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Hayek, Arrow, and the Problems of Democratic Decision-Making

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Abstract

Both Hayek and Arrow provide arguments about the inability of the vote process to yield a coherent social choice. Hayek demonstrated that planning is incompatible with democracy; its coherence requires dictatorship. Arrow demonstrated that voting fails to produce rational social choices; social rationality can be assured only when there is a single will. In both, the substitution of a single will for the many wills is ruled as incompatible with a free society. Because market socialism relies upon either the existence of a meaningful, stable social welfare function or democratic decision-making to allocate resources, the complimentary arguments of Hayek and Arrow imply that market socialism requires dictatorship to achieve coherence.

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> "[*The Road to Serfdom*] is also a polite book that hardly ever attributes to opponents anything beyond intellectual error. In fact, the author is polite to a fault; for not all relevant points can be made without more plain speaking about group interests than he is willing to resort to."
>
> Joseph Schumpeter [1946, p. 269]

I. Introduction

The long debate over the effectiveness of markets vs. socialist planning has now ended. Instead, to the extent that socialism represents a viable alternative model to capitalism, it takes on the form of market socialism.[1] The critique of Soviet style socialism is now more or less universal. But the Soviet model is said to be of little relevance to the reformulation of market socialism as a viable

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1.See Boettke (ed.) [2000] for a collection of the main books and papers in the debate from the late 19th century through the 20th century. Boettke [2000, pp. 1-39] discusses why this debate continues to be important for social theory.

model of political economy. The Soviet model possessed three distinctive characteristics: (1) Public Ownership, (2) Economic Monopoly, and (3) Political Monopoly. The advocates of market socialism argue that retaining public ownership is essential, but that public ownership need not imply either economic monopoly or political monopoly.[2] Instead, economic and political competition (and in fact pluralism) can co-exist with public ownership of the means of production. Public ownership must be retained in order to ensure that resources will not become concentrated in the hands of a few. Absent the concentration of wealth, democratic decision-making will not be marred by special interest manipulation.

In this paper we want to discuss the problems that confront democratic decision-making in the absence of interest group problems. Like most political economists, we give priority in explanation to the systemic incentives that exist under alternative institutional arrangements. Moreover, we do not wish to confuse the discussion by conflating motivation with incentives. But we argue that assuming public benevolence has two important rhetorical advantages that are often overlooked in these discussions. First, by assuming the best of intentions the analyst is less vulnerable to the charge of illegitimately importing his values into the analysis. Economic analysis is used as a tool of critique rather than as an engine of advocacy. Second, all political and economic systems must confront both knowledge problems and incentive issues. If we focus exclusively on incentive issues, then we fail to address the knowledge problems. By assuming benevolence, the analyst moves the epistemic issue to the forefront of analysis. Robust political economy requires that

2. See, *e.g.*, the work of Pranab Bardhan and John Roemer [1992].

both the assumptions of benevolence and omniscience be relaxed so that both incentive issues and knowledge problems are adequately addressed. However, it is just as useful to ask, 'given benevolence, how will individuals come to know the right thing to do in any given situation?', as it is to ask, 'assuming omniscience, what incentives do individuals face to do the right thing when making decisions?'

These *incentive* and *knowledge* problems are particularly acute when we compare decision-making in the market process with decision-making in the democratic process. It will be argued here that even if we assume that actors face the same incentives in both arenas, the knowledge they will have to use will be different. While not denying that incentives will in fact be different in practice, we hope to show that the disparate outcomes in markets and politics can be explained by the differences in knowledge utilized in these alternative processes.

II. The Limits of Democratic Agreement

Boettke [1995] has argued that Hayek's *The Road to Serfdom* has been misrepresented by both friends and foes alike. The book is often referred to as a 'political tract' of its time, and certainly there is much truth in that claim. But the substantive argument in this book is actually far more subtle than the typical political book by applying economic reasoning to political decision-making. It is in this sense that Hayek's work should rank as a pre-cursor to modern public choice theory [BOETTKE - LEESON, 2002].

Hayek did not concentrate his critique of social democracy on the question of "group interests" as Schumpeter points out in his review quoted above. But Hayek did address the logic of collective decision-making from the perspective of the 'use of knowledge.' As has been pointed out by Bruce Caldwell [1997, pp. 1878-1879], at the time of Hayek's writing, questions of incentives were often conflated with questions of motives, so to raise the issue was to impugn the moral character of the actors under investigation. Oskar Lange, in fact, ruled questions of incentives within bureaucracy as outside of the domain of economics proper and instead as questions of sociology.[3] As a result, Hayek at several points in engagements with intellectual opponents backed away from the incentive issue, although he clearly understood their intellectual force, "for the purpose of this argument" [1948, p. 196].

Hayek compared decision-making under markets, planning, and democracy, and the relationship between these three arenas of economic decision-making. *The Road to Serfdom* argued that the main debate was never about planning versus no planning as some had contended. Rather, the debate was about *who* was to do the planning. Within the market process, private property owners and their agents do the planning as they compete with each other in those plans to satisfy the preferences of others in the market. The problem with the planning models *en vogue* after WWI was

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3. Oskar Lange [1936-37, p. 127] states his argument as follows: "There is also the argument which might be raised against socialism with regard to the efficiency of public officials as compared with private entrepreneurs as managers of production. Strictly speaking, these public officials must be compared with corporation officials under capitalism, and not with private small-scale entrepreneurs. The argument thus loses much of its force. The discussion of this argument belongs to the field of sociology rather than of economic theory and must therefore be dispensed with here."

that they sought a single unified plan to rationalize the production process within an economy. Progressive-era technocracy and the 'successful' experience of war-time control convinced many of the general efficacy of government control over economic life. Thus, Soviet Russia was not the only country within the grip of planning ideology when Hayek put pen to paper for *The Road to Serfdom*. Western democracies were equally as enamored with the promised efficiency of economic planning. The question Hayek put to his readers was, 'how compatible is planning with the democratic values you so cherish?'

Hayek did not value democracy in itself. He was a classical liberal and an individualist. Liberalism, to Hayek, was a political philosophy that determined what the law *should* be, while democracy was the manner in which law was to be determined. Democracy is a procedure; liberalism is a standard by which to judge that procedure. Illiberal democracy is indeed possible, just as a non-democratic liberalism is a possibility. Majority rule is a potentially desirable method for governmental decision-making, but liberal doctrine denies to majority rule authority concerning what those decisions should be.

Within a liberal democracy politics is a game of consensus building. The majority must be persuaded of the desirability of particular decisions. Hayek argues that the planning ideology agitates against this consensus nature of liberal democracy. According to Hayek, coherent planning presupposes agreement on a common value scale among the population. "To direct all our activities according to a single plan presupposes that every one of our needs is given its rank in order of values which must be complete enough to make it possible to decide among all the different course which the planner has to choose. It presupposes, in short, the existence of a complete ethical code in which all the different human values are allotted their due place" [1944, p. 57]. Perhaps this presupposition was valid for primitive man, bound as he was by the traditions within his particular tribal community. But modern man, living in cosmopolitan society, does not live under such a strict code of conduct for each and every activity. Morals have instead become rules of the game that establish the boundaries within which individual players are allowed to play the game as they see fit.

"The essential point for us," Hayek writes, "is that no such complete ethical code exists. The attempt to direct all economic activity according to a single plan would raise innumerable questions to which the answer could be provided only by a moral rule, but to which existing morals have no answer and where there exists no agreed view on what ought to be done. People will have either no definite views or conflicting views on such questions because in the free society in which we have lived there has been no occasion to think about them and still less to form common opinions about them" [1944, p. 58].

Markets amalgamate the tastes of many, but they do not do so through majority consensus. Instead, markets are able to unbundle our choices and cater to a diversity of preferences in the process of bringing the most willing supplies and most willing demanders of particular commodities into coordination with each other. The voting booth, on the other hand, is a mechanism that aims to amalgamate the preferences of many by achieving consensus. Hayek's argument is that planning via democracy requires that we push democratic decision-making beyond its appropriate domain. In short, we require too much of democracy under planning.

Hayek reaches this conclusion without invoking the motivational problems of voting on economic decisions. As he states, "For our problem it is of minor importance whether the ends for which any person cares comprehend only his own individual needs, or whether they include the needs of his closer or even those of his more distant fellows – that is, whether he is egoistic or altruistic in the ordinary senses of these words" [1944, pp. 58-59]. The key point that must be recognized, Hayek insists, is that our cognitive capabilities limit our span of control and moral sympathy. The individualist doctrine "does not assume, as is often asserted, that man is egoistic or selfish or ought to be. It merely starts from the indisputable fact that the limits of our power of imagination make it impossible to include in our scale of values more than a sector of the needs of the whole society, and that, since, strictly speaking, scales of value can exist only in individual minds, nothing but partial scales of values exist – scales which are inevitably different and often inconsistent with each other" [1944, p. 59].

When we expect too much of democratic deliberation we run the risk of frustrating our efforts and delegitimizng the use of democratic deliberation in its proper sphere. The proper sphere of government action through democratic deliberation is determined by the extent to which individuals in society can agree to particular ends. For some functions of government there is virtual unanimity among citizens, for others there will be substantial majority, but for some there will be much disagreement among the citizens. The probability that we will come to an agreement on the proper scope and function of government decreases as we expand the span of control of government. In other words, Hayek postulates a limit to our ability to come to agreement. Furthermore, he argues that planning necessarily forces us to deliberate on issues beyond the scope of those where we could reasonably expect agreement to emerge via democratic means. "It is not difficult to see," Hayek argues, "what must be the consequences when democracy embarks upon a course of planning which in its execution requires more agreement than in fact exists [. . .] Agreement will in fact exist only on the mechanism to be used. But it is a mechanism which can be used only for a common end; and the question of the precise goal toward which all activity is to be directed will arise as soon as the executive power has to translate the demand for a single plan into a particular plan" [1944, p. 61] People may be able to come to an agreement on the desirability of a central plan, but not on the ends which that plan is to serve. "That planning creates a situation in which it is necessary for us to agree on a much larger number of topics than we have been used to, and that in a planned system we cannot confine collection action to the tasks on which we can agree but are forced to produce agreement on everything in order that any action can be taken at all, is one of the features which contributes more than most to determining the character of a planned system" [HAYEK, 1944, p. 62].

It is precisely by this mechanism, Hayek warns, that nations can be led to pursue illiberal ends via democratic means. Planning requires submission to the unitary end of the common purpose [see RIKER, 1982]. In other words, unless we presuppose a singular rank order of values, democratic decision- making will thwart the planning process. And since such a singular rank order of values is not possible in modern society, democratic outcomes will conflict with parts of the plan. Thus, if the plan is to take precedent, planning officials must be free from the strictures imposed by democratic procedures.

Hayek's argument presents us with the following choices. We can have a coherent economic plan, but we must suppress democratic procedure to achieve it. Alternatively, we may retain democratic procedures, but must suffer an incoherent plan as a result. Planning, Hayek is arguing, "leads to dictatorship because dictatorship is the most effective instrument of coercion and the enforcement of ideals and, as such, essential if central planning on a large scale is to be possible" [HAYEK, 1944, p. 70].

III. The Voting Paradox

It is useful to compare Hayek's diagnosis of the limits of democratic decision-making and Arrow's impossibility theorem. As in Hayek's presentation, incentive issues are not the focus of the analysis in Arrow, but instead the quality of the information that is generated within the vote process.[4] Arrow begins his discussion by contrasting an ideal dictatorship with either the market or the voting booth. Choice under dictatorship is by definition rational in the sense that any individual can be rational in his choices. A single will substitutes for all wills in determining the course of action. But Arrow wanted to figure out whether the market and voting can make the same claim to rationality. "Can such consistency be attributed to collective modes of choice, where the wills of many people are involved?" [ARROW, 1951, p. 2]. Is it possible, in other words, to construct a procedure beginning with a set of known individual tastes and ending in a pattern of social decision-making which would meet the basic tenets of rationality in choice? As is well known, Arrow argued that no

4. This is not to deny the importance of incentive issues within the vote process. The issues of rational ignorance, rational abstention, and special interest in combination with a vote-seeking political entrepreneur produces the strong bias within the policy making process to succumb to the logic of concentrated benefits and dispersed costs. It is this logic that underlies the demonstration of the potential conflict between 'good politics' and 'good economics' within democratic political systems. But for the discussion in the text we are putting these issues aside for the time being.

such procedure was possible under reasonable assumptions.

Consider a situation where a vacant lot exists near downtown and the city council must decide on what to do with the lot. The preferences of the three council members who must vote are given in Table 1.

Table 1: *Preference Scales of City Council Members*

Council Member 1	**Council Member 2**	**Council Member 3**
Public Park (A)	Parking Garage (B)	Elementary School (C)
Parking Garage (B)	Elementary School (C)	Public Park (A)
Elementary School (C)	Public Park (A)	Parking Garage (B)

If they submit the issue to democratic decision, they will find that the decision does not conform to the ordinary cannons of rational choice. If they are asked to choose between the Park (A) and the Parking Garage (B), the Park would win by a vote of 2 to 1. If we then had to choose between the Park (A) and a School (C), the School would win by a vote of 2 to 1. However, if we began the voting process by running the Parking Garage (B) against the School (C), the Parking would have won by a vote of 2 to 1. The result of the vote process is not consistent, but instead changes depending on the order in which the vote takes place. The winner, in other words, is not unambiguous and can be either A, B or C depending on how we start the pair-wise matching. This is known as the problem of cycling. Another way to put the vote paradox is to test the majority rule decision against the principle of transitivity in choice. If A > B, and B > C, then A > C. But in the example provided majority rule will violate the principle of transitivity. A will against B, and B will win against C, but C would win against A. Therefore, majority rule fails as a procedure of passing from individual tastes to collective choice in a rational manner [ARROW, 1951, p. 3].

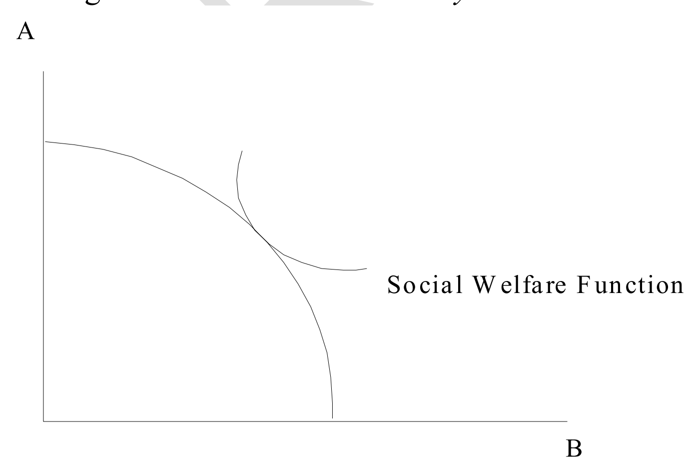
Arrow is led to a conclusion that either collective choices are democratic, but irrational, or they are rational, but dictatorial. Hayek, in contrast, was led to the conclusion that planning could be democratic, but incoherent, or coherent, but dictatorial. But in his discussion of democracy and markets, Hayek argues that: “It is now often said that democracy will not tolerate ‘capitalism.’ If ‘capitalism’ means here a competitive system, based on free disposal of private property, it is far more important to realize that only within this system is democracy possible” [1944, pp. 69-70]. Two points are worth stressing here: (1) Hayek sees a categorical distinction between decision processes within markets and democratic politics, and (2) the ‘irrationality’ of democratic decision-making is not seen as a problem provided that the sphere within which democratic rule is in operation is appropriately limited. This point is implied in Arrow’s impossibility theorem as well. According to Arrow, if near unanimous agreement can be reached among individuals as to what choice society should make, then democratic decision-making does yield rational results [1951, p. 74]. Hayek’s argument about restricting the sphere within which democratic rule is applied reduces the range of issues to be dealt with and increases consensus about what path society should take over the remaining issues. Indeed, as noted before, for Hayek, properly limiting the sphere within which democratic rule is in operation means scaling back the sphere until the issues remaining to be decided over are ones that virtually all can agree on. In this way, Hayek and Arrow can be seen as making a similar (or at least highly complimentary) arguments.

IV. Implications of the Argument in Hayek and Arrow

In his discussion, Arrow assumed away the differences between markets and voting because both were being treated as special cases of the more general case of social choice [1951, p. 5]. This move on Arrow's part reveals that the enterprise of constructing a stable and meaningful social welfare function, such as that in the work of Bergson and Samuelson, is highly questionable [ARROW, 1951, p. 24]. In Arrow's analysis, neither the market mechanism nor the voting booth can amalgamate the tastes of many individuals in such a way that we can meaningfully define a social welfare function.

The link between Hayek's and Arrow's analysis is via the socialist calculation debate. In conceiving the economic problem that society confronts (whether capitalist or socialist), mainstream economics postulated a social welfare function that is maximized by allocating given scarce resources to their highest valued uses, *i.e.*, the social welfare function would be tangent to the production possibility frontier, as depicted in Figure 1. Under capitalism this optimality of resource use would be accomplished through the invisible hand processes of the market mechanism, while in the model of market socialism it would be accomplished by the visible hand of the Central Planning Board.

Figure 1: *Production Possibility Frontier*



Hayek had argued in the height of the debate with Lange, *et al*., that this allocational problem of given means was precisely *not* the economic problem that must be confronted. "The economic problem of society," Hayek wrote, "is thus not merely a problem of how to allocate 'given' resources – if 'given' is taken to mean given to a single mind which deliberately solves the problem set by those 'data.' It is rather a problem of how to secure the best use of resources known to any of the member of society, for ends whose relative importance only these individuals know. Or, to put it briefly, it is a problem of the utilization of knowledge which is not given to anyone in its totality" [1948, pp. 77-78].

For Arrow, both the market and voting fail to aggregate preferences into a coherent social welfare function and thus the utilitarian argument for either market or democratic government cannot be sustained as was once thought. But Arrow mischaracterized the situation. Treating the economic problem as a planning problem, where the decentralized system is able to achieve what an all-knowing and benevolent social planner would achieve, draws our analytical attention away from how the entrepreneurial market process coordinates the decisions within the market so that they tend to realize the mutual gains from exchange. Similarly, with regard to democratic decision making, as James Buchanan [1954] pointed out, the focus on the violation of transitivity and the issue of cycling misses two important points about democratic rule. First, one should never have expected to be able to aggregate from individual preferences to a coherent social choice. The logic of choice at the individual level is one thing, but to impose that same logic of choice on society as a whole is an unjustified aggregation. Society's do not choose, individuals do. Second, why worry about cycles? In fact, cycles reflect shifting majority coalitions. If you could derive a stable majority coalition, then you would run the risk of the tyranny of the majority.[5]

Buchanan has also argued that Mises and Hayek overemphasized the calculation problems of socialism and obscured the cost and choice issues at stake in the debate [BUCHANAN, 1969, p. 96ff]. He flipped the terms of the debate over market socialism and suggested that even if we assume that all the problems of calculation are solved, "the socialist system will generate efficiency in results only if men can be trained to make choices that do not embody the opportunity costs that they, individually and personally, confront" [1969, p. 97]. As we have pointed out above, Buchanan's point was ruled out of the domain of economics by Lange. Perhaps Mises and Hayek could have clarified the debate by insisting that Lange's move reflected his failure to understand the elementary

5. "One of the important limitations placed upon the exercise of majority rule," Buchanan points out, "lies in the temporary nature of majorities. [...] [M]ajority rule is acceptable in a free society precisely because it allows a sort of jockeying back and forth among alternatives, upon none of which relative unanimity can be obtained. Majority rule encourages such shifting, and it provides the opportunity for any social decision to be altered or reversed at any time by a new and temporary majority grouping." Buchanan's emphasis is not on the formal 'rationality' of the social choice, but on the integrity of the democratic process itself driven by fleeting majority coalitions which constantly pushes various parties toward making compromises in the effort to win consensus. "This is democratic choice process, whatever may be the consequences for welfare economics and social welfare functions" [1954, pp. 82-83].

propositions of opportunity cost reasoning. But they chose to grant him the incentive issue and sought to demonstrate that even if we assumed that individuals faced the same incentive structure in socialist economic organization as they do in capitalist enterprises, they would be unable to access the knowledge necessary to calculate the alternative use of resources in the absence of private property in the means of production.

In a recent correspondence with Karen Vaughn over the socialist calculation debate, however, Buchanan has raised the important issue of the implication of Arrow's paradox for the arguments within this debate. As Buchanan put it: "Clearly, if we cannot aggregate individual preferences, no matter whether or not the other problems emerge, socialism is impossible" [1997]. Buchanan wonders why none of the participants on the Mises-Hayek side of the debate recognized this rather elementary point. In a reassessment of Hayek's *The Road to Serfdom*, Boettke argued that Arrow's result could be reinterpreted as an application of Mises's impossibility thesis to non-market decision-making via democratic voting and that Hayek's discussion of the limits of democratic agreement anticipated significant aspects of Arrow's argument [BOETTKE, 1995, p. 19]. Buchanan is correct, though, in his assessment that none of the scholars in the 1950s and 1960s on the Mises-Hayek side of the debate either explicitly referenced Arrow's theorem or developed Hayek's own pregnant analysis of the limits of democracy to aid in their critical analysis of socialism and social democracy.[6] Buchanan gets to the heart of the matter when he points out that the Lange, *et al.*,

6. Murray Rothbard is the one follower of Mises-Hayek who analyzed the democratic process, but he did not touch on the issues discussed in this paper. Rothbard instead chose to focus on internal contradictions in the popular arguments for democracy [1970, pp. 168-192].

argument was predicated on the idea that there exists a position on the Pareto frontier where aggregate utility is maximized and that this position can be attained by an idealized socialist planner. But Arrow effectively demonstrated even if such a solution point existed and could be achieved it would be unstable in the face of any collective decision rule other than unanimity [BUCHANAN, 1998].

Arrow's work, by raising doubts about the existence and stability of a Bergson-Samuelson social welfare function, knocks the legs out from underneath the argument for market socialism. His work also raises serious doubts about traditional welfare economic arguments for the benefits of decentralized markets. But whereas the market socialist model was explicitly derived from the formal theory of competitive equilibrium, our understanding of market processes need not be tied to this theory so completely. The market socialist model, *by construction*, can at best mimic the results obtained in the theoretical model of competitive equilibrium and thus is only as strong as the traditional model and its welfare economics implications. Since the *ex ante* existence of a meaningful and stable social welfare function is necessary for the operation of market socialism and Arrow demonstrated that no such social welfare function can be arrived at, market socialism is not a viable economic arrangement. Unlike for market socialism, the existence of stable social welfare function is *not* necessary for the operation of the market. The neoclassical model that employs this social welfare function attempts to represent the outcome of a process that has already taken place in real historical time. The social welfare function maximization is at best an *ex post* representation of an outcome that the market already achieved. The neoclassical model presents a *highly simplified* portrait of the *result* of the market process but says nothing about the complex process itself that tends to bring the market to this optimal position. The market socialist model then, in attempting to reproduce the conditions of the static neoclassical model, attempts to bring into reality an imaginary, idealized state through conscious deliberation. Thus, the argument demonstrating the impossibility of constructing a meaningful social welfare function undermines the notion of market socialism but merely raises doubts about the appropriateness of a particular *ex post* characterization of the market process. It does not, however, weaken the argument advanced by Mises and Hayek that socialism cannot achieve the efficiency of the real-world market process characterized by ever-changing market conditions. Their notion of an efficient, dynamic market process is not predicated on the existence of a social welfare function the way that market socialist and neoclassical conceptions are.

Because market socialism relies upon either the existence of a meaningful, stable social welfare function or democratic decision-making to allocate resources, and Arrow demonstrated that rational decision-making on these grounds is impossible, market socialism requires dictatorship to achieve coherence. This is both the implication of Arrow's theorem and a theme stressed in the work of Mises and Hayek. As noted above, Hayek pointed out that democracy is incompatible with planning, because planning requires dictatorship in order to achieve its aims. Similarly, Mises emphasized that socialism requires one will in order for planning to be effective. As Mises put it, "[t]he distinctive mark of socialism is the oneness and indivisibility of the will directing all production activities" [1966, p. 705]. This idea of coherent socialist planning requiring one will to work was an argument repeated by both Mises and Hayek in the height of the calculation debate with Lange, *et al*. It is strange then that they did not pick up Arrow's argument, which held similar implications, after it appeared in the early 50s to help bolster their claims.

V. Conclusion

Markets and democracy are choice mechanisms. Technical arguments have been raised about the formal properties of the market and vote mechanisms. Both Hayek and Arrow provided arguments about the inability of the vote process to yield a coherent social choice. Hayek demonstrated that planning was incompatible with democracy and that in order for planning to be coherent it would have to be dictatorial. Planning only makes sense when there is a single will. Arrow demonstrated that voting as a procedure for moving from individual preferences to rational social choices fails, and that social rationality can be assured only when there is a single will. In both, the substitution of a single will for the many wills is ruled as incompatible with a free society. Unfortunately, neither Hayek nor Arrow saw the full implications of their own argument.

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