remain strong, viable, and constant over time, and prevents the rapid turnover and governmental fragmentation that can weaken the ability of a government to create good and substantive policies.

Political behavior describes the actions and attitudes of voters and representatives concerning legislation and representation, and can affect the quality of law making by determining the role and importance of

deliberation and consensus, and the degree to which representatives are public interested. Accurate representation describes how well a representative body reflects the interests and preferences of an electorate, and can make political institutions a better reflection of popular will, induce participation, and introduce instability. Strategy entails the introduction of factors other than simple preference into the voting or electoral decision, and can skew accurate representation and make voting more complicated. Participation describes the size and quality of the electorate, and furthers society wide involvement in the political process. Districting describes how political entities are divided for the purpose of representation, and plays a role in the politicization of the process and through larger, less important districts contributes to the public interestedness of political behavior (Karlan 1989; Austen-Smith and Banks 1988; Lakeman 1974, 29; Rae 1967; Arrow 1963; Guinier 1994). How each of the electoral phenomena are influenced by SMD and CV will be explored and evaluated vis a vis the criteria qualities in Sections IV, V, and VI.

C. Single Member Districts (SMD)

The most common electoral system in the United States is the single member district with plurality rule. It is best analyzed in terms of the three aspects of electoral systems introduced above. In the balloting aspect, the voter is presented with a series of candidates and is asked to cast a vote for one. Districting in this system divides a geopolitical entity[9] in which an election is taking place into equally populated

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[9]A geopolitical unit is geographic area defined by a political jurisdiction. For example, towns, counties, and states all can be considered geopolitical units. In addition, voting districts can also be considered a geopolitical unit, but many times the arbitrary and illogical definition of these districts prevents them from being genuine geopolitical units, that have an identity apart from their role in the electoral process.

districts,[10] equivalent in number to the quantity of seats available in the elected body.[11] With one seat per district the exclusion threshold would be 50%, therefore requiring a candidate to receive half the electorates votes to be guaranteed victory. Then the electoral formula, plurality rule, designates the one candidate in each district with the most votes as the winner. For example, SMD would divide a state with a 35 person legislature into 35 equally populated districts, from which voters, casting one vote a piece, would elect the top vote getter from each district.

D. Cumulative Voting (CV)

Cumulative voting is a semi-proportional electoral system combining aspects of plurality and proportional systems. In the balloting aspect, each voter is given a quantity of votes equal to the number of seats available within the district. Voters are then able to distribute their votes among the candidates in any way they wish, including placing multiple votes on individual candidates. For example, in a district with three seats up for election, a voter may place one vote on each of three candidates, or may place two votes on one candidate and one on another, or may place all three votes on one candidate.[12,13]

Districting varies with CV. It could leave the geopolitical entity intact, thereby placing all voters in the same district, or it could divide the electorate into districts. Nevertheless, each district, to be effective, must have multiple seats available in each election. When CV creates multiple districts, they are usually identifiable geopolitical subdivisions

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[10]Prior to the early sixties when a series of court cases, (Gomillion v. Lightfoot (1960), Baker v. Carr (1962), Gray v. Sanders (1963), Wesberry v. Sanders (1964), and Reynolds v. Sims (1964)) created the "one man one vote" standard, districts did not have to be, and were rarely, equally populated.

[11]Through the process of reapportionment, districts are redrawn to adjust to population shifts on a regular basis. In America this occurs every ten years, coinciding with the census.

[12]The practice of placing all of one's votes on a single candidate is called plumping.

[13]The question of using fractional votes to allow voters to equally divide their votes among any number of candidates, say 1.5 votes for each of two candidates, is an implementation question and has no implications for this study.

and do not necessarily have to be equally populated, because the seats available are apportioned to the districts according to population. By way of example, Lani Guinier suggests that if CV were used in New York City, the city could be divided into its five boroughs and each borough would have a quantity of city council seats proportionate to their respective populations (155). Furthermore, the fact that each district contains multiple seats drives the exclusion threshold down. With five open seats, the threshold is 1/6 or 16.7%, thus requiring a candidate to garner only a little less than 17% to be guaranteed victory.

The electoral formula in CV is semi-proportional in that it elects more than one candidate, and thus is not "winner-take-all," and yet does not allocate seats in strict proportion to votes, but rather grants one seat to each of the winners, no matter how many votes they get. For instance, in a three seat race, the top three vote getters in the election would each win a seat, even if the first place winner had twice as many votes as the second or third place winners. (Guinier 1994; Lakeman 1974, 87-90; Still 1984).

IV. An Industrial Organization Interpretation of Government

Just as with economic institutions, a society's political institutions are made up of many structures that determine the conduct and performance of actors within those institutions. Legislatures, constitutions, and electoral systems are but a few of such structures that provide a system of rules and incentives that influence political behavior and outcomes (Myerson 1995). Thus, an analysis of government within the industrial organization paradigm can provide some valuable insights into the role of different political structures. The implication for studying electoral systems is that much of the economic theory of competition, efficiency, consumer welfare, and fairness that has developed in

industrial organization theory can shed light on these phenomena in the political realm.

For the purpose of this study, I have developed a dual level model of government markets. There is a market for the outputs of government, as well as a market for inputs. The output market deals with the production of government policy, while the input market deals with the selection of those who create the policy, the governors. Thus, the theory envisions two markets at subsequent stages in the political process, just as the markets for steel and automobiles are subsequent stages in the production process. Although the primary focus of this study is on the second of the input market, or the electoral system, the interactive effects of the political system make it helpful to briefly explain and examine the policy output market.

A. Outputs- Government as Monopoly

Viewing the market for political outputs from within the industrial organization paradigm recasts some familiar aspects of the political system in some new, yet helpful terms. The government is the producer, citizens are consumers, the political entity is the market, and policy is the good. Because government is the only producer of political and policy outputs, and there can only be one government per market (national, state, local) at a time, the market structure can be conceived of as a natural monopoly,[14] with the governors in power as monopolists (Tullock 1955, 458-9). For instance, the a city council has a monopoly on producing city ordinances, regulations, policies, expenditures, and certain services (Holcombe 1994).

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[14]Following Crain, Holcombe, and Tollison (1979), marginal cost would be constant because each additional policy action within a given government involves the same "processing and approval procedures"(54-5). But average cost would be declining because there is a fixed cost of gaining control of the monopoly (government). Government output in terms of policy etc. would be determined by marginal valuation and the average cost. Furthermore, the fixed cost can be expected to be quite high and thereby impose a kind of entry barrier that protects the status quo government from competition for its monopoly rights.

Just as society faces alternatives in dealing with natural monopolies in industry, it must also decide how to treat the sovereign monopoly. Tullock cites three common approaches; laissez-faire non-control, regulation, and public ownership (1955, 458). A hands off approach gives government the kind of unacceptable free reign that has not been accepted since the fall of the divine monarchies. In addition, it allows possessors of the monopoly rights to erect insurmountable barriers to entry. Public ownership surely exists, but it is public operation that is lacking. And in view of Arrow's impossibility theorem,[15] the inevitability of self-interest in representation, and the massive costs of direct democracy, public operation is unlikely. Regulation is also unacceptable because of the undemocratic control it would necessitate. Although, the Constitution, the Bill of Rights, and the common law all are examples of useful, and essential, regulatory schemes designed to control government monopoly, regulation of this type over every aspect of governmental action is unwarranted because it would completely insulate government from "consumer sovereignty" (Holcombe 1994, 146; Tullock 1955, 459). Consequently, another scheme must be relied on to restrain government monopoly power.

B. Inputs- The Market for Governors

From a market point of view, the best strategy would be to reduce the height of the entry barriers that allow monopolies to fight off challengers. Regular, competitive, democratic auctions of the publicly owned government's monopoly rights to interested parties serve this function well. In other words, allowing consumers to control the market

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[15]Arrow proved that no system of aggregating society's preferences could be devised that would meet five innocuous requirements (Arrow 1963).

for inputs, or governors, regulates the market for outputs, or government policy.[16]

Within the industrial organization paradigm, electoral systems can be seen as market structures in the market that determines who will govern. The market is the geopolitical voting unit, the firms are the various candidates, the good that is being offered is government policy, and the consumer is the government. Government demand, however is a derived demand coming from voters, just as auto industry demand for steel is derived from auto purchasers. Giving the electorate complete control over the input market, as elections do, replaces the government with the electorate as the consumer. Thus in each election, in each geopolitical unit, candidates design and offer their product in hopes of attracting voters, because the candidate(s) with the largest "market share" on election day will be chosen by the electorate as the firm, that will become the government monopoly. . Demsetz suggests that as candidates and parties bid for votes with promises of policy measures, competition will eat away any monopoly profits, and make government a reflection of popular sentiment (Holcombe 1994, 146-7). This analysis is flawed however because it assumes perfect competition for the monopoly rights of government.

Non-competitive aspects of the electoral process have two sources; the status quo owner of monopoly rights, and the electoral system itself. Because governments, or majorities in democratic nations, have almost unlimited monopoly power, government officials who want to continue to earn the benefits of monopoly power,[17] will use those powers to help

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[16]In my model the input market is not traditional input market described by the circular production flow concept. Rather it is only the first stage of a two stage consumer market.
[17]These benefits include not only the monetary rewards of government service, but also the prestige and other psychic benefits of government positions. Monopoly power also entails the ability of a legislator to deviate from the societally optimal production of services, in favor of the most personally profitable production point.

maintain their position by erecting barriers with which potential competitors must contend. Examples of this type of behavior in the American political system abound. The seniority system in Congress gives voters incentive to keep re-electing their representative so that he/she can provide better pork to the district. Also campaign financing, the franking privilege, and media coverage are all manipulated in favor of sitting legislators (Holcombe 1994, 98). The degree to which American legislators can advantage themselves by exploiting their monopoly status is fortunately limited by the competition introduced by the monopoly regulation found in the constitutional restrictions placed on government such as the free press, free speech, the separation of powers, and federalism (Holcombe 1994, 146-7).

Perhaps the greatest determinant of competition is a very subtle one in American politics, the electoral system. As was argued above, the system matters. Different electoral systems can have quite different impacts on processes and outcomes throughout the political realm. Certainly, the voting system employed contributes significantly to the number, quality, and behavior of competitors and potential competitors by placing barriers on their quantity and positioning. Also, government will reflect citizen preferences to varying degrees and in different ways because electoral systems transform preferences into outcomes differently. From analyzing the amount and type of competition generated, electoral systems can be classified as to the type of market structure they represent within the two level industrial organization model. It will be posited that SMD, because of the type of competition it engenders, is an oligopolistic market structure. Likewise, the competition involved in CV makes it a monopolistically competitive structure. Once classified, further claims can be made concerning the electoral phenomena generated by each market structure. Ultimately, these phenomena will be used to

evaluate the electoral systems according to the criteria qualities set out in Section II.

C. SMD as Oligopoly

An oligopoly exists in an industry when a small number of firms dominate the market. Similarly, a political oligopoly can be said to be present in the political market for the government's monopoly powers when a few candidates and or parties dominate the electoral process. Certainly the two-party dominated history of elections in the U.S. under SMD plurality rule makes a prima facie case for the existence of an oligopoly. There is evidence, however, that oligopolies are inherent in single member plurality electoral systems. Douglas Rae in his examination of electoral laws finds a "very strong relationship" between plurality electoral systems and two party system (1967, 95), that is unequivocally confirmed by Lijphart's study twenty years later (1990).

Further evidence of the oligopolistic nature of the American system can be found in manifestations of market power and the existence of entry barriers. Duverger's Law claims that the "plurality method, by discriminating against small parties, encourages a two-party system" (Lijphart and Grofman 1984, 5; Myerson 1995). Voter strategy causes only the two strongest parties to be taken seriously, because votes for weak parties are considered wasted. Thus, plurality rule restricts competition from third parties and strengthens the established, dominant producers (Myerson 1995).

Furthermore, the Median Voter Model hypothesizes that in plurality single winner elections, where issues are one dimensional and voter's preferences are single peaked, the candidate who has the support of the median voter will win. Because candidates in plurality elections attempt to maximize votes, in positioning their candidacy they will tend toward the median voter (Nicholson 1992, 783; Downs 1957,139-41). This effect

tends to push candidates ideologically and policy-wise together and discourage significant deviation from the median, thus reducing the range and quality of competition. The evidence for convergence is reinforced by Hotelling's principle of minimum differentiation which predicts competitors, in deciding where to locate on a continuum, will choose to situate themselves at the median in order to maximize profits, thereby causing consumers a welfare loss. Extending this to the political market suggests that candidates will converge on the median voter, presenting the voter with "excessive sameness" (Shepsle and Cohen 1990, 17; Myerson 1995).

Scholars have suggested shortcomings in the convergence model of plurality elections. First, an election with more than two candidates will not produce convergence (Shepsle and Cohen 1990; Grofman 1993; Cox 1987). In addition, potential competition will prevent convergence in a two candidate race (Shepsle and Cohen 1990, 28-29). These nonconvergence effects are militated against by the oligopolistic nature of SMD plurality rule, however. First, as discussed above, pluralities tend toward two competitor races, thus reducing the possibility of a multiple candidate race. Furthermore, the collusive aspect of the potential competition effect preempts the introduction of the multiple candidate effect, in the sense that the two candidates move apart on an ideological scale so as to prevent candidate entry on their ideological flanks. Also, Cox suggests that SMD plurality voting is highly centripetal in candidate issue positioning (1990).

Both Hotelling and Downs suggest that convergence is a negative aspect of political competition. Myerson, however, rejects the conclusion that it harms the voter, showing instead that convergence, in addition to being the optimal candidate strategy, is also the best outcome for consumers because it minimizes the distance between voters and the

ultimate single winner (1995). Thus, a properly functioning SMD plurality system produces convergence, thereby limiting the quantity and quality of competition.

Oligopolies must also resort to entry barriers to reduce the threat of competition. These take at least three forms. The institutional barriers that the status quo government erects not only protect government monopoly power, but also preserve oligopolistic competition for that power through the electoral rules[18] that are established. Also, third party barriers are erected by the 50% exclusion threshold of plurality rule and the Duverger effect that discourages all but the two strongest parties. Finally, districting reduces competition in two ways. It limits competition by making the jurisdiction that elects a representative smaller. And, the arbitrary nature of the districting tool allows and, in fact, encourages the creation of "safe districts", or the use of "vote dilution", which are designed solely to undermine competition. Any remaining distance between the median voter and the positions taken by candidates to prevent entry, is lost in the candidates' intentional ambiguity which allows them to simultaneously converge on the median voter and appear to "hold down the fort." As Downs says, "...parties will try to be similar and equivocate" (1965, 137). In these ways oligopoly market power is used to reduce competitiveness, while at the same time eliminate differentiation.

Evaluation

The clear conclusions of placing single member district plurality rule in the oligopoly model are that SMD exhibits reduced competition and a strong tendency toward undifferentiated political centrism. These conclusions have many implications for the electoral phenomena, which in

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[18]Registration, polling, and politicking rules, such as those instituted in Jim Crow regimes are examples of this type of entry barrier.

turn become the bases for some tentative evaluations of SMD. Certainly, the phenomenon most clearly affected is that of competition. The oligopoly market structure prevalent in SMD plurality rule restricts both the quantity and quality, in terms of differentiation, of competitors. This has natural and expected negative consequences for efficient and democratic competition. In addition, limiting competition has an adverse effect on participation as the lack of good competitive alternatives causes people to lose interest. Furthermore, the lack of good alternatives that is due to the absence of differentiation in electoral politics leads to inaccurate representation and minority exclusion which makes democratic and fair representation, especially for minorities out of the centrist mainstream, more difficult and less likely.

D. CV as Monopolistic Competition

Cumulative voting approximates monopolistic competition in form and function. Like a monopolistically competitive industry, CV usually has quite a few candidates, and the candidates are differentiated. Also, cumulative voting engenders vigorous competition, in which candidates try to carve out a niche to remain successful, just as firms do in the market. Thus, the two distinguishing characteristics of cumulative voting in the monopolistic competition paradigm are competition and differentiation.

Because cumulative voting has more than one seat at stake in an election, typically more candidates will compete for office, thus making elections more competitive. The cumulative aspect of the process, in which voters are able to "plump" votes, allows a certain degree of preference intensity revelation. The introduction of cardinal preferences into the electoral market makes demand curves as expressed in vote totals more reflective of the "true demand" of a pluralistic political society, and therefore more competitive (Cole, Taebel, and Engstrom

1990). Also, cumulative voting has relatively low entry barriers, causing real and potential competition to increase. Foremost among these is its low exclusion threshold which encourages candidates who may have a smaller following to enter a race. Institutional barriers will also be lower to the degree that a more differentiated government monopoly will face higher marginal costs in producing legislation, thus will be unable to pass competition restricting rules (Crain, Holcombe, and Tollison 1979). In addition, the preservation of natural political boundaries eliminates the barriers erected by arbitrary apportionment. Finally, the tendency away from stable two party competition will reduce the possibility of political collusion that prevents third parties from effectively entering the process and will diminish the institutionalized political party barriers.

Differentiation will occur in a cumulative voting system because there is no presumption of two party or two candidate competition, thus Cox's formulation that multiple candidate races will not converge holds (1987). In fact, "the Eaton-Lipsey analysis demonstrates the limited generalizability of Hotelling's Principle of Minimum Differentiation." Thus firms in multiple candidate races, "... need not collectively confront the consumer with 'an excessive sameness.'" (Shepsle and Cohen 1990, 20). In fact, it is suggested by Myerson that in elections where multiple seats are at stake Hotelling's contention that candidate dispersion is the most optimal outcome for consumers holds. Furthermore, Cox claims that any system utilizing cumulation will be dominated by centrifugal forces. Thus, competitors in CV will spread out along the policy continuum, rather than bunching at the median position, thereby presenting the electorate with a more differentiated product.

Evaluation

Application of the industrial organization model to the case of cumulative voting makes clear two prominent aspects of CV, its strong

competitiveness and its tendency toward differentiation. Thus, completely in opposition to SMD above, CV has vigorous competition, both in terms of quantity and quality. Also, the electoral phenomena of accurate representation and minority representation are benefited by CV as candidates are more differentiated, voters' demand is better met and those not in the majority gain representation. The consequences for the criteria qualities are significant. Efficient and democratic competition are clearly improved. Likewise, democratic and fair representation is furthered by greater accuracy, minority inclusion, and increased differentiation. Furthermore, participation is improved as more competitive races among more representative candidates bring more people into the political system. Also, a group of legislators beholden to more of society will be more responsive. Finally, as inclusion, deliberation, and competition increase in the political system, government policies will become more fair.

V. Analysis and Other Considerations

Now that the industrial organization model has been elaborated, its implications, as well as other factors relevant to the cumulative voting single member district comparison can be assessed. This examination will proceed by drawing out what electoral phenomena are affected and how, so that judgements can be made about the advantages and disadvantages of each system with respect to the criteria.

A. Single Member Districts

The widespread use of the single member district plurality rule system results from some particularly beneficial qualities that the system possesses in terms of representation and governance. SMD's strongest trait is its ability to represent the geographical groups within a geopolitical area. Also, the narrowed jurisdiction of single member districts, as opposed to a simple at-large system, allows and encourages

constituency participation because of the head to head nature of the election and its local flavor. Furthermore, a representative of a district is more likely to share the feelings of his/her constituency because the representative's election depends on the district's perception of him/her and the representative is likely to reside in the district, and thus will tend to share many of the constituent preferences. Finally, the representative will seem to be more accessible to constituents who can geographically identify the person who specifically represents them and will tend to form closer and stronger relationships with constituents (Weaver 1984; Guinier 1993; Dunn 1972).

In addition to the geopolitical benefits of SMD, stable two party governance is a consequence of the winner-take-all nature of plurality rule, which awards sole political representation of an entire district to the plurality winner, no matter how fractured the electorate is. In other words, a SMD plurality system tends to promote stability by not reflecting many of the divisions within the electorate. Also, SMD plurality rule is simple for the voter because of the smaller candidate pool with which they must become familiar and the straightforward nature of casting a single vote for the most preferred candidate.[19]

A third area of benefit comes in terms of minority representation. SMD uses the geographic clustering of minorities that frequently occurs due to voluntary and involuntary segregation to create districts in which minorities are a majority. Districts drawn thus will provide minorities with opportunities to elect their own representatives that may not have existed in an at-large system. The enforcement of the Voting Rights Act by the Federal government through the use of SMD to correct minority vote dilution reflects this beneficial trait (Weaver 1984; Grofman et al 1982;

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[19]Voting for the most preferred candidate is the optimal strategy for a two candidate race, the usual arrangement. Other strategies will be discussed below.

Guinier 1994). Furthermore, the fact that these seats are often times so lopsided to ensure minority representation makes these districts safe seats from which minority legislators can gain power and influence through the seniority system (Guinier 1993).

On the other hand, SMD suffers from some shortcomings as well. The geopolitical benefits discussed above have a negative side. Close ties between representatives and constituents also produce representatives with overly parochial concerns and allow obscure district politics to go unscrutinized. Even more fundamentally, however, creating geographic districts is well suited as a strategy to extend representation only to the extent that interests are predominantly geographic. Although this may have been true at one time, geography is no more determinative of political preferences than race, gender, or income today. In addition, districting for SMD tends to arbitrarily divide geopolitical entities, seemingly driven only to create equally populated districts (Weaver 1984; Guinier 1994; Note 1982).

This type of districting is inherently political, leading to gerrymandering that can destroy any sense of community cohesiveness in the name of political advantage. Furthermore, this political advantage becomes the cause of numerous and worthless political battles that waste the time of legislatures and courts. Also, when racial gerrymandering occurs, as it often does, a climate of racially based politics is created that polarizes communities. The adversarial nature of politics, implicit in this polarization is extended by the electoral focus and negative campaigning that are part of head to head, winner take all contests (Guinier 1993; Note 1982).

In terms of minority representation, SMD makes two crucial, yet not completely accurate or helpful, assumptions. First, it is assumed that geography is a proxy for racial or ethnic minorities, and second that race

or ethnicity is a proxy for political preferences. Racial and ethnic minorities are not always geographically segregated, Latinos in the Southwest are an example. Nor do all voters within a particular minority have the political leanings that are projected on them as a group. Therefore, single member districting is a weak strategy for improving minority representation. Strangely, SMD places the government in the position of defining political groups and assigning them political views. Likewise, because the entire concept of districting to create certain majorities necessarily creates other minorities, at least one group's voting strength is arbitrarily being diluted when government creates a district to combat the vote dilution facing another group. In the face of this, even a government concerned with fairness would have to choose which groups have the right to representation and in what amounts.[20]

In addition, achieving representation through racially gerrymandered SMDs may be harmful to minority interests. Minority representation becomes only token in the sense that government segregates minorities into a few districts only to ignore the representatives from those districts. This is further exacerbated by fact that packing minorities into certain districts leaves the rest of the districts overwhelmingly white and without any reason to even consider minority issues.[21] Furthermore, it is completely unproductive from a social justice standpoint to perpetuate segregation by creating electoral structures that increase disincentives to integrate America's geopolitical entities and make it unnecessary for candidates to appeal to groups other than their own. Finally, single member districting can and has been used to dilute minority voting

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[20] In United Jewish Organizations v. Carey (1977) this was precisely the issue. In creating a minority majority black district in New York a minority majority Jewish district had to be dismantled, causing quite a conflict between calls for fair representation among both groups.
[21] In fact, recent gains by the Republicans, especially the more conservative wing, can be partially contributed to the concentration of minority voters in particular districts.

strength in the same way it is used to dilute majority political monopolization. This is exactly how the majority monopolizes the political system in the first place. (Guinier 1994; Cole, Taebel, and Engstrom 1987; Note 1982; Guinier 1993; Still 1991).

Also, the stable two party government resulting from winner-take-all plurality rule prevents any third party from reinvigorating the political process, denies minorities, broadly defined, a voice in their representation, makes it too simple to maintain safe districts, over represents the majority,[22] results in excessively centrist representation, and wastes the votes of at least up to half the electorate.[23] (Weaver 1984; Grofman et al 1982; Still 1984; Guinier 1994; Note 1982).

Industrial Organization Analysis

Many of the considerations raised above about SMD can be analyzed within the industrial organization model set out in the previous section. Attributes such as stable two party competition and a smaller candidate pool are analogous to the restricted number of firms that exist in oligopoly. Likewise, the lack of third party competition, exclusion of minorities, broadly defined, and the safe district phenomenon accurately describe the market power to erect entry barriers and exclude competition that is part of oligopoly. In addition, the creation of minority majority districts represents the kind of artificial product differentiation that large oligopolists engage in to enlarge the scope of the market. Under this interpretation minority majority districts are an effort by the established oligopolists to extend their control over minorities. Also, the popularity and ease of SMD elections that arises from familiar, head to head contests

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[22]The cube law predicts that the majority party will be over represented because $(1-S)/S = [(1-V)/V]^K$ where S is the percentage of seats won by the party, and V is the percentage votes received by the party and K is 3, when two parties have 90% of the vote (Still 1984).

[23]A wasted vote can be defined as a vote that does not elect a candidate. Thus any vote that does not go to a winner is wasted.

is akin to the familiar name recognition oligopolists enjoy. Market power in an oligopoly also reshapes demand and allows firms to deviate from the optimal point of production for consumers, just as SMD reshapes voter demand by having winner take all elections and making assumptions about voter preferences in racial gerrymandering. Finally, the excessive sameness and overly centrist government inspired by SMD is similar to the excessive blandness, similarity, mass appeal that is associated with a large oligopolist's products.

Evaluation

Single member district plurality rule influences all of the electoral phenomena. It lacks accuracy in terms of representation because geographic representation is a poor predictor of shared political interest, a winner take all system doesn't reflect the true extent society's divisions, the majority is over represented, and elected representatives are disproportionately centrist, politically speaking. SMD's poor showing in terms of accurate representation has implications for evaluation by the criteria qualities. Inaccuracy reflects SMD's inadequacy as to fair and democratic representation since it significantly skews voter interests. Also, inaccurate representation makes a political system less responsive because it can ignore significant segments of the electorate.

SMD has a mixed effect on minority representation. It improves minority representation in that minority majority districts are commonly drawn and often turn out to be safe districts. Nevertheless, minority representation is harmed in that winner take all districts still create unrepresented minorities of some sort and any minority representation is only token. Also, SMD involves the government in making assumptions about minorities and perpetuating segregation. As was mentioned above, SMD is a weak strategy for minority representation, thus it only weakly fulfills the qualities of fair and democratic representation. Also, the

tokenism and segregation involved in the system decreases the likelihood of fair policy outcomes and reduces the richness of democratic competition.

SMD has several effects on political behavior. First, there are effects related the scope and closeness of representative constituent relations. This type of relationship promotes responsiveness and participation through familiarity, on the positive side, but harms democratic competition and representation through the presence of narrow, obscure, local politics, on the negative side. In addition, the lack of third parties and the overly centrist bias in SMD, despite its commendable tendency for stability, limits competition, responsiveness, representation, and participation, all to the detriment of the electorate. Furthermore, the chances of fair policies and democratic competition are impaired by the adversarial nature of SMD that pits group against group in fights over who is entitled to a district and turns campaigning and politics into a disgustingly negative process.

The effects of the increased districting in SMD are omnipresent. Beyond, its contribution to the kind of narrow minded representation that is detrimental to democratic competition, SMD's smaller districts limit efficient competition. Also, the inevitable politicization of the process and the subsequent legal and legislative battles further harm democratic competition. And, the necessary chore of choosing among groups for representation limits the chances of having fair and democratic representation.

SMD both encourages and discourages participation. Head to head contests and simple voting aid participation, but the large number of wasted votes and centrist electoral bias drive disaffected voters away. Thus the result for participation is ambiguous. SMD's tendency toward two party competition, its winner take all decision rule, and the prevalence of

safe seats contribute to stability, despite any drawbacks for other qualities such as responsiveness or competition. The lack of strategy involved in SMD promotes democratic and fair representation.

Finally, as already mentioned, competition in SMD is limited by safe districts, the absence of third parties, its centrist tendency, and the high exclusion threshold. Predictably, this adversely affects democratic competition, but it also harms representation by limiting the electorate's choices and participation through less competitive elections.

B. Cumulative Voting

Cumulative voting is appealing for a number of reasons. Geopolitically speaking, CV provides broader public interested representatives because of their larger, less localized constituencies. It leaves intact the "natural" political entities, allowing voluntary districts to form, constituted by voters of similar interests based solely on their individual political views rather than their geographic location or race. This allows voters to form cross-geographic alliances to unite voters with similar views previously submerged within separate districts. In conjunction with these alliances, the ability of CV voters to express their intensity of preference, eliminates the problem of minority submersion and vote dilution by allowing all interests to be heard in the political process (Still 1991; Guinier 1994; Note 1982; Still 1992; Weaver 1984; Kaplan 1993; Duncan 1993).

Furthermore, CV reduces the politicking involved in drawing and redrawing district lines and picking which group is the majority in each district because the extent of CV jurisdiction is defined by natural geopolitical divisions and is color blind. In addition, the multiplicity of represented interests and the importance of consensus fosters more and better debate in political institutions and society (Kaplan 1994).

CV also improves the electoral prospects for minority voters, both narrowly and broadly defined. First, not having to rely on geography allows minority voting power to be felt even when that minority is not residentially segregated. Second, the elimination of race districting allows minorities to seek out cross-cultural alliances with sympathizers who may have been submerged in a majority district otherwise. Third, the low exclusion threshold and the cumulative option make minority representation more possible. CV also allows government to stay out of the business of making assumptions about preferences and choosing among minority groups, and eliminates the need to perpetuate segregation. In addition, minority politicians gain experience in appealing to broader constituencies and all politicians have to be aware of minorities in their districts. Finally inclusion enhances the legitimacy of the body being elected by giving everyone an effective voice in government (Still 1991; Guinier 1994; Note 1982; Still 1992; Pildes 1993).

Finally, CV causes the legislative body to be more proportionally representative of the electorate, and therefore a more true reflection of the voters' preferences. There are less wasted votes because more voters voted for a winner, and consequently more individuals have a representative in the legislature. Similarly, CV induces voter participation among those formerly submerged in "safe" districts, and those previously alienated by the majoritarian bias of SMD plurality rule. Finally, the existence of multiple open seats creates a low exclusion threshold that encourages more candidates, as well as a larger variety of candidates to run for office. (Guinier 1994; Note 1982; Weaver 1984; Still 1992; Everson et al 1982; Still 1991).

Cumulative voting also has drawbacks, however. Because it is more proportional, CV tends to be less stable as various groups battle for control. Furthermore, the procedures involved with CV can be confusing

and voters must become familiar with a larger number of candidates, which can lead to an inaccurate vote. In addition, the fact that no representative is formally bound to a defined constituency could lead to a distance between voters and legislators that would be detrimental. Finally, CV can entail major use of strategy by parties, candidates, and voters in ways that may not be beneficial (Note 1982; Weaver 1984; Everson et al 1982).

Industrial Organization Analysis

Just as the issues raised about SMD could be analyzed within the industrial organization paradigm, the same can be done with respect to CV. The increased number of candidates and interests involved in CV is analogous to the greater number of firms in a monopolistically competitive market. The inclusion of minorities, the more proportionate representation of the electorate, and the increased variety of candidates speak to the differentiation that is common to monopolistic competition. In addition, just as monopolistically competitive firms must follow consumer demand with little deviation, CV's preference intensity revelation, its opportunity to form voluntary districts, and its avoidance of government assumptions about preferences cause it to more accurately reflect voter demand. The absence of safe districts and the low exclusion threshold is akin to the low entry barriers and the ease with which monopolistically competitive firms enter the market. Also, CV's wide variety of candidates and the voluntary districting they attempt to inspire is similar to the wide variety of firms and the market niches they try to create. The increased participation CV fosters, especially among formerly disaffected segments of the electorate, corresponds to the expansion of the edges of a highly competitive market. Finally, the sometimes excessive competition in CV is analogous to the occasional bouts of over competition that plague monopolistically competitive industries.

Evaluation

Cumulative voting's implications for the electoral phenomena are significant and therefore provide strong basis upon which CV can be evaluated by the criteria qualities. A high degree of accurate representation is provided by CV through its proportionality, the fact that preference intensity can be expressed, and the ability of voters to form voluntary constituencies based on shared interest. Accuracy promotes fair and democratic representation by better reflecting more of society's preferences. Also, accuracy encourages better responsiveness and more efficient competition by reflecting the true will of the citizens.

Perhaps the electoral phenomena CV affects most is minority representation. Minority representation is improved by the fact that a low exclusion threshold gives those not in the majority representation, preference intensity allows minorities the right to express the strength of their preferences, and voluntary districting eliminates the problem of vote dilution and opens up possibilities for alliances. Furthermore, the color blind approach CV takes reduces racial polarization, the perpetuation of segregation, and government political assumptions and choices concerning minorities. Clearly, this makes representation more democratic and fair, as inclusion promotes society wide representation. In addition, inclusion fosters deliberation and consensus, while preventing majority monopolization, which enhances democratic competition and the fairness of policy outcomes.

Similarly, CV also improves the quality of political behavior. Broader constituencies provide public interested representatives. Inclusion and competition increase the value and necessity of deliberation, consensus, and compromise, thereby improving democratic competition, representation, and policy. Voters can participate in cross cultural or geographic alliances based on shared interest, consequently

bettering participation and democratic competition and representation. The viability of new parties in CV promotes constant political reinvigoration enhancing responsiveness and democratic competition. And the political system's legitimacy is improved when all segments of society, especially minorities can effectively participate, thus improving policies and representation.

Districting is conspicuously absent in CV. By allowing voluntary constituencies to form within natural geopolitical boundaries, much of the animosity and politics that surround districting disappear. In turn, this improves democratic and efficient competition by allowing substantive issues dominate political debate and eliminating a degree of polarization. Representation also improves as larger districts contribute to broader minded representatives. Participation in CV is affected by the decrease in the safe seat phenomenon, the added candidate differentiation, and the ability of geographically dispersed voters to unite voluntarily. Each of these reflects positively on the criteria quality of participation, as well as democratic and fair representation. In terms of stability, CV's additional competition and minority representation reduce political stability, but can enhance responsiveness. Strategy, which will be dealt with more fully below, becomes a more complicated matter under CV, thereby deterring efficient and democratic competition and possibly fair representation as well.

Finally, competition as an electoral phenomenon is affected by a lower exclusion threshold, fewer safe seats, and the prevalence of political differentiation. As mentioned above, these characteristics contribute to an increase in the quantity and quality of competitors, which in turn makes competition more democratic and efficient, as well as enhances democratic representation and participation by involving a greater diversity of people and interests in the political system.

C. Strategy

One of the most important topics in evaluating an electoral system is the role strategy plays in the operation and outcomes of various systems. For SMD plurality rule, strategy is a relatively straight forward matter that has been investigated from many angles. Parties simply nominate the single candidate most likely to win the election. The high exclusion threshold and Duverger's law make it virtually inevitable that districts are dominated by a strong two party system that has the effect of eliminating individual candidate strategy as a significant factor. In addition, voter strategy is rather simple as well. In a two person election, clearly the most likely case, sincere voting[24] is the optimal strategy. In cases of more than two candidate election, the fear of wasted votes drives the voter to choose the most preferred candidate among the two strongest ones. Thus, as a general rule voters in SMD reduce the candidate field to the two strongest competitors and then vote for the most preferable candidate (Brams 1975).

The role of strategy in cumulative voting is significantly more complicated and not yet fully explored. Most of the difficultly results from the interaction of uncertainty on the part of parties, candidates, and voters in how to properly balance competing demands. Parties fully want to exploit their strength, but if too many of their candidates are competing, all their candidates could suffer. Furthermore, parties must organize and convince supporters to spread their votes equally among their candidates. For parties, a party dominated system seems optimal so they can effectively control candidates and voters. This allows parties to utilize game theory to maximize their chances based on past and expected vote shares, much as the Democratic and Republican parties in Illinois did

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[24]Sincere voting has voters choose for their most preferred alternative considering all the candidates before them and only the candidates before them.

when CV was used there. When parties control the process, game theoretic models can be constructed to show the optimal nomination strategies given a certain number of open seats and an expected vote total (Brams 1975; Goldburg 1994; Sawyer and MacRae 1962; Broh 1974; Glasser 1959; Glazer, Glazer, and Grofman 1984).

As alluded to above, however, CV will not tend toward a two party dominated system because cumulation and the low exclusion threshold make it possible for a more open system. Thus, candidates are more free to make their own strategic decisions and therefore have to deal with the issues of entry, campaign strategy, and voter instruction. Voters may have the most difficult strategic decisions because they must balance their votes between those candidates they most prefer, and those who need their votes the most. One optimal strategy for parties, candidates, and voters in CV is clear, however. Being organized is very important because it allows common interests to be recognized, their electoral strength judged, and maximizing instructions to be disseminated. Thus, the more organized a society's interests are, the more likely that strategy will help rather than hinder cumulative voting (Brams 1975).

VI. Evidence

To help provide a basis for the claim that cumulative voting is a better electoral system than SMD plurality rule in terms of competition, representation, and fairness, an experiment performed earlier this year, as well as the documented results of cumulative voting systems in practice can be examined.

A. Experiment

In order to approximate a voting situation, a ballot was constructed that asked subjects to choose among different types of music.[25] In the experiment different music types substitute for candidates or political

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[25]see appendix 1

parties. It is thought that musical tastes will be a reasonable substitute because they are similar to political beliefs in that people have distinct preferences among different types, those preferences are many times strongly held and sometimes culturally correlated, and there are identifiable majority and minority preferences. On each of the two sides of the ballot the subjects use a different electoral system. On the left side, a single member district plurality rule system is employed by dividing the total population into five equally populated, color coded, districts and asking the subject to vote for only one of the alternatives. On the right side, a cumulative voting system is employed by considering all ballots together, and asking the subject to distribute five votes among the alternatives as they please.[26]

There are a number of limitations inherent in the experiment that prevent it from having complete predictive power, but there still are some important hypothesis that can be tested. First of all, the fact that the number of competitors, and therefore the level of competition, is determined by the possible candidates' interaction with and relationship to the specific electorate prevents it from being measured by this experiment, which takes the number and identity of the candidates as given. It is hypothesized that the results for the SMD plurality rule side of the ballot will be undifferentiated among districts because subjects were not geographically segregated for the purposes of the experiment. In other words, the same music alternatives will tend to win in each district. Furthermore, the SMD system will be relatively unreflective of the total population's demand because it will choose a single winner from each district and voters are restricted to choosing only one alternative. On the other hand, CV results will be more differentiated because the system

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[26]The specific procedures followed are identical to the procedures laid out in the SMD and CV sections of this study, *supra*.

evaluates the population's preferences at-large, rather than on a district by district basis. In addition, CV will be more reflective of true demand because the winners will be the top five alternatives in the entire population and the voters can reflect the intensity of their preferences.

Table 1
SMD Plurality Rule

	Red	Blue	Yellow	Orange	Purple	Total
Hard/Classic Rock	6	4	4	6	10	30
Soft Rock		2	5	7	10	24
Oldies	2		3	3		8
Alternative	5	5	18	21	11	60
Pop		2	2	4	10	18
Heavy Metal	3	2	2			7
R & B/Soul	1	2	1	2	3	9
Rap			1			1
Christian/Gospel		4	2	7		13
Country	2	2	2	3	5	14
Easy Listening				1	2	3
Latin			1		1	2
Classical		1	3		3	7
Jazz	2			1	1	4
Dance						0
Folk		1		1		2
Other		1				1
Total	21	26	44	56	56	203

The results for the SMD plurality rule side of the ballot are presented in Table 1. They largely confirm the hypotheses. There are only two different winners, and there was almost only one. Alternative music won four of the five districts, with Hard/Classic Rock taking the remaining one. This result confirms the hypothesis that the winners would be greatly undifferentiated. Likewise, the hypothesis that the winners would be unreflective of the demand of the population was also confirmed. 80.0% of the seats (4/5) went to Alternative music which garnered only 29.6% of the total votes (60/203). Furthermore, Soft Rock which got 11.8%

of the vote (24/203) was totally excluded from representation, as were 55.7% of the entire electorate ((203-90)/203). The results show how the the two most popular kinds of music can totally exclude all other kinds from representation. This tendency would only be exaggerated if it were assumed, as is reasonable, that some of the low vote getters would not enter the race at all, thereby forcing their voters to vote for the more popular choices.

Table 2
Cumulative Voting

	Red	Blue	Yellow	Orange	Purple	Total
Hard/Classic Rock	24	19	26	31	37	137
Soft Rock	5	14	17	30	35	101
Oldies	4	4	14	29	22	73
Alternative	25	20	59	63	52	219
Pop	5	11	16	23	35	90
Heavy Metal	16	11	7	4	6	44
R & B/Soul	5	10	6	13	14	48
Rap	4	4	7	4	4	23
Christian/Gospel	1	9	9	25	7	51
Country	8	7	18	16	25	74
Easy Listening		3	3	8	12	26
Latin	1		9	6	3	19
Classical	5	5	18	11	11	50
Jazz	7	1	11	13	12	44
Dance		2		2	1	5
Folk				2		2
Other		9	1		4	14
Total	110	129	221	280	280	1020

For Cumulative Voting the results of the experiment are presented in Table 2. Five different choices won, Hard/Classic Rock, Soft Rock, Alternative, Pop, and Country, thus on its face CV seems to produce more differentiated results. Likewise, demand is more truly reflected because the five winners each gained 20% of the seats and their vote percentages varied from from 21.5% for Alternative (219/1020) to 7.3% for Country

(74/1020). The biggest loser was Oldies, which gained 7.2% (73/1020),
yet did not receive a seat. Both of these results reflect favorably when
compared to SMD plurality, where the largest deviation between seats and
votes was 50.4% (80.0-29.6), as compared to 12.7% (20.0-7.3) for
cumulative voting. Similarly the biggest loser in SMD had 11.8% of the
vote, whereas in cumulative voting the Oldies had 7.2%. The most telling
comparison of demand revelation and representativeness is between the
percentages of the electorate that did not vote for a winner. In SMD 55.7%
of the people were without representation, but in CV only 3.9% of voters
(8/203) did not vote for a winner.[27] Thus almost the entire population had
at least one representative for whom they voted. Although the incentive to
drop out would be less, it can be assumed that some of the lower vote
getters would not run, and again their votes would more than likely go to
the most popular candidates, probably reducing the deviation between
seats and votes. Overall the results, at least initially, strongly confirm
the hypotheses.

One shortcoming of the experiment diminishes the confidence that
can be placed on the differentiated hypothesis conclusion. Within the
experiment there is some ambiguity in whether the musical types are
parties or candidates. Overall, however, a music type corresponds best to
a political party because a candidate takes on qualities of a party, just as
a song takes on qualities of a music type. In dealing with SMD, this
ambiguity is not much of a problem because it is assumed that each party
will run one and only one candidate in each district. Thus the results for
the first side of the ballot are still highly relevant because the party is an
accurate proxy for the candidate. For CV, however, there is a problem. A
successful party, the Alternative party for instance, would run multiple

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[27]Although 39.1% of the votes cast (399/1020) did not go for winners, of the 203 people who
voted only 8 did not have a winner among their choices.

candidates in a CV election in hopes of capturing more than one seat. This experiment could not simulate the effect of having multiple candidates from the same music type run in the same election. It could be assumed however that the Alternative party, with a reasonably good estimation of its support would run two candidates. Other parties may try this, but none would be as successful as the Alternative party because they would run the risk of splitting their vote so as to cause both of their candidates to lose. If they did send two candidates and they split the alternative vote, each would still be elected with about 110 votes apiece, thereby giving Alternative supporters two seats and taking away the Country seat. Ultimately, this would reduce the differentiatedness of CV, but still not to the degree of SMD. Another consequence of the single party multiple candidate aspect of CV, is that it stresses the importance of accurately being able to estimate popularity and plan strategy, so that a party or people of a certain political leaning could gauge how many candidates to run in an election. Overall, despite these changes, CV still produces a more differentiated and representative group of winners than SMD.

Evaluation

The results of the experiment support the claims that CV is more representative and produces more differentiation. Increased representativeness signals effects for the electoral phenomena of accurate representation and minority representation. In terms of accuracy, the experiment shows how CV is more proportional than SMD with respect to the deviation between seats and votes. The resulting increased accuracy improves democratic and fair representation by better reflecting voter preferences as representative choices and enhances the responsiveness of a political system by making it more of a reflection of true voter will. For minority representation, the experiment showed how CV can break majority monopolization of the representative system by

including groups not in the majority. This effect bolsters democratic and fair representation by including a wider segment of society in the representative system, as well as enhancing democratic competition by allow a more diverse set of voices to be heard in the political system.

B. Real World

Since its inception, cumulative voting has primarily been seen as a practical and fair way to vote in jurisdictions that cannot agree to a voting procedure because of the fear of factionalism or majority tyranny. In its first real-world usages on the local level in parts of England and in South Africa toward the end of the nineteenth century, the results were generally favorable, allowing minorities to be represented and reducing factionalism. CV was also tried for a short time in Pennsylvania for municipal elections during the 1870s and in Chile around the turn of the century where the system was less successful and shorter lived. Furthermore, throughout this era CV was proposed and debated, but ultimately not adopted, for a number of legislatures including those in South Carolina, North Carolina, and New York City, as well as the in the House of Representatives and the Senate (Blair 1973; Dunn 1972; Seymour and Frary 1918; Lakeman 1974, 87-90; Moore 1919; Still 1991). Throughout these instances, CV was considered or put into use primarily because of its beneficial consequences for minorities.

The most sustained usage of cumulative voting, however, is found in Illinois where the system was used to elect the lower body of the legislature between 1872 and 1980. Originally instituted to mitigate the geopolitical polarization of the state into a pro-union Republican northern half and a anti-union Democratic southern half following the civil war, CV was designed to address "the injustice and inequalities of majority rule" (Everson et al 1982, 5). The system "worked" in that it allowed the second party in each half of the state to have representation. Much of the

conjecture above concerning CV is also confirmed by the Illinois experience. Cumulative voting provided more proportional representation, did not over represent the majority, and increased the importance and role of the minority in governing (Blair 1973; Wiggins and Petty 1979; Kuklinski 1973; Everson et al 1982; Dunn 1972; Hyneman and Morgan 1937; Wiste 1980; Blair 1960). In addition, it is claimed that CV contributed to legislative stability by moderating majority dominance and not magnifying or exaggerating changes in popular support the way plurality rule does (Kuklinski 1973).

CV did not work flawlessly in Illinois, however. It suffered from limited competition and failed to encourage any significant third party participation. The complaints of non-competitiveness and a lack of candidates and parties, however, are not clearly related to CV itself but rather seem to be a function of strong party control, high party allegiance, and collusion in the political process.[28] Competition was controlled by District Representative Committees (DRCs) through their power to determine the number of nominees for each party (Wiste 1980; Blair 1958; Dunn 1972; Blair 1960). There is strong evidence that the DRCs, commonly made up of incumbents running for re-election, from each party colluded to "set up" elections and eliminate the possibility of competition. Considering this and the overwhelming strength parties had over voters, candidates, and the process itself during the time CV was in use, much of the anti-competitive experience in Illinois can be considered a function of factors specific to Illinois and not related to CV. In fact, the vigorous competition in direct primaries, where parties did not choose the number of candidates, attests to the fundamentally competitive nature of CV that unfortunately was obscured in general elections (Wiggins and Petty 1979;

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[28]For instance, in the primaries, where parties could not dictate the number and identity of the candidates were hotly contested and were generally more competitive than those in other states (Everson 1982, 8).

Hyneman and Morgan 1937). Furthermore, the reasons for the system's repeal in 1980 were connected primarily to voter anger over a pay increase, rather substantive complaints about the system itself. The conclusion reached by many scholars is that CV in Illinois did "prevent the tyranny of an overwhelming majority" (Everson et al 1982; Kuklinski 1973).

Cumulative voting has also enjoyed use by corporations to elect boards of directors. Currently six states[29] make CV mandatory, and it is permitted in the others (Gordon 1994). Only about 15% of corporations, however, use cumulative voting (Vagts 1989). Considering this and the fact that in the last twenty years corporations have successfully petitioned states to eliminate mandatory CV, it is clear that corporations do not like CV. Primarily their dislike is motivated by the same things that make CV attractive as an electoral system in the first place: minority inclusion and competition. Management, perhaps to the detriment of stockholders,[30] believes that minority inclusion and competition introduce divisiveness and open the door for corporate takeovers. Thus CV's unpopularity in the corporate world is a result of the existence of the qualities that recommend CV as a useful electoral system in politics (Guinier 1994; Glazer, Glazer, and Grofman 1984; Cary 1980; Choper, Coffee, and Morris 1989; Vagts 1989).

The most recent uses of CV have come in response to violations of the Voting Rights Act's prohibition against minority vote dilution. In Alamogordo, New Mexico, where Latinos and Blacks have seen their votes diluted and the lack of geographic segregation prevents effective districting, CV is being employed to ensure better minority

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[29]Arizona, Kentucky, Nebraska, North Dakota, South Dakota, and West Virginia.
[30]It has been suggested that eliminating CV has a detrimental effect on a company's stock (Bhagat and Brickley 1984).

representation. The institution of the system resulted in a Latino woman being elected at-large in two consecutive elections, mostly on the strength of Latino voters (Cole, Taebel, and Engstrom 1990; Engstrom, Taebel, Cole 1989; Cole and Taebel 1992). Likewise, a school district in South Dakota has seen positive results, in terms of Native American representation, by changing to cumulative voting (Engstrom and Barrilleaux 1991). Also, blacks in Peoria, Illinois have been able to achieve representation on the city council thanks to cumulative voting (Van Biema 1994, AP 1987). Finally, some Alabama localities, including Chilton County, have experimented with cumulative voting to increase black representation. Surprisingly, not only did black representation jump after the institution of this system, but the Republicans, another under-represented group in rural Alabama, also increased their representation (Still 1992). The modern real world uses of CV also suggest that confusion is an insignificant factor and the system quickly gains popularity as its superiority to racially gerrymandered districts for all concerned becomes apparent (Cole and Taebel 1992).

The ability of CV to confer its representative and competitive benefits with out the many times divisive and convoluted racial gerrymandering necessary to solve vote dilution cases in SMD, has made it a popular option recently. In Worcester County, Maryland a federal judge imposed cumulative voting for the election of the county commissioners because minorities are widely dispersed and an acceptable SMD system could not be created (Van Biema 1994; Buckley 1994). Also, cumulative voting has been suggested as a remedy to the ongoing reapportionment battles taking place over North Carolina's US House districts.[31] It has been proposed that North Carolina be divided into three CV districts along county lines, thereby providing blacks with an opportunity to elect at

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[31]Currently proceeding through the courts as Shaw v. Hunt

least three representatives, demographically speaking (Kaplan 1994). Together, the evidence of cumulative voting usage indicates that it is an effective tool for improving minority representation.

Evaluation

The evidence concerning cumulative voting arising from the real world uses of the system delineates the effects for a number of electoral phenomena. First, it is clear from the modern and historical examples that CV enhances minority representation. Increased inclusion promotes democratic and fair representation, as well as democratic competition and policy fairness by preventing majority dominance and inspiring deliberation and consensus. The attested to proportionality of CV also promotes accurate representation, thereby further illustrating CV's democratic and fair approach to representation.

The evidence of CV's ability to de-politicize apportionment and reduce polarization shows the improved political behavior that results from CV. This kind of political behavior creates a more democratically competitive polity by focusing on consensus and the substantive issues.

Also, surprisingly, real world uses of CV suggest that in one sense CV is more stable, thereby suggesting that CV may not rate so badly in the stability criteria quality. Likewise, some evidence pointed to the unexpected conclusion that CV was uncompetitive, but mitigating factors and contrary evidence make it impossible to make any claims about competition concerning the real world uses.

VII. Conclusion

This study of cumulative voting and single member district plurality rule attempted to use a novel application of industrial organization economic theory to explain why cumulative voting is a superior electoral system. The industrial organization paradigm, by providing concepts, such as oligopoly, monopolistic competition, and entry barriers, lends further

insight into the advantages of cumulative voting, in terms of competition, representation, and fairness. By positing SMD plurality rule as an oligopolistic political market structure and CV as monopolistically competitive one, it was hypothesized that CV is more competitive, representative, and fair, as an electoral system. In light of the evaluations in Section IV, V, and VI, CV is superior to SMD in the qualities of competition, representation, responsiveness, participation, and policy outcomes, and inferior to SMD only in terms of stability. Overall, it seems clear that the hypothesis is confirmed and cumulative voting is more efficient, democratic, and fair than single member district plurality voting. This conclusion was buttressed by many theoretical arguments coming from the literature surrounding voting rights, public choice, and voting theory. Furthermore, a voting experiment, despite its shortcomings, provided some empirical evidence supporting the conclusion. And finally, the field research done on actual instances of cumulative voting usage also lends credence to the conclusions drawn. Certainly further research is needed empirically concerning cumulative voting, and as more localities become more familiar with CV, the evidence surrounding its real world effects will improve. But, policy implications can be drawn from this preliminary study.

Cumulative voting should be considered as a viable electoral strategy for all types and levels of elections that simultaneously elect multiple candidates. This would as a whole improve American elections, in terms of representation, competition, and fairness, three qualities that are essential to a well functioning democracy. This recommendation can be taken further for those localities that are experiencing destructive factionalism or minority exclusion and majority dominance. Simply put, cumulative voting should be instituted as soon as possible in these areas because although not a panacea, it certainly has proved useful in equitably

easing the tensions that arise in those situations. As the United States moves toward a more integrated, culturally diverse future, cumulative voting should prove to be an integral part of the American electoral system.

Appendix 1

Student Senate Music Survey

What kind of music do you want at dances? in concert? on the radio?

Vote on both sides of ballot please.

Vote for one only	You have five votes to distribute however you like. You can cast one vote for each of five different choices, five votes for one choice, or any combination in between (eg. three votes for one choice and one vote for each of two other choices)

___ Hard/Classic Rock	___ Hard/Classic Rock
___ Soft Rock	___ Soft Rock
___ Oldies	___ Oldies
___ Alternative	___ Alternative
___ Pop	___ Pop
___ Heavy Metal	___ Heavy Metal
___ R & B/Soul	___ R & B/Soul
___ Rap	___ Rap
___ Christian/Gospel	___ Christian/Gospel
___ Country	___ Country
___ Easy Listening	___ Easy Listening
___ Latin	___ Latin
___ Classical	___ Classical
___ Jazz	___ Jazz

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Student Senate

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