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Modelling Political Economy

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Abstract This paper uses a formal electoral model as the basis for discussion of various political episodes in British and US history and to evaluate the logic of Madison's argument about the republican scheme of government. This leads to the inference that political choice involves electoral judgment as well as preference. The stochastic electoral model is extended to incorporate the basis of judgment, namely valence. The model suggests that when the electoral system is based on proportional electoral methods, then there will be numerous parties with very different valences, adopting very divergent positions. Under plurality rule, on the other hand, the role of activists appears to restrict the number of parties to two, and to cause a slow political rotation in the policy space leading possibly to political realignment.

Keywords electoral judgement, constitutional quandary, valence model of elections

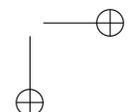
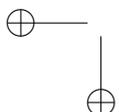
1. Introduction

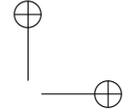
The idea behind this paper is to provide an extended interpretation of Madison's argument in *Federalist X* (1999 [1787]), and to use ideas from social choice theory and from the work of Douglass North, Mancur Olson and William Riker, in an attempt to develop a 'rational choice' approach to the evolution of society. This research program can be regarded as continuing the work of Madison's contemporaries, Condorcet and Laplace. In the later sections of the paper, recent work on modelling elections (Schofield and Sened 2006) is also discussed in an attempt to evaluate Madison's contention about the 'probability of a fit choice' in the Republic.

I shall also make use of Riker's earliest work on American Federalism, particularly the logic underlying the need for Union in 1787 (Riker 1953, 1964, 1987) and the stability of parties as coalitions (Riker 1962). After working for

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a number of years on rational choice theory (Riker and Ordeshook 1973), Riker returned to American political history, to interpret key events in terms of 'heresthetic' (1984, 1986, 1996). Riker coined the word heresthetic from the greek *αιρετικοζ*, meaning 'able to choose'. His book on *Liberalism Against Populism* (1982) argued that social choice theory implied that populism, in the sense of existence of a 'general will' was vacuous. At best, all one could hope from democracy was the liberal capacity to remove autocrats.¹

In this paper I attempt to construct the beginnings of a theory of democratic choice that I believe can be used as a heuristic device able to tie together differing historical accounts of economic and political development in Britain and the United States. The basic underlying framework is adapted from social choice theory, as I understand it, on which I graft a 'stochastic' model of elections. This model is an attempt to extend the Condorcetian theme of electoral judgement. I shall argue that its logic was the formal principle underlying Madison's justification for the Republican scheme of representation that he made in *Federalist X*. While this logic does not imply a general will in the sense of Rousseau, it does suggest that Riker was overly pessimistic about the nature of democracy. On the other hand, the social choice framework suggests that democracy, indeed any polity, must face difficult choices over what I call chaos and autocracy. These difficult choices are *constitutional quandaries*. The historical choices that I discuss often involve a leader or theorist, *an architect of change*, either in the realm of politics or economics, who interprets or frames the quandary troubling the society in a way that leads to its resolution.

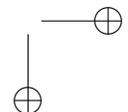
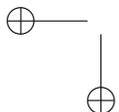
2. The Madisonian Scheme of Government

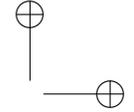
In order to provide a motif for the topics discussed in this paper, it is worth quoting Madison's argument in *Federalist X*.

[I]t may be concluded that a pure democracy, by which I mean a society, consisting of a small number of citizens, who assemble and administer the government in person, can admit of no cure for the mischiefs of faction. A common passion or interest will ... be felt by a majority of the whole ... and there is nothing to check the inducements to sacrifice the weaker party. ... Hence it is that such democracies have ever been spectacles of turbulence and contention; have ever been found incompatible with personal security, or the rights of property; and have in general been as short in their lives, as they have been violent in their deaths.

A republic, by which I mean a government in which the scheme of representation takes place, opens a different prospect ...

¹ Whether Riker's argument has any validity is still the subject of much discussion. See Mackie (2003); McGann (2006); McLean (2008).





The two great points of difference between a democracy and republic, are first, the delegation of the government, in the latter, to a small number of citizens elected by the rest; secondly, the greater number of citizens and the greater sphere of country, over which the latter may be extended.

[I]t may well happen that the public voice pronounced by the representatives of the people, will be more consonant to the public good, than if pronounced by the people themselves..

[I]f the proportion of fit characters be not less in the large than in the small republic, the former will present a greater option, and consequently a greater probability of a fit choice.

[A]s each representative will be chosen by a greater number of citizens in the large than in the small republic, the suffrages of the people will be more likely to centre on men who possess the most attractive merit.

The other point of difference is, the greater number of citizens and extent of territory which may be brought within the compass of republican, than of democratic government; and it is this ... which renders factious combinations less to be dreaded in the former, than in the latter. Extend the sphere, and you take in a greater variety of parties and interests; you make it less probable that a majority of the whole will have a common motive to invade the rights of other citizens..

Hence it clearly appears, that the same advantage, which a republic has over a democracy ... is enjoyed by a large over a small republic – is enjoyed by the union over the states composing it.²

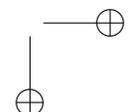
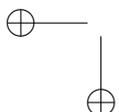
In this paper I shall try to relate Madison's justification for the Republican scheme of representation that he made in *Federalist X* to the social choice theory presented in Schofield (2008a) and the empirical work of Schofield and Sened (2006).

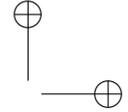
The key to my understanding of a general theory of social choice is that any polity must, on occasion, face difficult choices over what I call *constitutional quandaries*. Simply put, a quandary is a choice situation where all possible options appear extremely unpleasant, and laden with risk and uncertainty.³ The constitutional feature of the quandary refers to the likelihood that opinion as regards the correct choice will typically be highly heterogeneous. The actual choice will depend on the political mechanisms used by the society, and thus on the constitutional rules that govern political choice.

The results from social choice theory indicate that when preferences, or opinions, are sufficiently heterogeneous, then disorder or *chaos* can ensue. The process of social decision – making is denoted by correspondence, Q , so $Q(x)$ is the set of outcomes that can come about from x , as determined by whatever social rule or political process is used by the society. The idea of *social chaos* is that there are conditions under which, starting from almost

² James Madison, *Federalist X* (1787) in Rakove (1999).

³ The choice situation as regards Iraq in late 2007 is such a constitutional quandary.





any x , it is possible to reach almost *any* possible outcome $y \in Q^t(x)$ by reiterating the social rule. In contrast we can identify the *core* or *social equilibrium*, y , to be some stationary outcome such that $Q(y)$ is empty. An even stronger equilibrium notion is that of an *attractor* of Q : that is a single outcome y with $y = Q^t(x)$, which results from any x , after a sufficient number of iterations of the rule. For any voting procedure, Q , without a dictator, oligarchy or collegium, able to control or restrain social choice, then as the dimension of W increases then so does the likelihood of chaos.⁴ The essence of the argument of North, Wallis and Weingast (2009) is that 'limited access societies' depend for their development on the stability induced by a rent seeking oligarchy.

While these results focused on voting rules, it seems just as likely that chaos can ensue in a society where war is the method of decision making. When war, or intense and unrestrained conflict dominates, then we can expect chaos, or the unpredictability of outcomes.⁵ Indeed, it is possible that any society can fall into chaos, unless some institutional device, such as a collegial veto (or 'negative') is constructed to prevent such a situation.⁶ For example, Madison argued that

for the harmony of that [British] Empire, it is evident I think that without the royal negative or some equivalent controul [*sic*] the unity of the system would be destroyed. The want of some such provision seems to have been mortal to the antient [*sic*] Confederacies.⁷

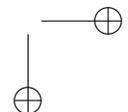
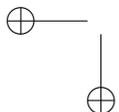
Federalist X suggests that Madison certainly viewed direct democracy as subject to chaos. Since a legislative assembly can be understood as a direct democracy, social choice theory provides a formal basis for Madison's argument about direct democracy and about what he called 'mutability' of the legislature.

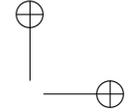
⁴As shown in Schofield (2008a), a voting rule is characterized by a family of winning coalitions, \mathbb{D} . A *dictator* is a single agent who belongs to every winning coalition and is also winning. An *oligarchy* is a group that belongs to every winning coalition and is itself winning, while a *collegium* is a group of voters that belongs to every winning coalition in \mathbb{D} , but need not be winning. Social choice theory suggests chaos is possible when there is no collegium, but only if the dimensionality of the policy space is high. So the closer the political game is to being zero-sum (as in Iraq today) then the more likely is chaos.

⁵Bates *et al.* (2003) estimate that there have been over 400 cases of political instability in the period 1955 to 2002, including 39 cases of genocide, 62 revolutionary wars, 72 ethnic wars and 106 cases of 'adverse' regime change such as coup d'état. The chaos in Zimbabwe after the election in March 2008 is but an example.

⁶The classic example of a fall into chaos is France, from the first meeting of the Estates General in May 1789, through the execution of King Louis XVI in January 1793, followed by the Terror and the deaths of Condorcet in March 1794 and Robespierre in July 1794. The political instability was ended by Napoleon's coup d'état in November 1799. See Winik (2007) for example.

⁷Letter to Jefferson, 24 October 1787, in Smith (1995: 498).





This first method of mitigating chaos is to impose the concentration of power implied by the existence of a dictator, oligarchy, or collegium. Because a dictator can control every choice, it is very unlikely that such a degree of concentration of power can occur. However, we can use the term *autocrat* for one who controls the levers of power of the polity, without being constrained by some strong form of political veto.⁸

Schofield (2006a) argues that an autocrat is likely to be an extreme risk-taker.⁹ The same argument suggests that an oligarchy will tend to be more risk-taking than a collegium. The further discussion in Schofield (2008a) of current U.S. politics strongly suggests that the U.S. president, together with his cabinet, is a collegium in the current situation where the Republican members of the Senate recently lost the ability to block legislation that is contrary to the policy preferences of the President.¹⁰

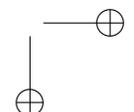
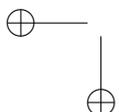
However, because Congress may be factionalized, it can, as Madison expected, exhibit what he called ‘mutability’ – a degree of disorder or incoherence in the laws that are passed. My understanding of the U.S. Constitution is that the Presidential veto was designed to overcome Congressional mutability. Madison, of course, was concerned that the President would gain autocratic power, and to avoid this, the Congressional super-majority counter-veto was devised. However, even with the counter-veto, the President does have some autocratic power, and I shall use the term *weak autocrat* to characterize his power. It is evident that there is a tendency for U.S. presidents to display the degree of risk preference that characterizes autocrats. I judge that Congress will generally be risk-averse, which is why, I believe, power to declare war resides in Congress. From this perspective, the weak autocracy that I ascribe to the president is an important feature of the U.S. constitution because risk taking is an essential component of presidential power. Moreover, Congressional risk-avoidance has the effect of delaying the resolution of fundamental constitutional quandaries. Typically, a *quandary* can only be faced if there is a risk-taking leader capable of forcing resolution. Schofield (2008a) discusses examples of presidential risk-taking by Eisenhower in 1957

⁸ It has been suggested that the *Codex Justinianus*, prepared by order of Justinian the Great in Constantinople in 533 CE, while setting out a system of Roman Law that was the basis for the Civil Law of Europe, also gave legitimacy to the imperial or kingly autocrat. See http://en.wikipedia.org/wiki/Corpus_Juris_Civilis, and Rosen (2007). Many states seem to be autocracies already or about to fall into autocracy, witness Putin’s Russia, Chavez’s Venezuela, Mahmoud Ahmadinejad’s Iran and Pakistan after Musharraf.

⁹ There are many examples in support of the hypothesis: Ghenghis Khan, Attila, Philip II of Spain, Napoleon, and more recently, Saddam Hussein. The historical examples of imperial-risk taking given in Kennedy (1987) give credibility to the hypothesis. See also Kershaw (2007) on risk taking by the Axis leaders in World War II.

¹⁰ 41 Republican senators are needed to block cloture and so prevent the vote on a bill.

¹¹ Many writers since Schlesinger (1973) have used the term ‘imperial presidency’ for the weak autocracy of the president.



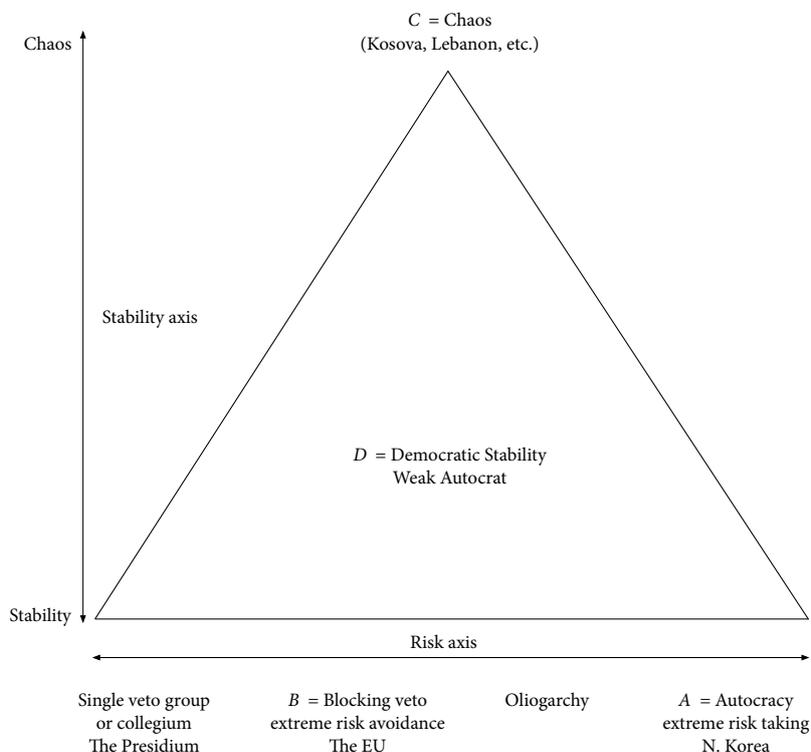


Fig. 1 — Chaos and Risk

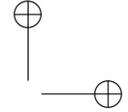
and Johnson in 1964, both of which entailed conflict over civil rights between the president and Congress. At the same time, the purpose of the Congressional veto, aside from restraining any tendency to full autocracy, is to cause the president to temper his risk-preference with caution.¹²

Fig. 1, taken from Schofield (2006a) is a schematic representation of the balance between chaos and risk.¹³

Balancing power and risk-taking is one method of mitigating democratic disorder. The second method depends on basing choice on judgement rather than preference. As Madison argues in *Federalist X*, the choice should be for those who 'possess the most attractive merit'. It is important for the constitu-

¹² A good example of this is the caution displayed by Franklin D. Roosevelt in late 1941 as he moved the country to a war-footing, paying attention to public opinion and the concerns of Congress (Kersaw 2007).

¹³ Notice, however, that this figure is not intended to imply that a risk-taking autocrat is a sufficient method to avoid chaos. While Mugabe is clearly a risk-taking autocrat in Zimbabwe, his attempts to retain power in the early part of 2008 plunged the country into disorder.



tional balance between President and Congress that the President be elected by a method that gives what Madison called ‘a probability of a fit choice’. Since presidential choices will be made in the context of uncertainty and risk, it is vital that the electorate use their judgement in making a fit choice for president. Madison clearly hoped that the selection of the President would be founded on judgement, rather than preference, and that this selection would not exhibit the disorder that he believed could render the legislature mutable.

It can be argued that Madison developed his argument in *Federalist X*, on the basis of his reading of Condorcet’s *Essai* of 1785.¹⁴ In constrained situations where we may assume that judgements predominate, and voters evaluate the options in a clear-sighted fashion, then their choice of Chief Magistrate may indeed be well formed in the way that both Condorcet and Madison thought possible.

Madison hoped that, because the election of the Chief Magistrate involved the selection of a person, rather than an option (as in the passage of a law), then judgement rather than preference or interest would predominate. I now consider a more general model where judgement and preference are both incorporated. It is of course entirely possible that beliefs or judgements in the electorate can be transformed in a chaotic fashion. Nonetheless, it is possible that electoral belief can be associated with what may be called a *core belief*. Since a *core*, in social choice theory, is an unbeaten alternative, we can, by analogy, use the notion of a *core belief* to refer to belief that has general acceptance in the society.¹⁵

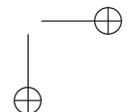
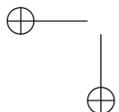
I now present an institutional narrative making use of the idea of a core belief to complement the work of North and Olson.

3. An ‘Institutional Narrative’

North’s early work with Thomas (North and Thomas 1973, 1977) attempted an economic explanation of the transition from hunter/gatherer societies to agriculture. Later, he proposed a ‘neo-classical theory of the state’, wherein ‘Leviathan’ contracts to set up a system of property rights and taxes (North 1981). His later work has focused on institutions, and how they change as a result of incentives, knowledge and beliefs (North 1990, 1994, 2005). One

¹⁴Condorcet’s Jury theorem in the *Essai* refers to the probability that a jury makes a correct choice on the basis of majority rule. Schofield (2006a) argues that Madison received work by Condorcet from Jefferson in Paris, and acknowledged receipt on 6 September 1787. This suggests that Madison adapted Condorcet’s idea during the Fall of 1787, while writing *Federalist X* for publication on 22 November 1787.

¹⁵Of course, a core belief can change rapidly. A core belief in the U.S. electorate circa 2003 was that there existed a close connection between al-Qaeda and Saddam Hussein, and this belief provided the justification for the invasion of Iraq. This belief has turned out to be false. By late 2007 a core belief was forming that the U.S. should leave Iraq.



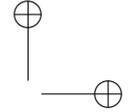
of his most persuasive pieces is his work with Weingast (North and Weingast 1989) on the Glorious Revolution in 1688 in Britain, and how this transformed Britain's ability to manage debt, fight wars (particularly with France), and develop an empire. More recently, North has concentrated on the conditions that may enhance social stability (North, Wallis, and Weingast 2009).

Much of Olson's work has attempted to grapple with understanding how some societies are successful and others much less so. In his early book, Olson (1965) used the idea of the prisoner's dilemma to suggest that cooperation may fail, as individuals pursue their selfish ends (by strikes, revolutions, etc.) and indirectly constrain economic growth. Later, Olson (1982) used this argument to provide a 'declinist' explanation of why stable democracies such as Britain and the U.S. appeared less vital (in the 1980's) than the newer democracies of the post World War II era (such as France, Germany, Japan, etc.).

In this section I shall briefly sketch the narrative scheme that I shall use, developing the ideas of North and Olson, and based on the notion of factor coalitions, forming in the policy space. Rogowski (1989) earlier made use of the assumption, from economic theory, that there can be assumed to be three factors of production: land, labor and capital. External and internal features may grant advantages to particular coalitions of these factor 'interests'. For example, the U.S. in the late 1700's could be characterized as abundant in land, with both labor and capital relatively scarce. Principal imports were manufactures, intensive in capital and skilled labor. Thus protection in the form of tariffs would necessarily benefit capital and 'industrial labor'. In contrast, since land was abundant, the landed interest, together with 'agricultural labor', would benefit from free trade. Consequentially, the political conflict between the commercial Federalist Party and the agrarian Jeffersonian Republicans, at the election of 1800, can be interpreted in factor terms. However, some of the elements of the controversy of that time can only be understood with respect to earlier factor conflicts in Britain, in the period from 1688.

North and Weingast (1989) had argued that the creation of the Bank of England in 1693 provided a method of imposing credible commitment on Parliament. The dilemma facing any government of that time was that war had become more expensive than government revenue could cover. Consequently, governments, or monarchs, became increasingly indebted. Risk-preferring, or war-loving, monarchs, such as Philip II of Spain or Louis XIV of France, were obliged to borrow. As their debt increased, they were forced into repudiation, thus making it more difficult in the future to borrow.¹⁶ Since the Bank of England 'managed' the debt in Britain after 1693, there was an incentive for Parliament to accept the necessary taxation, and also to avoid

¹⁶ Kennedy (1987).



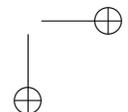
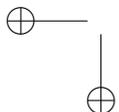
repudiation. This would have the effect of reducing the cost of public debt.¹⁷ However, it was clear after 1688 that William III would pursue the war with France with great vigor and cost.

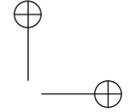
The political problem facing Parliament after 1688 was whether to engage in a long term war with France, as William III wished, and if war was chosen, how to fund it. War would require a standing army, which could give too much power to the monarch, endangering liberty. To depend on a weak and poorly trained militia could well induce France to risk a war that Britain would lose. The solution to this first part of this dilemma was to divide control of the standing army between Parliament and the monarch (Humphrey 2009).

However, the War of Spanish Succession (1701-14) brought war weariness, and the Tory government after 1710 sought to avoid the costs (and taxes) induced by war. Contrary to the argument of North and Weingast, the escalating war debt by 1710 could, in fact, make repudiation an attractive option. After 1710, it was not obvious how Parliament could be obliged to commit to fiscal responsibility. The solution was the brilliant strategy of Robert Walpole, Britain's first 'prime' minister. Schofield (2006a) argues that the key compact to create a long run political equilibrium (between the Tory landed elite, and the Whigs, the capital elite) was initiated after 1720, and involved the protection of land via increased customs and excise.

The fundamental problem was that the majority of members of both Commons and Lords were of the landed interest. The obvious method of funding government debt (which had risen to 36 million pounds sterling by 1713) was by a land tax. Indeed the land tax raised approximately 50 percent of revenue. War weariness had brought in a Tory government in 1710, and the obvious disinclination of the Tory landed gentry to pay increasing land taxes forced up the interest rate on long term government debt from 6 percent to 10 percent (Stasavage 2002). In some desperation the government created the South Sea Company in 1711. After Queen Anne died in 1714, and the Hanoverian, George I, became sovereign, increasing speculation in South Sea Company stock and then the collapse of the 'bubble' in September 1720, almost bankrupted the government. Walpole stabilized confidence in the Company by a swap arrangement with the Bank of England. In April 1721, Walpole, now Chancellor of the Exchequer and First Lord of the Treasury, began his scheme to stabilize government debt by instituting a complex system of customs and excise. By restricting imports, mostly foodstuffs and land intensive commodities, this system had the effect of supporting the price of the scarce commodity, land. From 1721 to 1810, these excise taxes and customs raised

¹⁷ Quinn (2001) suggests that there was a crowding out, in the sense that while the cost of public debt fell, the cost of public debt rose, at least until 1705.





an increasing share of government revenue.¹⁸ O'Brien comments that these data

provide some statistical support for suggestions that the burden of taxation on the aristocracy declined during the eighteenth century. Not until they confronted Napoleon did the upper classes once again undertake the kind of sacrifices for the defence of property that they had made under William III. [W]ith the repeal of the Pitt's income tax in 1816 the situation reverted to the status quo ante bellum.¹⁹

As Brewer (1988) has described, the system required a sophisticated and skilled bureaucracy. The Walpole bargain created a compact between the 'commercial' Whig interests and both Whig and Tory 'landed' interests, securing their Parliamentary support for continued war with France. The Walpole compact had many effects. First, it ushered in a period of Whig dominance until 1783.²⁰ By supporting land prices, the bargain led to increased investment in agriculture.²¹ Although agricultural output increased in Britain (by 76% between 1740 and 1860) the population grew even more rapidly (increasing from about 6 million in 1740 to 21 million in 1860). Britain became increasingly dependant on food imports, particularly from the United States.²² However, the combination of protection of land and population growth led to an increase of the cost of living of 43% between 1740 and 1800, and a decline of the real wage.²³ It is estimated that 80% of subsistence farmers were forced off the land between 1780 and 1810. The fall of real wages until the end of the Napoleonic Wars, coupled with a rise in GDP/ capita suggests that income inequality increased in this period. The model of political economy of Acemoglu and Robinson (2005) would suggest that the compact could only be maintained by a severe restriction of the

¹⁸Tax receipts as a percentage of national income rose from 10.8% in 1720 to 18.2% in 1810. The share of customs and excise in government income was about 73% in 1720 and 82% in 1800 (O'Brien 1988:15).

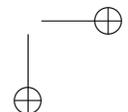
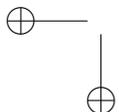
¹⁹(O'Brien 1988:16).

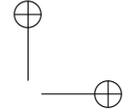
²⁰From 1721 to 1783 eleven out of thirteen prime ministers were Whig. Tory prime ministers included the Earl of Bute (1762-3) and Lord North (1770-1782). In contrast, from the time of the Tory, William Pitt the Younger (1783-1801, 1804-1806), until Benjamin Disraeli (1868, 1874-80) there were fourteen Tory or Conservative prime ministers out of eighteen.

²¹Allen (1988) estimates that the rental on land rose from about 0.5 pounds per acre in 1725 to 1.5 pounds per acre in 1825.

²²On population growth see Clark (2007a: 36). Clark (2007a) also estimates an increase of agricultural imports from zero in 1730 to 22% of GDP in 1860. Clark (2007b) refers to the tendency of population to rise to match food production as the 'Malthusian Trap' after Thomas Malthus ([1798], [1830] 1970). Malthus wrote his essay to contradict the more optimistic views of Condorcet's *Esquisse* (1795). On Condorcet's *Esquisse* see Baker (2004) and Rothschild (2001).

²³Clark (2005: 1325). Clark estimates the real wage in the decade 1800-1809 was about 10% below that of 1730. See also Floud and McClosky (1994).





franchise. Real wages started to rise after the end of the Napoleonic Wars²⁴, but it was not until 1867 that the franchise was extended to any great degree, while protection of land was maintained until the repeal of the Corn Laws in 1846.²⁵

In brief, the Walpole compact

- helped to maintain the Whig elite in power,
- transformed agriculture, forcing people off the land and into the cities,
- facilitated rapid population growth, because of the availability of agricultural imports from the United States,
- led to the creation of efficient capital markets, eventually facilitating the expansion of manufacturing,
- which paid for food imports, thus indirectly providing the population resources to extend the empire,
- allowed the Whig government to borrow the capital required for Britain to finance the long war against France,
- caused the impoverishment of a considerable proportion of the population until 1815, inducing a large immigrant flow, first to the colonies and then the United States.

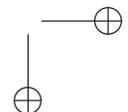
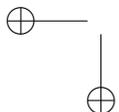
This last effect necessitated the maintenance of a restricted franchise, since extending the franchise could have led to Parliamentary disorder, destroying the compact, and with it the dominance of the Whigs.

It was also crucial for this dynamic path of Britain's economic development that there be a plentiful and cheap supply of (land intensive) agricultural goods from the United States. This was facilitated by the availability of land and the growth of the American population.

A key aspect of the origin of the synergetic relationship between Britain and America was the success of the thirteen colonies in their revolution against Britain. The principal factor in this was the success of Britain in the Seven Years War against France (1758-1763). This gave Britain the entire area east of the Mississippi, including Quebec, while France ceded New France (Louisiana) to Spain. After Pontiac's Rebellion at the end of the war, Britain tried to prevent settler encroachment into the Ohio Valley first by the Proclamation Act (1763) and then the Quebec Act (1774). It has been

²⁴ Clark (2005) estimates an increase of 66% by 1860.

²⁵ Clark (2007a) estimates that real farm rents/acre increased until about 1880 and then fell rapidly. See also Mokyr and Nye (2007).



suggested that Adam Smith had the idea of the Quebec Act. Whatever the motivation of the British Government, the Quebec Act infuriated both the elite and the people. The arrival of a fleet of 130 transport ships in New York, under General Howe, was intended to intimidate the Colonies. Word arrived from France that Louis XVI had been persuaded by the Foreign Minister, Vergennes to provide resources²⁶ to the Colonies, and I argue that this information was crucial in the decision by the Continental Congress to declare Independence. French aid was decisive for the American success. In September 1781, French fleet blockaded the British army under Cornwallis at Yorktown, and a French army of 6,500 men helped Washington force the surrender of the British.

The population of the thirteen colonies had increased from about 200,000 in 1700 to 890,000 in 1750 to 2.8 million by 1790 and 5.3 million by 1800. A contribution to this population growth was the emigration of 80,000 from England and Wales, 115,000 from Ireland, and 75,000 from Scotland (including 15,000 highlanders) between 1700 and 1780²⁷

The rapid expansion of this food-producing agrarian empire can be partly attributed to the election of Thomas Jefferson in 1800. By the 1790's, Jefferson was well aware of the implications of the Walpole compact in terms of impoverishment and concentration of power. His reading of the works of Henry St. John, Viscount Bolingbroke, led him to believe that the land-capital bargain led to corruption, as well as the filling of Parliament by placemen. In fact, Bolingbroke's arguments against Walpole were, to some degree, invalid, since the compact did make it possible for Britain to manage its debt, fight its wars and create an empire. Bolingbroke's logic was, however, valid for the U.S. Hamilton's attempt in 1793 to recreate Walpole's system would have necessitated both a land tax and tariff protection. Since U.S. imports were primarily manufactures, a tariff would protect the scarce factor, capital, associated with these imports. In Jefferson's view, this would have disadvantaged the landed interest.²⁸ By creating an agrarian coalition, essentially of the Southern slave-owning landed interest, and western free farmers, Jefferson created a long-lasting compact under which the U.S. became the food supplier for Britain.

The Jeffersonian-Jacksonian agrarian coalition survived until 1860, and it was the expansion of the U.S. agrarian empire through the Louisiana Purchase of 1803/4 and the Treaty of Guadalupe Hidalgo after the war with Mexico that provided the agricultural basis for Britain's expansion. However, the gain of Mexican territory led to the southern slave owner's demand for ex-

²⁶10 million livres eventually.

²⁷Harper (2003).

²⁸Schofield (2006a) argues that Jefferson's view about this agrarian empire was much influenced by the ideas expressed by Condorcet in the *Esquisse* (1795).

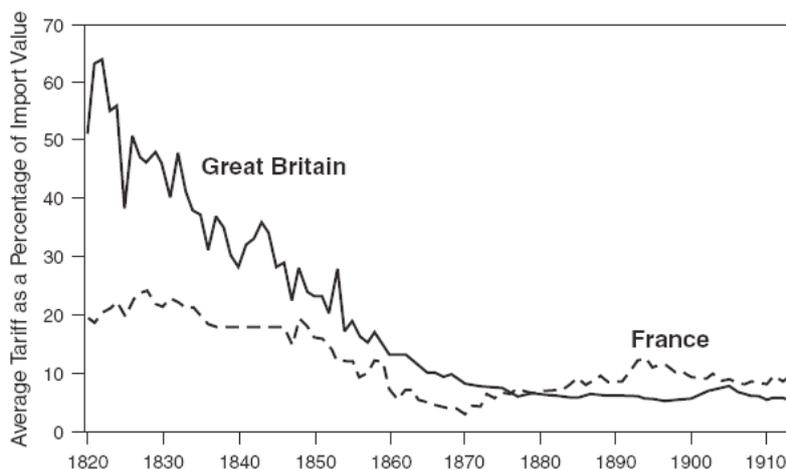


Fig. 2 — Tariff Revenue as a Fraction of All Imports (Nye 2007)

pansion of the slave interest to the Pacific, and this ultimately destroyed the Jeffersonian-Jacksonian Democracy in the Civil War.

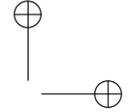
The aftermath of the Civil War created a new coalition, of commercial interests and industrial labor, as represented by the presidential victory of the Republican, McKinley, over the populist Democrat, William Jennings Bryan, in 1896. From this perspective, U.S. politics in the period 1896–1956 can be interpreted in terms of a single factor dimension, *capital*, since we can regard the interest of land to be generally in opposition to capital. Thus, for the period from 1896 until the 1930's, the inclination of Republicans for the preservation of a hard money or gold standard rule was in opposition to the need for available credit in the agricultural sector.

In the 1960's, agitation for greater civil rights brought the labor axis into prominence. L. B. Johnson's positioning on this axis contributed to his great electoral victory in 1964, but also opened the way for the Republican Party to adopt an increasingly conservative position on the social dimension and gain political control in the southern states (Miller and Schofield, 2003).

Returning to Britain in the nineteenth century, Fig. 2 compares British and French import protection, and clearly indicates the degree to which British imports were protected in the early part of the century.²⁹

This figure suggests that the Walpole compact was still based on protection of land and restriction of the franchise, at least until the Repeal of the Corn

²⁹ Fig. 2 is reprinted from *War, Wine and Taxes* by John V.C. Nye (2007), by permission of Princeton University Press.



Laws in 1846. Mokyr and Nye (2007) present a detailed account of the ability of the landed interest to continue protecting land and their wealth until the middle of the nineteenth century.³⁰ As McLean (2001) describes, this first significant decrease in protection was effected by the Tory, Robert Peel, together with Wellington in the Lords, against the interests of the majority of their party. Famine in Ireland made it obvious to Peel and Wellington that unless food prices were lowered then social unrest could lead to civil strife.³¹ By the 1860's, Britain's economic lead allowed for further reduction in the protection of land, in the form of Gladstone's budget of 1861, which reduced the duty on wine and repealed the paper tax (Aldous 2006). McLean (2001) also discusses the astonishing ability of Disraeli to push through the Reform Bill in 1867, doubling the enfranchised population. Whether as cause or effect, the real wage started to rise rapidly after 1860³² while real GDP/capita rose very rapidly, with income inequality declining. Marx's extrapolation from the recent past had proved as wrong as Malthus's earlier argument.³³

Fig. 3 presents a schematic figure of the opposition between the Liberals, led by Gladstone, and the Tories, led by Disraeli. The figure is meant to suggest that Disraeli understood that the hold on the Tories by the landed interest had to be broken, so as to better oppose the the Whigs, or Liberals, dominated by capital. (The catenary in this figure is defined in section 5 below). I suggest that Disraeli's maneuver. depended on beliefs about Empire. For industrial labor, 'Empire' meant the opportunities for emigration and a better life in the Dominions of America, Canada and South Africa. By using the rhetoric of 'Empire', the Conservatives could hope to appeal to working class voters. These political changes laid the foundation for Britain's hegemony in the late nineteenth century.³⁴ The figure is also intended to suggest that the principal axis of political contention concerned the nature of this hegemony. For the next century, the political debate turned on whether Britain should maintain a system of Imperial preference in opposition to the growing power of the United States. This answer to this question was very much on Keynes's mind during the negotiations over the creation of the post World War II international institutions (discussed in Schofield 2006a, Ch.7).

While these institutions may have facilitated economic growth, it is still the

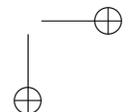
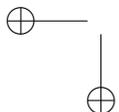
³⁰ Although land was protected, Mokyr and Nye argued that the development of a centralized party system (Cox 1987) prevented the formation of rent seeking 'Olsonian' coalitions that could have slowed technological development.

³¹ 2 million people emigrated from Ireland in the period 1846-1856, while the U.S. population jumped in this decade from 23 million to about 32 million. The population of England had grown, but only to about 20 million.

³² By 20% in a decade. See Clark (2005).

³³ Marx ([1867] 1930).

³⁴ Disraeli's maneuver probably allowed the Conservatives to vie with the Liberals over the next fifty years.



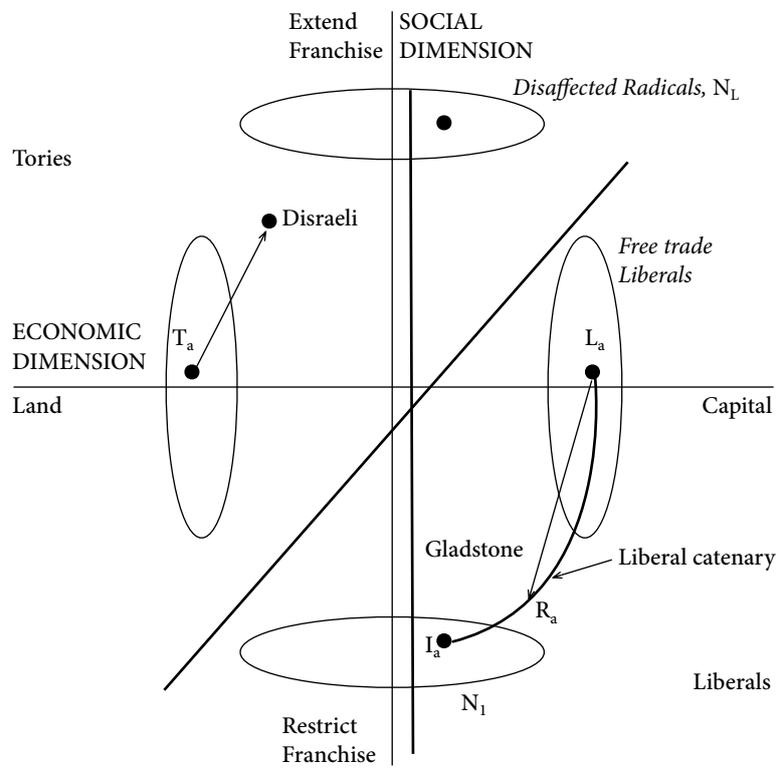


Fig. 3 — Tories and Liberals in Britain in 1867

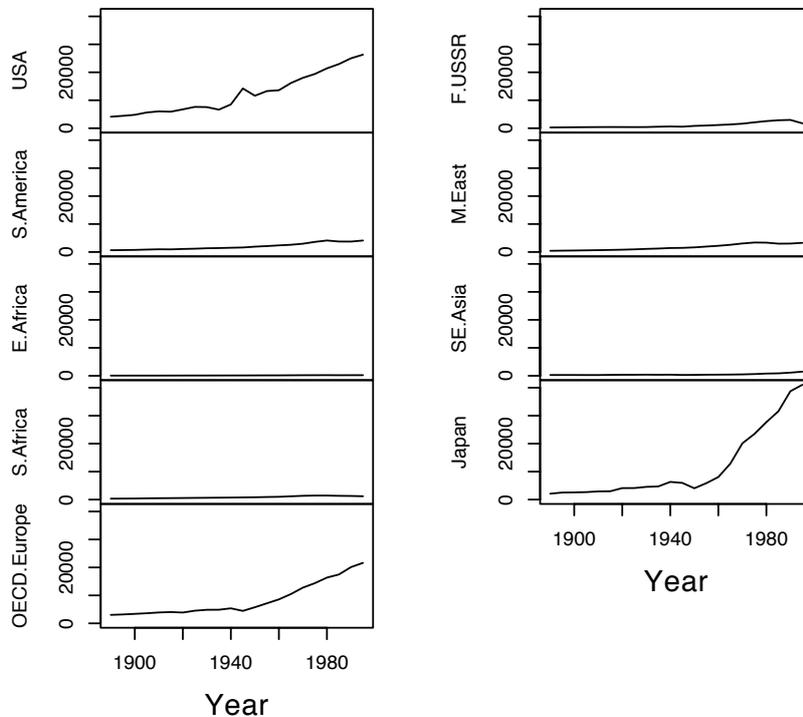


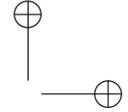
Fig. 4 — Malthus or Condorcet

case that, as world population rises, so does the number living in dire poverty (Collier 2007). Both Malthus and Condorcet were correct: the majority of the world's population still live in the *Malthusian Trap*, while the developed world lives in a version of Condorcet's *Picture of the Human Mind*.

Fig. 4 gives a schematic representation of the growth of GDP in the United States, Japan and other OECD economies in contrast to the slow or non-existent growth in other parts of the world.

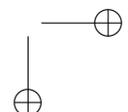
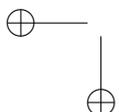
The thrust of the argument in Schofield (2006a) is that what appears to be a stable political economic equilibrium may create a constitutional quandary. Such a quandary may cause *architects of political change* to respond by creating new political economic compact. This in turn may be broken. We can enumerate some of these transformations:

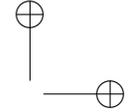
- the glorious revolution of 1688, and the later creation of the Walpole compact in 1720, which created the foundation of the British empire, but required limited franchise in Britain and Ireland,



- the break between the colonies and Britain in 1776-1783, caused by the conflict over the land of the Ohio Valley,
- the Jeffersonian compact of 1800 leading to the American agrarian empire, which allowed for the rapid expansion of the US population, but required the maintenance of slavery,
- the dissolution of the Jeffersonian compact by Lincoln after 1860, again due to conflict over land, between the slave owning southern elite and southern industrial interests over control of the west,
- the slow dissolution of the Walpole compact in Britain, first by Peel and Wellington in 1846 and more completely by Disraeli in 1867, leading to an enlarged franchise, free trade, rapid GDP growth/capita and British hegemony,
- conflict between eastern capital interests and western populism in 1896 in the contest between William McKinley and William Jennings Bryan,
- the creation of the New Deal compact by Roosevelt in 1932 to protect labor,
- the creation of the Atlantic compact in 1945 under which the United States supported international institutions to promote growth and economic stability,
- conflict over the extension of the franchise, leading to the Civil Rights Acts of 1964-65 during the presidency of Johnson,
- the response by the Republican party during the presidencies of Nixon and Reagan, leading to the capture of the southern states and eventually the collapse of the Roosevelt compact,
- the creation of a new compact by George W. Bush in response to the fear generated by 9/11/2001 by taking on autocratic power with the support of the New South, consolidating the dominance of capital, increasing inequality and attempting to make the United States the global hegemon,
- the increasing dependency of the United States on imported oil and debt, and thus on the oil autocracies of Saudi Arabia, and Russia, and on the financial support of China,
- the eventual collapse of the financial bubble in September, 2008, increasing the likely Federal debt to approximately \$12 trillion,³⁵

³⁵The Federal support included \$85 billion for American International Group and \$200 billion for the mortgage agencies, Fannie Mae and Freddie Mac.





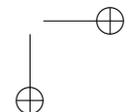
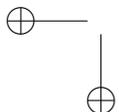
- the creation of a fractured world, with numerous failed states in the Middle East and Africa and possibly a resurgent Russia, willing to use its military power to expand its share of interest.
- the attempts by Barack Obama in the first stage of his administration to recreate the global Keynesian compact and begin to deal with the possibility of catastrophic climate change.

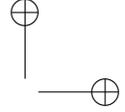
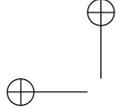
This narrative suggests that there are complex inter-relationships between preferences, or interests on the economic and political axes. However, the manner in which these interests are transformed into beliefs is, to a considerable degree, still a matter of conjecture. Indeed, how these beliefs take political expression seemingly depends on the perception and strategies of political leaders such as Walpole, Peel, Disraeli or Gladstone in Britain, and Franklin, Washington, Madison, Jefferson, Lincoln, Roosevelt, Johnson, Reagan and G.W. Bush in the United States.

The narrative just presented suggests further that the dynamic economic transformations that have caused the great bifurcation between the rich countries (Britain, the United States etc) and poor are due to political changes with respect to civil rights.

The transformations in the United States, listed above, led Miller and Schofield (2003) to suggest that political parties in the U.S. slowly cycle in the two-dimensional policy space, created in the period just prior to the Civil War. In certain periods (such as 1896-1920) the principal axis is one of land/capital. However, in the more general situation, which has held from 1964 to the present, a second dimension, *the social axis* (a reflection of the free labor/slave axis) is also necessary for understanding political change. Although I have not developed the argument fully for Britain (though I should say, the United Kingdom, since the Irish question was also of paramount importance), it seems that the party positions also slowly changed in a manner similar to the U.S. realignments.

While the transformations that have occurred in the United States can often be attributed to risk-taking leaders, it is also the case that the Madisonian constitutional balance requires that the risk-taking of a president should, at least in principle, be balanced by the risk-aversion of Congress and of the electorate. The narrative presented in this section suggests that when beliefs rather than simply preferences or interests are relevant, then democratic systems can maintain a kind of structural stability, balanced between chaos and the rigidity of permanent equilibrium, and determined by the beliefs of the electorate. The next section of the paper attempts to formulate a 'Madisonian' model of election, that is in principle applicable to any democratic polity.





4. Preferences and Judgements

We assume that individuals have preferences that can be represented in terms of utility functions on some ‘policy’ space W . This space characterizes both voter interests, and possible eventualities. The space W embodies preferences over economic factors – labor, capital and land – with an additional political axis involving civil rights or religion.

The interests or beliefs of the population or ‘electorate’, V (of size v) are described by a set $\{x_i\}$ of ‘ideal points’, one for each ‘voter’, $i = 1, \dots, v$. An individual’s ideal point in the space, W , is used to describe or represent that voter’s interests. In the empirical models discussed in Schofield and Sened (2006), the ideal point can be obtained from a survey.

The set of options, N , of size n , is a set $\{z_j\}$, each one being a point in W . In the situation of an election, each element of N is a declaration of intended or proposed policy. There is one for each candidate, j . While it is usual to conceive of each z_j as simply a point, we can easily allow z_j to involve various possibilities, associated with differing probabilities of occurrence.

The ‘latent utility’, u_{ij} of voter i for candidate j has the form

$$u_{ij}(x_i, z_j) = \mu_{ij}(x_i, z_j) - A_{ij}(x_i, z_j) + (\theta_j \cdot \eta_i) + \varepsilon_{ij}. \quad (1)$$

We use θ to denote a set of k -vectors $\{\theta_j\}$ each one representing the effect of the k different sociodemographic parameters (class, domicile, education, income, religion, ethnicity, etc.) on voting for party j while η_i is a k -vector denoting the i^{th} individual’s relevant ‘sociodemographic’ characteristics. The composition $(\theta_j \cdot \eta_i)$ is the scalar product and can be interpreted as the heterogeneous ‘valence’ ascribed to party j as a consequence of the various sociodemographic characteristics of voter i .

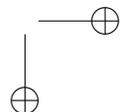
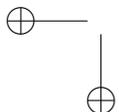
The term $A_{ij}(x_i, z_j)$ is a way of representing the ‘preference disagreement’ between the interests of voter i and the j^{th} option. The function $A_{ij}(x_i, z_j)$ is determined by the distance between x_i , the preferred position (or bliss point) of voter i and z_j , the declared policy of candidate j .

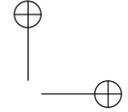
The model is stochastic because $\{\varepsilon_{ij}\}$ is a set of possibly correlated *disturbances*. The term $\mu_{ij}(x_i, z_j)$ is the perception by a voter, i , with ideal point, x_i , of the ‘valence’ of the option presented by the candidate j . This valence is a way of modeling the non policy *judgement* by voter i of the quality of candidate j .

In the general model, the probability, ρ_{ij} , that voter i chooses option j is

$$\rho_{ij} = \Pr[u_{ij}(x_i, z_j) > u_{ij}(x_i, z_k) \text{ for all } k \neq j]. \quad (2)$$

We can apply this model in various ways.





First, consider the pure preference based ‘non-stochastic’ or deterministic case where all $\varepsilon_{ij} = 0$, the valence is zero and $A_{ij}(x_i, z_j) = \beta \|x_i - z_j\|^2$, while $\| - \|$ is the Euclidean norm and $\beta > 0$ is the spatial parameter.

The results on social choice theory imply that if decision making is binary (pitting one option against another), and based on majority rule, or more generally on a non-collegial voting mechanism, then disorder (in terms of the non-existence of a core or social choice) can ensue as long as the dimension of W is sufficiently large.

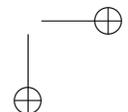
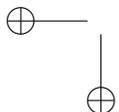
In the stochastic model, we assume, on the contrary, that $\{\varepsilon_{ij}\} \neq 0$, with $\{\varepsilon_{ij}\} = \{\varepsilon_j\}$ independent of i , and also pairwise independent and identically distributed.³⁶ This model can be interpreted as focusing on the ‘beliefs’ or judgements of the participants. In particular, if the spatial coefficient, β is identically 0, then this is a situation of pure ‘belief aggregation’. Individuals will choose among the various options with probability determined by the valence judgement that they have made. I suggest that the final decision is often the consequence of what I call a *belief cascade*. As more individuals decide that option z_s , say, is superior, then other voters will in turn, be swayed to form a judgement in favor of z_s . By analogy with the social choice notion of a core, a *core belief* is one held by a majority of the society. Condorcet (1785) in his *Essai* argued essentially that a core belief would tend to be a correct belief. Roughly speaking, *Condorcet’s Jury Theorem* asserts that, in a binary choice situation, the probability that a majority selects the true outcome will be greater than the probability that a typical individual will select the truth. Rae (1969) and Schofield (1972) used a version of the theorem to argue that majority rule would be ‘rationally’ chosen by an uncertain society as a constitutional rule, since this rule would maximize the probability of a fit choice.

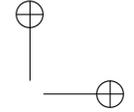
Since judgement will vary in a society, we can model the variation in beliefs in the society by supposing that the valence terms $\{\mu_{ij}(x_i, z_j)\} = 0$ but that judgement is determined only by the sociodemographic characteristic, η_i , of the individual. While this would induce some variation in judgements, voting models based on this assumption perform poorly in predicting voter choice. Moreover, the jury theorem depends on the condition of voter (pairwise) ‘statistical independence’ which is a very strong assumption. Indeed, this assumption would not be satisfied in the case that voter judgements were based solely on sociodemographic characteristics.³⁷

This suggests considering a more general case when $\beta \neq 0$, so both interests and judgements are involved. As discussed Schofield (2008a), such a

³⁶ More complex models allow for correlation between these disturbances.

³⁷ For example, individual preferences in Iraq are very probably determined by such sociodemographic characteristics, and there is little likelihood of the Jury Theorem being valid in this context.





model requires considering how the various candidates respond to the pattern of electoral preferences and beliefs. The simplest case is of *exogenous or intrinsic valence*, where $\mu_{ij}(x_i, z_j) = \lambda_j$, for all i . The model showed that only in the case that the differences between the candidate valences $\{\lambda_j\}$ are ‘low’ (in comparison to the product of β and the electoral variance) can we expect ‘convergence’ by candidates to the electoral mean.³⁸ Convergence implies that the mean electoral preferred point corresponds to a core belief about social policy. Indeed, when all candidates converge to the electoral mean, then we can view this point as the ‘social attractor’. The empirical examples of Israel and Turkey, discussed in section 5, show that when the valence differences are sufficiently high, then parties will adopt different policy positions on the principal electoral axis. Parties with the highest electoral valence will position themselves closer to the electoral center, and depending on the electoral regime, will either gain an electoral majority, or will be at the legislative core. While there will be a core, it will not be an attractor, since there can exist groups with divergent political beliefs in the society. Thus existence of a core belief depends in a delicate way on the distribution of the intrinsic valences or judgements of the electorate, and the response of political agents to these beliefs.

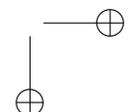
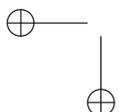
The empirical examples suggest that it is necessary to extend the electoral model by assuming $\mu_{ij}(x_i, z_j) = \lambda_j + \mu_j(z_j)$, for all i , where λ_j is a constant term, independent of (x_i, z_j) . This additional component of belief, $\mu_j(z_j)$, called *activist valence*, is a function of the behavior of activists, but is again independent of i . This model assumes that valence is directly influenced by the contributions of activists, and these are indirectly determined by the policy positions adopted by candidates or party leaders. Note that as $\mu_j(z_j)$ increases, then the probability that a voter chooses option j also increases. The model implies that parties balance the centrifugal tendency associated with activist support against the centripetal attraction of the electoral center.³⁹

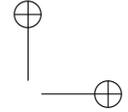
However, when the electoral method is proportional representation (PR) then even small parties can gain representation in the legislature. This suggests that activist groups with diverse preferences may support parties that are far from the electoral center. Indeed, the logic of the model suggests that activist groups have little incentive to coalesce under PR. Thus, these diverse activist groups will support a diverse set of parties. The data presented in Schofield (2008a) indicate that PR results in a fragmented legislatures.

It is obviously possible to extend this model, by allowing an individual’s beliefs to be function of the ideal point. In some sense, incorporating sociodemographic characteristics does allow for this kind of variation in be-

³⁸The necessary condition is given in terms of a bound on the convergence coefficient, c . See the definition of this coefficient in section 5.

³⁹Formal results for this model are presented in Schofield (2006b).





liefs.

One of the long standing puzzles arising from the study of U.S. politics is why precisely the plurality or majoritarian feature of the U.S. electoral system generates a two party structure rather than the fragmented political configurations that appear to hold under PR.⁴⁰ The discussion below leads to the conjecture that the plurality system of the US gives greater power to activists. Activist groups seem to face increasing to size, because of the nature of the electoral system, and this forces coalescence.⁴¹ If this hypothesis is valid, then it would provide a reason why political competition under plurality leads to the two-party system.

Because there generally will exist two dimensions of policy, the various activist groups will tend to coalesce into at most four separate and opposed groups. Even in the United States, the two party system can break down, and it is probable that conflict within such activist groups at times of constitutional quandary generates the realignment of the political system.

Although the changes wrought by such reconfiguration are the result of transformations in the beliefs of the electorate, the hope that Madison had over the 'probability of a fit choice' will depend on the ability of the electorate to ascertain the quality of candidates through unbiased judgement of the worth of past decisions and proposals for future actions.

5. The Stochastic Model of Elections

A standard result in the class of stochastic electoral models is *the mean voter theorem* – that all candidates converge to the electoral mean when they are motivated to maximize vote share (McKelvey and Patty 2006). An illustration of non-convergence of presidential candidate positions is provided in Fig. 5.⁴² This presents an analysis of the distribution of voter preferred points, obtained from the national election survey for the Presidential election of 1964, together with estimated positions of the candidates, Johnson and Goldwater. It can be seen in the figure that the 'estimated cleavage line' does not go through the origin, indicating asymmetry of some kind between the two candidates.

Empirical research on elections in a number of countries including the United States and Britain⁴³, and Turkey⁴⁴ has constructed multinomial con-

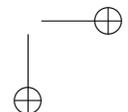
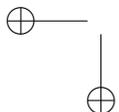
⁴⁰Riker 1953, 1964, 1987; Duverger 1954; Filippov, Ordeshook and Shvetsova, 2004.

⁴¹Once the groups have formed, they may face decreasing returns from the support they provide.

⁴²This figure is taken from Schofield Miller and Martin (2003).

⁴³Schofield and Sened (2006); Schofield, Miller and Martin (2003); Miller and Schofield (2003, 2008); Schofield and Miller (2007).

⁴⁴Schofield, Gallego, Ozdemir and Zakharov (2008).



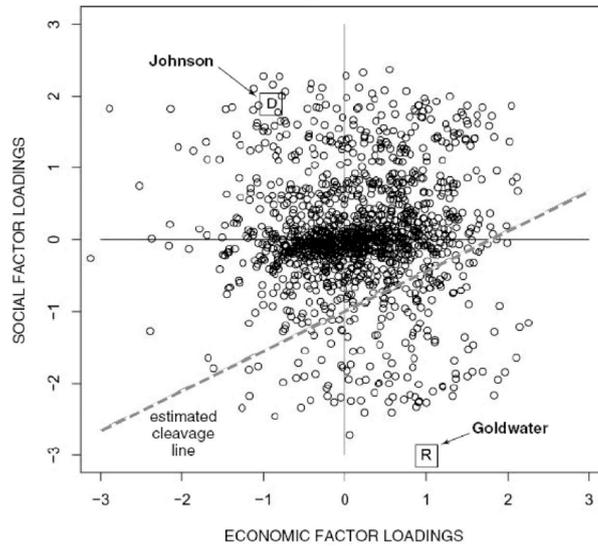


Fig. 5 — The Election of 1964

ditional probit (MNP) and logit (MNL) models and shown that the addition of *candidate or party valence* (Stokes 1992) adds to the statistical significance of the estimations. As discussed in section 4 of this paper, exogenous valence, λ_j , is the electoral perception of the ‘quality’ of a candidate or party leader of party, j . In empirical models this valence is assumed to be independent of the position of the party or candidate, and simply reflects the overall degree to which the party is perceived to have shown itself able to govern effectively in the past, or is likely to be able to govern well in the future (Penn 2009).

The formal model discussed below indicates why convergence need not occur.⁴⁵ For example, Fig. 6 gives an estimate of party positions in the Israel Knesset in 1996, showing the tendency of parties to align along a principal electoral axis.⁴⁶ Fig. 7 gives a similar figure for Turkey.⁴⁷

Fig. 8 illustrates the estimated positions in the Netherlands at the recent election of 2006. In this case, both policy dimensions are equally relevant, and the parties scatter in all directions.⁴⁸

Since it is usual to assume in empirical models that the stochastic component of the model is associated with errors or disturbances that have the ‘Type

⁴⁵ Full details of the formal results are presented in Schofield, (2006b, 2007, 2008a)

⁴⁶ This figure is taken from Schofield and Sened (2006). See also Schofield (2008b)

⁴⁷ This figure is taken from Schofield, Gallego, Ozdemir and Zakharov (2009).

⁴⁸ This figure is taken from Schofield (2008a).

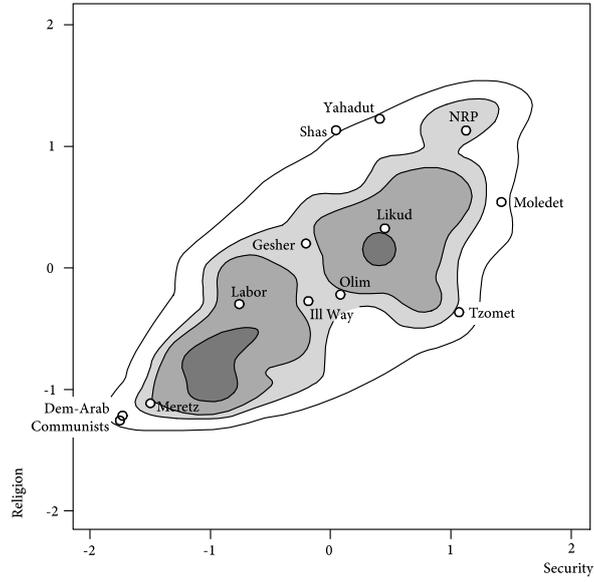


Fig. 6 — Party Positions in Israel 1996

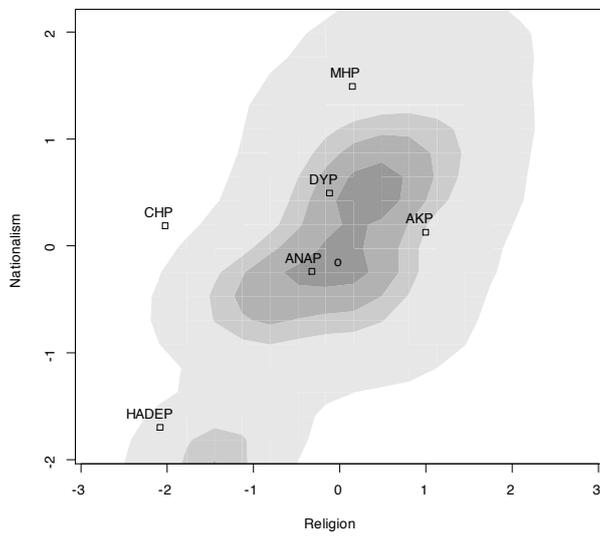


Fig. 7 — Party Positions in Turkey in 2002

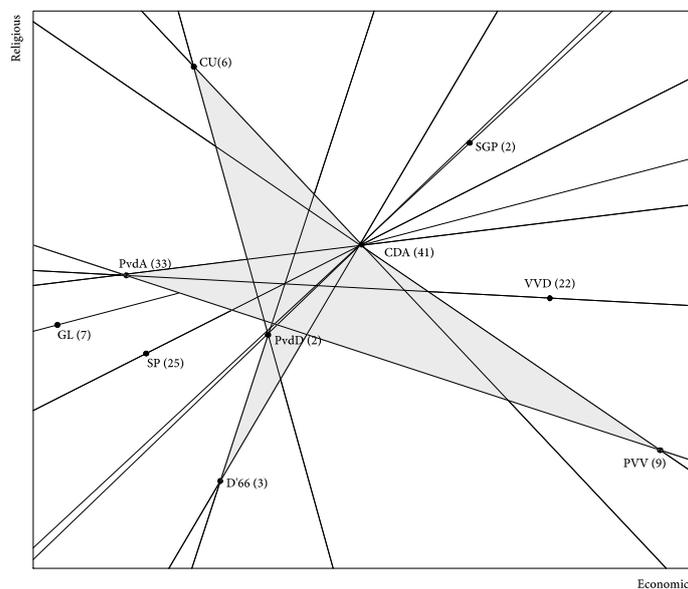


Fig. 8 — Party Positions in the Netherlands in 2006

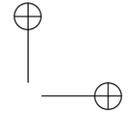
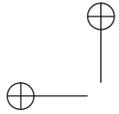
I extreme value distribution, this assumption is imposed on the formal model (see Dow and Endersby (2004). Schofield (2007) obtains the necessary and sufficient conditions for the mean voter theorem to be valid when the candidates have differing valences, but without the sociodemographic parameters $\{\theta_j\}$. These conditions are expressed in terms of a convergence coefficient, c , that can be computed from the parameters of the empirical model, namely the spatial coefficient, β , the valence differences and the variance, σ^2 , of the electoral distribution. First let ρ_1 be the probability that a voter chooses the party with lowest valence, λ_1 . Then

$$\rho_1 = \left[1 + \sum_{k \neq 1} \exp[\lambda_k - \lambda_1] \right]^{-1} \tag{3}$$

$$\text{and } c = 2\beta[1 - 2\rho_1]\sigma^2. \tag{4}$$

The sufficient condition for convergence is that $c < 1$, while the necessary condition is that $c < w$, where w is the dimension of the space.

When the sufficient condition is satisfied, then all candidates will adopt vote maximizing positions at the electoral mean. When the necessary condition fails, then no candidate will adopt such a position, and the candidate with the lowest valence will chose the most radical policy position. The so-



ciodemographic variables can then be incorporated to obtain a more accurate estimation of the vote maximizing positions of the parties. These results are compatible with the estimated positions given in Figs. 5 to 8.

The formal model can also be extended to take account of the influence of activists on party and candidate positioning. The key idea of this work is that of a balance locus for a political leader. This locus is the set of points given by the balance between activist influence and the attraction of the electoral center.⁴⁹

Fig. 9 presents a schematic representation of the influence of activists in Britain. The importance of the 'empire', mentioned earlier, was reflected in Thatcher's electoral success in 1979 and the 1980's. Indeed, a recent empirical analysis of electoral beliefs in Britain (Schofield 2005) make it clear that in addition to the usual economic (or 'capital') axis, it is necessary to employ a second 'social' axis. This axis incorporates 'civil rights', but is also characterized by attitudes to European Union. Conservative MP's responses to a questionnaire on this topic suggest that they are strongly opposed to the incorporation of Britain within the European Union. In other words, political beliefs, that were founded on an economic rationale dating back over a hundred years, are still relevant, in a somewhat different form, today. The contract curve, or catenary, in the figure is meant to illustrate the bargains that can be made between different activist groups.

Fig. 10 gives a similar representation of the influence of activist groups in pulling U.S. presidential candidates away from the electoral origin.⁵⁰ Miller and Schofield (2008) suggest that U.S. politics is subject to continuously realigning forces induced by these activist coalitions. These act in a clockwise direction in the two-dimensional policy space, following the arcs designated as contract curves between the activist groups as shown in Fig. 10.⁵¹ It is possible that similar realignments occur in Britain, as suggested above by the discussion of the political events in 1846 and 1867.

Miller and Schofield also argue that U.S. politics has become increasingly dominated by the contributions from socially conservative activists at *C* in Fig. 10. The alliance between socially conservative activists at *C* and big business, located at *E*, has led to Republican manipulation of electoral opinion, calling into question the validity of Madison's belief in the probability of a 'fit choice'.⁵²

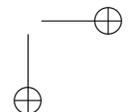
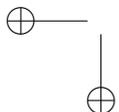
However, the model suggests that, at a time of constitutional quandary, then the influence of activist groups may become less intense, and the importance of electoral valence could lead to elections that center on those who

⁴⁹Schofield (2005), Schofield (2006b), and Schofield and Miller (2007).

⁵⁰Miller and Schofield 2003; Poole and Rosenthal 1997.

⁵¹Fig. 10 is taken from Miller and Schofield 2008.

⁵²See also Gore (2007).



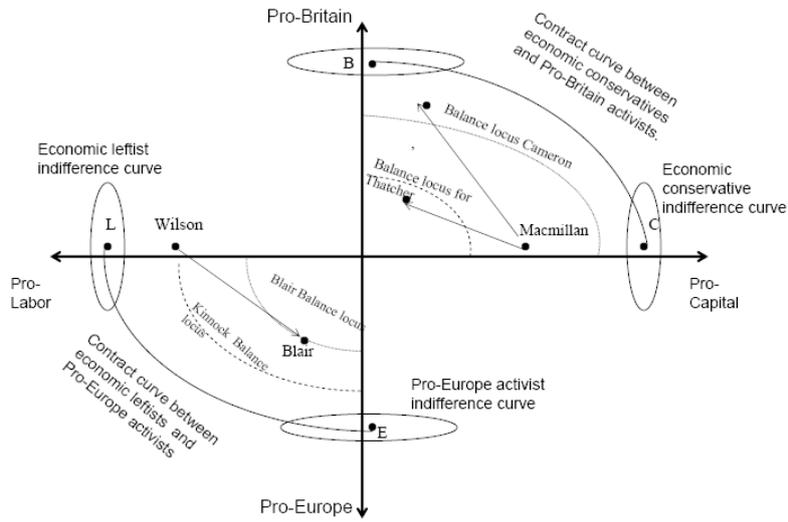


Fig. 9 — Activists in Britain in 1997

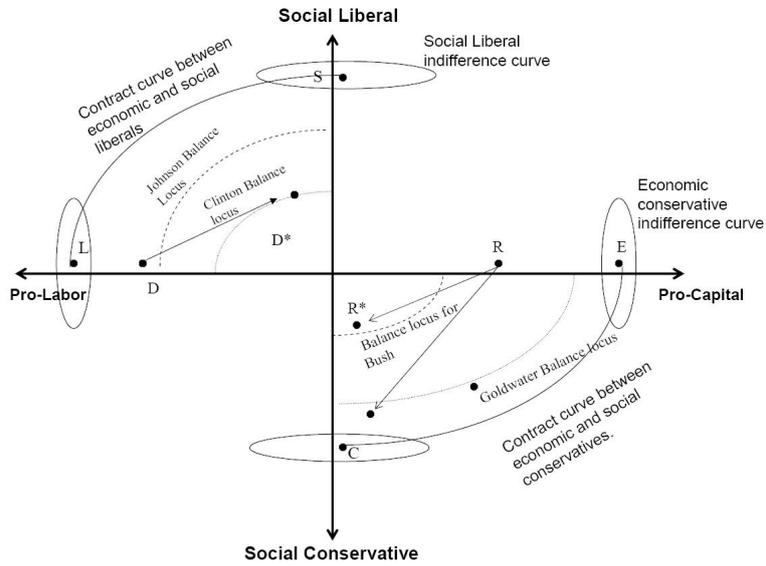
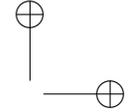


Fig. 10 — Activists Coalitions in the United States



‘possess the most attractive merit and the most diffusive and established characters’, as suggested by Madison.

6. Concluding Remarks

The stochastic spatial model is a powerful tool for studying the interaction between activists, political candidates and the electorate in a representative democracy.⁵³ Current research is directed at the analysis of the relationship between electorally induced preferences and voting behavior by representatives in polities with electoral systems based on plurality rule, as in Britain, Canada, the United States and Turkey, and contrasting these equilibria with those obtaining in polities based on proportional representation. The model can also be used to examine the conditions under which authoritarian regimes remain stable (Schofield and Levinson 2008).

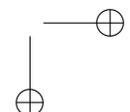
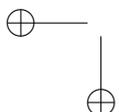
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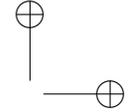
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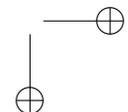
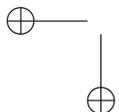
⁵³ See for example Acemoglu and Robinson (2005).



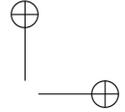
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