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You may cite this version as:

McLean, I.; McMillan, A. & Leech, D. (2004). *Duverger's Law, Penrose's Power Index and the unity of the United Kingdom* [online]. London: LSE Research Online.

Available at: <http://eprints.lse.ac.uk/archive/00000563>

This is an electronic version of an Article published in *Political studies* 53 (3) pp. 457-476 © 2005 Blackwell Publishing.

<http://www.blackwellpublishing.com/journals/PS>

The authors gratefully acknowledge that work on this paper was partly supported by the Leverhulme Trust (Grant F/07-004m).

Duverger's Law, Penrose's Power Index and the Unity of the United Kingdom

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ABSTRACT

As predicted by Duverger's Law, the UK has two-party competition in each electoral district. However, there can be different patterns of two-party competition in different districts (currently there are five), so that there have usually been more than two effective parties in the Commons. Since 1874 it has always contained parties fighting seats in only one of the non-English parts of the Union. These parties wish to change the Union by strengthening, weakening, or dissolving it. By calculating the Penrose power index for all parties in the House of Commons for all General Elections since 1874, we identify the occasions on which a party that wished to modify the Union was pivotal. We explain various acts (e.g. the Crofters Act 1886; the first three Irish Home Rule Bills; the Parliament Act 1911) and non-acts (e.g. the failure to enact female suffrage before 1914) by reference to the Penrose indices of the non-English parties. The indices also explain how and why policy towards Scotland, Wales and Northern Ireland changed, and did not change, in the 1970s.

Duverger's Law

According to Duverger's Law, *The simple-majority single-ballot system favours the two-party system* (Duverger 1954, p. 217). Duverger's Law contains both mechanical and what Duverger called psychological components, although we might relabel the latter 'rational calculation' components. The mechanical component is the *responsiveness* (Cox and Katz 2002, pp. 32-7) of the plurality electoral system. An electoral system may be viewed as a mapping from votes to seats. Let the vote share of parties i and j be denoted by v_i and v_j , and their seat shares by s_i and s_j . Then the mapping may be written

$$\frac{s_i}{s_j} = \left(\frac{v_i}{v_j} \right)^\beta + e$$

where e is an error term and the exponent β denotes the responsiveness of the system. If $\beta = 1$, the mapping is proportional representation. If $\beta < 1$, the system is relatively unresponsive. If $\beta > 1$, the system is relatively responsive.

The plurality electoral system is highly responsive as between the two leading parties in nationwide, multi-district competition. Early work (Parker Smith 1910, Kendall and Stuart 1950) assumed $\beta = 3$ for general elections to the UK House of Commons.

Accordingly, Kendall and Stuart called the relationship the 'cube law'. However for some 19th-century general elections, $\beta > 3$ (McLean 2001, chapter 4 *passim*). For late 20th and 21st century general elections, $1 < \beta < 3$ (Curtice and Steed 1986).

This high responsiveness usually guarantees that the largest single party wins more than half of the seats in the House of Commons and forms a single-party administration. Of the 43 UK General Elections since 1832 inclusive, 35 (81.40%) have resulted in a single party winning more than half of the seats. For a single party to win more than half of the vote is much rarer. In the 33 UK General Elections since 1874, the leading party has gained more than half of the vote only six times (18.18%)¹. Four of those six cases were in the 19th century, when there were still numerous unopposed returns, especially in Ireland. Only in 1931 and 1935 did the winning party indisputably win more than half of the votes. The combined probability that in a UK General Election the largest party will win more than half of the seats and *not* win more than half of the vote exceeds 0.5.

Usually, therefore, only two parties are capable of forming a UK government. Except between 1918 and 1924, no informed citizen has had any reason to doubt which two. However, understood properly Duverger's Law is a statement about what is rational *at district level*. Each elector should rationally ask *Which parties are in contention in my district?* not *Which parties are in contention to form the next government of the UK?* Increasingly since 1983, for instance, the pattern of party competition in England has polarised into two main sets of districts: those where the two leading parties are Labour and the Conservatives, and those where the two leading parties are the Conservatives and the Liberal Democrats. In Scotland and Wales, four parties are in contention: the three main UK-wide parties plus the local separatist/nationalist party, viz., the Scottish National Party (SNP) and Plaid Cymru (PC). In any one district, fewer than four parties are in contention, but the patterns of competition are such that

¹ Calculation before 1874 is difficult because of unopposed returns.

in each country all four have a reasonable chance. Even the Conservative Party won one seat in Scotland in 2001. Table 1 displays these patterns.

[Table 1 here]

The cell entries in Table 1 are the constituencies of the UK. The rows denote the party which came first, and the columns the party which came second. The lower section of the table lists the leading patterns of Duvergerian competition. Five families of parties are listed in Table 1. Scottish and Welsh nationalists are grouped as ‘Nat’; all Northern Irish parties as ‘Other’. There are 11 possible combinations of first and second. However, Table 1 shows that five of those 11 account for 649 (98.5%) of the 659 contests in 2001, viz. Labour-Conservative (414 seats); Conservative-LD (102 seats); Labour-nationalist (58 seats); Labour-LD (57 seats); and the 18 seats in Northern Ireland, uncontested by any Great Britain parties. There, party labels change fast but party families more slowly. There are two clearly delineated communities, of unionists and nationalists. Within each community there are moderate (pro power sharing) and extreme (hostile to power sharing, or unwilling to make compromises on behalf of power sharing) parties. The (Northern) Irish Unionists were allied with the Conservatives between 1886 and 1972.

The UK parties which wish to weaken, or dissolve the Union are thus the SNP, PC, and the main Northern Ireland nationalist parties, the Social Democratic & Labour Party (SDLP) and Sinn Fein (SF). The Ulster Unionist Party (UUP) and the Democratic Unionist Party (DUP) wish to strengthen it. The UK therefore has multi-party competition at national level, while Duverger’s Law operates at district level.

This situation is not new. The SNP and PC have been in contention since the Parliament of 1966-70, when each of them won a by-election. The Irish Unionists have been identifiable as a separate group since 1886; the Irish nationalists since 1832, albeit with a break between 1852 and 1874. Before 1918 Ireland elected 105 MPs.

Where the local pattern of two-party competition differs from the standard pattern, there is always a chance that Duverger's Law will fail to deliver the responsive, exaggerative properties for which it is famous (and celebrated by some). It may also produce one hegemonic party and fragmented opposition parties, each with strength in only some regions of the country, as frequently in Canada and India and foreseeably in the UK.

When can a localised party influence political outcomes? A party has some power *ex ante* if the incumbent party has a reasonable fear that the challenger may gain seats at the next election unless its supporters can be placated. A party has power *ex post* if an election has failed to give any party a quota of seats, where a quota is the minimum number necessary to carry legislation. A minor dispersed party may have relatively large *ex ante* power, because the incumbents rationally anticipate that should the new party grow, it could be a serious threat. This may explain the Liberal concessions to the Labour Party between 1906 and 1914 when Labour held no actual bargaining power in Parliament (McLean 2001, chapter 4). The territorial parties have less *ex ante* power, because there have only ever been 105 seats in Ireland (17 in Northern Ireland); 40 in Wales; and 72 in Scotland. With the sole exception of TP O'Connor,

MP (Irish Party) for Liverpool Scotland from 1885 to 1929, none of the territorial parties has ever sought seats outside its part of the UK.

Thus the territorial parties have never been potential governments of the UK. But from time to time they have posed threats to the Union, either:

- *an electorally credible threat to walk out.* Sinn Fein did so in 1918 and the SNP said it would in 1974 if it won more than half of the seats in Scotland. Nothing could bring Sinn Fein back. The credibility of the SNP threat in 1974 accounts for the Labour Party's policy reversal on devolution in that year (McLean 2004). Or:
- *veto power in Parliament.* This paper does not consider the House of Lords, where the Conservatives could veto any outcome until 1911. Since 1911 the Lords have had a 'suspensory veto' which turns into a real veto in the last two years (1911-49) or the last year (since 1949) of a Parliament. The Conservatives' control of the Lords lasted until 1999. These facts are important for constitutional history, but analytically trivial.

In the Commons, a party has voting power if it can turn an otherwise winning coalition into a losing coalition by defecting from it, or an otherwise losing coalition into a winning coalition by joining it. We analyse all cases since 1874 when a party which wished to modify the Union has held power of this sort in the Commons.

Penrose's power index

Lionel Penrose's (1946) seminal contribution to political science had to be reinvented more than once before its force was recognised. He formalised the intuition of the previous paragraph, and proposed the concept of a power index. In what is now widespread² terminology, decision-making in the House of Commons is an example of a *weighted voting game* (WVG) between parties. A WVG is simply a list of weights and a quota. In a Parliamentary voting game, the quota is determined by the rules of the house. In Commons roll-calls, the quota is a simple majority of the votes cast. In a full house, therefore, the quota is half of the total number of seats, rounded up to the next integer.

The size of the parties in the House of Commons after each General Election between 1874 and 1918 is given in Table 2, and for 1922 - 2001 in Table 3.

[Table 2 about here]

[Table 3 about here]

From Table 2 we see that in the House elected in 1892 there were 272 Liberal MPs, 269 Conservatives, 72 members of the main (anti-Parnellite) branch of the Irish Party, 45 Liberal Unionists, 9 Parnellite Irish members, and 3 Labour members. The house size was 670 and the quota therefore 336.³ The Commons of 1892 can therefore be stripped down to

² But some authors argue against using an explicitly game-theoretic approach to model voting, Coleman (1971, 1973) for example.

³ The non-voting officers of the House (the Speaker and deputies) are usually elected on a party ticket and counted in the party totals, but do not vote. However, they are drawn from all parties, not systematically from either the government or the opposition. They add only a little noise to the data.

$$WVG_{1892} = \{336, 272, 269, 72, 45, 9, 3\}.$$

Penrose (1946) gives the first solution concept for WVGs. A party is pivotal if it can turn a losing vote into a winning vote, or a winning vote into a losing vote. Such an event is labelled a ‘swing’ in Tables 2 and 3. The Penrose method then assumes that all possible combinations of parties are equally probable. The *Penrose index* (or Penrose measure) for any party a is

the *a priori* probability that, in a division on a bill, the votes will be so disposed that if a 's vote were to be reversed then the fate of the bill would also be reversed.... [Alternatively, it] is the conditional probability – given that we know how a will vote – that the fate of the bill would be reversed were a to vote otherwise (Felsenthal and Machover 1998, p. 40).

In the Commons of 1892, there are 16 swings for each of the Liberals, the Conservatives, and the majority Irish faction, i.e., the three largest elements in WVG_{1892} . There are no swings for any of the three other elements in WVG_{1892} . Therefore three parties have power and three are powerless. Each of the three parties with power faces a total of 32 possible divisions of the other parties and participates in 16 swings. Therefore its Penrose index value, the probability of a swing, is $16/32 = 0.5$. The Penrose index for the other three groups is of course 0. These are dummy players. There is no coalition to which any of them is crucial.

Penrose's approach to voting power measurement has been reinvented several times. Two of these also involve significant extensions of the method. (For the history see Felsenthal and Machover 1998, pp. 6-10). The Banzhaf (1965) index (below: Bz

index) simply normalises the Penrose index by rescaling it so that all values add to 1. It is therefore a measure of the relative power of party blocs, where the Penrose index is a measure of their absolute power. The total number of swings in WVG_{1892} was 48 and therefore the relative power, or Banzhaf index, of each of the parties with any power, having 16 swings, is $1/3$ or 0.333, and the others a Bz index value of 0 (Table 2).

Coleman (1971) not only reinvented the Penrose index as a measure of absolute voting power but also generalised it to allow for decision rules requiring supermajorities (and also quotas not requiring a majority). His approach focused on voting as the basis of a collective *action* rather than in terms of distribution and he explicitly rejected game-theoretic analysis. He argued that voting power is not something that is necessarily shared out among the members, an assumption that is fundamental to the game-theory perspective. Instead, he made a key distinction between the powers of individual members or parties within a legislature and the power to act of the legislature as a whole, measured in absolute terms, and argued that the key power relationship was that between these two, rather than between members. This approach is capable of leading to much richer analyses of power allowing for dynamic changes – for example elections and/or changes to the number of MPs -than the essentially static approaches based on game theory. Coleman's contribution has not been fully appreciated in the literature (although his paper is widely cited). The Banzhaf index has been predominant because analysts have preferred to use normalised power measures, and, because the normalised Coleman indices are no different from it, Coleman's approach has tended to be dismissed and its distinctiveness missed.

Some writers deny that power indices can make any contribution to empirical analysis. This may be because they misunderstand their properties (Barry 1980) or because they dispute the realism of Penrose's equiprobability assumption – that *a priori*, any combination of parties is as likely as any other. The latter criticism has generated a lot of debate but in fact the same point has also been made by most of the advocates of power indices and therefore to an extent the critics have been attacking a straw man.⁴ The key point is that the power indices defined in this way are useful as measures of *a priori* or constitutional power that results purely from the rules of decision making, the weights and the quota, and should not be taken too literally as measuring actual power in an empirical sense. Most of the literature so far has dealt with *a priori* power indices and there has been relatively little on empirical power to date.

Recently Leech (2003b) has argued that there is an important distinction to be made between the *voting power approach* and the use of power indices, and that the former

⁴ Garrett and Tsebelis have argued in a number of papers that power indices essentially tell us nothing because of the unrealism of the probabilistic voting assumptions (Garrett and Tesebelis 1996, 1999; see also Albert 2003 for a recent critique). But exactly the same point was also made in their original, seminal contributions by Shapley and Shubik (1954), Banzhaf (1965), Coleman (1971), and also by many other defenders of the method. Finally the reader is left with a sense that the real difference between the two sides in the debate is that the critics insist that this point is fatal to the whole approach, while the defenders call for further research into power indices to extend them to take account of the real world preferences of players and develop empirically relevant power indices. Coleman (1973) suggests some such promising lines of research.

is more general than the latter. In particular, it is often possible to obtain unambiguous *qualitative* results without having to get involved in controversy about power indices in purely *quantitative* terms. Many of the results in this paper are of this kind. For example if a party has no swings then its power index is zero regardless of any assumptions about probabilistic voting. Finding such cases is an important application of the voting power approach.

Power indices remain controversial. Some prefer to use another index, that due to Shapley and Shubik (S-S) (1954), which sometimes gives different values to the Banzhaf index for a given WVG. Yet other indices have been proposed, with different properties again. The question of the appropriate choice of *a priori* power index has generated a lot of literature. The Penrose family measures what Felsenthal and Machover (1998) call *I-power*. The S-S index measures what they call *P-power*. *I-power* is the *a priori* power to influence an outcome. *P-power* is the *a priori* power to demand a share of the spoils. Alternatively, *I-power* may be characterised as ‘policy-seeking’, and *P-power* as ‘office-seeking’. This removes the mystery as to why the two indices may give different values for the same WVG. S-S characterises power as a constant sum game. The total value of the spoils is fixed and only who gets what is at issue. The Penrose family characterises power as probability of being decisive. It is a probabilistic, not a game theoretic, concept, and according to it power is not a fixed quantity – it can be created or destroyed by changes in players’ weights.

We show (in this section) that the Penrose family of indices is the correct one for the situation analysed here, and (in the next section) that the voting power approach throws real light on even very well-known events in political history. It can explain

why some unexpected things happened, and why some expected things failed to happen.

A party which wishes to change the shape of the Union does not seek spoils from the government of the Union. To be in government would compromise or contradict its purpose. The Irish Party under Parnell, like Sinn Fein today, did not want to share the government of the United Kingdom. It wanted Ireland to have a looser relationship with the UK, or to leave it altogether. No Irish, Welsh, or Scottish nationalist party has ever sought to enter a government coalition in the UK. The Ulster Unionists may have sought to, but they have never been part of a formal coalition since 1972. Before then, when they were part of the Conservative Party, no NI Unionist MP ever sat in a Conservative or Unionist Cabinet.

The nationalist parties have contested seats in the UK Parliament in order to influence legislation, not to form part of the government. Parnell's Irish Party did so brilliantly. Other groups, including the SNP and PC, both factions of Ulster unionism, both factions of Irish nationalism in Ulster, and even the forgotten Crofters' Party of 1885, have had I-power at certain times since 1874.

Both the Penrose family and S-S are *a priori* power indices, which means they measure the formal, constitutional voting power of a party when all theoretically possible coalitions are considered. This is not the same as the actual power a party may possess which must take into account its policies in relation to those of the other parties as well as the formally defined WVG. Although it is policy-blind, *a priori* voting power is still a useful concept, because it enables us to identify cases where a

party may have no power. An *a priori* power index of zero means that actual voting power is also zero. Where it is nonzero, we discuss its relevance to its actual power in the parliament concerned.

The unity of the United Kingdom 1874-1918

The first Irish Nationalists were the Repealers organised by Daniel O’Connell, ‘The Liberator’, in the Parliaments of 1832 to 1847. They peaked at 37 seats in the 1847 Parliament, when the party system had just been shattered by Sir Robert Peel’s Repeal of the Corn Laws (McLean 2001 ch. 2). They could have been crucial. But O’Connell died in 1847 and his party disintegrated. The horror of the Famine of 1845-7 seems to have turned Irish politics inward. Not until 1874, under Isaac Butt, did the Irish Home Rulers regroup as a bloc. Butt’s successor Charles Stuart Parnell formed the Irish Party into a compact and deadly wielder of I-power. In the 1880 Parliament, the Irish Party had no I-power given the party numbers and the quota. However, Parnell had perfected parliamentary obstruction and filibustering, bringing business to a halt until the two main British parties collaborated on introducing guillotine and closure procedures between 1881 and 1887 (Morley 1908, ii: 463).

The extension of the franchise in 1884-5 consolidated the power of the Irish Party in Catholic Ireland. In the General Election of November 1885, Parnell’s party reached its peak strength of 86, winning a majority of seats even in Ulster. Table 2 shows that 1885 elected a classic ‘hung parliament’. Two versions of the Penrose and Banzhaf indices are shown for that parliament. The first, shown as 1885a, can be written as,

$$WVG_{1885a} = \{336; 335, 249, 86\},$$

It lumps the 16 independent Liberal supporters, shown as ‘Others’ in the standard source (Craig 1989, Table 1.13), as most historians have done, with the rest of the Liberal Party. On that assumption, the Liberals fell just one seat short of quota. Their blocking status assured them more power than the Conservatives or the Parnellites, but the Parnellites had the same chance of being decisive as the Conservatives.

The power indices cast new light on the drama of 1885-6. Parnell had advised the Irish in Britain to vote Tory, in the hope of getting concessions from the incumbent minority Tories under Lord Salisbury. Salisbury’s Irish Lord Lieutenant, Lord Carnarvon, was secretly discussing a Home Rule pact with Parnell. When Salisbury repudiated the pact, Carnarvon resigned, but news of his resignation had not leaked when Gladstone’s son flew the ‘Hawarden kite’ in December, announcing Gladstone’s conversion to Home Rule. Salisbury resigned, in order that Gladstone’s party rather than his own would split over Irish Home Rule. (The Carnarvon affair was not revealed for some decades). With Parnell’s backing, Gladstone introduced a Home Rule Bill in March 1886. It failed in June, when 93 Liberals voted with the opposition. They were to become the Liberal Unionists, who fought the General Elections of 1886 to 1895 as a separate force before incorporation into the Conservative and Unionist Party.

The power indices show that even without the Hawarden kite, there would have had to be a Home Rule Bill in 1886. Salisbury’s repudiation of Carnarvon would have become known. Parnell would for sure have switched to the Liberals and demanded a Home Rule Bill. He could have blocked all business in the Commons until he got it.

Another way to characterise the Commons of 1885 is shown in Table 2 as ‘1885b’. Five of the 16 independent Liberals were the members from the far north-west of Scotland, who became known as the “Crofters’ Party”. In the 1885b line of Table 2, they are shown as ‘Others’. So we can write:

$$WVG_{1885b} = \{336; 330, 249, 86, 5\}.$$

The Crofters’ Party disintegrated in 1886 because some of them joined the Liberal Unionists and some the Gladstonian Liberals. But their job was done. The Highlands of Scotland shared with the West of Ireland:

- absentee landlords,
- a history of famine and emigration, and
- subsistence farming on below-subsistence plots.

There had been some rural disorder there, although a pale shadow of the Irish Land Campaign of 1879-85. As soon as local male householders were enfranchised, they elected MPs who pressed their grievances. The ‘revolutionary Crofters Act 1886’, as Kellas (1980, p. 155) appropriately calls it, gave security of tenure to crofters even without legal title to the land they farmed. It created a Crofters’ Commission, which still exists, to protect crofting tenure. The 1886 framework remains in place in the Highlands to this day. Unlike in Ireland, land grievances were kept apart from nationalist grievances. Settling the land question in the Highlands restored peace, though it did not bring prosperity. The power indices for 1885b explain how the Crofter MPs could pull off this coup: the Crofters party had one swing in a coalition with the Conservatives and Irish.

In the 1886 Parliament the Conservatives had an overall majority even without their new Liberal Unionist friends. The next ‘hung parliament’ was that of 1892,

$$WVG_{1892} = \{336; 272, 269, 45, 72, 9, 3\}.$$

By now the Irish Party had split over Parnell’s marriage to Kitty O’Shea. The factions fought one another in Ireland, but their joint control over Catholic Ireland remained total. After 1900, other Irish minority factions arose. However, the strategic situation in the Parliaments of 1892, January 1910,

$$WVG_{1910J} = \{336; 275, 273, 72, 10, 40\},$$

and December 1910,

$$WVG_{1910D} = \{336; 272, 272, 74, 10, 42\},$$

was the same. In all three of those Parliaments, the main faction of the Irish Party had equal *a priori* probability of being decisive to that of the much larger Liberal and Conservative parties. In all three of those Parliaments, *and only those three*, fundamental constitutional legislation touching Ireland was introduced. In 1893 Gladstone introduced the second Home Rule Bill. It passed the Commons but was contemptuously rejected in the House of Lords by 419 votes to 41. A prerequisite to Home Rule was thus Lords reform. After the Lords rejected the ‘People’s Budget’ in 1909, the January 1910 election was fought on ‘The Peers against the People’. The incoming Liberal government required Irish support for its legislation. With Irish

support it introduced the Parliament Bill, enacted in August 1911, which trimmed the Lords' veto. There would have been no Parliament Act without the Irish Party.

The General Election of December 1910 produced almost identical seat aggregates, and therefore power indices, to its predecessor. Once again, the Irish Party was pivotal in the Commons. The governing Liberals had no great enthusiasm for Home Rule. They put it off until 1912. They could put it off no longer, because it was common knowledge that it would be rejected twice in the Lords. Under the Parliament Act, it would therefore have to be presented in the sessions of 1912, 1913, and 1914, to guarantee its enactment before the General Election required by 1915. By 1912 the Irish Party were back where Parnell had been in 1886. They could veto everything except Irish Home Rule. One thing they vetoed was female suffrage (McLean 2001 pp. 105-112). Unlike the Irish Party, the Labour Party never had I-power before 1914. Yet, there are many papers on Labour's attitude to female suffrage; almost none on the Irish Party's attitude. Why?

By 1918, the world had been turned upside down, except (according to Winston Churchill) for the dreary steeples of Fermanagh and Tyrone. As with 1885, Table 2 lists the 1918 House twice. The governing Coalition comprised those MPs to whom the wartime leaders had given a 'coupon' of support. Most (332) of those elected with the coupon were Conservatives, but 141 successful candidates from other parties received the coupon. In addition, 50 uncoupled Conservatives supported the Coalition government. The line 1918a treats all these coalition forces as a single party, which was of course overwhelmingly dominant.

The line 1918b is more interesting. If we break the Coalition into its constituent parts, the Conservatives still hold more than half of the seats in the House. Therefore their (Penrose or Banzhaf) power was total, and that of all other parties was zero. But the Coalition continued until the Conservative backbenches revolted against it in autumn 1922, overthrowing the Liberal Prime Minister Lloyd George and their own leadership together (Ramsden 1997). This only makes Lloyd George's leadership all the more astonishing (McLean 2001, chs 6 and 7). He almost got a new alignment of British politics, and he did get an Irish settlement that had eluded Pitt, Peel, Gladstone, and Asquith, all while a redundant member of an oversized coalition. The Conservatives could have thrown him out at any time after the 1918 election. The surprise is not that they did, but that they took so long about it.

The unity of the United Kingdom 1922-2001

Table 3 presents the I-power data for all UK Parliaments since the Commons took on its current shape.

The first three columns of Table 3 give the number of seats held by each of the three major UK-wide parties, Conservative, Labour, and Liberal. Allies of each main party have been counted with it in the normal way⁵ The Conservative numbers, however, *exclude* those Northern Irish Members who sat as either Conservative or Unionist. They were part of the Conservative Parliamentary Party from 1922 until 1972, when they broke with the Conservatives over the Heath government's suspension of Home

⁵ The two Liberal wings are counted together in 1922; National Labour and National Liberal are counted with the Conservatives in 1931-35; Liberals and Social Democrats are counted together in 1983 and 1987.

Rule. Together with all the other (albeit sometimes warring) factions of Northern Irish unionism, they are listed as 'NI Pro Union' in column 4. Column 5 lists the (again, sometimes warring) Northern Irish nationalist MPs. Columns 6 and 7 are for the SNP and Plaid Cymru respectively. Column 8 lists all others. Column 9 gives the total size of each house, and column 10 the quota.

Governments may gain or lose seats between General Elections. The notes to Table 3 list the relevant cases since 1922. In the Parliament of 1951-55, the largest party moved from non-winning to winning by gaining a seat. In the Parliament of October 1974-1979, the largest party moved from winning to non-winning by losing seats. These two Parliaments are accordingly listed twice in Table 3.

With only 12 seats among them for most of the period, the Northern Irish parties had little chance of emulating the old Irish Party. The pro-Union parties (column 4) have always won more than their population share of seats in Northern Ireland, and the anti-Union parties (column 5) fewer. This is not because of gerrymandering. Local government districts in Northern Ireland have sometimes been gerrymandered but Westminster constituencies have not been. Rather, the factions of Unionism have been better at non-aggression pacts than have the factions of nationalism. Therefore the pro-Union parties have never held fewer than 9 of the Northern Irish seats. *Ex ante*, they, and still more the Northern Irish Nationalists, are much weaker than Parnell's party, and by more than the difference in the seat shares. As the probability of being decisive is normally increasing with size, a bloc with 10 seats will usually have less *a priori* power than that wielded by a bloc with 80 seats. But the likelihood of their

wielding any power at all is a function not only of their own size but also of the size of the other groups in the house.

As with Table 2, Table 3 gives, for all relevant Houses, the number of swings, the Penrose index, and the Banzhaf index for each party. Where it makes a difference, the indices are calculated separately on the basis of treating all the 'Others' as a single party, and treating them as a set of single-member parties.

As explained above, the UK electoral system is highly responsive. At some times including the present, the system has also had a bias as between the two main parties. A bias between two leading parties exists if, at equal vote shares, one of them would win more seats than the other. Currently the bias in the British electoral system strongly favours the Labour party. This is for many reasons, the over-representation of Scotland and Wales (where Labour is relatively strong) compared to England and Northern Ireland being one of them.

The combination of bias and responsiveness means that the chances of small unionist and anti-unionist parties' being decisive is *ex ante* much smaller than it was for Parnell. Table 3 confirms this *ex post*. There have been 24 Parliaments since the creation of Northern Ireland. Nineteen of those led to the election of a majority government. In these 19 cases, the value of the Banzhaf and Penrose indices for all opposition parties is 0, as shown in the rightmost column of Table 3. Treating the Ulster Unionists as a separate group, neither they nor their anti-union opponents had any Commons leverage in any of these 19 Parliaments.

The five remaining cases are the Parliaments elected in 1923, 1929, 1951, and both February and October 1974. The 1923 General Election led to the first, minority, Labour government of 1924.

$$WVG_{1923} = \{308; 248, 191, 159, 10, 2\ 5\}$$

Its main Irish initiative was to get under way the Boundary Commission that was a key part of Lloyd George's slippery genius of 1921. If it had worked as Lloyd George let Michael Collins understand (McLean 2001, ch. 7), it would have struck a severe blow at Ulster unionism. If it worked in the way Lloyd George let Sir James Craig and his own Unionist Cabinet colleagues understand it would, it would strike a severe blow at Irish nationalism. Its recommendations were closer to the Unionist than to the nationalist dream, but not because of the Unionists in the Commons. They had no swing vote power. Each of the three big parties had equal power; the minorities had none. The Government would fall whenever a coalition of the Liberals and Conservatives formed against it, as happened in October 1924. Irish politicians on both sides of the union debate were powerless bystanders.

The second minority Labour government, of 1929-31, had far more seats than its predecessor (288 rather than 191), but its *a priori* power, and that of the Liberal and Conservative parties, was the same.

$$WVG_{1929} = \{308; 250, 288, 59, 10, 2\ 6\}$$

Any coalition of the two UK opposition parties against the Government would oust it, although the end in 1931 involved not only that but a section of the Labour Party's own leadership breaking away. Again, no Irish faction had any say. There were no Irish policy initiatives under the second MacDonald government.

The case of 1951-3 is very interesting. The Conservatives, who then included the Ulster Unionists, won a narrow majority in the 1951 General Election. In 1953, they gained a seat from Labour – a feat that no incumbent government has managed since. From then on, the Conservative Party outside Northern Ireland held an absolute majority of seats in the Commons, and the power of all other parties was 0. But so narrow was the Government's majority before then that any opposition group, including the Ulster Unionists if they had been minded to take an independent line, could have forced it to change its policy if they all united against it. That is the meaning of the equal Banzhaf index value of 0.0909 for all opposition groups ranging from the three anti-Union Northern Irish members to the 295 Labour members.

The Banzhaf index does not attempt to measure ideological distance. A grand coalition to force change on Sir Winston Churchill's Conservatives would have had to embrace both the Ulster Unionists and their nationalist enemies (themselves divided in that parliament into one 'Irish Labour' and two Nationalist MPs). They had equal power: but as their aims on most issues were diametrically opposed that is tantamount to saying that they had no power. There were no Irish policy initiatives between 1951 and 1953.

February 1974 replicated November 1885.

$$WVG_{1974F} = \{318; 297, 301, 14, 11, 1, 7, 2, 2\}$$

It was a classic hung parliament in which no party had an overall majority and all parties had bargaining power. The incumbent Conservative Prime Minister, Edward Heath, at first attempted to do a deal with the Liberals that would enable him to stay in office. He failed. He had lost the Ulster Unionists twice over. In 1972 the Unionists broke their formal connection with the Conservatives in protest at the Government's suspension of Stormont. These Unionists, who had agreed to bargain with the British and Irish Governments in the Sunningdale Agreement, attempting to end the worst period of sectarian violence in 20th century Northern Ireland, were themselves thrown over by the coalition of anti-Sunningdale Unionists who won over half of the Northern Irish vote under the banner of the UUUC (United Ulster Unionist Council).

Harold Wilson then formed a minority Labour government, in effect daring his majority opponents to form a grand coalition to eject him. They never did, unlike in 1924. Wilson went to the country again at a time of his choosing, in October of the same year. As in 1951, any coalition to force policy change would have to be very diverse. The UUUC bloc had a Penrose index of 0.1875. There was thus an *a priori* 18.75% per cent chance that the UUUC bloc could have been pivotal in a vote to change policy. But the indices are policy-blind. They regard a coalition between the Unionists and their deadly enemy, the solitary Northern Irish nationalist in that parliament (Gerry Fitt) as equally likely with any other coalition.

The year saw dramatic developments in Northern Ireland but the UUUC bloc had no direct role in them. In May, a Loyalist-organised strike against the Sunningdale power-sharing arrangements caused massive disruption to power and transport. After two weeks, the power-sharing executive, repudiated by the UUUC bloc and the strikers, resigned. Direct rule resumed. The UUUC bloc, by getting 51% of the vote in February, had shown the electoral weakness of the moderate faction of Unionism. But it was not they who brought about the resumption of direct rule. The very fact that the Ulster Unionist bloc is unlikely to be pivotal in the House of Commons shows that direct rule is at best a mixed blessing, and at worst a curse, for Ulster unionism.

There was an unforced change in Union policy that year, but it concerned Scotland, not Northern Ireland. The UUUC bloc had already reached its maximum potential size. But a known effect of the electoral system is that it penalises parties with evenly-spread support until that support reaches a crucial level of around 35% - then it violently swings round from punishment to reward. The SNP had got 22% of the vote in Scotland, and seven seats. With 35% of the vote, it would get 50 or more. That was a less violent but actually more brutal threat to the Wilson government than posed by either side in Ulster. For the SNP had announced that, if it won more than half of the 71 Scottish seats, it would start to negotiate for Scottish independence. That would not only change the Union but radically reduce the chances of a Labour government coming to power in the rest of the UK, because most Labour and Liberal governments have depended on Scottish seats for their Commons majority. Accordingly, in the summer of 1974 Wilson reversed Labour's policy on devolution to Scotland and Wales, and undertook to introduce devolution to both countries (McLean 2004). The

seven Scottish Nationalists posed a more credible threat to UK policy than did the eleven-strong UUUC bloc.

With the October 1974 General Election, Wilson did get a paper-thin overall majority, but within two years it had disappeared due to defections and by-election losses.

$$WVG_{1974Ob} = \{318; 280, 314, 13, 10, 2, 11, 3, 2\}$$

So from 1976 to 1979 the unionist and anti-unionist parties once again had non-zero power. Their power peaked in the last months of the parliament, as the economic and devolution policy of the government (led by Jim Callaghan since 1976) were both in tatters. The devolution policy fell in 1977 thanks to an ‘English backlash’ rebellion which killed the Scotland and Wales Bill. Devolution was reintroduced in the shape of separate Scotland and Wales bills, but further backbench rebellions forced, first, a referendum requirement and, later, a requirement that a ‘Yes’ to devolution was not to be enacted unless 40% of the electorate in the relevant territory had voted Yes. The Penrose indices for this parliament show that the *a priori* power of the 10 Ulster Unionists, the 11 Scottish Nationalists, and the 280 Conservatives was the same. On the Penrose index, each had, *a priori*, a 6.5% chance of being decisive.

When the crunch came, the relative strengths of the Ulster and Scottish lobbies had reversed from five years earlier. It was common knowledge that the SNP’s electoral support had crumbled. Though consistency required them to mount a motion of no confidence in the Government after the Scottish referendum result had produced a narrow Yes vote that came nowhere near crossing the 40% threshold, Callaghan

derided them as ‘Turkeys voting for Christmas ’ (Butler and Kavanagh 1980, p. 125). Was this the first use of a now-commonplace phrase? In the days before the vote the Government looked everywhere for allies. They recruited Plaid Cymru in return for a promise of support for former slate quarrymen suffering from silicosis (a concession that former Labour members for the Plaid Cymru seats had failed to get from previous Labour governments). They agreed to increase the number of seats in Northern Ireland from 12 to its population proportion of 17. Ironically, according to Butler and Kavanagh, this did not secure the votes of the two NI anti-union MPs, who thought this would favour the Unionists. Their calculation has proven to be wrong – the anti-Union parties in Northern Ireland now win considerably more seats, both absolutely and relative to the pro-Union parties – than before 1983 (Table 3). The ‘Ulster MPs openly offered their votes for the speedy installation of a gas pipeline’ (Butler and Kavanagh 1980, p. 126), but the Government refused to concede that. It was defeated by one vote. The Conservatives won the ensuing General Election. Devolution to Scotland and Wales did not revive until 1997. Constitutional change in Northern Ireland remained on the agenda, culminating in the Good Friday Agreement of 1998. In the run-up, policy had been bipartisan between the outgoing Conservative (Major) and the incoming Labour (Blair) parties.

The power indices thus confirm that none of the post-1922 parties which wish to modify the Union has been big enough to emulate Parnell. Only the SNP could grow to a size comparable to Parnell’s party. But if the SNP grew to 50 or more seats, it could take the more direct route that it threatened in 1974, namely to negotiate directly for independence. The smaller groups are rarely pivotal except when the seat totals of the two big parties are close. But then they are caught on the other horn.

When the seat totals of the two parties are very close, then *all* the small groups – pro-Union and anti-Union – are almost equally empowered, regardless of small differences in size. The Banzhaf indices show that on the five occasions when any group other than the incumbent government has had Banzhaf power, either none of the non-English parties has (1923 and 1929) or all of them have (1951, 1974F, and 1974O). But in the latter case their power cancels out. The Ulster groups might agree on pork (or gas), and they should have agreed, but failed to agree, that expansion in parliamentary seats was in their joint interest. They could never agree on constitutional change, on which they have diametrically opposite views.

Politicians have not always understood their true power positions. For instance, Harold Wilson, no friend of the Ulster Unionists, complained about the right of the Ulster MPs to vote on Great Britain matters, when British MPs under devolution had no right to vote on Northern Ireland matters. This is what became famous in the 1970s as the ‘West Lothian question’, when it was constantly asked in relation to Scotland by Tam Dalyell, then MP for West Lothian. Wilson saw it as an unearned boost of 10 to 12 seats for the Conservatives. In 1966 he proposed to revive Mr Gladstone’s ‘in and out’ scheme of 1893, whereby Ulster MPs would have had no right to vote on GB business (Jackson 2003, p. 83). The West Lothian question remains very much alive, but Wilson had no reason to fear it. The Unionists were not pivotal in 1966. They had never been pivotal in Wilson’s lifetime except between 1951 and 1953. We have found no evidence that they used their pivotal status then. Perhaps they did not realise it themselves.

Ulster Unionists have never been certain whether or not they wanted Home Rule for Ulster. In 1920-21 most of Ireland, whose politicians had campaigned for Home Rule for a century, did not get it. Six counties of Ulster, whose politicians had said 'Home Rule is Rome Rule', got the devolution they had bitterly opposed. Once they had it, they found that they liked 'a Protestant parliament and a Protestant state' in Craig's phrase of 1934 (quoted by Jackson 2003, p.229). But a strand of Ulster Unionism clings to the Unionist ideology of Dicey and Carson, which wants a (Northern) Ireland fully integrated with the rest of the UK. In recent years the most Diceyan of Ulster Unionists were James Molyneux (leader of the Unionists at Westminster from 1979 to 1995) and his mentor Enoch Powell (MP for South Down 1974-87). Whatever may be the constitutional force of the Diceyan argument for union, the political science of it is brutal. Northern Irish unionists have a vanishingly small chance of being uniquely decisive at Westminster. They had better accept devolution. It is all they will get. Enoch Powell may be sharing a rueful posthumous drink with the founders of the Parti Québécois as they contemplate this joint truth.

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Table 1

First and second parties in the UK at the 2001 General Election

		Second Party					
		Con	Lab	LD	Nat	Other	Total
Winning Party	Con	0	106	58	1	1	166
	Lab	308	0	49	54	2	413
	LD	44	8	0	0	0	52
	Nat	4	4	1	0	0	9
	Other	0	1	0	0	18	19
		356	119	108	55	21	659

Battlegrounds:	n of seats	% of total
Con/Lab	414	62.82
Con/LD	102	15.48
Lab/Nat	58	8.80
Lab/LD	57	8.65
Northern Ireland	18	2.73
All other patterns	10	1.52
	659	100.00

Table 2.

Power indices for minor parties: House of Commons 1874-1918

Parliament	Seats:							total	Quota
	Lib	Con	LU/Coaln non C	Irish (main faction)	Irish (minority faction)	Lab	Others		
1874	242	350		60				652	327
1880	352	237		63				652	327
1885a	335	249		86				670	336
Bz Index	0.6	0.2		0.2					
Penrose	0.75	0.25		0.25					
Swings	3	1		1					
1885b	330	249		86			5	670	336
Bz Index	0.4167	0.25		0.25			0.0833		
Penrose	0.625	0.375		0.375			0.125		
Swings	5	3		3			1		
1886	192	316	77	85				670	336
Bz Index	0.1667	0.5	0.1667	0.1667					
Penrose	0.25	0.75	0.25	0.25					
Swings	2	6	2	2					
1892	272	269	45	72	9	3		670	336
Bz Index	0.3333	0.3333	0	0.3333	0	0			
Penrose	0.5	0.5	0	0.5	0	0			
Swings	16	16	0	16	0	0			
1895	177	340	71	70	12	0		670	336
1900	183	403		77	5	2		670	336
1906	400	157		82	1	30		670	336
1910J	275	273		72	10	40		670	336

Bz Index	0.3333	0.3333		0.3333	0	0		
Penrose	0.5	0.5		0.5	0	0		
Swings	8	8		8	0	0		
1910D	272	272		74	10	42	670	336
Bz Index	0.3333	0.3333		0.3333	0	0		
Penrose	0.5	0.5		0.5	0	0		
Swings	8	8		8	0	0		
1918a	36	523		7		58	10	634
1918b	36	382	141	7		58	10	634

Sources Craig 1989 Tables 1.11 to 1.21. Difficult cases assigned by reference to Craig 1974; Stenton and Lees 1976-81; and Dictionary of National Biography CD version.

Notes

1885a treats the Crofters' Party as part of the Liberal Party.

1885b treats the Crofters' Party as a separate party.

1918a treats the Coalition as a single party: all recipients of the 'Coupon' plus all independent Conservatives listed as Con. All non-coupon Liberals listed as Lib.

1918b treats the Coalition as two parties: Coalition Conservative, listed under Con, and Coalition non-Conservative, listed under Coaln non C

In 1918 the house size was 707, but the 73 Irish seats won by Sinn Fein were left unfilled when the Sinn Fein members refused to attend.

Table 3

Power indices for minor parties: House of Commons 1922-2001

Parliament	Con	Lab	Lib	NI Pro Union	NI Anti Union	Scots anti Union	Welsh anti Union	Other	total	Quota	notes
1922	335	142	116	10	2	0	0	10	615	308	
1923	248	191	159	10	2	0	0	5	615	308	
Bz Index	0.333	0.333	0.333	0	0			0			
Penrose	0.5	0.5	0.5	0	0			0			
Swings	16	16	16	0	0			0			
1924	407	151	40	12	0	0	0	5	615	308	
1929	250	288	59	10	2	0	0	6	615	308	
Bz Index	0.333	0.333	0.333	0	0			0			
Penrose	0.5	0.5	0.5	0	0			0			
Swings	16	16	16	0	0			0			
1931	544	52	4	10	2	0	0	3	615	308	
1935	422	158	20	10	2	0	0	3	615	308	
1945	204	393	12	9	3	0	0	19	640	321	
1950	288	315	9	10	2	0	0	1	625	313	1
1951a	312	295	6	9	3	0	0	0	625	313	2.
Bz Index	0.636	0.091	0.091	0.091	0.091						
Penrose	0.875	0.125	0.125	0.125	0.125						
Swings	14	2	2	2	2						
1951b	313	294	6	9	3	0	0	0	625	313	3
1955	332	277	6	12	0	0	0	3	630	316	
1959	353	258	6	12	0	0	0	1	630	316	
1964	292	317	9	12	0	0	0	0	630	316	4
1966	242	363	12	11	1	0	0	1	630	316	5
1970	321	287	6	9	3	1	0	3	630	316	6

1974F	297	301	14	11	1	7	2	2	635	318	
Bz Index	0.246	0.316	0.175	0.105	0.018	0.105	0.018	0.018			
Penrose	0.438	0.563	0.313	0.188	0.0313	0.188	0.0313	0.0313			
Swings	56	72	40	24	4	24	4	4			
Bz	0.246	0.316	0.175	0.105	0.009	0.105	0.026	0.009			
Index*								(x2)			
Penrose	0.438	0.563	0.313	0.188	0.016	0.188	0.047	0.016			
*								(x2)			
Swings*	112	144	80	48	8	48	8	8 (x2)			
1974Oa	277	319	13	10	2	11	3	0	635	318	7
1974Ob	280	314	13	10	2	11	3	2	635	318	8
Bz Index	0.049	0.732	0.049	0.049	0.024	0.049	0.024	0.024			
Penrose	0.063	0.938	0.063	0.063	0.031	0.063	0.031	0.031			
Swings	8	120	8	8	4	8	4	4			
Bz	0.049	0.732	0.049	0.049	0.012	0.049	0.037	0.012			
Index*								(x2)			
Penrose	0.063	0.938	0.063	0.063	0.0165	0.063	0.047	0.016			
*								(x2)			
Swings*	16	240	16	16	4	16	12	4 (x2)			
1979	339	269	11	10	2	2	2	0	635	318	9
1983	397	209	23	15	2	2	2	0	650	326	
1987	376	229	22	13	4	3	3	0	650	326	
1992	336	271	20	13	4	3	4	0	651	326	10
1997	165	418	46	13	5	6	4	2	659	330	
2001	166	413	52	11	7	5	4	1	659	330	

Bz Index: Normalised Banzhaf index computed assuming Other is a bloc.

Penrose: The absolute (or nonnormalised) Banzhaf index or Penrose index

Bz Index*: Normalised Banzhaf index treating Other as parties of one member

each (only reported if it makes any difference).

Notes to Table 3.

- 1 One Lab-Ind switch. Lab had overall maj throughout part
- 2 One Con by-election gain 05.53.
- 3 From 05.53.
- 4 One Lab byelection loss in 01.65.
- 5 One each Scottish and Welsh anti-union gain by 11.67.
- 6 Cons lose 5 by-elections, last in 11.73. One NI Pro Union MP by then sitting as Alliance.
- 7 Lab lost 5 by 11.76 (3 byelection losses, 2 floor crossings).
- 8 From 11.76.
- 9 Cons lost 5 by 10.82 (4 byelection losses, 1 floor crossing).
- 10 Cons lost 8 in byelections by dissolution.