

Draft

On the stability, preservation and growth of democracy<sup>1</sup>

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Abstract

To survive inter-societal competition, each society must have certain basic institutions that offer security against internal uprising and external aggression, and that specify the underlying political-economic structure. These institutions cannot be decentralized because of free riding, economies of scale, and the need for credible commitment. It seems proper to treat such institutions as primitives at par with individual preferences. Once installed, these institutions help generate stability of two types. The first is the stability of the regime against aggression, and the second is collective rationality (transitivity) arising from the centralization of power. Letting constitutions represent systems of government with the associated basic institutions, the dominant constitutions tend to be those that support a relatively strong economy and defense. This paper argues that depending on the internal and external threats and potential for economic prosperity, a stable constitution can display varying levels of centralization including democracy. The constitution, however, is not arbitrary, as some sort of majority cycle over institutions would imply. Surviving constitutions, much like competing firms, have two key features: they have goals and they represent *knowledge* accumulated over centuries. The goals of the U.S. Constitution, for example, are to “establish Justice, insure domestic Tranquility, provide for the common defense, promote the general Welfare, and secure the Blessings of Liberty.” The knowledge of a constitution is contained in its constraints and procedures. Assuming that the procedures help attain the goals, there is no obvious sense in which a Condorcet winner in the absence of the basic institutions, even if it exists, should take precedence over a constitutionally determined outcome.

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The philosophical and distributive implications of the paradox of social choice are still not clear. Certainly, there is no simple way out. I hope that others will take this paradox as a challenge rather than as a discouraging barrier.

Nobel Memorial Lecture, Dec 12, 1972  
Kenneth J. Arrow

## 1. Introduction

The inquiry into the social good and its attainment, although increasingly refined, has produced a succession of controversial ideas without a consensus in sight. Plato's idea of an objective social good, that was independent of individual desires and attainable through a philosopher king, finds little support either in reality or in modern theory. In modern thinking, at least since Jeremy Bentham (1748-1832), social good arises from the good of individuals. Bentham's utilitarianism defines social good on the basis of two connected ideas. The first states that each individual counts. The second implements the first by defining social utility as the sum of individual utilities. While the implementation is flawed because it admits interpersonal comparison of utilities, the idea that each individual counts continues to retain its appeal and serves to justify democracy and markets. Indeed, modern scholars regard liberty and equal participation as the main elements of democracy (Riker, 1988) although institutional intervention in real democracies effectively precludes equality of votes (as opposed to equality before the law or protection of individual rights).

The assumption that each individual counts is integral to the preference aggregation approach of social choice theory. Its main result, due to Arrow (1963), states that, except in some special cases, collective rationality is incompatible with a decentralized society wherein each individual counts and each is free to choose: "the doctrine of voters' sovereignty is incompatible with that of collective rationality (Arrow, 1963, p.60.)" In other words, the democratic method (meaning liberty and equal participation as per Riker) rules out, except in special cases, a social ordering that enables maximization of social welfare in a meaningful sense. According to Riker (1988, p.136), "to guarantee an ordering or a consistent path independent choice requires that there be some sort of concentration of power (dictators, oligarchies or collegia of vetoers) in sharp conflict with democratic ideal."

This paper seeks to address Arrow's problem (that decentralization is incompatible with transitivity) and offers positive statements about the stability, preservation and growth of democracy.

Section 2 reviews the relevant literature, and Section 3 lays out the main idea of this paper to deal with Arrow's challenge. The idea is that Arrow implicitly assumes that the society in question is at peace. Attainment of peace requires centralization, which makes some of Arrow's axioms unrealistic. Section 3 ends with the following question: Granting that centralization is necessary to secure peace, how far must centralization go? Does it have to be dictatorship? The questions are addressed in Section 4. I then ask is centralization compatible with some meaningful conception of democracy? Section 5 presents Riker's (1988) conclusions and method. Riker concludes that liberal democracy, supported by a constitution (implying centralization), can attain democratic ideals. That is the good news. The bad news is that Riker also concludes that voting outcomes are not expressions of the will of the people. One of the tasks of Section 5 is to decipher Riker's method and separate it from Riker's conclusion. Section 6 applies Riker's method to a world sufficiently centralized to secure internal and external peace in the wake of inter-societal competition. Presence of inter-societal competition gives voters a way to measure officeholders' performance. Those politicians or parties, who fail to offer security or provide for the economy to pay for the security, presumably must go. This gives a purpose to the voters and hence the vote reflects the will of the people. Remember, Riker does not have any goals external to individual preferences (he, like Arrow, considers one society at peace), and hence, he cannot say that collective decisions reflect the will of the people in the presence of cycles. In contrast, there is an external requirement that each society must survive in inter-societal competition, voters judge officeholders based on the latter's performance in this competition. Finally, using the criterion of reproducibility of a system of government, Section 6 argues that real societies may display varying levels of concentration of power. Conclusions follow.

## 2. Literature Review

The conceptual impact of Arrow's theorem has been profound considering that 2500 or so articles and books (Shepsle and Bonchek, 1977, p. 69) have tried to restrict, apply, expand, interpret, address, survey or otherwise deal with Arrow's theorem. Restricting individual preferences to be single-peaked allowed Black (1958) to prove that majority-rule yields transitive social preferences. Restricting individual preferences, such that no alternative of each triplet is the at the top, middle or the bottom of the preference ranking of each member of the group, allowed Sen (1966) to generalize Black's result. In an application, Arrow (1963, pp. 81-83), building upon Black (1958), states that both Rousseau and Kant unnecessarily require unanimity whereas single-peakedness with majority rule would suffice to obtain the most desirable social state; for the society to exist, Rousseau requires the existence of the general will and Kant requires each individual to follow the moral or categorical imperative. In another application to organizations, Arrow and Raynaud (1986) replace conditions on individual preferences by conditions on criteria by which to choose alternatives, and conclude that it is not possible to rank order alternatives by a synthesis of the various criteria: organizations have no best project in the presence of multiple criteria.

Among extensions, the most famous are Gibbard-Satterthwaite theorem that any voting system is strategically manipulable (Gibbard 1973, Satterthwaite, 1975) and the

instability results of McKelvey (1976) and Schofield (1978) that social choices are cyclical and hence anything can happen. To interpret Arrow's theorem and its various extensions, their consequences for democracy, and *a method to deal with them*, we have Riker's (1988) famous book, "Liberalism Against Populism." A deeper review of the book follows later in this paper. Among the famous questions is Tullock's (1981): in the wake of all the instability results, why do we observe so much stability in reality? McLean (2002) summarizes a set of answers to Tullock's question including the famous one: stability exists because of the structure-induced equilibrium (Shepsle, 1979; Shepsle and Weingast, 1981). Riker's (1980) response is that there would be cycles over institutional choice with the result that the will of the people could not be deciphered from an observed collective decision. For surveys as well as additional results, see Sen (1977a, 1977b, 1986), Brams (1985), Inman (1985), Schofield (1985), Saari (1994), Austen-Smith Banks (1999) and references therein; of course, there exist other great pieces but it is not my purpose to survey them here.

Let me summarize, however, the main results of the preference aggregation approach that I need. Efforts since Arrow, with focus on maximal salvaging of Arrow's axioms, have explored consequences of restricting preference profiles, the set of outcomes, the aggregation rule, and equality, and have arrived at the following key result. Although the core generally does not exist, it would if the dimension of the policy space is sufficiently small. More precisely, suppose the set of outcomes  $X$  is compact and convex, the preference profile  $p = (p_1, \dots, p_n)$  on  $X$  is convex and continuous, and the aggregation rule  $f$  is a map such that  $f(p)$  is a social preference relation. Then the core of  $f(p)$  is non-empty if and only if the dimension of  $X$  is no greater than the Nakamura number of the aggregation rule minus 2 (Schofield, 1985, ch. 4). The result holds for both non-collegial rules (those without centralization) and collegial rules (those with centralization); for collegial aggregation rules, the Nakamura number is infinity, and hence, the core trivially exists. The result states that we can overcome Arrow's problem without centralization, by appropriately choosing an aggregation rule, if our policy space happens to be of sufficiently low dimension. It is unrealistic, however, to require the policy space to be of sufficiently low dimension. For majority rule voting, the Nakamura number is 3, and the core exists if  $k = 1$ ; hardly comforting for so many who have used majority rule for so long.<sup>2</sup> So what do we do?

### 3. Potential ways to address Arrow's Problem

We could choose one of two paths to address the Arrow problem: (1) sidestep the problem by assuming that the set of outcomes is sufficiently small, or (2) allow for some sort of centralization. I choose the latter path. Here is my reason. Arrow's axioms constitute the minimum number of axioms that are logically inconsistent; social decisions

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<sup>2</sup> Some empirical studies conclude that the observed policy space is indeed low, perhaps one or two, dimensional. Unfortunately, this conclusion does not free us from the Arrow problem. That is because we want the core to be nonempty in a world that is both low dimensional and decentralized. But the real world is filled with varying levels of centralization. Hence, empirical observations do not permit us to characterize the Arrow problem as being purely theoretical.

cannot fulfill them simultaneously. But that does not mean that there exist no other compelling restrictions on social choice; just that *Arrow did not need them*. The fact is that social decisions must fulfill certain restrictions that take precedence over Arrow's axioms, and require centralization; once centralization exists, Arrow's problem diminishes. To illustrate consider two examples concerning internal and external security with implications for centralization.

Consider a society with a Condorcet winner at which a majority oppresses the minority perhaps by unfair taxation, seizure of property, enslavement and so forth. The Condorcet winner is unfair, but fairness is not one of Arrow's requirements. What can the minority do? Often nothing. But if the minority can get organized, it would probably reason, persuade, argue, threaten, and eventually carry out acts of violence, potentially breaking up the society. Hence, the majority must find a way to deal with the *firepower* of the minority; see Przeworski (1999) for the rise of democratic voting as a substitute to violence. The society must make a credible commitment that certain preference-based outcomes are off-limits. To make something off-limits, it is necessary to have centralization. Indeed, the Federalist Papers Numbered 6 through 9 by Alexander Hamilton make a case for the Union, and thus for centralization represented by the U.S. Constitution, on the basis of the internal dangers that threaten America.

Consider another example. Suppose a Condorcet winner leads to a defeat in a war that ends the society and the civilization it represents.<sup>3</sup> While the risk of a defeat cannot be eliminated, prudent societies install mechanisms that minimize the risk by blocking out *bad* Condorcet winners. Again, centralization is necessary to ensure that the eventual decision of the society is based not only on preferences of the moment but also on experts with both knowledge and authority to occasionally override popular decisions. The Federalist Papers Numbered 2 through 5 by John Jay make a case for the Union based on the external dangers that threaten America.<sup>4</sup> Likewise, Federalists Papers Numbers 18

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<sup>3</sup> Consider a counterfactual based on the story of Themistocles told by Plutarch (1960). After the battle of Marathon in 490 BC, with Themistocles as the General, Athenians discovered a silver mine. By the usual practice, Athenians would distribute the revenue of the mine among themselves, but Themistocles persuaded them to use it to build a navy; only Athenian citizens had the power to decide. The Persians, under King Xerxes, attacked Athens in 480 BC and Athenians miraculously beat the Persians in the naval battle of Salamis. Contrary to the fact, imagine that the Condorcet winner was to distribute the revenue among the Athenian citizens. The Arrow conditions would be met but there would be no Athenian Navy, no battle of Salamis, Persians would probably win with serious consequences for the Greek civilization. Had there been centralization of power, with its associated checks and balances, the silver would belong to the state, and Athens perhaps would not run the risk that it did.

<sup>4</sup> In Federalist Number 5, John Jay quotes a letter Queen Anne wrote on 1 July 1706, to the Scotch Parliament, making a case for the Union between England and Scotland. Here is a relevant excerpt: "An entire and perfect union will be the solid foundation of lasting peace: It will secure your religion, liberty, and property; . . . . It must increase your strength, riches and trade; and by this union the whole island, . . . , will be *enabled to resist all its enemies*." (emphasis in the original)

through 20 by James Madison present lessons about survival in a hostile environment based on the history of earlier republics, leagues, and confederacies.

The examples serve to highlight restrictions that take precedence over Arrow's axioms. Arrow implicitly assumes that the society he is examining is *at peace*. History suggests that the assumption of peace is a serious assumption. Even if a society is observed to be at peace, it is because there exist mechanisms, such as the US Constitution, that generate peace. Thus, by assuming peace, Arrow has assumed centralization at variance with his axioms that represent decentralization. This is a comment not on Arrow's theorem, but on the admissibility of Arrow's axioms based on reality. Arrow's axioms may be normatively desirable, and may even be obtainable in special theoretical cases considered by Black (1958) and Sen (1966), but they are unobtainable because real societies are centralized in the wake of inter-societal competition.

The question is what should be the level of centralization and does it violate the ideals of democracy? It is a question to which most of the Federalist Papers are addressed, especially Numbers 41 to 83. In the next section I defend centralization as a means to obtain transitivity. The subsequent section reviews Riker's work on the question of attainability of democratic ideals.

Centralization could range from zero to an extreme dictatorship with many possibilities in between. A brief description of levels of centralization below should help set the stage for locating constitutions on the basis of centralization they represent. I *assume* that constitutions create sufficient centralization that the associated aggregation rules are collegial, and impose enough constraints on the players that game-theoretic approach to the problem of social choice yields fruitful results. By treating constitutions as collegial rules, it is possible to bring together modern theory and the questions that concerned Aristotle, Hobbes, Mill, Locke, Hume, Hamilton, Madison, Jay and millions of people who seek a better life. Collegial rules, interpreted as the real-life constitutions, form the bridge between the social choice theory and political science dating back to Aristotle.

#### 4. Centralization

Power may be concentrated in a dictator, an oligarchy or a collegium. Recall, an aggregation rule is oligarchic if there exists a decisive coalition such that each of its members has a veto for each pair of alternatives. And an aggregation rule is collegial if its collegium, which is the set of individuals that belongs to each decisive coalition, is nonempty. Majority rule is not collegial because each majority is decisive, and no individual belongs to all majorities. Clearly, a dictator is an oligarchy, and an oligarchy is a collegium but not vice versa. A dictator is all-powerful. An oligarchy is far less powerful: members of an oligarchy must all agree to change a status quo. Unlike the usual interpretation of an oligarchy as the elite with a common interest, it is permissible to consider capital and labor (each treated as a homogeneous faction within) as an oligarchy if (a) each can individually veto a change, and (b) together they are decisive for each preference profile whereby if capital and labor strictly prefer  $x$  (protectionism) to  $y$  (free trade), the society strictly prefers  $x$  to  $y$ . While it is true that the preferences of

those outside the oligarchy (e.g., consumers) do not matter, it is permissible that preferences of capital and labor conflict. As another example, a legislature with two opposing parties, such that the two can jointly approve and each can individually veto any proposal, is an oligarchy.

Thus, an oligarchy need not be as bad as it sounds when we say that a dictator is a special case of an oligarchy or that Sparta was ruled by an oligarchy. Arguably, Madison would not have a serious objection to an oligarchy so long as the oligarchy, unlike Sparta but similar to the U.S. Congress, comprised several independent factions. Athenian democracy in its early phase could be interpreted as an oligarchy comprising the nobility and the farmer-hoplites: neither could act alone, but together they could (again treating each group as homogeneous within). Finally, a collegium (like committee chairs of the U.S. Congress) is less powerful than an oligarchy: a member of the collegium need not have a veto for each pair of alternatives, and a collegium need not be decisive.<sup>5</sup>

For a collegial aggregation rule, the core exists. Thus, societies with centralization would be stable in the sense that they would reach a well-defined social decision. While a dictatorship may be bad, an oligarchy or a collegium, with several independent factions, may be good enough. Moreover, there is no requirement that collegia at times 0 and 1 be one and the same. A collegium at time 0 may be replaced by another collegium at time 1 through elections. Presumably, the possibility of being booted out of office at the next election would have moderating effect on the actions the collegium takes now.

#### 4.1 Constitutions as collegial aggregation rules

A constitution concentrates power. A well-constructed democratic constitution credibly limits power (by instituting rule of law, defining and enforcing rights, requiring periodic elections, creating multiple veto points, promoting political competition) with a view to long-term economic progress, defense against internal and external threats, and dynamic stability of the constitution itself.

To the extent a constitution concentrates power, it is a collegial aggregation rule, and to the extent it limits power it is collegial while remaining as far away from dictatorship as possible. Thus, investigating constitutions has the same purpose as pursuing research in the footsteps of Arrow. Arrow's line of inquiry searched for meaningful social preferences under noncollegial rules (no centralization). Pursuit of optimal constitutions is search for minimal centralization while meeting certain common goals pertaining to economic advancement, defense and the like. But there are important differences as well. Arrow's line of inquiry is an exercise in mathematics in the sense that it is the same for all societies for all times, independent of history, the state of the economy, and concerns about war and peace. In contrast, optimal constitutions are state dependent, stable against internal and external threats, attentive to the economy and the welfare of the people, and mechanisms that permit the optimal use of dispersed information (Hayek).

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<sup>5</sup> Note that if the collegium contains too many factions, then there may be too much social indifference, and if it contains just one faction then there may be too much concentration of power. Thus, the size of the collegium is important to strike a balance between the number of elements in the core and centralization.

## 4.2 In defense of centralization

Participation, liberty and equality are considered key elements of democracy (Riker, 1988, p.5). Given this view, it follows that all free (liberty) votes (participation) should count the same (equality). In reality that is not the case. Real democracies have centralization, and centralization precludes equality. In this section, I attempt to investigate the meaning of societal preferences intermediated by a central structure.

Given the nature of people, centralization is necessary to enforce cooperation in the setting of Prisoner's Dilemma game, for coordination, and to pursue economies of scale including those in the production of knowledge. For this reason we rely on experts on questions of science or the administration of a society. We do not seek peoples' preferences over competing hypotheses about the laws of Nature; instead we turn to the experts. When there is a consensus among experts, we take that to be the opinion of the society.

Implicit in the choice of the expert system over democracy is the belief that many choices are better left to the experts because it is more efficient; the experts enjoy economies of scale and possess comparative advantage in the field of their knowledge. Experts may require that things be done in a certain fashion, and may forbid certain actions for the benefit of the society. Viewed in this fashion, we may regard a constitution as an expert system of accumulated wisdom about how best to survive and grow. Although not everything in a constitution is accurate and up-to-date, constitutions contain considerable amount of information learned over thousands of years. For instance, the lessons of war instituted by King Philip of Macedonia are in virtually every constitution of the world. Surviving constitutions, those that helped us compete in the marketplace and battlefields, represent the best of the breed. They survived because they are founded on much knowledge and they often saved us from collective irrationality. As noted before the U.S. Constitution is based on experiences of the olden times; see Federalist Numbers 18-20 by James Madison.

Suppose as per the constitution a policy U is unconstitutional whereas a policy C is constitutional. We could say that as per the constitution, the society prefers C to U. That is, C would serve the society better than U. Now suppose, based on the ordinal rankings of the members of the society it is determined that the society prefers U to C. What should we take the society's preference to be? Suppose the choice that would make the society more competitive in the world is the better choice. Then we might consider C to be better because of the constitution's potential advantage over people in terms of both knowledge and incentive. People may be driven by the potential for short-term gains, or may just be swayed by the thought of the day.

There are times when people are knowledgeable about social policies and it serves the society well to accept the people's wisdom. But there are also times, when people's collective wisdom runs counter to the constitution. When societal preferences, based on individual preferences, contradict these knowledge-based societal preferences, we require

that societal preferences be consistent with the constitution and other statutes that we agreed to adopt. Prisoner's dilemma, expert knowledge and the need for long-term survival, make centralization an essential component of a democracy, and societal preferences that run counter to the constraints of the constitution perhaps have no standing so long as there exists a way to amend the constitution.

It is true that once centralization exists, it could be used to pursue inefficient or cruel goals. That is why the need for a constitution that limits the power of the government, promotes political competition, and helps defend against unlawful internal and external encroachments. The question is does centralization permit attainment of democratic goals. For this I turn to Riker.

## 5. Riker's thesis

Riker argues that any theory of justice must face the reality test that its stated goals are attainable by its specified means. It is a test that the Marxian justice (to each according to his needs) and Rawlsian justice (veil-of-ignorance based distribution) fail. Does democratic justice pass the test? Riker (1988) states that the theory of democracy asserts that democratic ideals (individual self-realization and self-respect) are attainable through democratic method (free and equal participation). The assertion may be either true or false. "If it is true, then the notion of democracy makes sense. But if it is not true, if the method cannot realize the ideal, then, however lofty the ideal may be, the notion of democracy is meaningless (Riker, 1988, pp. 2-3)."

So is democracy meaningless? With voting at the heart of democracy, Riker (1988) develops two distinct interpretations of democratic voting: liberalism and populism. Populism states that outcomes of voting represent the will of the people like Rousseau's General Will. Liberalism states "the function of voting is to control officials and *no more* (Riker, p.9, emphasis in the original);" no more implies that no popular will may be attributed to voting. More precisely, liberalism requires that it be possible to reject an offending official. Liberalism does not require retention of the unoffending (Riker, pp. 242-3). That is, in an electoral setting, liberalism requires the possibility of "conviction of the guilty" (rejection of the offending), but does not require "acquittal of the innocent" (retention of the unoffending), which is the exact opposite of the jury setting. It is in this sense liberalism is the complement of pluralism; under pluralism voters seek the truth (the General Will, the best outcome), which is to say that voters rise above their narrow interests and act like jurors in pursuit of the common good. Note that liberalism, if it is politically feasible, makes economic sense when there is ample supply of good officials: it is more costly to the society to retain a bad official than to fire a good official.<sup>6</sup> Indeed, the possibility of an erroneous firing would make the official work harder. Under liberalism, "The threat of next election retains its force (Riker, p. 243)."

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<sup>6</sup> Let me complete the story of Themistocles from an earlier footnote. After Themistocles stepped down, the Athenians ostracized him. In a complete turn of events, he had to beg the Persian King (son of Xerxes) for asylum, which the King granted. Themistocles spent the rest of his life away from Athens. The important point is that so abundant was the supply of able leaders that Athens moved on to greater glory even after it ostracized the man whose contribution to the world civilization is difficult to match.

Riker draws two main conclusions, one for each interpretation of voting. First, populism is “inconsistent and absurd” (Riker, 1988, p. 241). Drawing upon Condorcet’s paradox of voting, Arrow’s theorem, Gibbard-Satterthwaite theorem, and the instability results of McKelvey (1976) and Schofield (1978), Riker concludes that free and equal participation would often produce arbitrary collective outcomes. The outcomes are arbitrary because they are not derived solely from individuals’ true preferences. Rather a given preference profile often yields different outcomes depending on the rule of aggregation or the presence of manipulation. Because no rule has any claim to be the best, no outcome can be said to be superior to the other. And when there is no best choice, there is no will of the people.

Second, despite the presence of unfairness, manipulation or cycles in voting, liberalism makes sense because it helps attain democratic goals. Let us see how. Liberal democracy promotes participation (obviously), empowers voters to eject officials which helps curb tyranny which helps promote freedom, and it gives each voter an equal chance to restrain officials (Riker, p. 244-246). But how does the attainment of participation, freedom and equality help attain self-actualization and self-respect? According to Riker (p. 8), freedom provides the environment, and equal participation provides the chance for self-actualization and self-respect; it is up to the individuals to do what they wish once the proper conditions exist. Thus, if the democratic method could be sustained, the conditions for attaining the goals would be met. So sustaining the method itself becomes the goal implying that democratic method and goals are the same: free and equal participation.

As I read it, Riker’s conclusion concerning liberal democracy is as follows. Conditions for (institutions that ensure) free and equal participation give voters the power to eject officials who then protect free and equal participation not only with the hope of reelection but also to avoid persecution if defeated. It is as if there is a fixed point in the “free and equal participation” space: the point maps into itself time after time rather than ending up in some sort of dictatorship.

This then is the implication of Arrow’s theorem for democracy as developed by Riker: democracy is not meaningless because liberal democracy makes sense although populism does not. Yet Riker’s message is bleak: it is not possible to read people’s will in voting outcomes. Moreover, if a majority votes to retain officials who tyrannize a minority, that would be consistent with the liberal view because the majority did have a chance not to elect the officials. The liberal view says “nothing about the quality of popular decision, whether good or bad (Riker, p.9).”

Although Riker’s defense of democracy is weaker than the popular belief that democracy on an average leads to good outcomes, his method to evaluate a political system is strong. Let me try to specify the principal elements of Riker’s method. First, the system of justice must be implementable: the method must lead to the goals. Rawlsian, Marxian, Marcusean and Platonic systems are not implementable (Riker, p. 3). Second and closely related to the first, the system of justice must be reproducible: the means should reach the

ends, and ends attained today should support the means tomorrow.<sup>7</sup> Third, certain protective institutions are necessary for liberal democracy to survive (as opposed to being just meaningful). Liberal democracy cannot live off a liberal interpretation of voting; it needs protective institutions (e.g., Madison's system of checks and balances) to guard against an oppressive ruler (Riker, pp. 249-250).

Thus, underlying Riker's method is the assumption of protective institutions (centralization) and the requirements that the system of justice be implementable, and reproducible. Acceptance of Riker's method does not require agreement with Riker's conclusions except perhaps in Riker's setting: *a single society at peace*. Riker does not dwell on the origin of peace but that does not affect the method. A different setting with multiple societies facing the threat of internal or external violence could lead to different conclusions than those of Riker. This is the subject of the next section.

## 6. On the stability, preservation and growth of democracy

Riker concludes that centralization implied by the U.S. Constitution is necessary to make liberal democracy work; at page 250 Riker (1988) lists the salient features of the Constitution that help prevent any single party from acquiring enough power to subvert. What he does not consider however are the institutions necessary for the safety and survival of each society in the wake of inter-societal competition. Competitive survival is a common goal, whether some individuals in the society like it or not. There are two consequences of the assumption taking competitive survival as a common goal.

First, voters can judge officeholders by the latter's success or failure in ensuring the survival of the society, in upholding and abiding by the Constitution, and in keeping the economy strong. Societies in which voters do not vote on this basis or are not allowed to vote on this basis, sooner or later perish. The ones that survive have the property that the voters watch out for the continued strength of the society; I am considering voting behavior over decades at a time as opposed to voting behavior over an election cycle. Thus, in systems that survive, liberal democracy usually produces good outcomes with respect to safety and survival in a competitive world. Note that survival does not demand fairness to the minority. For example, many societies, ancient and modern, have remained sufficiently strong to survive inter-societal competition while pursuing slavery.

Second, the systems of government that would survive inter-societal competition are going to be those that can either win or defend against competing systems. Quite independent of our normative view of an ideal system of government, the systems or constitutions that endure, and therefore worthy of closer scrutiny, are those which can withstand internal tensions and uprisings as well as external aggressions. Eventually what matters is the capacity of the system of government to survive and reproduce itself against the challenges posed by the competing systems. Such survivors could be, and have been, dictatorships, democracies or things in-between, depending on the state of the world. Obviously, the systems of government that survive are linked to an economy

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<sup>7</sup> Note that credible commitment (North and Weingast, 1989) does not guarantee reproducibility: a system may credibly commit but may perish against a (militarily) stronger system.

capable of producing a mix of guns and butter to both conquer and defend against internal and external threats.

A mighty dictator, with enough resources whether from production or plunder, can demolish many competing systems as Alexander the Great did. The Athenian democracy was no match against the Macedonians and perished around 331 BC. The system of government that Alexander left behind (dictatorship), including its underlying institutions, reproduced itself for many centuries in many parts of the world. Some of the institutions from Alexander's time enabled the rise of the Roman Empire and are an integral part of today's governments.

Let me try to assemble the key ideas in a picture. The x-axis in Figure 1 represents the degree of centralization. The y-axis represents the level of stability. First let us consider stability in terms of the core. For noncollegial rules stability depends on the condition based on Nakamura number. For collegial rules, the core always exists as represented by the line ST. Now consider the stability arising from economic progress and defense. The society is unstable when there is too much decentralization, and *it is also unstable when there is dictatorship*. Stability increases till we approach some "ideal" level of centralization. If economic stability is paramount, it follows that the chosen level of centralization would be a point like Y in the picture. So long as Y is associated with a nonempty collegium, Arrow's question does not have a serious consequence for nation states. Centralization pursued to address the problem of coordination and cooperation is sufficient to avoid McKelvey-Schofield type of instability.

Note that Figure 1 allows any point to be an equilibrium between a collegium and a dictatorship, depending on the competing systems. Historically, many points between a collegium and dictatorship were equilibrium points. Depending on the state of the world, near-dictatorship (such as that of Alexander) may be optimal for some societies, whereas democracy may be optimal for some other societies; optimal in the sense of maximizing the probability of survival.

## 7. Conclusion

The scary part of Arrow's theorem is that rationality requires extreme dictatorship. But the fear seemed to be overdone. Dictatorship is sufficient but not necessary for rationality. A collegial rule, not even an oligarchy, would be enough for a nonempty core. Thus, if real democratic constitutions are centralized enough to qualify as collegial rules, stability is guaranteed without extreme centralization. Moreover, if citizens adopt a constitution that is collegial (centralized enough) for reasons of market imperfections (public goods, imperfect information, economies of scale) or internal and external threats to their society, then citizens have *voluntarily* chosen to have people with veto power over some, but not all, pairs of alternatives. While the citizens may wish that the world were perfect and fully decentralized, they know centralization is necessary for food, security, and thus, survival. An upshot of centralization is that, once in place, it constrains all things, including aggregation of individual preferences. A positive

implication of centralization is that no further action is necessary to address Arrow's problem: necessary centralization for the sake of stability (no empty core) would already have occurred to accomplish economic stability and national security.

But a country with too much centralization runs the risk of a majority or minority tyranny, financial ruin, and ultimately military defeat. Hence, wise thinkers have focused attention on devising constitutions that avoid tyranny or anything that obstructs economic progress. Take for example the Constitution of the United States. Its stated goal is to "establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty." It then proceeds to centralize power in the various branches of the government. But once the constitution is in place and treated as a collegial rule, no further action is necessary to deal with the McKelvey-Schofield sort of instability. Given that core is said to exist for the relatively decentralized constitution of the United States (Shepsle, 1979), I should think that a core exists for the more centralized constitutions.

There is nothing sacrosanct about preferences at a given point in time once we consider economic performance. Even if social preferences are well defined, as they would be in a society comprising, say, 60% homogenous fundamentalists, the necessity of economic progress may require a constitution that blocks such preferences from taking effect. As Schofield (2001) points out a part of Indonesia's problem is that its rulers ostracized entrepreneurs of Chinese origin, leaving Indonesia submerged in economic backwaters. Likewise, Capital and labor may have opposing interests in the short-run, but they are far more economically aligned in the longer time horizon especially in industrialized countries (recall Henry Ford's wage hike in 190? so that workers work harder and have the income to buy his cars).

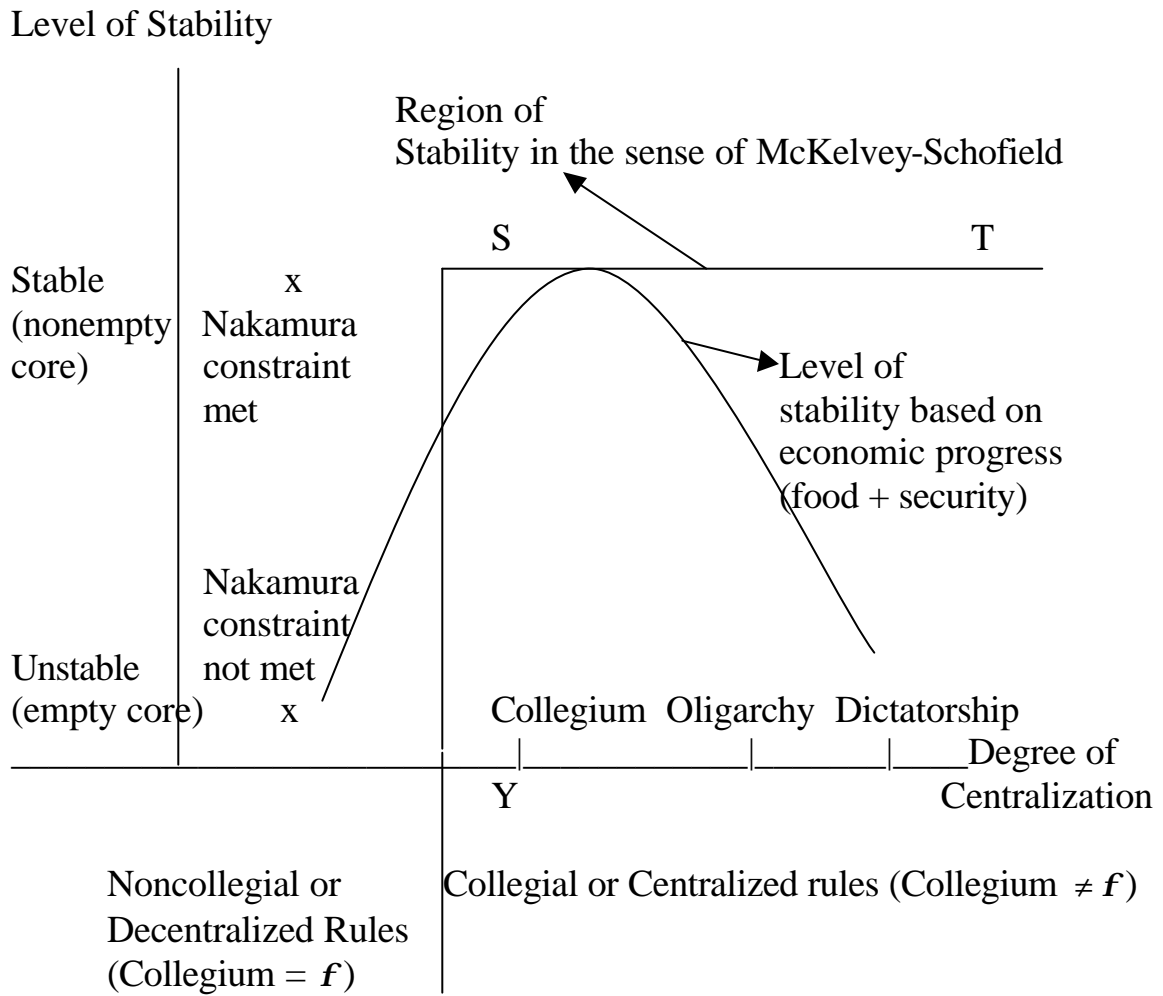
"Optimal" constitutions vary over time. Sometimes the optimal constitution is attained by trial and error in an evolutionary sort of way, sometimes by deliberation and design while keeping the elements that have weathered history. At different points in history, optimal constitutions varied in their level of centralization. Suboptimal constitutions, like inefficient firms, were eliminated often violently by competitive politics reflected in internal uprisings and external attacks. King Philip, by defeating Athens in 338 BC, appears to have shown that Athenian democracy was not optimal in the context of its competing societies.

Yet social choice theory is traditionally concerned with the nature of social preferences, social choice and the stability of democracies, it has ignored the link between the polity and the economy. In contrast, modern economics, with its focus on consumers, firms and markets, has ignored the polity especially the military aspect of it. Obviously, both social choice and economics can at best qualify as partial equilibrium approaches, with neither branch contributing anything significant when the world needed to reorganize itself after the collapse of the Soviet Union.

Things can change swiftly. If a dictator can acquire an "indestructible" defensive and offensive weapon (see James Bond) there is no reason why the world would not return to

the days of plunder and dictatorship. The hope is that it would not happen because democracies, through their decentralized system of producing science and technology, would have a higher probability of producing such weapons.

Figure 1



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