I&S Debate Forum

Can Social Solidarity Be Institutionally Engineered? The Case of Presidential Elections*

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How Your Vote Counts Depends on How Your Vote is Counted

辯The social sciences rarely make concrete predictions. The reason is not that the social sciences are unscientific, but that theories concerning human beings require many initial conditions in order to make their explanation specific.[1] Even so, some subjects are more amenable to rigorous methodology than others. Voting systems are perhaps the most typical of these studies, and have in fact witnessed rich and tenable findings.[2] For this reason, mathematicians like Marquis de Condorcet and Charles Dodgson (Lewis Carroll) were attracted to the theory of voting very early on.[3] The reason is probably related to the definition of this subject. Voting systems

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* In this article, the author discusses whether Taiwan should change its presidential election system with co-debater Emile C.J. Sheng, whose viewpoints can also be found in this issue.

[1] For example, a theory may prescribe that "voter **X** has a stronger incentive to vote if the candidate he supports can bring him greater benefit, and has a weaker motivation to vote if the cost of voting increases." In order to predict whether **X** will turnout to vote, we need to specify the difference between benefit and cost. The cardinal functions of benefit and cost are thus the initial conditions of this theory.

[2] Many books are renowned for the study of voting systems and their outcomes. See, for example, Josep M. Colomer, ed., *Handbook of Electoral System Choice*, foreword by Bernard Grofman (Houndmills, Basingstoke, Hampshire and New York: Palgrave/Macmillan, 2004); Gary W. Cox, *Making Votes Count: Strategic Coordination in the World's Electoral Systems* (Cambridge, UK and New York: Cambridge University Press, 1997); and Maurice Duverger, *Political Parties: Their Organization and Activity in the Modern State,* translated by Barbara and Robert North (New York: Wiley, 1966).

[3] The term "voting system" is also associated with the name of some mathematicians other than

are methods for groups of people to select one or more options from many, taking into account the individual preferences of the group members.   A voting system is thus a formally defined formula that can be analyzed by rigorous methodology.

In political science, voting systems attract the attention of brilliant scholars for the same reason.   When used to select representatives or executive officials in a country, it becomes an electoral formula (or system).   In the past few decades, thousands of articles have been written regarding the formation, consequence, and choice of electoral systems.   Even the prestigious journal *Science* was susceptible to this vogue and published an essay on the science of elections.[4]   Expert or not, all students of political science must have heard of Duverger's "law" of electoral and party systems.   In social choice theory, five of the most important theorems are related to voting.[5]

With the most recent wave of democratization that has swept the world, the interest in electoral systems has deepened.   Genuinely democratic or not, the nascent democracies are at least electorally competitive.   How the rules of the electoral game should be chosen is not only theoretically interesting, but also a practical issue vital to the survival of these young democracies.   Scholars hold that as a particular electoral system usually results in particular political and social outcomes, state builders must choose the best way to set up the rules of electoral competition.   For the citizens, the existing electoral system strongly influences the chance of citizen participation and their mutual relationships.   To understand how democracy works or how a citizen's vote counts, we must first know how his vote is counted.

These issues are especially significant to the nascent democracies.   Most of these countries experienced colonization and authoritarian rule, and thus have no monarch—a national unifier usually bestowed with considerable power—to serve as the head of state.   The way the president is elected thus becomes a key variable

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Dodgson and Condorcet, such as Borda, Hare, d'Hondt, etc.

[4] See Steven J. Brams and Dudley R. Herschbach, "The Science of Elections," *Science* 292 (May 25, 2001): 1449.   Another political science article published by *Science* is Robert Axelrod and Douglas Dion, "The Further Evolution of Cooperation," ibid. 242 (December 9, 1988): 1385-90.

[5] These theorems hold that, other things being equal: (1) majority rule cycles should be omnipresent; (2) given two-party competition, political parties should converge; (3) potential voters should not vote; (4) potential voters should remain largely ignorant about the choices facing them; and (5) coalitions should be the minimal size necessary for winning.   See Bernard Grofman, "Reflections on Public Choice," *Public Choice* 118, no. 1-2 (January 2004): 31-51.

affecting how conflicts in society can be managed. This article compares four presidential election formulas—*plurality voting*, *runoff*, *alternative voting*, and *approval voting*, and argues that approval voting stands out as the system most conducive to the formation of a cohesive society. The findings can then be applied to Taiwan, where a recently held presidential election went hand in hand with the weakening of social trust. I will first discuss some methodological issues and address the basic criteria to evaluate an electoral system. I will then compare these four formulas and project their practical consequences. Finally, I will tackle the possible objections to approval voting, especially those proposed by my co-debater, Professor Emile C.J. Sheng.

How Do We Know That Voting Systems Matter?

To be applicable, a theory of voting systems must generate statements that are empirically testable. Some theories satisfy this condition because the statements are mathematically (or analytically) true. For example, in SNTV or d'Hondt PR, the threshold of exclusion in district magnitude **M** is **1/(M+1)**.[6] These types of propositions, while helpful, are unfortunately quite few.[7] More often, a theory of voting systems adopts empirical assumptions in order to make its hypotheses verifiable. The threshold of inclusion, or the minimum number of votes required to

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[6] The threshold of exclusion has been a key variable in the theories of voting, with mathematicians in the nineteenth century having fist delineated the formula. For more recent discussions, see Stein Rokkan, "Elections: Electoral Systems," in *International Encyclopedia of the Social Science* (New York: Croewell-Collier 1968); Douglas W. Rae, *The Political Consequences of Electoral Laws* (New Haven, Conn.: Yale University Press, 1971); Bernard Grofman, "A Review of Macro-Election Systems," in *Sozialwissenschaftliches Jahrbuch fuer Politik* (German political yearbook), ed. Rudolph Wildenmann, vol. 4 (Muenich: Verlag, 1975), 303-52; and Rein Taagepera and Matthew S. Shugart, *Seats and Votes: The Effects and Determinants of Electoral System* (New Haven and London.: Yale University Press, 1989).

[7] In this case, the answer can be controversial if the mathematical assumptions are debatable. Take Lijphart et al.'s discussion on the limited vote for example (see Bernard Grofman and Arend Lijphart, eds., *Electoral Laws and Their Political Consequences* [New York: Agathon Press, 1989], 157). They find the exclusion threshold to be **V/(V+M)** when each voter can cast **V** ballots, and give an example of **M=3, V=2**, and number of voters = 1000. According to this formula, a minor party is sure to win a seat if its vote share is above 800 votes (or 400 for each candidate). This is under the assumption that the large party nominates three candidates and the minor party nominates two. If the minority party nominates only one candidate, the threshold of exclusion for that minority party candidate would be 1/4, or **1/(M+1)**. That is, if this candidate can receive more than 500 votes, he will be elected because the other three competitors can receive no more than 500 votes. Lijphart's argument is correct if we define the threshold of exclusion as the *maximum* vote share below which a candidate (or party) could lose the election. If we define this threshold as the *minimum* vote share above which a candidate is sure to take a seat, the answer should be 250 votes in this case.

gain a seat, can be as low as one and as high as the threshold of exclusion.[8] Neither is a likely scenario, however, so the theorist must presume assumptions that are most likely to occur and then test the hypothesis thus derived.

Empirical studies of voting systems use the elements of a voting system as independent variables and examine their covariance with the consequent variable. This can be a challenging task, however. In any particular country, the electoral system tends to be the same across districts and time. To conduct a cross-national comparison, the cases must reach a certain number and the investigator must control for many intervening variables. The most difficult task is for a theorist to propose a voting system that has never been used. There is no empirical evidence to verify its function, and the formal definition of the system is hardly adequate to justify the proposal. A new proposal, however, is just what emerging democracies need.

How then could the proponent of a voting system defend his idea? An electoral formula can be rationalized normatively—we do know, for example, that some systems are more proportional than others. That kind of benefit is not enough, however. Society may be interested in other criteria that cannot be deduced easily from the system's formal rules. A better way is to imagine how the system may function under various assumptions—such as the number of contenders, campaign strategy, voters' preferences, and, most importantly, how individual preferences are aggregated into a collective choice. This information can be either empirically obtained or theoretically assumed. In the latter case, the reasonableness of the assumptions determines the plausibility of the proposal. Even so, room for debate always exists, for the assumptions and criteria to evaluate a system can always be challenged. In the following sections, I will follow this proposed method to address the systems of a single-winner election.

How Can Voting Systems Be Evaluated?

I propose six criteria to judge a voting system: *fairness*, *stability*, *welfare maximization*, *degree of complexity*, *campaign strategy*, and *manipulability*. As will be discussed later, these standards are all related to the quality of democracy, in

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[8] If only one candidate participates in an election, one vote will be enough for him to be elected. If **M+1** candidates join an election of district magnitude **M** and all obtain almost similar vote shares, the winner must reach the exclusion threshold to be elected.

particular the cohesion of civil society. Since the focus of this article is on presidential elections, I will also deal with the situation where only one winner is to be chosen.

Fairness could refer either to the votes wasted in an election (in the sense of particular votes having no influence on the electoral outcome) or to whether competitors from different backgrounds are treated equally by the voting system. In electoral studies, the concept of proportionality is used to capture both meanings. System **A** is more proportional than system **B** if, given the same percentage of the vote received by a party, this party receives a greater ratio of seats under **A** than under **B**. Many studies have shown that district magnitude is the key factor that determines proportionality: the larger the number of seats to be elected in a district, the more proportional is the system.[9] A system of low proportionality causes votes to be wasted and is unfavorable to candidates supported by minority groups (or parties).

Stability concerns whether the elected representatives can establish a stable decision-making body. A system is stable if the cost of decision-making is low and if the decision will not be challenged. The electoral studies literature tends to depict a negative correlation between fairness and stability. The lower the threshold for a party to obtain legislative seats, the more fragmented the party system will become and so the cost of decision-making will rise.[10] Nonetheless, several provisos should be added to this statement. First, a low decision-making cost does not imply a high quality decision. I will address this issue later on in the paper when discussing other criteria. Second, stability in the decision-making body does not imply stability of the political system. Excluding minority opinions in order to reach stability could lead to pressure that destabilizes the whole political system. Third, stability of a voting system can only be observed at the district level. If districts are not homogenously divided, stability at the district level could lead to heterogeneity at the national level. Fourth, some voting systems can give minority interests their due even if the winner is from the dominant group.

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[9] For a detailed discussion of thresholds and district magnitude, see Jih-wen Lin, "Looking for the Magic Number: The Optimal District Magnitude for Political Parties in d'Hondt PR and SNTV," *Electoral Studies* 22, no. 1 (2003): 49-63.

[10] The fragmentation of party systems can be measured by the effective number of parties $1/\Sigma p_i^2$, where p_i indicates the seat ratio of party **i**. There is a negative correlation between this indicator and the threshold of exclusion because the lower the latter, the smaller the average size of the parties.

The maximization of social welfare occurs if the voting system produces outcome **X** and the members in society cannot collectively reach a result **Y** to improve their welfare. This is of course a weak requirement: most people could still be dissatisfied when this condition is fulfilled if they share no consensus about how the situation can be improved. Many therefore regard welfare maximization as a system's minimum requirement because it at least ensures the stability of a decision. A solution that captures this concept is the Condorcet winner. Decision **C** is a Condorcet winner if, when compared in turn with the other alternatives, it is preferred to these alternatives. Depending on the situation, **C** could be a candidate, a party, or a legislative proposal. Unless specified by institution, **C** is preferred to **D** if more people support **C** than **D**.[11] One must note that a Condorcet winner describes a social choice decision, which can include one or many "winners" as defined by the voting rules. A multi-seat election, for instance, will see the election of multiple candidates. Also to be noted is that a Condorcet winner does not always exist.

The degree of difficulty for citizens to understand a voting system is crucial to the institutionalization of the system. In comparison with the nineteenth century, when some mathematicians were endeavoring to discover the "perfect" voting system, nowadays the choice of electoral systems tends to be made by the citizens. A "perfect" system must also be simple; otherwise, people could reject it purely on technical grounds. The simplicity of a voting system can be manifested in the mechanics of how people should vote and how the winners are decided.

Campaign strategy links the candidates and the voters and therefore affects social solidarity critically. The competing teams can choose to debate in public their issue positions, or resort to appeals based on the personal image of their candidates. They can highlight their own selling points, or just denigrate their rivals. When all competitors choose to vilify each other, the campaign strategy becomes negative. Negative campaigning has a strong impact on how people will vote and how endorsers of different contenders will view each other. An election dominated by negative campaigning will discourage moderate voters from voting and cultivate distrust among loyalists of different candidates. The less the candidates are punishable by the voters, the more likely they will run a negative campaign, especially

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[11] Thus defined, a Condorcet winner is a stronger requirement than social welfare maximization. That the collective welfare cannot be improved does not mean any alternative is preferred to other outcomes.

when they have little positive contributions to sell to the voters.

The manipulability of a voting system refers to the possibility for the result of an election to be altered by the strategic behavior of a group of candidates or voters. Most candidates are tactical campaigners, but whether they can manipulate the electoral outcome depends on whether some voters intend to cast their vote strategically. Strategic voting is defined as the misrepresentation of a voter's sincere preference in order to reach a more advantageous electoral outcome. A narrower definition of strategic voting is when a voter selects candidate **Y** even though his favorite is candidate **X**. When strategic voting takes place, the electoral outcome may be biased toward specific voters or candidates and is thus not reflexive of society's collective interest. In this way, manipulation can undermine social trust and jeopardize the legitimacy of the elected office.

The criteria discussed above are all related to social solidarity. Most citizens will feel alienated if the voting system disproportionately represents a particular social group. People will regard the political system as inefficient if its output is inconsistent or can be easily overthrown. A decision that fails to maximize social welfare leads dissatisfied social groups to be critical of the government. A complicated electoral system, even if implemented, makes the source of political power a mystery—at least to the average citizen. The legitimacy of the elected officials will be questioned if the voters sense any manipulation of the electoral process. Most importantly, people will distrust each other if the politicians they identify with are always attacking each other.

A Comparison of Electoral Formulas
for a Single-Winner Election

In accordance with the aforementioned criteria, this section now compares four electoral systems used in single-winner elections: *plurality voting*, *runoff*, *alternative voting*, and *approval voting*.[12] The formal definitions of these voting systems are as follows:

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[12] Other single-winner systems, such as the Borda count and the Condorcet procedure, are difficult to practice in large-scale elections and the outcomes are not necessarily superior to those of approval voting. The Borda count is also subject to strategic manipulation.

1. *Plurality voting*: This procedure could be used in single-winner or multi-winner elections and have several subtypes, such as the limited vote, bloc vote, and single nontransferable voting.[13]   For the purpose of this paper, I will focus on plurality voting used in the single-member district.   In this case, it is also called the "first-past-the-post" (FPTP) or relative majority system.   Each voter casts one vote for a candidate, and the candidate winning the most votes is elected.   The presidential election in the United States is the most frequently cited example of plurality voting.   Many countries (especially the United Kingdom and the former British colonies) use plurality voting to select the delegates of their national parliament.

2. *Runoff*: Any number of candidates can compete under this rule, but if no one candidate obtains a majority, a second round of elections will be held.   During the second stage, the competition is usually (but not always) limited to the candidates who received the top two positions in the first round.   Theoretically, it is possible to run an elimination runoff which eliminates the weakest candidate each round until someone wins the majority of the votes.   The presidential election in France is a typical example.   The runoff is also used by many former French colonies and some countries in Central and Eastern Europe.

3. *Alternative voting*: This form of voting is also called instant-runoff, the Hare system, single-winner single transferable voting (STV), ranked choice voting, or preferential voting.   When no candidate receives the majority support, the lowest polling candidate is eliminated.   The votes received by the eliminated candidate is then transferred to the candidate ranked above the removed candidate until someone receives majority vote.   Nations applying this method are few in number, and include the elections of the Australian House of Representatives, the Irish president, the Parliament of Nauru, and the Fiji House of Representatives. Alternative voting and STV are equivalent in formula, but the latter is used in multi-member elections.

4. *Approval voting*: This is a voting system where each voter can vote for, or approve of, as many candidates as they like.   Each candidate receives one vote if he is

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[13] With district magnitude **M**, limited voting allows the voters to cast **L** votes and 1<**L**<**M**; with bloc voting, **L=M**.

approved of once, and voters cannot concentrate their votes on a particular candidate. The candidate with the most votes is elected. Approval voting has not been used for any national election, but is becoming popular at the local level in many countries. Many academic associations are also adopting this method to elect their leaders. The most famous political leader elected by approval voting is the United Nations Secretary-General. Approval voting could be used in elections with single winner or multiple winners.

We are now ready to compare the above four voting systems. To facilitate analysis, consider table 1, which illustrates a single-winner election among three candidates. The percentages of the first column designate four types of voters distinguished by various preference orders of the three candidates. We assume that moderate voters are more likely to endorse multiple candidates than are the extremist voters. Thus, Type I and Type IV voters are further differentiated by the intensity of their preferences. Thirty-eight percent of **B** supporters will only vote for **B**, and 30 percent of the **G** loyalists will only approve of **G**.

Table 1
A Single-Winner Election among Three Candidates

Type	%	Preference order	Voter behavior under approval voting	Candidate vote share*		
				B	M	G
I	38	B>M>G	30% are deep-B who only select B; 8% select B and M.	38	8	0
II	13	M>B>G	All select M and B.	13	13	0
III	8	M>G>B	All select M and G.	0	8	8
IV	41	G>M>B	30% are deep-G who only select G; 11% select G and M.	0	11	41

*Assumption: Each voter will cast at most two votes under approval voting. With plurality voting, only the first preference is counted. Runoff is determined by the preference for the electable candidates in the two stages. Alternative voting eliminates the candidate who is listed as the top choice by the least number of voters. Those voters' second preference votes are then given to the remaining candidates.

Fairness

The easiest way to gauge the fairness of voting systems is to calculate the threshold of representation. Since the threshold of representation (or inclusion) requires empirical assumptions, I focus on the threshold of exclusion at this moment. If we adopt the definition that, for district magnitude **M**, the threshold of exclusion is the maximum vote share below which a party (or candidate) could lose, the answer will be **1/(M+1)** for all four systems. When applied to a single-member district, the threshold becomes 1/2 for all. Since this threshold estimates the maximum vote share that can deprive a candidate of his seat, we should assume the worst case he can face. A critical condition is thus that this candidate faces only one rival and that every voter votes. The worst situation for this candidate is that he loses to the competitor by one vote, in which case his vote share is almost 1/2. Since only two candidates join the race, the first three methods are practically the same. For approval voting, the worst scenario for this candidate is that his rival is supported by all voters. The maximum number of votes a losing candidate can receive thus occurs when all but one voter voted for him, while his rival is approved of by all voters. The threshold of exclusion under approval voting is thus 1/2.[14] The substantial meaning of this threshold, however, is different from those of other systems. This is because when a candidate receives one half of the ballots, he is in fact approved by all voters, but the percentage is 50 because all voters cast two ballots. Under the plurality system, the threshold indicates the support from half of the voters. In sum, concerning fairness, approval voting is at least not worse than the other single-winner voting systems; the result could be interpreted in a more positive way, however, given that a loser is not really a loser when almost all voters approved of him.

Stability

Since only one winner is to be elected, the four systems should, *ceteris paribus*, produce the same degree of party fragmentation. Nonetheless, these systems use various modes to select the winner, so the subsequent party system should

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[14] This threshold can be calculated in a more general way. Let there be **C** candidates competing for **M** seats, **C>M**, and let the number of voters be **N**. The worst case for the candidate is that **C=M+1** and that all voters vote for these candidates. Since all voters vote, the total number of votes is **N(M+1)**. If this candidates receives **N(M+1)/(M+1) = N** votes, the other candidates will each obtain **[MN(M+1)/(M+1)]/M = N** votes. Therefore, insofar as a candidate can receive more than **1/(M+1)** share of the total votes, he is guaranteed a seat.

also be different. According to Duverger, the plurality vote tends to nurture a bi-party system while runoff usually follows the coalition of multiple parties.[15] The runoff is practically the same as a two-stage plurality system, so the expected number of parties should be four. Judging from the examples of the United States and France, this hypothesis is verified. Alternative voting and approval voting are both held in a single stage, and candidates from different parties have little incentive to form coalitions. A two-party system is most likely to result from the latter two voting systems, but the winner under approval voting tends to enjoy cross-partisan support. Since alternative voting and approval voting ask the voters to list their preference or make multiple choices, the voters whose candidate is not elected will feel less alienated than under plurality voting.[16] Comparatively speaking, approval voting and alternative voting are most conducive to political stability. Runoff, by the higher fragmentation it nurtures, is more likely to cause instability.

In practice, plurality voting does not necessarily produce a two-party system, and any exception could lead to undesirable consequences. In the example of table 1, **G** will be elected by plurality rule. This is an unstable winner, because Type I and Type II voters could coalesce to elect **B**, since both prefer **B** to **G**. This situation occurs frequently when more than two candidates compete under plurality rule. With alternative voting, **M** will be eliminated first but, after the votes are transferred to the second preferences of **M**'s supporters, **B** and **G** will each receive 51 and 49 percentages of the votes. **B** is elected by a majority and the electoral outcome is thus more stable than under plurality voting. When approval voting is used, the winner is also **B**. The vote percentages of **B, G**, and **M** are 51, 49, and 40, respectively, so **B** enjoys the same broad-based support as in alternative voting.

Social Welfare Maximization

This is a complicated issue that requires a thorough analysis of the preference of the citizens. As pointed out earlier, we should at least inquire about the possibility for the Condorcet winner to be elected under these single-winner voting systems. The answer is that, even if the Condorcet winner exists, no voting system guarantees

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[15] Duverger, *Political Parties*.

[16] Nevertheless, small parties could survive under both approval voting and alternative voting if their support is crucial to the victory of the large parties. Yet their survival is not as institutionalized as under the runoff system.

his victory. Nevertheless, the circumstances under which the Condorcet *avoids* being elected still vary by system, and this variance can have significant political implications. To be emphasized first is that, regardless of the electoral system, the Condorcet winner will necessarily be elected if the feasible set contains only two candidates. The Condorcet winner, by definition, refers to the option supported by the majority.

The situation is totally different when more than two candidates take part in the election. With the plurality rule, a non-Condorcet winner can easily be elected if his rivals are both moderate. Take a look at table 1 again. The Condorcet in this case is **M**, because **M** is preferred to **B** and **G** according to majority rule. However, **G** will win the election by receiving 41 percent of the votes if people vote sincerely. Even if **M** withdraws from the election, the elected **B** is still not a Condorcet.[17] This is not a desirable social outcome because the winner will immediately encounter strong opposition. This risk also occurs in a runoff. Suppose the distribution of voter attitudes on a spectrum is bi-modal, so that in the first stage two extreme candidates win the top two positions. The second stage then necessarily selects an extreme candidate. Even if the Condorcet—who must be a moderate—enters the second stage, the radical parties still have the capacity to pull the winning candidate toward the extreme positions. If a bi-modal distribution of ideology is typical of a divided society, a runoff could intensify the tension between the antagonistic groups. In the above example, a runoff will most likely select **B** and **G** as the first-stage winners, even though **M** is the Condorcet. With alternative voting, the Condorcet could be the first to be eliminated. In table 1, this is the fate of **M** if the voters list their preferences honestly. Unfortunately, approval voting does not solve this problem. According to society's preference profile specified in table 1, **B** will be elected under both alternative voting and approval voting. Therefore, no single-winner voting system is sure to elect the Condorcet winner.[18] However, I will explain later that approval voting at least ensures the election of the candidate supported by the largest social group.

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[17] In this case, the feasible set still contains three candidates, so the previous argument does not apply here. The feasible set contains the possible options, which is unrelated to the viability of the candidates.

[18] The only exception is, of course, the Condorcet procedure. A decision under this system will be indecisive, however, if the Condorcet winner does not exist.

Difficulty for the Citizens to Understand the Electoral System

Among the voting systems discussed in this essay, plurality is perhaps the easiest to understand.   Some voters may need a justification, however, if plurality rule fails to select a moderate candidate—this occurs when multiple candidates join the poll.   Runoff requires the voters to vote twice if no candidate receives majority support.   Procedurally, a runoff is similar to plurality voting at each stage, but asking the voters to cast their ballots twice in a short period of time can be cumbersome. The reasonableness of runoff will be challenged if an extremist candidate is elected in the second round.   Alternative voting and approval voting both belong to range voting, which asks the voters to fully express their preferences.   Alternative voting demands the voters to rank the candidates, which is difficult for many, and the determination of the winner can also be time-consuming.   Approval voting, in contrast, does not require the voters to rank their preferences.   This system is procedurally much easier, and simple aggregation will suffice to decide the winner. A voter can easily turn the number of a candidate's votes into a percentage by dividing it with the total number of votes.   In addition, approval voting satisfies the intuitive desire to "approve" or "disapprove" a candidate by simply putting a mark under their name.   As will be explained later, extremist candidates are less likely to be elected under range voting, so these two systems require little explanation for any aberrant results.

Campaign Strategy

According to the "median voter theorem," candidates competing under plurality rule should converge at the center of the policy spectrum.[19]   This means that the candidates are policy-oriented and will gradually soften their ideological insistence.   If so, why should we be bothered by negative campaigning, which is characterized by the smearing of rival candidates?   The first possibility is that this theorem is empirically inaccurate.[20]   Second, the assumptions of the median voter

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[19] Anthony Downs, *An Economic Theory of Democracy* (New York: Harper, 1957).

[20] For example, the Democratic and Republican parties in the United States have been found to hold distinct areas on the issue space constructed by party platforms.   See David Robertson, "Britain, Australia, New Zealand and the United States, 1946-1981: Initial Comparative Analysis," in *Ideology, Strategy, and Party Change: Spatial Analyses of Post-war Election Programmes in 19 Democracies*, ed. Ian Budge, David Robertson, and Derek Hearl (Cambridge: Cambridge University Press, 1987), 69.

theorem may be more than two-party competition and unidimensionality, and the result no longer holds once these assumptions are changed.[21]   The most arguable assumption is probably that the candidate has complete information about the voter's opinion distribution.   No election will see the full turnout of all voters, and the more uncertain the expected turnout, the less predictable the location of the median voter. It is highly possible that a candidate, thinking he is standing at the median point, is actually located at another point, and thus will be beaten by a rival who has better information.[22]   In addition to turnout, many factors, such as random shocks, also contribute to the uncertainty of the median location.   Another reason is that campaigning is usually hierarchically managed.   To reach out to the voters, candidates usually rely on local agents (or "vote captains") to mobilize support from the constituents.   Many of these agents are political activists, and are usually more sensitive to the candidate's policy positions than are the ordinary people.[23]   To summarize, the greater the uncertainty of the voter's opinion distribution and the more indispensable the vote captains,[24] the less likely the candidates will converge at the median position.

Why plurality voting encourages the candidates to launch negative campaigning is now much more understandable.   Suppose the candidates identify the median only probabilistically.   Since each voter casts at most one vote, a safer strategy is to tell the citizens that his rival is not the median, rather than proclaiming that he himself is the median—this latter option is risky because there is uncertainty about the exact median location.   Another advantage of negative campaigning is that moderate voters will be discouraged from voting, so that the candidates will face less pressure to sacrifice their ideological commitments.   Additionally, the moderate voters are, by comparison, more likely to support a candidate's rival than are his loyalists.   The tragedy of negative campaigning is that, since all candidates share the

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[21] For a detailed discussion of the median voter theorem, see note 5 above.

[22] Another possibility is that, in parliamentary elections, the median of the constituencies are different. This argument is inapplicable to presidential elections where the whole nation is a district (such as Taiwan).

[23] Gary Miller and Norman Schofield, "Activists and Partisan Realignment in the United States," *American Political Science Review* 97, no. 2 (2003): 245-60.

[24] A candidate who enjoys national reputation depends less on the vote captains than does one who relies on personalistic support.   Candidate image and social cleavage patterns therefore matter.

same incentive, a Prisoner's Dilemma is created.   Many candidates, especially those with positive policy contributions, would prefer a campaign dominated by policy debate rather than negative propaganda.   The dominant strategy of even such a candidate, however, would be to stick to negative campaigning, lest he become a sucker in the eyes of his adversary.

Consider table 1 again.   Suppose **B, M,** and **G** are the presidential candidates and the opinion poll shows the support rates of candidates **B** and **G** to be 38 and 41, respectively.   It is a neck-and-neck race, so the problem is how the two leading candidates should run their respective campaigns.   If they choose to be moderate, the voters with strong ideological commitment will punish the candidates by not turning out to vote.   Conversely, negative campaigning will discourage the moderate voters from voting.   Since the moderate voters have a higher tendency to swing between **B** and **G**, however, attracting the ideological voters is a safer strategy. Now suppose the election runs according to plurality rule and the leading candidates decide to launch a negative campaign.   The moderate voters will either vote for **M** or decline to vote, but have no incentive to endorse **B** or **G**.   Note that the restricted options of the moderate voters result from the plurality rule that each voter can only cast one ballot.   If only one candidate attempts to run a negative campaign, his rival still faces pressure to follow the same strategy.   If a candidate refuses to respond to his rival's attack, pressure will then come from his loyal supporters.   Since the votes of the loyalists count more than those of moderate voters, the candidate will be compelled to counterattack his opponent.   The situation remains the same if **M** retreats from the poll: the moderate voters will either vote for **B** or **G**, or refuse to vote. Insofar as the ideological voters can penalize their candidate by declining to offer their ballots or resources, negative campaigning is a safer tactic.

We can depict the scenario in a more game-theoretic way.   Suppose that the candidates are already engaging in negative campaigning and that the "diehard" ideologists will cast at most one vote for their favorite candidate.   Also suppose some of them will refrain from voting if their candidate is too "soft."   Under plurality rule, the moderate voters can punish the candidates by keeping away from the voting booth, but since the ideologists can follow suit, the voice of silence can hardly change the campaign style or the electoral outcome.   If one candidate decides to initiate a positive campaign, will he be rewarded?   With plurality rule, there will be no reward if there are more than two promising candidates because each voter can cast only one

ballot, and most of the moderate voters will give their support to the moderate candidate.   If there are only two promising candidates, the chance for the converter to attract the moderate vote will not be higher than the support lost from the diehard voters.   This candidate can endeavor to appeal to both types of voters, but this is a doubly risky strategy.   At the very least, he will be criticized as a dishonest politician.

The situation is quite different when approval voting is used.   Since the moderate voters now have multiple options—to vote for any number of candidates or not to vote, the leading candidates will have to modify their strategy.   The reason is straightforward: the likelihood of voting for multiple candidates increases with the moderate tendency of the voters.   In table 1, 60 percent of "ideological" voters would only cast one ballot for their favorite candidate, while the remaining 40 percent would vote for their first and second preferences.   Even though the moderates are in the minority, their impact is strong.   The candidates still face the problem that both the loyalists and the moderates can punish them by refusing to vote, but the relative weights of their votes are changed by the voting system.   Also consider two possibilities.   First, if there are more than two viable candidates, the candidate committed to "positive campaigning" will lose some of the votes of the extreme voters, but in return he will receive the support from moderate citizens who can now cast several ballots.   Therefore, in this case this candidate is at least not discouraged from being positive.   As for the second case, the same logic applies when only two candidates remain in the race.   Although being moderate runs the risk of being reproached by the ideological diehards, the moderate voters now become more attractive of a voting block because they have more ballots to allocate to the converters.   In other words, approval voting works because it magnifies the influence of the moderate voters by allowing them to vote for multiple candidates.   Although negative campaigning will not totally disappear under approval voting, two things are certain.   First, this system is *relatively* more conducive to positive campaigning than is plurality voting.   Second, the larger the pool of moderate voters, the more appealing their votes become.

If we follow the previous assumption that candidates need vote agents to mobilize support, yet another game illustrates the difference between plurality voting and approval voting.   Let **r** be the resources donated by a candidate's vote agent and **v** stand as the ballot to be cast by a moderate voter.   Suppose a candidate receives **r**

only if he insists on his ideological position and attacks the rival, while he garners **v** only if he runs a moderate campaign.   The key difference between plurality voting and approval voting is that in the former case a candidate can only grasp **v/2** if both candidates are playing a moderate strategy, while in the latter case each can get **v** under the same strategic outcome.   A candidate will receive **v** if his opponent is playing negative, but adopting this strategy will deprive him of **r**.   Then the two systems yield different conditions under which both candidates adopt positive strategies.   With plurality voting, the condition is **v>2r**; with approval voting, the condition becomes **v>r**.   Neither system guarantees the abolishment of negative campaigning, but the chance for this outcome to be eradicated is higher under approval voting than under plurality voting.

The advantages are not entirely present under alternative voting.   Although both types are a form of range voting, the key difference between approval voting and alternative voting is that in the former every vote carries the same weight while in the latter the preference is rank-ordered.   For this reason, only a small part of the voters will vote for all candidates under approval voting, while under alternative voting the preference must be specified in full, making the order of preference very important. To be elected, the candidate must be ranked high by many voters in order for him not to be eliminated in the first round.   Still, negative campaigning under alternative voting will be less rampant than under plurality voting; this is because the candidates must be listed as the second preference by the voters who selected the eliminated candidate.   He will be ranked low if the citizens think him responsible for the negative campaigning.   When there are only two candidates, alternative voting and plurality voting are virtually the same—there is no rank to make, actually.

A runoff can in fact be treated as a two-stage plurality, and so has similar drawbacks.   Since each voter has one vote under runoff, negative campaigning will first take place between candidates (parties) with similar ideological backgrounds. No matter which two candidates are ranked top in the first round, the next stage will see the coming about of the centrifugal force.   If two moderates come out first, they will not converge in the second round, first because of the same force that creates negative campaigning under plurality rule, and second because the extreme voters are more organized than are their plurality counterparts.   As Duverger explains, a runoff tends to encourage multipartism, which compels the leading candidates to rally with their ideological allies in order to obtain majority support in the final round.   If the

top candidates are from the radical parties, the same forces will be at work; they will probably shift in stance slightly toward more moderate views, but on no account will they converge at the center.

Strategic Voting

Broadly speaking, strategic voting occurs if some voters vote not according to their true candidate preference order. The existing literature usually adopts the narrower definition of this term, however, referring to the situation that occurs when a voter votes for candidate **Y** even though **X** or even more candidates are preferred to **Y**. The rationale is usually to prevent a worse outcome from occurring—the discarded candidate is usually electorally weak.

In this sense, strategic voting is common under plurality rules when multiple candidates join the race. Consider the above example again. With plurality rule, the two groups of moderate voters have a strong incentive to abandon **M** and let their second choice be elected. If they decline to vote tactically, the winner could be their least favorite candidate. When the runoff is used, it is even more common for small parties to sacrifice their favorite candidate in order to prevent their archenemy from winning. This tendency is in fact institutionalized: many voters whose most preferred candidate fails to enter the second stage will then be forced to support their second-best choice. This is the fate of the moderate voters in the above example.

Alternative voting is a special kind of range voting, under which voters are allowed to express various degrees of satisfaction over the candidates, so the incentive to vote strategically does not seem as strong. This system also requires the voters to have strong calculating capabilities in order to vote strategically. Since only one winner is to be chosen, however, some tactical voters can still misrepresent their preferences in order to increase the odds either that their favorite candidate will win or to prevent the worst candidate from being elected. Intriguingly, tactical voting under alternative voting requires a voter to reduce a candidate's odds of winning by raising his rank, or to enhance this candidate's fortune by lowering his preference order.[25]

To see why, consider the following example where three candidates from

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[25] For a detailed discussion on strategic voting under different voting systems, see Steven J. Brams and Peter C. Fishburn, *Approval Voting* (Boston: Birkhäuser, 1983); and Steven J. Brams and Peter C. Fishburn, "Alternative Voting Systems," in *Political Parties and Elections in the United States: An Encyclopedia*, ed. L. Sandy Maisel (New York: Garland, 1991), 23-31.

fictitious Labor, Conservative, and Democratic parties compete in a single-winner election.   Voter preference profiles are displayed in table 2.   When the voters cast their vote sincerely, the Conservative candidate will be eliminated first and 20 percent of the vote will be transferred to the Democratic candidate.   The victory thus goes to the Democratic Party.   For Type I voters, this is the worst outcome.   They can thwart this result by misrepresenting their preference as Conservative > Labor > Democratic and force the Democratic candidate to be eliminated in the first round. Although the Conservative is not their most favorite choice, he is still better than the Democratic option.

Table 2
Strategic Voting under Alternative Voting

Voter type	%	Preference order
I	42	Labor > Conservative > Democratic
II	20	Conservative > Democratic > Labor
III	38	Democratic > Labor > Conservative

As a breed of range voting, approval voting is designed to minimize strategic voting.[26]   We can even make a general statement that, under approval voting, there is little need to refrain from voting for **X** in order to let the less preferred **Y** be elected. Conversely, if a voter votes for candidate **X** strategically, he should also vote for all candidates he prefers to **X**.   A voter can still vote for his favorite candidate even if this candidate has no chance of winning the seat.   In some sense, the vote cast to this candidate is not "wasted" because the voter can select this candidate together with the promising one.   Sometimes the votes received by an unelected candidate can be politically significant: it at least manifests the will of the minority because when all voters vote sincerely, the vote shares reflect the influence of the contenders irrespective of their political fortunes.   If the voter's most favorable candidate has a good chance of being elected, the voter can strengthen that candidate's odds of winning by only voting for him.

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[26] Brams and Fishburn, *Approval Voting,* 15-34.

In this sense, narrowly-defined strategic voting will not take place under approval voting.   In the example of table 2, the Labor candidate will be elected if all voters cast two ballots.   Will the Type II and Type III voters have the incentive to vote strategically?   Type II voters can only choose between withholding their support for the Conservative or the Democratic candidate, but in both cases the odds of the Labor candidate will not be reduced.   For Type III voters, the only possibility is to hold back their votes for Labor.   This will indeed deprive the Labor candidate of his championship.   Such a move does not make sense, however, because the new winner will be the Conservative, a nightmare outcome for Type III voters.

More generally stated, approval voting satisfies the monotonicity condition: *A voter cannot save candidate X from losing by placing him in a relatively lower rank; nor can he prevent X from winning by placing X in a relatively higher rank.   Namely, this voter cannot change the result of the election by misrepresenting his preference order.*   For this reason, sincerity (defined narrowly) will be sacrificed to the minimum extent under approval voting.   The example in table 2 shows how this condition is violated under alternative voting yet preserved under approval voting.

What should be emphasized is that approval voting is not entirely strategy-proof.   Assume that, in the example of table 1, 5 percent of the 38 percent **B**-supporters are so nice that they intend to vote for all candidates.   **G** will then receive 54 percent of the votes and claim victory.   This may not be the best result for these nice people, however, so they could "strategically" withhold their support for **G** and thus ensure that **B** is elected.   Yet this scenario simply follows the aforementioned conjecture that the voters can concentrate their support on the most preferred candidate while not voting for the lesser preferred ones.   This still satisfies the monotonicity criterion and should not be counted as strategic voting defined in the usual sense.   For this strategy to work, the race must be neck-and-neck and the "vote-concentrators" have to be well organized.   Even if such a circumstance actually occurs, the result will be similar to that under plurality voting.

Table 3
A Summary of the Comparison of the Four Single-Winner Voting Systems

	Plurality	**Runoff**	**Alternative**	**Approval**
Fairness (threshold of exclusion)	1/2	1/2	1/2	1/2, but the votes could be coming from all voters
Stability	High, but exception exists	Low	High	High
Social welfare (Condorcet)	Not guaranteed	Not guaranteed	Not guaranteed	Not guaranteed
Difficulty to understand	Low, but aberrance may occur	Low, but aberrance may occur	High	Low
Negative campaigning?	Yes	Yes	Not always	Quite unlikely
Strategic voting	Yes	Yes	Yes	No, if strategic voting is defined narrowly

To summarize, all single-winner election systems have their shortcomings, but a comparison can still be made among them (see table 3). On the criteria of fairness and Condorcet-selection, all four systems are equivalent. Except for runoff, the systems create stability by limiting the number of effective parties. Approval voting earns the highest scores on the other three tests. Its formula is as uncomplicated as plurality voting, and the interpretation of the electoral result is straightforward. Unlike plurality and runoff, unexpected outcomes rarely take place under approval voting. The most noteworthy advantage of approval voting is its capacity to minimize negative campaigning and strategic voting, maladies most detrimental to popular confidence in electoral democracy. By expanding the influence of the moderate voters, this system imposes a higher cost on negative campaigners than do other systems. It is the only single-winner voting system where preference misrepresentation is unnecessary. Taken together, approval voting is not worse than the other systems on several normative criteria, and is the only one that curbs the intention to divide society by causing the citizens to distrust each other. Approval voting is also the only system where the electorates can honestly reveal their

preferences without fearing their vote choice will backfire.

Possible Objections to Approval Voting

As illustrated by Kenneth Arrow's famous impossibility theorem, all decision-making systems are inherently defective—all will violate some defining features of democracy under some circumstances.[27]   Approval voting, like the other three systems, is unable to guarantee the selection of the Condorcet.   This is against Arrow's "rational society" assumption: the non-Condorcet outcome is vulnerable to the challenge of the Condorcet winner, if it exists.

Whether a voting system can select the Condorcet winner is a key question in social choice theory.   From a practical point of view, there can also be doubts about the feasibility and plausibility of approval voting.   This section will focus on the questions that many people will ask: Will approval voting select a "compromised" winner?   Will the multi-ballot system favor the group that is already dominant? Most fundamentally, would the voters really vote as rational choice theory predicts?

In order to win under approval voting, the candidates must make an effort to attract cross-partisan support.   Will this system select a winner who is neither hated nor strongly favored by most people?   If a candidate is elected because he presented a platform that managed to refrain from irritating most voters, what will his mandate be after claiming victory?   The possibility that such a candidate would be elected certainly exits, and its occurrence becomes a normative issue: do we want a contender who receives his mandate by alienating a significant portion of the citizens, or do we wish to see a "nice" but compromised candidate elected?[28]   The answer may depend on one's political convictions.   In any case, we can easily prove that the winner of approval voting must be endorsed by the "strongest" social group—if "strength" can be measured by the relative size of a group.[29]   To see why, consider table 4, which turns the percentages in table 1 into variables.

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[27] Kenneth Arrow, *Social Choice and Individual Values* (New York: Wiley, 1951).

[28] It should be emphasized again that a candidate can receive a clear mandate by negative campaigning. His social base is the distrust of the voters who do not support him.   In this case, the mandate may not be buttressed by a well-defined and consistent partisan platform.

[29] According to Brams and Herschbach, alternative voting is more biased toward compromised candidates than is approval voting.   See Brams and Herschbach, "The Sciences of Elections."

The above section has shown that approval voting induces sincere voting. Based on this assumption, **M** will be elected only if **m+m' > b+m** and **m+m' > g+m'**. This is equivalent to **m' > b** and **m > g**, which can be converted to **m+m' > b+g**. In plain language, the equation says that the moderate candidate **M** will be elected only if the size of his supporter base outweighs the sum of the electorate who votes for **B** and **G**. In this case, **M** is the champion not only because he is the Condorcet winner but also because he represents the largest portion of the voting pool. For the latter reason, he will also win under plurality voting. On the contrary, if **m' < b** or **m < g**, **B** or **G** will be elected. We may thus deduce that approval voting tends to select the candidate who can also win under plurality voting if the electorates vote sincerely. Nevertheless, approval voting does not share the weaknesses of plurality voting, especially negative campaigning and tactical voting. When a society is divided, the real "compromised" candidate is the moderate candidate. If elected, he will face pressure from both extremes to be their partner, but his "weak" background will prompt the coalition to be dominated by the radical voices. We may deduce further that approval voting is most favorable to a society where the moderate group is the strongest. This is because their candidate is the Condorcet winner and will be elected, and citizens in this group have a stronger influence to steer the campaign agenda than under plurality voting. When elected, this winner is certainly not a "compromised" one.

Table 4
A Single-Winner Election among Three Candidates: The Generalized Case

%	Preference order	Comments	Votes received		
			B	**M**	**G**
B	B>M>G	b* are deep-B who only select B; b-b* selects B and M.	b	b-b*	0
m	M>B>G	Suppose all select M and B.	m	m	0
m'	M>G>B	Suppose all select M and G.	0	m'	m'
g	G>M>B	g* are deep-G who only select G; g-g* selects G and M.	0	g-g*	g

Note: The first column lists the percentages in terms of a variable.

A related issue is whether approval voting, by compelling the contenders to reach out for cross-partisan support, will weaken the partisan basis of a democracy. Again, this question can be answered normatively in two ways. The first concerns the hope we place in political parties, and the answer hinges on how an ideal democracy should be. There are naturally pros and cons to partisan politics, but few would wish to see society divided as a result. Second, various constitutional designs may have different expectations for party politics. For instance, a proponent of the presidentialist system would prefer the parties to be characterized by weak discipline so that deadlock can be broken by cross-partisan cooperation. Some semi-presidentialist constitutions institute the president as a national unifier. A president elected under approval voting will fit this role most agreeably. Also noteworthy is the high chance for the winner of approval voting to be supported mostly by a single-choice electorate. However, the previous section has already shown how the campaign culture can be transformed by the small percentage of people who approve of multiple candidates. The fear that approval voting will undermine a country's partisan basis may be unnecessary.

Another doubt about approval voting is that it may be used by the dominant social group to fortify its power. Suppose a presidential race has two candidates, one of whom is from a dominant social group. Also assume that the contest is a tightly fought one, so that some voters in this social group do not consider this candidate their first choice. Will this candidate resort to appeals to group identity (such as ethnic, regional, or religious commonalities) to attract their second ballot? Another candidate, being a minority candidate, may not enjoy this advantage. In this case, electoral results under approval voting will be more biased than other voting systems toward the candidate representing the dominant group. When less than half of the voters consider this candidate their top choice, this bias can even overturn the electoral outcome. Approval voting should be applied very cautiously in this situation. No evidence, however, can verify this bias because the ballots cast by a voter are not ordered by preference. The winner and the loser can have their own interpretations of the outcome, neither of which can be proven true or false.

Finally, this article is based on the assumption that voting behavior is attributable to some rational principles. Whether the voters really vote rationally is a complicated issue beyond the scope of this article. One thing is for sure, however: rational or not, voting behavior under approval voting is more predictable than under

other systems because this particular set of rules minimizes strategic voting. Be it based on rationality, party identification, issue stance, or even emotion, voting behavior under approval voting can be explained by the variables we commonly examine in electoral studies. When the likelihood of strategic voting is minimized, rationality and intuition can look the same. Because voting behavior becomes more predictable, the candidates will have a stronger incentive to modify their campaign strategies in order to attract cross-partisan support.

What if Approval Voting is Used in Taiwan?

Like many young democracies, Taiwan's new political system is marked by the direct election of the president. So far three presidential polls were held under the plurality rule, providing rich data to test for the defects of this voting system. The first presidential election took place on March 23, 1996, in which four teams participated in the race. Backed by the loyalists of the Kuomintang (KMT, the Nationalist Party) and some identifiers of the Democratic Progressive Party (DPP), the KMT candidate Lee Teng-hui was elected with a 54 percent share of the vote. The second election was held on March 18, 2000, which witnessed the contest among three leading teams. James Soong, an independent candidate who defected from the KMT and later founded the People First Party (PFP), was in the lead when the campaign started, followed by the DPP's Chen Shui-bian, and then the KMT's Lien Chan. Chen managed to garner about 40 percent of the vote to beat Soong by a narrow margin. Votes were cast for the most recent presidential poll on March 20, 2004, where only two teams joined the campaign. Again, Chen received slightly more than 50 percent of the vote and thus claimed victory.

These elections reveal at least the following controversial outcomes: the inability for the Condorcet to win, insincere voting, and negative campaigning. First, the Condorcet in the first election may well have been Lee Teng-hui. This is because he was preferred to KMT defector Lin Yang-kang by both Lee's loyal supporters and DPP identifiers, while the anti-Lee group in the KMT and Lee's fans preferred him to the DPP's candidate, Peng Ming-min. In the 2000 election, by contrast, the probability for Chen Shui-bian to have been the Condorcet is low. Most observers of this campaign believed that, had Lien Chan and James Soong been united, Chen could not have won this race. Most likely, Lien was the Condorcet in this election, even

though his vote share was the lowest.   Only two teams took part in the 2004 election and Chen was victorious, so in theory Chen was the Condorcet.   Taking into account the alienated voters in this campaign, however, Chen's legitimacy is still contested. These elections (especially the 2000 one) demonstrate that Condorcet and victory have no clear association.   Second, strategic voting is a prevalent phenomenon in these elections.   Most people attributed Lee Teng-hui's landslide win in the 1996 poll to the tactical help of the DPP supporters in protest of the missile tests conducted off Taiwan's coast by the People's Republic of China.   In the 2000 election, Chen's championship was assisted by some of Lien's local agents who thought Soong untrustworthy and Lien unable to win.

The third campaign is a clear violation of the "median voter theorem."   The election satisfies the key assumptions of this theorem, e.g., a dominant cleavage along the national identity dimension and the participation of only two candidates.   The competitors did not, however, really converge on the salient issues.   The reasons have already been outlined in the preceding section.   Most interesting is how the two teams manifested their divergence.   On the key issues related to national identity, both teams adhered to a position that their rival would not dare take.   Yet a non-convergent campaign is not necessarily centrifugal.   That explains why the candidates utilized negative campaigning as a means to demonstrate that rivals were not middle-of-the-roaders.   Combined, these two strategies forced the voters to choose whom they love based on whom they hate: I support a particular candidate not only because of our closer ideological positions but also because he was insulted by his rival.   When ideology and emotion become inseparable, the campaign will see no public debate on platforms but only reactive self-protection.   Again, the institutional cause of this campaign culture is explained above.

Will approval voting ease these predicaments?   We can consider two scenarios.   The first is when more than two viable candidates join the race.   In the 1996 election, Lee Teng-hui was not only the Condorcet but also the champion in the opinion polls, making him the clear winner with or without strategic voting.   Had approval voting been used, the DPP supporters could have chosen both Peng and Lee, although far fewer KMT identifiers would have followed this strategy.   Lee would still have claimed victory, and the DPP supporters would have felt less guilty about their choice.   The game in 2000 very much resembled table 1.   Among the leading candidates, Chen and Soong were roughly of equal strength, while Lien lagged behind.

Also suppose most voters would only have approved one candidate, but a small section would have cast ballots for two candidates.   Under such circumstances Soong and Chen would still have led.   Lien would not have been elected even if he looked most like the Condorcet.   Still, no voter could have rescued his favorite candidate by strategic voting.   If the candidates were ranked by **B, G**, and **M** as in table 1, then no electorate could vote strategically or concentrate their votes on a particular candidate and change the rank.   This may well be the real situation.   When strategic voting is minimized, the campaign is transformed—it makes no sense for the candidates to ask the supporters of another candidate to switch their ballots.   "Abandon a candidate to protect another" (棄保, *qibao*) will no longer be the core issue of the poll.   Although the median candidate (Lien in this election) would not be elected under approval voting, his supporters would have a greater impact on the campaign: first, they can still cast their first vote for this candidate; second, the other candidates would desperately need their second vote to win.   If, as some opinion polls suggested, people who put Lien as their top choice had a higher probability to list Chen rather than Soong as their second choice, Chen would have had to soften his attitude toward Lien's supporters in order to get their approval.   Chen would still have been elected, but the campaign would have had a much different flavor.

　　　The second scenario occurs when only two candidates compete for a seat. When the voters are only given two alternatives, all single-winner systems except approval voting work the same—one stage will be sufficient to generate a majority winner and the voters have no candidate to rank under alternative voting.   All four systems will surely select the Condorcet, and the electorates have no strategic vote to cast.   So what particularity could approval voting have?   With only two candidates competing, approval voting is the only system where the voters can cast more than one vote.   If there is anything unusual about approval voting (in a two-candidate contest), the source must be this feature.   So does this particularity matter?   Any candidate will wish to see his supporters approve of him only, and most voters will probably do so.   However, some voters will decide how many candidates to approve by their behavior.   A candidate is less likely to be approved by his rival's supporters if he attempts to concentrate his votes by assaulting this rival.   This adds a huge cost to negative campaigning: the more a candidate wants to use this strategy to prevent his loyalists from endorsing his rival, the less likely he will receive the approval of the

upholders in the other camp.   This may be the most significant merit of approval voting.

Negative campaigning in Taiwan's 2004 presidential election proved to be the primary force that divided society.   To consolidate their support bases, the DPP's Chen Shui-bian and the KMT's Lien Chan did their best to denigrate each other, from performance to personality—a development which resulted in the "hollowing out" of the moderate voters.[30]   A voter decides to vote for a candidate not necessarily because he understands or even cares about his candidate's issue positions, but because he dislikes the candidate's rival.   No wonder mutual distrust diffused throughout Taiwanese society both during and after the campaign process.   Had approval voting been used in this election, a manipulator of negative campaigning would have been penalized by failing to grab votes from the opposing camp.   This could have proven fatal if the poll was neck-and-neck.   Another advantage of approval voting is that the electors who are not predestined to endorse either camp will have greater leverage to change the electoral outcome.   Instead of refusing to cast a valid ballot, they could now promise to deliver their support to the candidate who adopts a more positive campaign strategy.   These voters would be delighted to attend the next presidential inaugural ceremony, no matter which candidate is elected.

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Exploring the Perfect or the Best?
A Reply to Emile C. J. Sheng's Criticism of Approval Voting

The sections above have enumerated the values of four single-winning electoral systems and the possible objections to approval voting.   Whether the systems can be implemented as theorized, however, remains unanswered.   To tackle this problem, Professor Emile C. J. Sheng has kindly written an article in which he casts great doubt on the practicality of approval voting in Taiwan.   His argument can be summarized as strategic behavior on the part of both voters and candidates would negate *any* potential positive effects of approval voting while running the risk of unforeseen negative consequences.   He affirms these claims by drawing several counterarguments (to my article) via constructed examples.   Since approval voting

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[30] This election was marked by the "invalid vote coalition," which asked the voters to support neither candidate.   Under plurality voting, this strategy is ineffective because an invalid vote has no impact on the candidates' vote shares.

would induce strategic behavior unpredicted by the proponent of this system, he argues, Taiwan should maintain the current plurality system and give the voters a chance to learn from their past mistakes.

To evaluate Sheng's argument, we can examine the following two questions: (1) whether the constructed examples are logically valid; and (2) if the constructed examples are valid, whether the potential positive effects of approval voting are *all* negated. The question of the unforeseen drawbacks of approval voting involves a normative judgment of political reform, which will be discussed in the concluding part of my reply. Guided by these questions, the remainder of this article will examine whether Sheng's counterarguments can validate his claims as described above.

"*An Orange Becomes a Tangerine after Crossing the Border*"

Sheng borrowed this Chinese motto to suggest that the application of a voting system will change its theoretical properties. This saying serves Sheng's criticism by hinting that, when applied to Taiwan, accepted theories of political science fail to work. His example is the famous median voter theorem. Logically speaking, we cannot claim that *no* theory applies to Taiwan simply based on the setback of the median voter theorem. In substance, Sheng's argument that Taiwan's presidential election violates the median voter theory must be based on the premise that the latter is true. There are already many studies casting doubt on this theorem. First, the failure of the two contenders to converge at the median point does not mean that the competition is centrifugal. I have highlighted the forces that prevent the two candidates from converging at that point, particularly the uncertainty about turnout and the reliance on activists to garner votes. Empirically, Robertson has discovered that, in the United States, the Democratic and Republican parties occupied distinct areas of the issue space that he constructed from party platforms (1948-1980).[31] In other research, many have found that, when a given constituency in the United States elects members of opposite parties, the difference in voting records between the office-holders of different parties was enormous.[32] I have also argued that there are

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[31] Robertson, "Britain, Australia, New Zealand, and the United States."

[32] See Fiorina Morris, *Representatives, Roll Calls, and Constituencies* (Lexington, Mass.: Lexington Books, 1974); Keith T. Poole and Howard Rosenthal, "The Polarization of American Politics," *Journal of Politics* 46 (1984): 1061-79; and Charles Bullock and David Brady, "Party, Constituency, and Roll

theoretical reasons to explain why the median voter theorem fails to work in Taiwan's 2004 presidential poll.   To mobilize local support, both camps must first attract their traditional loyalists by taking a stance on the national identity issue.   Nevertheless, the campaign was not a centrifugal one in that neither Chen Shui-bian proposed Taiwan independence nor Lien Chan asserted immediate reunification.   Both candidates were in fact redefining the status quo of Taiwan.   Much of the negative campaigning came from the candidates' attempts to discredit each other, a topic beyond the scope of Downs' theory.

To examine whether a theory can be applied to Taiwan, we must distinguish between its basic assumptions and the initial conditions that make its explanation specific.   No "Western" theory of electoral competition can boldly claim that it can only be applied to situations where no external threat exists.   In fact, the job of a positive theory is exactly to explain why an orange would become a tangerine after crossing the border, rather than claiming that an orange everywhere is an orange.   No horticulturist would be naïve enough to neglect the impact of the environment on fruit cultivation.   We need a theory exactly because Taiwan is a land abundant in surprises; this is the best way to refine the existing theories.   To conclude, the merits of approval voting can hardly be rejected by the inapplicability of the median voter theorem to Taiwan, let alone because the theorem is empirically questionable.

Are Voters Sincere?

Sheng then proceeds to demonstrate the prevalence of strategic voting under plurality and approval voting.   In my analysis, the likelihood of strategic voting is taken as a dependent variable and the voting system is the independent variable.   To examine Sheng's counterargument, the problem can be divided into several levels: (1) are voters always insincere; (2) is strategic voting institutionally induced; (3) if the answer to the second question is "yes," which institution has this potential; and (4) what kind of strategic voting can be induced by what kind of voting system?   Since Sheng offered no evidence of (1), I will focus on the last three questions.

The first example used in Sheng's counterargument is the strategic voting in Taiwan's Legislative Yuan election.   I am in agreement with Sheng that tactical voting is widespread in these elections, since SNTV-MMD is a special case of

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Call Voting in the U.S. Senate," *Legislative Studies Quarterly* 8 (1983): 29-43.

plurality voting.   As has been analyzed earlier, strategic voting occurs under plurality voting with district magnitude **M** if a voter finds his favorite candidate unable to reach the top-**M** rank.   Nevertheless, that voters vote insincerely under plurality rule by no means suggests that they will vote likewise under other voting systems.   I have shown that, among the four single-winner voting systems, approval voting is the only alternative that deters strategic voting (see table 3).

The question, of course, is what is the definition of strategic voting.   If we define this behavior as the sacrifice of one's preferred candidate in order to prevent a worse outcome from occurring, approval voting is indeed strategy-proof.   Sheng has used my example (see table 2 in this article) to draw a challenge to my argument that strategic voting (defined in this way) will not take place.   His analysis is, unfortunately, fallacious.   Consider the second scenario of his counterargument about strategic voting.   Suppose Types II and III voters follow Sheng's instruction and build a coalition that endorses only the Democratic candidate.   Type I voters indeed have no way to prevent the Democratic candidate from winning if this coalition is viable.   However, this coalition is not viable: if Type I voters will vote for the Labor and Conservative candidates and Type III voters will vote for the Democrat, Type II voters can cast their ballots only for the Conservative and let their favorite candidate claim victory.   Type II voters can even demonstrate their honesty by casting ballots for their top two choices, which will result in the Conservative still being elected.[33] This example therefore fails to invalidate the monotonicity condition under plurality voting.   If Type I and Type III voters only cast their votes for their top choice, as Sheng's first counterargument has suggested, Type II voters indeed have no chance to let the Conservative candidate win.   For them, the best scenario is to make the Democratic candidate the winner.   Note, however, that under approval voting Type II voters have no need to sacrifice the Conservative to make the Democratic the champion—they can cast ballots for both candidates and keep the result unchanged.

I have stated that approval voting cannot preclude that voters will concentrate their votes on their most favored candidates.   Since the voters do not "sacrifice" their optimal choice in this case, this behavior would not normally be considered strategic voting.   Many of Sheng's examples belong to this type.   In the first scenario of

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[33] In the first case, the vote distribution among the Conservative Party, Labor, and the Democrats will be 62, 42, and 38.   In the second case, the vote distribution becomes 62, 42, and 58.

Sheng's counterexample, Type III voters will indeed be motivated to concentrate their support for the Democrats if Type I voters vote only for Labor. The second example is the 1993 election of the President of National Taiwan University. Running under approval voting, the candidate from the medical college—the largest and the most influential school—claimed victory by asking his colleagues to refrain from endorsing his rivals from the other colleges. To some, this might not be viewed as a desirable outcome, since the winner is not necessarily the most popular candidate. However, sincerity is in no way violated.

The critical issue is whether vote concentration under approval voting will take place to such an extent that the system is in effect similar to plurality voting. I will share my thoughts on this problem by answering Sheng's next counterargument.

How Will Politicians Respond?

Sheng also suggested that the benefits of approval voting could be overshadowed by the strategic behavior of the politicians. For instance, most candidates would ask their voters to approve one candidate only. In order to decrease the approval level of their opponents, we would not expect a significant amount of declining negative campaigning either. No one doubts that the candidates could have this incentive. The problem is, however, the extent to which the political contestants can realize this goal. Safe is to argue that, even when a candidate enjoys much more voter support, his influence is limited to a certain portion of the voters. This occurs even when the voter's incentive to vote strategically is strong. In Taiwan's 2000 presidential election, almost no opinion poll showed Lien Chan to be the leading candidate. Chen Shui-bian and James Soong should consequently have asked Lien's followers to transfer their support to them so that the voters' third choice would not be elected. Yet Lien still managed to obtain 23 percent of the popular vote.

What about approval voting? Despite the candidates' desire to concentrate their support, assuming that no voter will cast multiple ballots is as imprudent as asserting that most voters will do so. However, what if only a small percentage of the electorate is ready to approve multiple candidates? The factors determining the extent of their influence are not only the number of these voters, but also the closeness of the race. Suppose the moderate voters are the pivots, then the possibility to cast multiple ballots increases their influence significantly. The logic is very simple: with

approval voting, a moderate voter potentially supporting candidate **X** can also cast his ballot for candidate **Y**, but this vote has a higher chance to be concentrated on **Y** if candidate **X** launches a negative strategy toward **Y** that is disliked by this moderate voter.

This logic can be applied to answer a question related to the previous counterargument. The moderate voters will concentrate their votes on the moderate candidate only if they are able to elect this candidate. In this case, the moderate will be both the most influential group and the Condorcet winner, and the moderate candidate will also be elected then under plurality rule. The campaign will also be dominated by the moderate candidate. However, this is not the case presented in table 1. In this example, the moderates could cast multiple ballots exactly because **M** is a minority and has no way to win. With plurality voting, each voter can at most cast one ballot, forcing the moderates to select a lesser preferred candidate or even not to vote. Approval voting, by the aforementioned logic, gives the moderate voters more chips, hence the higher capacity to influence the campaign. I never assumed that the increased influence of the moderate voters would totally improve the electoral campaign. Yet it should be clear by now that approval voting has a higher probability to reach that goal than does plurality voting.

Is There a Best Electoral System?

The last counterargument is normative. Sheng introduced the famous impossibility theorem posited by Kenneth Arrow to show that all decision-making systems, approval voting included, are in essence defective. On this point I have no objection at all. As displayed in table 3 of this article, all single-winner voting systems violate at least one of Arrow's axioms: none ensures the selection of the Condorcet winner. With this possibility, these systems do not guarantee that a transitive social preference—a critical condition of rationality—can exist. In other words, the winner of these systems is always challengeable.

The lack of rational social preference occurs when the Condorcet winner does not exist. I will now use Sheng's example, which I reproduce here, to demonstrate that approval voting is more likely to select the Condorcet winner, if it exists. This is called an "evil example" because six voting methods produce six results, among which the Condorcet winner is **E**. However, if we look at this case more carefully and apply the Gournot-Nash assumption that Sheng suggested, the

situation may change.   Just let Type III voters select the top three options (just like the others do), and the winner under approval voting becomes **E**, the Condorcet winner.   We can even prove that, if the Condorcet winner exists and enjoys plurality support, it will be selected under approval voting.

Table 5
The Preference Order of an Imaginary Society—An Evil Example

Voter type	I	II	III	IV	V	VI
Number	18	12	10	9	4	2
Rank 1	A	B	C	D	E	E
2	D	E	B	C	B	C
3	E	D	E	E	D	D
4	C	C	D	B	C	B
5	B	A	A	A	A	A

Note: This table is a reproduction of table 3 of Sheng's accompanying article.

How then do we deal with Arrow's pessimistic picture?   If we are looking for the perfect system, then there is no solution.   If, however, we are seeking the *best* system to handle a particular problem, an answer may exist.[34]   In table 3, I have compared the strengths and shortcomings of the four single-winner voting systems, and have shown that approval voting is never worse than any other system but is much superior in many criteria.   Especially noteworthy is the capacity of approval voting to diminish (if not eliminate) negative campaigning, a malady detrimental to the maturation of Taiwan's democracy.

Lastly, I am not sure if approval voting will attract more contenders than plurality voting does.   All four single-winner voting systems have the same threshold of exclusion, and the threshold of inclusion can be as low as one vote.   In between is an area of great uncertainty, subject to the influence of many variables.   There is little reason to assume that more candidates will join the race because the voters can distribute their votes to multiple candidates.   A popularity test does not make sense if the candidate's odds of winning are not increased.   If we believe that strategic voting

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[34] For a comparison of electoral systems in probabilistic terms, see Samuel Merrill, *Making Multicandidate Elections More Democratic* (Princeton, N.J.: Princeton University Press, 1988).

is minimized under plurality voting, the likelihood for the candidates to lay odds on their capturing the insincerely cast votes should also be low.

Concluding Remarks

To summarize my reply, approval voting certainly has various theoretical deficiencies and practical drawbacks. Claiming that the system is devoid of *any* positive effects is, however, a bit of a stretch. Setting this debate aside, the key factor that deeply influences one's view of political reform is one's belief of how progress can be made. Social theorists make universal statements and general explanations, but must also keep deviant cases in mind. It is the exceptions that prompt theorists to refine their propositions. Similarly, an institutional engineer brings up a formula to redress some social problems by considering the theoretical features of this proposal, while keeping an eye on the unintended consequences that may follow. As any new institution usually falls short of predicted performance, the evaluation can only be made by assessing the plausibility of its theoretical assumptions.

That explains why a true debate on new electoral formula is difficult, if not impossible. When the debate focuses on the axiomatic sources of why a system can work, there is little room for "surprises" to sneak in. The challenger will be put in a disadvantaged position, providing that the defender has thought through the soundness of the assumptions and their logical extensions. Even if an institution has unseen consequences, we cannot completely cast it aside because the key evidence is invisible. Opponents of institutional reform are also vulnerable to another moral condemnation: using unintended evil consequences to reject a progressive proposal is typical of "reactionary rhetoric."[35] I do not wish to move this debate to a focus on morality, and have thus concentrated on the logic of the arguments. This assumption brings the debaters to the same arena, and can produce real syntheses if alternative assumptions are plausibly proposed. Sheng's criticisms have indeed reminded us of the limits of approval voting—it is not immune to strategic abuse from the electorate and politicians, even though the likelihood for the manipulators to succeed under this

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[35] Albert O. Hirschman, *The Rhetoric of Reaction: Perversity, Futility, Jeopardy* (Cambridge, Mass.: Belknap Press, 1991). According to Hirschman, rhetoric of reaction is characterized by three protestations: that the reform can be contradicted by unintended consequences, is unable to be implemented, or is devalued by unwelcome side effects.

institution is smaller than under plurality voting.

I agree with Sheng that political culture matters and that institutional design must take people's learning process into account. Culture may not, however, be a sufficient answer to the problem of institutional choice. All social theorists are studying culture, if it is defined as modal features of human behavior. National identity can be ascribed to political culture, just as vote equalization tendency under SNTV can. The problem is whether culture can be taken as the basic assumptions of a theory. If it can, the consequent cannot be culture; otherwise, we will be trapped in a tautology. A better approach is to take culture as the behavior induced by certain institutional environments. Many of the malpractices on the part of Taiwanese politicians occur under the plurality system used in single-member or multi-member districts. Based on the foregoing analysis, we can easily explain why two-candidate plurality competition divides Taiwanese society and why the SNTV-MMD arrangement factionalizes the constituency. What can the Taiwanese citizens learn if they are not presented with an alternative institution?

Bibliography

Arrow, Kenneth. 1951. *Social Choice and Individual Values.* New York: Wiley.

Axelrod, Robert, and Douglas Dion. 1988. "The Further Evolution of Cooperation." *Science* 242 (December 9): 1385-90.

Brams, Steven J., and Peter C. Fishburn. 1983. *Approval Voting*. Boston: Birkhäuser.

———. 1991. "Alternative Voting Systems." In *Political Parties and Elections in the United States: An Encyclopedia*, ed. L. Sandy Maisel, 23-31. New York: Garland.

Brams, Steven J., and Dudley R. Herschbach. 2001. "The Science of Elections." *Science* 292 (May 25): 1449.

Bullock, Charles, and David Brady. 1983. "Party, Constituency, and Roll Call Voting in the U.S. Senate." *Legislative Studies Quarterly* 8:29-43.

Colomer, Josep M., ed. 2004. *Handbook of Electoral System Choice*, foreword by Bernard Grofman. Houndmills, Basingstoke, Hampshire and New York: Palgrave/Macmillan.

Cox, Gary W. 1997. *Making Votes Count: Strategic Coordination in the World's Electoral Systems*. Cambridge, UK and New York: Cambridge University Press.

Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper.

Duverger, Maurice. 1966. *Political Parties: Their Organization and Activity in the Modern State,* translated by Barbara and Robert North. New York: Wiley.

Grofman. Bernard. 1975. "A Review of Macro-Election Systems." In *Sozialwissenschaftliches Jahrbuch fuer Politik* (German political yearbook), ed. Rudolph Wildenmann, vol. 4:303-52. Muenich: Verlag.

———. 2004. "Reflections on Public Choice." *Public Choice* 118, no. 1-2 (January): 31-51.

———, and Arend Lijphart, eds. 1989. *Electoral Laws and Their Political Consequences*. New York: Agathon Press.

Hirschman, Albert O. 1991. *The Rhetoric of Reaction: Perversity, Futility, Jeopardy*. Cambridge, Mass.: Belknap Press.

Lin, Jih-wen. 2003. "Looking for the Magic Number: The Optimal District Magnitude for Political Parties in d'Hondt PR and SNTV." *Electoral Studies* 22, no. 1:49-63.

Merrill, Samuel. 1988. *Making Multicandidate Elections More Democratic*. Princeton, N.J.: Princeton University Press.

Miller, Gary, and Norman Schofield. 2003. "Activists and Partisan Realignment in the United States." *American Political Science Review* 97, no. 2:245-60.

Morris, Fiorina. 1974. *Representatives, Roll Calls, and Constituencies*. Lexington, Mass.: Lexington Books.

Poole, Keith T., and Howard Rosenthal. 1984. "The Polarization of American Politics." *Journal of Politics* 46:1061-79.

Rae, Douglas W. 1971. *The Political Consequences of Electoral Laws*. New Haven, Conn.: Yale University Press.

Robertson, David. 1987. "Britain, Australia, New Zealand and the United States, 1946-1981:

Initial Comparative Analysis." In *Ideology, Strategy, and Party Change: Spatial Analyses of Post-war Election Programmes in 19 Democracies*, ed. Ian Budge, David Robertson, and Derek Hearl, 38-72. Cambridge: Cambridge University Press.

Rokkan, Stein. 1968. "Elections: Electoral Systems." In *International Encyclopedia of the Social Science*. New York: Croewell-Collier.

Taagepera, Rein, and Matthew S. Shugart. 1989. *Seats and Votes: The Effects and Determinants of Electoral Systems.* New Haven and London: Yale University Press.