Jean Monnet Chair Papers

Modelling Political Order in Representative Democracies

NORMAN SCHOFIELD

The Robert Schuman Centre at the European University Institute

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Schofield: *Modelling Political Order in Representative Democracies*

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Modelling Political Order in Representative Democracies

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Abstract

Over the last twenty-five years formal political theorists have discussed at great length and with theoretical intensity the problem of chaos or equilibrium in the political economy. This essay argues that there are four distinct research programs in rational choice theory, characterized by distinctions between individual and collective choice, and between preferences and beliefs.

The essay reviews the possibility of chaos rather than equilibrium in the four programs. As an application fundamental theoretical differences are delineated in various political economies, namely the U.S., Britain and in the multiparty systems based on proportional representation in Europe. Using these models a critique is provided of a class of arguments which assert that political choice can give rise to economically irrational policies. Finally some comments are addressed to the question of the maintenance of political consensus in these various polities in situations where distributional concerns are predominant.

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Introduction

An extremely powerful notion to use in attempting to understand human society is that of the *market*, conceived in the broadest sense. Each individual is endowed with intellectual, physical and moral resources and uses these in a rational way to attain personal goals. Implicit in this conception is the ancillary notion of free trade: that each individual has the ability and opportunity to trade with others who are so inclined. In economic versions of the market a price vector may determine the content of permissible trades. Under certain conditions (basically to do with the extent to which individual desires are private) the "equilibrium", x, of the market is *Paretian*: that is there exists no other state y which is preferred by everyone to x.

However it is implausible that all human desires are private-regarding: we all need companionship, security, love, interaction, *etc.* It is not at all clear that such aspects of our lives, often called public goods, can be attained in some reasonable fashion by a market. It is possible, however, that some of these goods can be created in the context of a political market. The fundamental question, then, for political economy is whether the political "market" can create public goods such as order and security in a Paretian fashion. This concern with equilibrium and Pareto optimality has lead to a lively theoretical debate over the last thirty years. Indeed this debate has spilled back into economic theory, since it is now realized that economic markets can be disordered or chaotic. There has also been a (mostly empirical) debate over the degree to which activity in the political market place can contaminate the equilibrium or Paretian features of the economic market.

I propose in this essay to present my own views on these debates, to ascertain how they may illuminate the notion of political order. My view is that the theoretical framework that underlies both the economic and political market is that of rational choice theory (*RCT*), and it is necessary to start with a reasonable understanding of four inter-connected facets of *RCT*.

Four Research Programs in Rational Choice Theory

Diagram 1 distinguishes between preferences and beliefs on the one hand and individual and collective choice on the other. To deal first with the contrast between preference and belief, it is evident that in modelling individual choice, say, it is important to deal not only with the individual's preferences, or desires; it is also necessary to understand how that individual conceives of the world, and its behavior. Just to get at the difference, does a juror who asserts a defendant is innocent do so because of a *preference* for innocence, or because of a belief in innocence? A belief may be changed as new evidence comes to light, but a preference may stay unchanged.

Diagram 1. Research programs in Rational Choice Theory

	Individual	*Collective*
Preferences	Nash	Arrow
Beliefs	Aumann	Condorcet

The contrast between individual and collective conceptions is to some extent a matter of degree, but "individual" models focus on the rational decision making of a single entity examining all possibilities or eventualities. On the collective side, although the collectivity is made up of rational individuals, there is in general no attempt to fully model all the possible choices made by each individual. These distinctions may become clearer below. For the moment it is worth emphasizing that the earliest work in *RCT* was by the Marquis de Condorcet (1745-1794) who studied both belief and preference (collective) choice.

In my view collective choice is conceptually akin to field theory in physics (namely gravitation, originating in the work of Newton (1842-1727), and electromagnetism, integrated by Maxwell in 1864). The individual choice theories are 20th Century inventions and are conceptually close to the quantum theories of the weak and strong nuclear force. There is a further connection concerning computability: full analysis of quantised systems involving three or more entities can be astonishingly complex. In the same way, game theoretic analysis of individual choice involving two agents is often possible, but when there are three or more individuals and no symmetry it is often impossible to fully elaborate the likely behavior. For this reason it is often necessary to use collective choice theory as an approximation, because of the intractibility of working at the individual level. In physical science, field theory is a limiting case when

there are many interacting bodies. In rational choice theory the move from the individual level to the collective level is sometimes more a matter of faith than of proof.

There is one other connection between the physical science research programs and the rational choice programs, or more particulary between the program based on gravitation/mechanics and the collective preference program. Although the "Newtonian" inverse square law of gravitation provided the theoretical basis for the development of mechanics, there was deep concern over the computability of the model of the solar system. The problem was this: although the dynamical system involving one planet and one sun could be written down explicitly, it was unclear whether a model involving two planets and a sun was computationally stable. More particularly, small perturbation effects of planet *A* on planet *B* might imply that the orbit solution for *B* was non-convergent. Empirically this could mean that calculations for *B* would, over time, become inaccurate. If the perturbation errors remain small, then the system of planetary equations is called *structurally stable*. Laplace, in his work on celestial mechanics (1799-1825) conjectured that the system was indeed structurally stable. An attempt at a proof by Henri Poincaré (1854-1912) in 1890 suggested that a planetary system could be highly unstable. (In fact, recent analysis using high speed computers suggests that the solar system is basically structurally stable.) However Poincaré's work laid the foundations for the qualitative study of dynamical systems, and for one of the fundamental theorems of mathematics of the twentieth century. If the underlying space of the dynamical system has no more than two dimensions, then almost all such systems are structurally stable (Peixoto, 1962). However, if there are at least three dimensions, then there is a rich class of *chaotic* systems (Smale, 1966). A chaotic system is one that exhibits an extreme form of dependency on initial conditions or parameters. Although it might be possible to examine a chaotic system in qualitative terms, it is almost impossible to predict exactly how the system will behave. To come back to celestial mechanics, it is known that chaotic planetary systems consisting of three bodies are a theoretical possibility (Saari, 1970, 1976). It is also possible that some small but important components of the solar system (such as asteroids, comets and minor moons) have chaotic behavior. Smale's result suggests that there are dynamical systems described by completely deterministic equations that are fundamentally chaotic and thus, to all intents and purposes, unpredictable.

One of the main topics for debate in rational choice theory has concerned the possibility for chaos within collective choice mechanisms. Although the debate has cooled off recently, I still view it as of fundamental importance for any formal model of political or economic markets.

The Arrow "Collective Preference" Program

Arrow's (1951) Impossibility Theorem is the fundamental result in the theory of collective choice: No aggregation procedure which combines "rational" individual preferences (transitive in both strict preference and indifference) can result in a "rational" social preference ordering respecting both the Pareto criterion (unanimity) and non-dictatorship. Since voting is one of the fundamental collective choice procedures, we can interpret Arrow's result through its implications for (deterministic) voting. In this context the requirement that the procedure give a "rational" ranking is obviously unnecessarily strong. All that we really need is that the procedure give a "choice", and this can be guaranteed if the ranking is required to be acyclic (that is lacking in cycles of the form: x preferred to y,... preferred to z preferred to x).

An important situation is where the set of alternatives has a geometric form (given by a particular dimension). In this case the "choice" or collective equilibrium of the procedure is usually called the *core*. It was shown by Black (1958) and Downs (1957) that if this "policy space" of alternatives was one-dimensional, then a core could be guaranteed if preferences were `convex'. More recently, it has been demonstrated that a non-veto voting process (labelled **D**} has a number v(**D**) (called the Nakamura (1979) number or *stability dimension* of **(D),** which partially classifies the process in the following way. If the dimension is no greater than v(**D**), then a core must always exist (Schofield 1984). However, if the dimension is (v(**D**) + 1) then a core need not occur. Instead, voting cycles are possible. However, these cycles must belong to the Pareto set, and in general, the phenomenon of cycling will be constrained. Disorder, even if it occurs, can still be compatible with a reasonable ordering of collective choice. However, this insight, which was first due to Tullock (1967), is invalid in higher dimensions. In particular, for each process, **D**, there is a second classifying integer, w(**D**), with the following property. If the dimension is at least w(**D**) then a core *almost never* exists. Thus cycles are *generic*, in the sense that, for almost all preference configurations, cycles must occur. Even more seriously, if the dimension is at least (w(**D**) + 1), the "chaos dimension", then it is *generically* the case that these cycles fill the space. In other words, from any one point in the "policy space" it is possible to construct a political agenda which will lead to any other point (Schofield 1985; McKelvey and Schofield 1986).

These results are essentially based on a particular condition due to Fan (1961) applied to a correspondence F that describes the voting process, **D**. That is for any point x, let $F(x)$ be the set of points that beat x under the rules **D** of the procedure. The Fan condition is that at every x, $F(x)$ lies in a "half space". If the dimension is less than v(**D**), then the "Fan" condition must be satisfied, no "cycles" can occur and a core must exist. We can infer that chaos is impossible. On the other hand, if the dimension exceeds w(**D**) then, generically, there is an open dense set S in W such that the Fan condition *fails* at

every point x in S. This implies the S-reachability condition: that every point x of S is reachable from any point in S. Notice that this does not quite imply the existence of chaos. However it does imply that there exists a selection f (a function) from F such that the process $\{x, f(x),...,f\ k(x),...\}$ is chaotic (Saari, 1985).

The two differing situations, with and without equilibrium, can be characterized in a geometric way which is intuitively satisfying. In the equilibrium case, below the stability dimension, there is at every point a *social welfare gradient* which determines the permissible or socially feasible moves. "Rational" moves or transitions made by the society will then lead into the equilibrium. This gradient represents in some abstract sense the local *consensus* that the society can attain. It is precisely at the instability dimension $w(\mathbf{D})$ that there can occur points where no consensus (or social welfare gradient) is possible, while at the chaos dimension consensus is almost always impossible. (These results concern deterministic voting, where it is assumed that any individual is always in a position to rank alternatives. "Probabilistic" voting has different features and is discussed below.)

These abstract voting theorems have engendered considerable controversy on the viability of democratic institutions (Riker, 1982, 1986) and on the extent to which such institutions are in fact stable (Tullock, 1981). A recent literature has focussed on the evident fact that real political institutions have a great deal more structure than is assumed in these theorems (Shepsle 1979, Shepsle and Weingast 1981). Indeed it is obvious that with restrictions on coalition power and the existence of multiple veto groups there can exist equilibrium. The question remains however: if it is no more than certain specified rules that keeps the equilibrium-inducing institutional structure in place, then what happens when the rules are broken? As I write this in 1994 it is evident that the enormously complex and rule-bound institutional structure of the Soviet Union and most of Eastern Europe is being transformed. In both the political and economic realm there is strong evidence that chaos in the technical sense is occurring. While new institutional structures will doubtless appear, I for one would not hazard a guess as to their form.

The "chaos" voting theorems (McKelvey and Schofield, 1986) should perhaps be viewed as a possibility result: that is for any type of non-dictatorial or democratic voting system it is possible, given high enough dimensionality, for complete `disorder' to occur. "Neo-institutionalism" on the contrary emphasizes the fact that political choice is constrained by particular decision-making structures, by transaction costs, by lack of information, by norms and conventions, *etc.* (See North, 1990 for an extensive discussion.) Recent work on modelling "representative" or parliamentary political systems generally concludes that an "equilibrium" can be plausibly maintained when the representatives make choices in a well-structured context, where they have consistent

beliefs about the motivations of the electorate, of other representatives, and of the rules of interaction and of political discourse.

The chaos voting theorems are only directly relevant for models of committee choice in situations where the policy dimension is sufficiently high. Below the instability dimension, the models do suggest that majority rule committees (choosing in a two dimensional space) will make choices that are Paretian, and generally centrally located. Indeed if there are many voters (as in an electorate), then the collective choice can be expected to belong to a very small area in the Pareto set (Schofield and Tovey, 1992). To go beyond these models, to make inferences about representative democracy on the basis of collective choice procedures is unwarranted without a fully developed model of the decision calculus of political agents, namely candidates, parties, representatives, *etc.* Most of this work lies within the Nash program, and will be discussed below.

The Nash and Aumann "Individual" Programs

(Nash 1951; Aumann 1976). As we noted earlier, the existence of the competitive equilibrium in an economic market is of fundamental importance. In this model, each individual acts out of rational self-interest to maximise utility on a budget set or production set, taking prices as exogenously given. Moreover, under certain private regarding conditions, there will exist a price vector such that all markets clear. Now in some sense such a model does not fully detail rational behavior. If individuals have reason to believe that their choice will affect prices, then they should build such reasoning into their choice. There are formal results (some of which are discussed elsewhere, Schofield 1994a) that imply that manipulation of various kinds is a possibility for a "rich" class of economies.

However manipulation necessarily involves forming beliefs about the way the world and people behave. So before pursuing the notion of manipulation further, it is useful to discuss results in the Aumann program of individual belief aggregation.

To give a simple case, consider a committee of experts each of whom has some private information, and thus a set of priors about the state of the world. If the experts have commonly understood models of the world, and their deliberation results in a "statistic" that encapsulates their information, then each can update their prior probability to form *a posteriori* probability distributions. Eventually their posterior probabilities will converge (McKelvey and Page, 1986). However this convergence depends on certain "common knowledge" assumptions that may not be valid in more general situations.

In a more complex situations such as the market, individuals not only have private information, but quite distinct preferences. Thus to model an individual's rational calculation, we may have to model that individual's beliefs about other agents' beliefs, and model their beliefs about others, *etc.*, *etc.* As Arrow (1986) has noted, an understanding of markets may require a solution to this underlying "common knowledge" problem. One recent technical result by Nyarko (1993) suggests that general models of markets, involving both beliefs and preferences, tend to bifurcate into two classes. For certain "equilibrium" markets, the underlying fundamentals of the game imply that reiteration results in a contraction to beliefs and behavior which are mutually consistent. For other markets, given *any* possible behavioral trajectory there is some system of initial "hierarchichal" beliefs which can trigger the trajectory.

Thus while there may well exist a "Nash" equilibrium in a relatively simple market game, a more structured game form, where individual rational behavior is modelled more fully, can be chaotic. (Indeed Brock *et al.* 1991, have found empirical evidence of chaos in stock markets.) The transition from equilibrium to chaos can also be seen in public goods or "prisoners dilemma" (*PD*) situations. The standard view of the one shot prisoner's dilemma is that each individual should rationally defect. Consequently the Pareto preferred cooperative outcome will not occur. The "irrationality" of this Hobbesian non-cooperative outcome is usually viewed as a basis for the necessity of government for public goods provision (Taylor 1976). Many authors have argued that cooperation can be maintained if the *PD* is reiterated in time (Taylor 1982; Hardin 1982; Axelrod, 1984). The seminal work by Kreps, Milgrom, Roberts and Wilson (1982) indicated however that, as the iterated game nears its end, then complicated behavior can be sustained by quite reasonable beliefs about others' behavior. Since rational behavior by each individual in the *PD* is thus based on common knowledge foundations, it is in principle possible for "anything to happen". This is the basis for the so-called folk theorem (Fudenberg and Maskin, 1986). To relate this back to the ideas of chaos, Richards (1990) has shown that "empirical chaos" can occur in two person prisoner's dilemmas. Other instances of chaos at the theoretical level include models of bandwagon effects, fashions and fads (Bikhchandani, *et al.*, 1992) and the bifurcation into equilibrium or chaos shown in *n*-person collective active games by Huberman and Glance (1994).

The point of this observation is not to just assert that chaos is possible, but to emphasize that any theoretical model which attempts to demonstrate that some phenomenon is likely in a particular collective context is probably wrong.

This caveat should be kept in mind when considering the various models that have been proposed to describe political competition. Deterministic models of two-candidate or two-party competition have had to deal with the chaos results mentioned earlier. The various models vary somewhat with regard to the assumptions made about the motivations of the candidates, but in general they

assume that the fundamental motivation is to win. Since there can in general be no certainty of winning (and indeed no equilibrium) it has been proposed that the candidates converge towards a set known as the uncovered set (McKelvey, 1986). The logic of this is that the candidates use mixed strategies, randomizing among a set of possible policy objectives. However it is difficult to regard this as a serious model of candidate objectives. Perhaps a more plausible situation to model is one where candidates owe obligations to particular interest groups, and so have "induced policy preferences". Rational candidates might then choose policy points near the center of the electoral distribution. I have tentatively proposed an equilibrium notion called the "heart" (Schofield 1993a) which is defined, and continuous, in the voter preferences which can be thought of as an "attractor" for candidates. However, "policy driven" models of this kind do not generally exhibit the degree of candidate convergence found in one-dimensional Downsian "policy-blind" models of political competition.

Coherent models with more than two parties are even more difficult to construct. The earlier literature (ably summarized in Shepsle, 1991) assumed parties attempted to maxmimize the number of seats or votes they won in the election. Such an assumption is open to criticism and it is more plausible to assume that parties are committed to certain policy positions, but perhaps modify these positions before the election both with regard to electoral returns and the constraints these declared objectives will have on negotiation over government. It is evident that such models have to address the degree of credible commitment that the parties have towards their declared policies. For example in Britain the Labour Party has clearly attempted, over the last four years, to move towards the "political center", yet under Kinnock and Smith the electorate found the various declarations less than credible. Perhaps with Blair as the new leader of the party, it will be possible for Labour to take over the middle ground. It is obvious that the electoral response involves beliefs as well as perferences. However details of the electoral system can be very important in turning beliefs into votes and seats. A later section will return to this theme.

The Condorcet "Collective Belief" Program

Condorcet's (1785) idea was that politics can be thought of as the aggregation of the beliefs of the many concerning the truth. The simplest situation is one where each individual k, has some probability, pk of making the "correct" choice in binary decision. It is usually assumed that each pk > 0.5 and that the voter choices are independent. In this case the probability p that a majority chooses the correct option exceeds 0.5 and indeed if the size of the society approaches infinity then p approaches 1. (Ladha, 1992)

We can use this model to approximate political competition between two candidates. Suppose now there is an underlying policy space within which the

candidates compete for votes. Suppose further that the two candidates pick positions, *x, y*, and for convenience call the candidates *x, y*. For each voter, *k*, let *(xk, yk)* be the "distances" xk and yk from voter *k*'s position. Let pk be the probability that *k* votes for *x*. Suppose that the probability pk is chosen so that pk = 1/2 if *xk = yk*, while pk approaches 1 if *yk* approaches [<]. For each *(x,y)* let p*(x,y)* be the average of pk. In general if the pk's are independent, and if p*(x,y) > 1/2* then the probability *p(x,y)* that x wins exceeds p*(x,y)*. Moreover if the size of the society approaches infinity, then *p(x,y)* approaches 1. In this model of collective belief aggregation no mention has been made about "preferences". We have only modelled the nature of beliefs in terms of some underlying parameter space. The model has the feature under further "concavity" assumptions on the pk's that if the candidates desire to win, then they will choose identical positions *(x = y)*. Moreover these positions are, in some sense, optimal in that they minimize the average distance R xk between the "winning" position and the voters. That is to say, the equilibrium position, *x*, is at the "barycenter" of the voter positions (Ladha and Schofield, 1994). Many probabilistic voting models (Enelow and Hinich, 1984; Coughlin, 1994) have similar features. My view is that these "probabilistic" models should be regarded as belief aggregation procedures rather than preference aggregation mechanisms. As we have noted above with regard to preference aggregation, if voters choose "deterministically" which candidate they prefer, then chaos can occur. It is still a lively debate in rational choice theory whether the equilibrium results of belief aggregation models or the political chaos of deterministic, preference aggregation are more appropriate for interpreting political competition. My view is that political aggregation involves both preference and belief and that we are not yet in a position to fully model political behavior. However we can perhaps draw some broad inferences depending on the general structure of the political institutions. The reader will have noticed that the previous discussion has been void of any mention of real political institutions. What I propose to do now is sketch out the differences between American and British political institutions on the one hand, and the European political systems based on proportional representation. I shall attempt to use the *RCT* theories outlined above to draw inferences about the general features of these institutions.

Political Institutions

The United States

Any elementary description of the U.S. distinguishes between the legislature, executive and judiciary. The fact that these three institutions are so distinct is the uniquely characteristic feature of the U.S. To formally describe the relationship between the institutions is overwhelmingly complex, but I shall, nonetheless present my own views on this. I assume that both the House and Senate are characterized by weak parties; that representatives and senators reflect heterogeneous, local preferences. Analyses of voting behavior in both houses (Poole and Rosenthal 1991) indicates that there is an underlying two-dimensionality in voting behavior in the Congress. I infer that there is a strong geographical structure to this heterogeneity. Intuitively I would say one dimension is an East-West cleavage, and we can think of it as old industry--new industry. A second dimension can be thought of as north-south, possibly pro- and anti-government intervention. The formal results by Schofield and Tovey (1992) mentioned earlier, given this heterogeneity, imply that the "heart" for both houses is small and centrally located. Small changes in election results may cause this "heart" to move, but only "continuously". Log-rolling or vote exchanges in both houses are likely to lead to legislation in this heart. Compromise between the houses results in outcomes in the intersection of House and Senate hearts.

I conjecture that the same underlying "policy" space describes the system of electoral preferences in the population at large. However, presidential candidates for the two parties are generally committed, through the operation of a system of primaries, to distinct policy positions. Because there is a significant degree of uncertainty in the outcomes of presidential elections, a probabilistic policy-driven model of two-candidate competition is plausible. As we emphasized such a model does not display convergence. Instead each candidate chooses a declaration that optimizes with regard to the policy commitment necessary to obtain endorsement, and with respect to the candiates' information or belief over the probability of election. There is no reason to believe the equilibirum position of the winner belongs to the House-Senate heart. After the election it is plausible that the President then has to face the incompatibility between his underlying commitment on certain issues, his electoral promises as well as the difference between these and reasonable compromises (in the heart) with the House and Senate.

My view of the rôle of the judiciary requires that we introduce the notion of social or political risk. It is plausible that well structured political institutions should be designed to deal with risk in different ways. I infer that in general a president is risk averse, that the House and Senate are risk-neutral (because of their heterogeneity) while the judiciary is risk-averse. To elaborate on this in-

ference would require a book by itself. Perhaps it is sufficient to say that these underlying risk postures are sustained by beliefs and negotation both within and between these three institutions.

Britain

Unlike the U.S., Britain has a parliamentary system with a number of strong parties. The electoral system is first past the post (*FPP*), which implies there is a relatively low correlation between the proportions of votes cast for each of the parties and the proportion of seats they receive (Schofield, 1994b; Taagepera and Shugart, 1989). Small, but geographically concentrated parties, such as the Scottish or Welsh Nationalists tend to do quite well, proportionally.

The two current center parties, liberals and social democrats, even though they recently coalesced, gained very few seats given their electoral vote (less than 5% compared to 20%). There is a strong north-south feature to electoral politics, with the Conservative strength concentrated in the south and Labour strength in the north. Given what appears to be a fundamental uni-dimensionality, there is little evidence of "Downsian" convergence to a voter median. To compare with the Downsian model, suppose that there were only two parties and a single dimension in Britain. Clearly policy commitment by either party would make it vulnerable to defeat by the other, and a strong centralizing tendency could be expected. This tendency with Blair and Major as the respective leaders (recently called Blajorism) is still quite weak. Assuming that the parties are expected *seat* maximisers, subject to their ideological constraints, suggests that there is both a high degree of uncertainty imparted by the electoral system and more than one dimension to the political conflict. (It is possible that disagreements over European integration comprise a second independent dimension from the usual economic dimension.) It may be the case that a Condorcet model of probabilistic voting is the appropriate one to use. Even so, the subtlety of the electoral system means that no simple assertion regarding the optimality of the winning party position can be made. Note also the difficulty with the Duverger hypothesis that only two parties can survive in an *FPP* system. Although the center parties are relatively impotent in parliamentary terms, they still obtain significant electoral support.

European Multiparty Systems

With an electoral system based on proportional representation (*PR*), political fragmentation (defined in terms of the pattern of parliamentary seat ratios) can be very high (as in Finland, or Italy). Classical arguments against *PR* relate the electoral system to fragmentation and so to unstable government. The oddity of this argument is that parliamentary coalitions in a number of European countries are very often based on a center party, generally called a Christian Democrat party (see Laver and Schofield, 1990; Schofield 1994b). However this "centrality" may be a phenomenon of the past. In Italy the domi-

nance of the centrist Christian Democrat Party (*DCI*) was destroyed in 1992. The results of the recent (May 1994) election in the Netherlands have lead to the loss of power of the *CDA* and a new "purple" coalition involving Labor, Liberals and Democrats' 66.

In contrast to the centrist systems of Belgium, Italy (up to 1992) and the Netherlands (up to 1994), strong left wing parties in the Scandinavian countries have often resulted in minority socialist governments, alternating with right wing or bourgeois coalition governments. Empirical analyses of party declarations and government policy making (Budge *et al.* 1986; Laver and Budge 1993) suggest that the policy space in these countries involves at least two dimensions--one economic and one concerning social welfare. The models of coalition government that have been proposed give theoretical reasons why centrist policies associated with a social consensus should result. It is entirely possible that these inferences are dependent on a particular historical context that is fading. For example, the reunification of Germany has lead to the formation of new parties (Republicans) and the weakening of the centrist Free Democrats. The existence of social consensus in the new Germany may be a thing of the past.

However, it is plausible that the overall centrist consensus in the Euroepan polities (other than Britain) lies near an electoral European "heart". This may suggest a reason why the current British government finds this European consensus so difficult: as I have suggested the electoral system in Britain does not appear to induce centrist government policies.

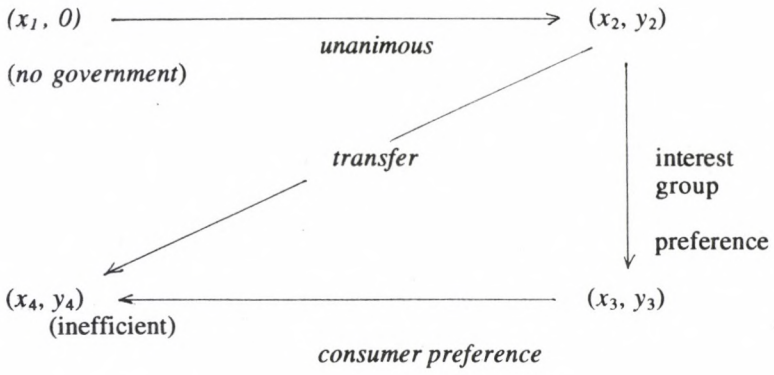
Japan

Japan has a rather unusual political system, presumably rooted in the nature of the electoral system. In the past, multi-seat districts gave rise to intense competition between factions within the Liberal Democratic Party (Schofield and Wada, 1994). *LDP* factions jockeyed for power and contributions but still maintained the pretense of a unified party. This "stability" has recently collapsed, as small *LDP* factions allied themselves with the non-*LDP* parties. Recently of course the anti-*LDP* coalition broke down as the Socialists in turn changed their allegiance. If in fact the Japanese polity is fundamentally zero-sum rather than policy-oriented, then full-scale chaos could occur.

The Economic Irrationality of the Polity

In this section we review the general argument that political intervention in the economic market gives rise to economic irrationalities. To give the argument in its most blunt and abstract form, suppose that x_1 is the economic equilibrium outcome which we can assume to be Pareto optimal with regard to private goods distribution. It is well known that the private goods economy is unable to deal with public goods provision, so assume first that the public goods allocation y_1 is zero. A government is formed and levies some tax, say, to create an "optimal" level of public good, y_2 (we return to the method of public good provision in a moment). By definition taxation effects the private good economy, so the outcome is now (x_2, y_2). We can assume that (x_2, y_2) is unanimously preferred to $(x_1, 0)$. Once government is in place, it gives entry to interest groups who "manipulate" the economy to secure rents, *etc.* The manipulated outcome, (x_3, y_3), is preferred to (x_2, y_2) only by these interest groups. The alleged irrationality results because economic productivity is higher at (x_2, y_2) than at (x_3, y_3). By definiton this means that *GNP*, say, is higher at (x_2, y_2), so there is a system of transfers within the economy from the economically efficient state (x_2, y_2) to a state (x_4, y_4) that is preferred by almost everyone to (x_3, y_3). Diagram 2 gives the logic of this argument.

Diagram 2



Note that it is assumed that once the move to the economically inefficient outcome (x_3, y_3) has been made, it is politically impossible to move to (x_4, y_4). The reason for this is that the interest group prefers (x_3, y_3) to (x_4, y_4) and exercises a veto so that the move from (x_3, y_3) is politically infeasible.

The Rise and Decline of Britain

Olson's (1982a,b,c) arguments in the *Rise and Decline of Nations* can be interpreted in terms of this diagram. The interaction of interest groups is essentially a prisoner's dilemma: a group, such as a trade union, will defend its interests by pushing for higher wage rates, restricting the implementation of new technology to maintain employment for its members, or protecting against foreign imports. While such a strategy is rational for the group, it is socially irrational as it reduces social output in the long run. Once one group manipulates in this way, others follow suit, and total output declines further. Olson further suggests that the periods of long political stability facilitiate interest group activity of this kind, while countries (such as Germany) that have had severe social crises, such as defeat in war, have weaker interest groups and are less susceptible to this dilemma of democracy. It should be remembered that Olson was writing at the end of the 1970's with the aim perhaps of explaining the relative decline of Britain and the U.S.A. While the framework lacked a specific model of interest group behavior, it did perhaps appear consistent with the events under the Heath and Callaghan governments in Britain. Beer (1982) provided a related model of the "new group politics" in Britain. With the decline of party identification, small groups in the economy became unconstrained in pressing their claims in the political arena for subsidies, excess pay rewards and other benefits. Although Beer does not emphasize this point, it is possible that the *FPP* system in Britain had the effect of magnifying the power of such interest groups. However it is also fairly obvious that the trade union groups that Olson had in mind in Britain have been more or less emasculated in the last fifteen years. Clearly neither Olson nor Beer had a formal model of political activity in mind, and their arguments tend to some extent to be contradicted by the models involving political equilibrium discussed earlier.

Public Goods in the U.S.A.

A somewhat related literature has developed over the last few decades on the provision and distribution of public goods. In the classical public finance literature, the public good is financed by a tax-rate which is chosen by majority rule. Since the choice of a tax schedule is a uni-dimensional problem, standard Downsian arguments (Denzau and Parks, 1983) would suggest the existence of a median tax equilibrium for the political economy. It is evident however that evaluation of a given tax rate is dependent on the subsequent choice of what public goods are to be created. Moreover any public project is likely to have geographically local effects on employment and factor prices. Thus any public good decision, and more generally any major government spending decision, has some distributional consequences. In a sense Thurow (1980) is correct to refer to the "zero sum society". Various authors have argued that political mechanisms, designed to deal with public goods conflicts, will lead to overprovision of the goods. Thus political representatives propose pork barrel

projects that benefit their own constituencies, knowing that most of the cost will be faced by other voters. Weingast (1979) for example has argued that "universalistic" coalitions including nearly all legislators are likely and that these will continuously overprovide public goods. Since the tax costs of this overprovision will be high one might expect increasing budget deficits (we return to this point in a moment). Although certain aspects of this argument may be justified, some difficulties should be mentioned. I assume that the nature of preferences by U.S. representatives is quite heterogeneous, but that the policy problem is not completely distributional. In this case theory suggests that vote trading in Congress will result in a small domain of possible legislation. By definition this means the coalition is not universalistic. However it is true that evaluation of policy outcomes may not involve a complete economic pricing. Thus political outcomes may lead to budget deficits, but not necessarily as high as implied by the universalistic model. However it is also true that past compromises in the "congressional heart" have resulted in mandated transfers that are difficult to change. On the other hand, transformations in government expenditures that do not affect large numbers of people are politically feasible (the recent reductions in military expenditure resulting from the end of the cold war are good examples).

Now consider the ability of interest groups to manipulate the U.S. economy. In the political choice of economic strategy it would appear appropriate to use the results of Condorcet belief aggregation. Because of the heterogeneity of the representatives it is reasonable to infer that the consequence of voting on issues that are fundamentally uncertain will result in "centrist" policies. For example, there is, in the U.S., great variety in popular opinions over the virtues of free trade (Nafta in particular) and the appropriate way to deal with crime. The content of the trade and crime bills do not suggest that they were captured by special interests. Beliefs about the appropriate pattern for health care in the U.S. are even more complex. However it is possible that a Condorcet compromise will eventually be found.

The argument just outlined is that heterogeneous beliefs in Congress generate a "Condorcet" belief equilibrium that need not be identified with any particular party. This equilibrium will change over time as new information becomes available to voters and representatives. It is fairly apparent that the U.S. has responded quite vigorously to the structural transformation that is affecting the world economy. In general, low productivity jobs are being eliminated; the automobile industry which was regarded as incompetent a decade ago has responded vigorously to foreign competition; protection against imports is fairly weak. All of this is quite contrary to the Olson thesis concerning the ability of interest groups to protect themselves. This does not mean there is consensus, in the generally accepted meaning of the word, but there does appear to be a belief equilibrium. Perhaps unfortunately, one aspect of this "equilibrium" is that the tax base of many U.S. cities has been depleted, and poverty and crime are endemic.

Social Compromise in PR polities

Many authors (Lehmbruch, 1980; Lipjhart, 1976, *etc.*) have used the term consociationalism to describe a situation where bargaining and compromise dominate in the political arena. In particular, coalition governments in *PR* polities are based on negotiation between a number of relatively small parties. To relate these ideas to the inferences on multiparty *PR* systems in Europe, it is plausible that social consensus is attained through the presence of a relatively large "centrist" party which is able, in general, to maintain itself in government by bargaining with smaller allied parties. Crouch's (1982) work on evaluating the success that the European countries had in moderating inflation and unemployment in the 1970's suggests that high political fragmentation in countries such as Belgium, Denmark and Finland made consensus difficult to attain. So we can infer there is a conflict between centralism and fragmentation. What I wish to suggest is that the nature of the social consensus in the European polities is based on preference aggregation, and focussed in general on a dominant center party. Usually this consensus involves agreement in the polity over the nature of the social contract: that is the level of government expenditure, minimum wage legislation, health and unemployment benefits, access to education, *etc.* One aspect of the social contract that is relevant is, of course, the level of trade protection implied by the Common Agricultural Policy. The quite pronounced differences between the general understanding of the social contract in the *PR* parties of the European Union and the nature of the belief equilibrium in the U.S. suggests one way of interpreting the disagreements over agriculture that attended the recent *GATT* negotiatons. Since the European Center parties are committed to the social consensus, it has proved very difficult for them to adapt to recent structural changes in the international economy. Economic protection and the relatively high social cost of labor has lead to exceptionally high levels of unempoloyment. Recent unemployment figures (*Economist*, August 1994) are 24.6% (Spain), 14.1% (Belgium), 12.6% (France), 12.4% (Denmark), 11.6% (Italy), 9.4% (Britain), 8.3% (Germany), 7.2% (Netherlands). Meanwhile the U.S. rate is 6.1%. Of course these countries are at different stages of the business cycle. However it does seem to be the case that one of the consequences of the technological transformation that faces us all is a rapid rise in white collar unemployment. If this is a permanent feature, then the European centrist social consensus will be difficult to maintain. This may be the reason why small extreme parties have been able to gain support recently in France and Germany.

Conclusion

In the last two sections I have written as though equilibrium necessarily exists in the various polities that were discusssed. The instability results from the Arrow program suggest, on the contrary, that chaos is a real possibility, but only when the underlying dimension of the policy space becomes sufficiently high. In other words in times of economic downturn the political game may more closely approximate a zero-sum situation. In the context of the U.S. Congress this would imply that the heart explodes out to the full Pareto set. In European multiparty polities, the center party would no longer be able to control, indirectly, the path of policy making. Instead one would expect constantly changing coalition government. In Britain the implicit electoral coalitions underlying the majority party would become unstable. It is possible that political representatives in developed democracies take care to prevent, if they can, the occurrence of such zero-sum chaos. Of course the international economic tribulations and the oil crises of the late 1960's and 1970's did induce some degree of chaos. The 1980's and early 1990's on the contrary, were a period of economic and political recovery from this instability. It is possible that attempts to mitigate the effects of the current economic transformation could make the eventual disorder more extreme than it might otherwise be.

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