

## **Who Gets Hung in a Hung Parliament? A Game Theory Analysis of the 1987–88 British General Election**

JORGEN S. RASMUSSEN\*

The arrival of the Alliance on the British political scene has complicated the party system to an extent unknown for over half a century. Elections can no longer be counted upon to produce straightforward and immediate shifts in partisan control of the government. The next election could very well produce a hung Parliament.

The range of election results in 1987–88 that would produce a hung Parliament is quite wide.<sup>1</sup> In terms of a ‘Butler swing’ against the Conservatives, anything between 5.3 per cent and 10.4 per cent would deprive both main parties of an overall majority in the Commons. (The Alliance’s prospects of gaining an outright majority, as distinct from holding the balance of power, are assumed to be negligible.) A drop in the Conservative vote that benefited Labour and the Alliance equally anywhere within the range of 7 to 14 per cent would lead to a hung Parliament. Moreover, if Labour benefited more than the Alliance, a drop of under 7 percentage points would be sufficient to deprive the Conservatives of their outright majority. And, if the Alliance benefited more than Labour, the drop would need to exceed 14 per cent for Labour to win an outright majority. The same point can be made in terms of seats. The Conservatives have only to lose seventy of their current 395 seats to forfeit their Commons majority. But Labour must win 117 – almost all of them from the Conservatives – to obtain a majority itself. Underlining the magnitude of this task is the fact that in 1983 Labour finished second in only 131 seats.

Thus an extraordinarily wide range of shifts from the voting behaviour of 1983 can produce a hung Parliament. In that event, the parties will be forced to reach some sort of understanding about which of them will form what type of government. Some may argue that doing so will involve little negotiation: leaders of both main parties seem determined not to grant proportional representation, the widely-anticipated price for Alliance co-operation. Indeed, some Liberals fault Steel for selling Liberal support to the Callaghan Government for only a free vote on proportional representation (PR) for the European elections and are determined to get a guarantee of PR in any future bargaining.

Interestingly, however, when, following the Alliance’s major gains in the

\* Department of Political Science, Iowa State University.

<sup>1</sup> The figures in this paragraph are based on Table 1 in Ivor Crewe, ‘Can Labour Rise Again?’, *Social Studies Review*, 1 (1985), 13–19.

1985 local elections, David Owen set forth his terms for Alliance support should the next general election produce a hung Parliament, he did not so much as mention PR. Instead his price was an Alliance veto over the content of the Queen's Speech.<sup>2</sup> While the Alliance leaders apparently prefer a pact in which they would agree to sustain a minority government to a formal coalition, Owen was hardly adamant: 'Facing a grave national economic situation . . . politicians have a duty to consider forming a stable coalition of parties with a negotiated programme . . . in preference to just sustaining a minority government.'<sup>3</sup> Furthermore, David Steel's comments on Owen's speech were taken as indicating that, if the largest party in the Commons could not agree with the Alliance on the contents of the Queen's Speech, then the other leading party would have to be given the same opportunity before a dissolution would be in order. In other words, the Alliance would be ready to listen to an approach from either of the main parties and would *not necessarily* insist on PR, especially if instead it was conceded something like a Speaker's Conference on electoral reform or a referendum on PR. Clearly a variety of options remains open and the negotiation process deserves analysis.

Game theory can help clarify the complexities of the situation, suggest the probability of various outcomes (an activity not to be confused with predicting the result) and also assess which strategies are most likely to be effective. While some assumptions about party strengths must be made, it is not essential to know the exact number of seats each party holds. This analysis will assume that the Conservatives will be the largest party in a hung Parliament. The only other assumption is that seats will be so shared that *either* the Conservatives *or* Labour could obtain a majority by making a deal with the Alliance.

Since the Alliance seems likely to be a distant third in Parliamentary seats, a two-person game seems an appropriate model. Each of the two main parties can offer a deal to the Alliance or decline to do so. If neither party chooses to make an offer:

NO DEALS the Conservatives, as the incumbent and the largest party, remain in office and attempt to function as a minority government.

If the Conservatives make an offer while Labour is unwilling to do so:

CON DEAL then a Conservative/Alliance agreement is possible.

If Labour indicates to the Alliance that it is willing to deal while the Conservatives refuse to make an offer:

LAB DEAL then Labour can come to power in co-operation with the Alliance.

<sup>2</sup> 'Owen veto is price of power sharing', *The Guardian*, 7 May 1985, p. 1.

<sup>3</sup> *The Guardian*, 7 May 1985, p. 1.

Finally, if both are willing to deal:

**BOTH DEAL** the result is uncertain; the Alliance becomes the kingmaker and can put into power whichever of the two main parties it prefers.

Notice that in this game a Labour minority government is not a possible outcome unless the Alliance prefers a pact to a coalition under **LAB DEAL**. Otherwise a Labour failure to reach agreement with the Alliance continues Conservative rule under **NO DEALS**.

Any attempt to infer the intensity of the leading parties' preferences for one or another of these outcomes would probably yield arbitrary numbers. We must, therefore, settle for ordinal utilities (outcomes simply ranked in order of preference), rather than cardinal utilities for any game theory matrix.<sup>4</sup> The Conservatives' preference ordering is fairly obvious. They want to remain in office and would rather not have to share power. They prefer **NO DEALS** to **CON DEAL**. **BOTH DEAL** is better than **LAB DEAL**, since it keeps open the possibility of staying in power. For Labour to come to office is the least desirable outcome.<sup>5</sup>

Labour's ordinal utilities are less clear. The party's moderates presumably most prefer **LAB DEAL**, which enables them to replace the Conservatives in office. This is especially the case if agreement with the Alliance can be obtained without granting **PR**, although a veto on the Queen's Speech is a high price. The least desirable may be **BOTH DEAL**, because the moderates would be attacked severely by the party's fundamentalists if they were to appear to have begged for Alliance aid only to be spurned, a possibility if both parties make an offer. Furthermore, a bidding war would be likely to drive up the price for an agreement with the Alliance and thus would run a greater risk of provoking the fundamentalists. If the Conservatives are to remain in power, then **NO DEALS** is better than **CON DEAL** because some government policies could be blocked in the Commons and new elections probably would occur sooner. So for the moderates a reasonable ranking is **LAB DEAL**, **NO DEALS**, **CON DEAL**, **BOTH DEAL**.

Labour's fundamentalists are likely to see things differently. As the 1983 election indicated, the Labour left prefers ideological purity to expediency; half a loaf is not better than none. They do not want to have to make deals with anyone. If such intransigence results in keeping the Conservatives in office as a minority government, so be it. Such a government would have only limited power and, probably, a short life. Much as the Labour left hates

<sup>4</sup> Henry Hamburger, *Games as Models of Social Phenomena* (San Francisco: W. H. Freeman, 1979), pp. 36–42.

<sup>5</sup> Conceivably the Conservatives might feel that **PR** is worse than even a Labour government and would be willing to let Labour come to power if the *only* means of remaining in office were conceding **PR** to the Alliance. Such a preference, however, would be based on a belief that Labour could be trusted not to offer **PR**. As we shall see later, this is a high-risk gamble under the circumstances.

the Conservatives, their antipathy for the ‘traitors’ in the SDP is even greater. Thus the worst of all situations would be having to court the Alliance in a bidding war with the Conservatives and risking being spurned. In fact, even a Conservative–Alliance coalition would be better than sully oneself by compromise with traitors. The fundamentalists doubt that infusion of a few Alliance MPs, crypto-Conservatives in their eyes, into a Thatcher Government would do anything to deal with Britain’s basic economic problems. The economy would deteriorate further, which in a perverse way the fundamentalists would welcome on the grounds that only when things get even worse will they get better: maybe it needs 5 million unemployed to get the voters to demand socialism. So the Labour fundamentalists’ preferences are NO DEALS, CON DEAL, LAB DEAL, BOTH DEAL.

#### THE CONSTITUTIONAL GAME

Constitutional practice makes clear that the Conservatives, as the incumbents and assumed largest party, have the first opportunity to form a government. Thus the game is one of sequential play and perfect information – players know the strategic choices made by an opponent prior to their own play.

While sequential games can be analysed most readily by decision trees, yet matrix presentation – the so-called normal form – can be adapted to indicate sequential choices of strategy.<sup>6</sup> The Conservatives, as the first player, have two choices – to make an offer to the Alliance or not to do so. Labour, however, has four potential strategies.<sup>7</sup> It can decide to make an offer regardless of what the Conservatives do or it can decide not to make an offer regardless. On the other hand, it may prefer a conditional strategy. In that case it can play tit-for-tat, that is, offer if the Conservatives have and do not offer if the Conservatives have not. Or it can play tat-for-tit, that is, offer if the Conservatives have not done so and not offer if the Conservatives have. While the game has only two players, the fact that we do not know which of Labour’s utilities will prevail means that two matrices are required for the analysis (one if the Labour moderates’ preferences shape party strategy and the other if the fundamentalists’ do). These appear in Figure 1.

If the fundamentalists’ preferences guide Labour’s behaviour, then Labour will not make an offer to the Alliance. Not offering is its dominant strategy, that is, produces the best result regardless of what the Conservatives do. If the Conservatives do not make an offer, Labour’s refusal to do so gives the fundamentalists their most preferred result (the second of the pair of numbers in the bottom row, second column of Figure 1(a)). If the Conserva-

<sup>6</sup> Using a matrix for the first game will facilitate comparisons with the subsequent three games. See Hamburger, *Games as Models of Social Phenomena*, pp. 16, 26–30 and Frank Zagare, *Game Theory: Concepts and Applications* (Beverly Hills, Calif.: Sage Publications, 1984), pp. 16–17.

<sup>7</sup> While play is sequential, game theory assumes that players decide upon their strategy *before* play begins so that they have a well-thought out plan of action and do not just respond on the spur of the moment in the heat of the actual negotiation process.

(a) Payoffs when Labour fundamentalists are in command

Conservatives	Labour			
	Offer	Do not offer	Tit-for-tat	Tat-for-tit
Offer	BOTH DEAL 3,4	CON DEAL 2,2	BOTH DEAL 3,4	CON DEAL 2,2
Do not offer	LAB DEAL 4,3	NO DEALS 1,1	NO DEALS 1,1	LAB DEAL 4,3

(b) Payoffs when Labour moderates are in command

Conservatives	Labour			
	Offer	Do not offer	Tit-for-tat	Tat-for-tit
Offer	BOTH DEAL 3,4	CON DEAL 2,3	BOTH DEAL 3,4	CON DEAL 2,3
Do not offer	LAB DEAL 4,1	NO DEALS 1,2	NO DEALS 1,2	LAB DEALS 4,1

Key: Each cell shows the outcome of the two relevant actions, with the first number indicating the preference the Conservatives receive and the second, Labour. Thus, when both parties make an offer to the Alliance (upper, far left cell), the result is BOTH DEAL and the Conservatives get their third preference and the Labour fundamentalists their fourth.

Fig. 1. The constitutional game payoff matrix

tives *do* make an offer, Labour’s refusal to do so still gives the fundamentalists their second best result (the second of the pair of numbers in the top row, second column of Figure 1(a)). Under the circumstances, this is the best they can do (their first preference, the number 1, does not appear in the top row of Figure 1(a)). Their payoff is as good as they could get with a tat-for-tit strategy (do the opposite of what your opponent does) and better than what they would receive from either an offer or tit-for-tat (do the same as your opponent does). The Conservatives *know* that Labour will adopt this strategy: perfect information means you know your opponent’s preferences and game theory assumes rational behaviour. Therefore, they also can decline to make an offer, secure in the knowledge that this will keep them in power as a minority government.

When the Labour moderates prevail, Labour still has a dominant strategy, but it alters to tat-for-tit. When the Conservatives make an offer, Labour’s tat-for-tit gives it only its third most preferred result (the second number in the pair of figures in the last column of the top row of Figure 1(b)). This is not very satisfactory, but it is as good a result as that produced by categorically refusing to make an offer and is better than the payoffs from either the offer or tit-for-tat strategies. Furthermore, should the Conservatives fail to make an offer, then tat-for-tit gives the moderates their most preferred result. Thus the Labour moderates ensure getting the best result possible

for themselves, no matter what the Conservatives decide to do, by following a tat-for-tit strategy.

The Conservatives, who can figure all this out for themselves (again, the benefit of perfect information), are thus forced to make an offer to the Alliance. If they do not, Labour, playing tat-for-tit (doing the opposite of the Conservatives) will make an offer and the Conservatives will get their worst possible payoff – ejection from office by a Labour–Alliance pact or coalition. Thus the result is a Conservative–Alliance agreement, the Conservatives' second preference and Labour's third.

Unfortunately for the players, the result of the game is what is known as a deficient outcome. Either of the 1, 2 payoffs in the lower row of Figure 1(b) would be preferable to *both* parties. Although both players individually have behaved rationally, they have produced a group-irrational outcome.<sup>8</sup> The problem is that these more desirable outcomes are attainable only by *joint* action – either a binding agreement between the leading parties not to deal with the Alliance (how would this be enforced?) or Conservative trust in Labour's promise not to do so. In the absence of one or the other of these, the Conservatives dare not adopt the strategy of no offer (even though it alone can yield their most preferred result) because they are vulnerable to either a Labour unconditional strategy of an offer or the conditional tat-for-tit strategy.

Thus the Conservatives remain in office either as a minority government or in coalition with the Alliance, depending upon which of Labour's factions prevails. Should the Conservatives have to negotiate with the Alliance, they are unlikely to be forced into conceding PR. Labour's tat-for-tit strategy means that a bidding war for Alliance support will not develop.

#### THE WEEK-IN-POLITICS-IS-A-LONG-TIME GAME

While the constitutional niceties may be observed in the event of a hung Parliament, nothing actually prevents *either* party from communicating with the Alliance as soon as the election results are known. Labour might be unwilling to risk waiting until Conservative–Alliance negotiations run their course before investigating whether the Alliance can be persuaded to help eject Mrs Thatcher. The Alliance would no doubt welcome, and try to stimulate, approaches from both main parties as it seeks the best deal. Assuming that the game is one of simultaneous play is likely to be more realistic than the formal constitutional game of sequential play.

When play is simultaneous, information can no longer be perfect: players cannot be aware of their opponent's prior play because this has not yet occurred. Since the opponent has not yet made a choice, a player can only infer what the opponent's preference orderings are – another example of

<sup>8</sup> Such a result is possible because the game is variable-sum, rather than zero-sum. That is, Labour's preferences are not the exact reverse order of the Conservatives'.

(a) Payoffs when Labour fundamentalists are in command

		Labour	
		Offer	Do not offer
Conservatives	Offer	BOTH DEAL 3,4	CON DEAL 2,2
	Do not offer	LAB DEAL 4,3	NO DEALS 1,1

(b) Payoffs when Labour moderates are in command

		Labour	
		Offer	Do not offer
Conservatives	Offer	BOTH DEAL 3,4	CON DEAL 2,3
	Do not offer	LAB DEAL 4,1	NO DEALS 1,2

Fig. 2. The week-in-politics game payoff matrix

imperfect information. So, although both of the leading parties would doubtless be aware that the other was communicating with the Alliance, neither would necessarily know the exact content of the other’s approach or the specific strategic choice it had made to guide its negotiations. As in the constitutional game, two matrices – one for Labour moderates and one for fundamentalists – are required and appear in Figure 2.

If the fundamentalists’ preferences are guiding Labour’s behaviour then, as in the constitutional game, Labour will not make an offer: such play remains the fundamentalists’ dominant strategy. If the Conservatives do not make an offer to the Alliance, the absence of a Labour offer gives the fundamentalists their most preferred result (the second of the pair of numbers in the lower right-hand quadrant in Figure 2(a)). Similarly, if the Conservatives do make an offer, the absence of a Labour offer produces the fundamentalists’ second preference and avoids their least preferred outcome.

The Conservatives lack a dominant strategy. When Labour makes an offer, the Conservatives get a better result (3 rather than 4) by also making an offer. But when Labour does not make an offer, the Conservatives do better (1 rather than 2) by not making an offer. If the Conservatives felt certain that Labour’s fundamentalists were shaping party strategy, then they too would decline to make an offer, anticipating their most preferred payoff without having to give anything away. Labour intransigence makes matters easy for the Conservatives. Neither party would make an offer to the Alliance and *both* the Conservatives and Labour (as guided by the fundamentalists) would get their most preferred result.

The Conservatives would remain in office without having to share power with the Alliance. As a minority government, however, they would be able to stumble on for only a short time until defeated on a motion of confidence. Then, the Labour fundamentalists hope, new elections will produce a Labour majority. As for the Conservatives, they could argue that the futility of voting for the Alliance had been demonstrated; the voters should come to their senses and remove this irrelevance to give the country the effective Conservative government it needs.

But the Conservatives cannot bank on Labour's fundamentalists being dominant. And if the Labour moderates' preferences guided the party, the main parties would find themselves in a very tricky situation because rational behaviour (defined in game theory as pursuing one's best interests) would have become impossible. As can be seen in Figure 2(b), Labour would lack a dominant strategy, unlike the situation in the constitutional game.

A player without a dominant strategy can adopt the maximin procedure to obtain his best security level.<sup>9</sup> The Conservatives look for the worse result for them in each row and pick the better of these. This procedure reveals to the Conservatives that now they *must* make an offer to the Alliance to be certain of avoiding their worst possible payoff (in the lower left-hand quadrant). Making an offer ensures a result no worse than 3 and may even yield 2, their second preference. When Labour follows the same procedure (using the second number in each pair of payoffs), its best strategy is not to make an offer.

The two strategies intersect in the upper right-hand quadrant, the Conservatives obtaining their second most preferred result and Labour managing to avoid its least preferred one. Once again, as in the constitutional game, the result is deficient. The pair of payoffs in the lower right-hand quadrant is preferred by *both* players.

While the situation appears to be the same as in the constitutional game, it is in fact worse. Although the outcome of the previous game *was* deficient, it at least was an equilibrium solution: neither player could improve the payoff he received by a unilateral change in strategy. That is not true in this game. The Conservatives could obtain a better result with a strategy of no offer to the Alliance. While such a shift (from the payoffs in the upper right-hand quadrant of Figure 2(b) to those in the lower right-hand quadrant) does benefit Labour – it now gets its second rather than its third preference – that outcome also is *not* an equilibrium solution. One player – this time Labour – could still improve its payoff by selecting a different strategy. If Labour believes that the Conservatives are not going to deal with the Alliance, it can obtain its most preferred result by making an offer – the fear of which was the one

<sup>9</sup> Hamburger, *Games as Models of Social Phenomena*, pp. 45–7, discusses three other decision-making procedures. Maximum-average and minimax-regret would, for this particular game, produce the same choice of strategy. While the maximax principle results in different behaviour, it seems too naive to be a realistic guide to action. Unfortunately, as we shall shortly see, maximin strategies do not necessarily lead to equilibrium solutions in non-zero sum games.



that led the Conservatives to seek an agreement with the Alliance in the first place. If they think Labour is going to deal, then the Conservatives, unwilling to end up with their worst possible result, must opt for making an offer in order to get a payoff of 3 instead of 4. But the upper left-hand quadrant clearly is an unsatisfactory result, since it is an outcome deficient to *both* the upper and lower right-hand quadrants.

In short, the situation is one of indeterminacy – a game without an equilibrium solution. Neither player has a pure strategy nor can either calculate a mixed strategy.<sup>10</sup> While both leading parties prefer the lower right-hand to the upper right-hand quadrant, no enforcement mechanism exists to impose this solution. In the matrix appearing in Figure 2(a) none was needed because Labour had a dominant strategy. But now for Labour to accept its second preference when a different choice of strategy could give it its most preferred result is not rational. Once Labour ceases to have a dominant strategy and the Conservatives cannot count on Labour to follow the fundamentalists' preference of no deals, the game is transformed.

The two leading parties could agree that neither would make an offer to the Alliance. But as such an agreement keeps the incumbent Conservatives in office as a minority Government, the Conservatives might not feel safe in trusting the Labour moderates to keep their pledge. Once the fear of such 'treachery' crosses the Conservatives' minds, they might feel compelled to defect first to ensure that Labour does not come to power at their expense. Fear that one's opponent might deal with the Alliance is increased if the price is perceived as being less than granting PR. If the Alliance can be bought for some concession on electoral reform short of PR, then each party might doubt the other's intransigence. Why should the Conservatives permit themselves to be ejected from office when they could have had a Parliamentary majority with Alliance support by conceding some voice in policy formation or even a Speaker's Conference on electoral reform? Equally, why should Labour deny itself power obtainable for a limited concession?

While the prospect of the Alliance being bought on the cheap encourages both leading parties to defect from any agreement not to deal, unfortunately for them the logic of bargaining encourages an expensive transaction. If both are going to defect, then each wants to ensure that its offer, rather than its opponent's, is the one accepted. The Conservatives cannot rule out the possibility that Labour might concede some form of electoral reform in an effort to make the Alliance the more attractive offer. As for Labour, only an offer of electoral reform can ensure not being outbid by the Conservatives. The situation is fraught with dangers for both parties and is all too likely to degenerate into a bidding war.

Thus while the legalistic, constitutional game suggests that the Conservatives

<sup>10</sup> A mixed strategy is precluded because for each player the largest payoffs are on a row or a column, not on a diagonal. In any event, whether mixed strategies are relevant to single-play games or are useful only for repeated play is a matter of some controversy. See Zagare, *Game Theory*, pp. 34–6.

would remain in office – as a minority government or in coalition with the Alliance depending upon which Labour faction is shaping that party's strategy – the more realistic, week-in-politics game makes the result contingent on the outcome of a Conservative–Labour bidding war for Alliance support. The dynamics of that negotiation process suggest substantial concessions to the Alliance on electoral reform.

#### THE EVERY-MAN-FOR-HIMSELF GAME

Some may consider two-person games of whatever type inappropriate as models because they treat the Alliance as a passive actor, except when deals offered to it by both leading parties give it a choice. Therefore, a three-person game analysis should be considered. And perhaps the game can be made a closer analogue to reality by allowing for a Labour minority government as a distinct option rather than simply as one form of a Labour–Alliance agreement. Such an analysis would focus directly upon the possible outcomes rather than on the behaviour involved in producing them.

For a game of this type the outcomes are:

CON-MIN	Conservative minority government
LAB-MIN	Labour minority government
CON/ALL	Conservative/Alliance coalition
LAB/ALL	Labour/Alliance coalition

Since more than two players are involved, decision-making rules must be specified. Firstly, any of the outcomes can be produced by all three parties agreeing upon it. For example, the Conservatives might want time to regroup after losing a large number of seats and might be willing to let Labour, even though the second largest party, come to power (rather as happened in 1923–24). The Alliance might calculate that it had more to gain electorally from a minority Labour government – which would be weak and would soon fail – than from a Labour–Alliance coalition. Thus all three would agree on LAB-MIN.

Secondly, each of the four outcomes can be produced other than by unanimity. Labour and the Alliance can agree to produce LAB/ALL, as can the Conservatives and the Alliance to produce CON/ALL. As for LAB-MIN, if the Conservatives and Labour agree on this, the views of the Alliance are irrelevant. This result could also be produced by agreement between Labour and the Alliance. If the Alliance does not want to be in coalition with Labour, but does want the Conservatives out of office, it can vote with Labour on a motion of confidence against the Conservatives. The defeated Conservatives would then be replaced in office by Labour. CON-MIN is produced (in addition to unanimity) by agreement between Conservatives and Labour or between Conservatives and the Alliance by the same arguments set forth for LAB-MIN.

Finally, CON-MIN is the default result. When none of the combinations

of parties specified exists, then the Conservatives, as the incumbent and the largest party, remain in office. This decision-making rule means that when each party prefers a different outcome – that is, when there is total disagreement among them – the Conservatives remain in power.

Again the Conservatives' preferences are clear: CON-MIN is better than CON/ALL is better than LAB-MIN is better than LAB/ALL. Unshared power is better than shared and, if Labour must be in office, better for it to be weak than to have a Parliamentary majority.

As in the previous analysis, Labour's preferences are likely to vary between the moderates and the fundamentalists. Both most prefer LAB-MIN, but the moderates go next for LAB/ALL, followed by CON-MIN and finally CON/ALL. The fundamentalists would agree that a Conservative coalition with the Alliance is least desirable but would prefer CON-MIN to LAB/ALL, finding a weak Conservative government better than being forced to compromise with SDP traitors, as was explained when we discussed the preference orderings for the two-person games.

The preference orderings for the Alliance are the most complex of all. Some observers believe that David Owen, but not David Steel, wants the Alliance to adapt to the shift in the ideological centre of gravity of British politics under the Thatcher Governments. Furthermore, Owen would find working with some of the Labour party even less pleasant than would Steel. Thus one can hypothesize that CON/ALL heads Owen's preferences, while LAB/ALL tops Steel's. For both, the other's top preference becomes their second preference: each as a realist recognizes that the Alliance requires some role in the government to be a credible political force. Both would then put LAB-MIN third and CON-MIN fourth. This ordering for Owen is justifiable, despite ranking CON/ALL ahead of LAB/ALL. He is not a closet Tory and favours reforms that the Conservatives do not. Furthermore, a minority Labour government could be blocked from implementing the far left's policies.

Labour is not the only party with fundamentalists. Steel's problems over the pact with the Callaghan Government indicate some of the tensions that exist within the Liberal party over the question of coalition with either main party. The Liberal fundamentalists' first preference may well be CON-MIN.<sup>11</sup> This prevents Labour, the party the Alliance hopes to displace, from appearing able to return to power. If CON-MIN is not possible, then LAB-MIN would have to be accepted to avoid the compromises that would be involved in an Alliance coalition with either party. In any event, a weak Labour government might help to generate conflict between Labour's various factions and further discredit the party. If coalition must occur, then one with Labour is marginally preferable, at least if Mrs Thatcher still leads the Conservatives. So the Alliance (especially the Liberal) fundamentalists' preference ordering becomes: CON-MIN, LAB-MIN, LAB/ALL, CON/ALL.

<sup>11</sup> The SDP is not without a few fundamentalists of its own. Like their Liberal counterparts, they would seem to prefer a Conservative minority government to a Labour one. See Neville Sandelson's letter in *The Guardian*, 16 May 1985, p. 12.

Conservatives 1

		Alliance			
		1	2	3	4
Labour	1	I	I	I	I
	2	I	II	I	I
	3	I	I	I	I
	4	I	I	I	IV

Conservatives 2

		Alliance			
		1	2	3	4
Labour	1	I	I	I	I
	2	II	II	II	II
	3	I	I	I	I
	4	I	I	I	IV

Conservatives 3

		Alliance			
		1	2	3	4
Labour	1	I	I	III	I
	2	I	II	III	I
	3	I	I	III	I
	4	I	I	III	IV

Conservatives 4

		Alliance			
		1	2	3	4
Labour	1	I	I	I	I
	2	I	II	I	I
	3	I	I	I	I
	4	I	I	I	IV

Key: I, 1 CON-MIN  
 II, 2 LAB-MIN  
 III, 3 CON/ALL  
 IV, 4 LAB/ALL

Roman numerals: outcome of relevant actions  
 Arabic numbers: strategy intended to produce given outcome

Fig. 3. Every-man and Machiavellian games payoff matrix

If information is assumed to be incomplete – that is, the players are unaware of their opponents’ preference orderings – then each player must employ a *sincere* strategy: that is, do what he most prefers. So the Conservatives follow the strategy productive of CON-MIN, Labour (either wing) that consistent with LAB-MIN and the Alliance the strategy for CON/ALL or LAB/ALL, as the case may be. (While the Alliance fundamentalists’ influence cannot be ignored, they are unlikely to be able to dictate strategy.) Given the decision-making rules set forth above, the result is a Conservative minority government. When the Alliance is guided by either Owen’s or Steel’s preferences, each of the three parties disagrees with the others on the preferred outcome and the result is the default outcome, by which the Conservatives continue in office. Thus, regardless of what the Alliance does, the Conservatives and the Alliance fundamentalists get their most preferred result, the Labour fundamentalists get their second most preferred, the Labour moderates their third, and Steel and Owen their least preferred result.

This can be seen in the upper left of the four payoff matrices in Figure 3.<sup>12</sup> This is the matrix for a Conservative strategy designed for CON-MIN.

<sup>12</sup> A three-player game requires a three-dimensional matrix. The grids appearing in Figure 3 should be visualized as descending slices from a cube-like solid geometric form.

Labour's strategy for LAB-MIN is the second row. One reads down column 3 or 4 (depending upon which strategy the Alliance adopts) to find the outcome. In both cases the result is CON-MIN. Note that Owen and Steel could have done slightly better – obtained their third rather than fourth preference – since II, LAB-MIN, is available in the second row of this matrix. But they did not know that this was possible – this is what the assumption of incomplete information means – so they had no alternative to playing their sincere strategy, that consistent with their first preference. It would have been irrational for them to have done otherwise in the absence of knowledge of the other parties' preference orderings and actions. None the less, pursuing their most preferred result has given them their least preferred one – a most unsatisfactory outcome.

#### THE MACHIAVELLIAN GAME

Analysis of the three-person game becomes more interesting with an assumption of complete information. Sophisticated rather than sincere strategies then become optimal.<sup>13</sup> The parties obviously know the decision-making rule for the game – how control of the government is determined – and it is realistic to assume they have some idea of their opponents' preferences.

In such a game, both the Conservatives and the Labour fundamentalists have dominant strategies, CON-MIN for the former and LAB-MIN for the latter. Given such choices, the Alliance must adopt a strategy productive of LAB-MIN to avoid getting its worst payoff of CON-MIN (upper left in Figure 3, row 2). That is, in the absence of any offer from either Labour or the Conservatives, Owen and Steel instruct their MPs to vote with Labour to oust the Conservatives, preferring a period of weak Labour government to Mrs Thatcher's continuing as even a minority Prime Minister.<sup>14</sup>

While the Labour moderates share their fundamentalists' first preference of a minority Labour government, choosing a course of action is not so straightforward for them. Unlike their fundamentalist colleagues, they lack a dominant strategy. Since strategies productive of CON-MIN and CON/ALL are *dominated*<sup>15</sup> for them, however, they will select either LAB-MIN or LAB/ALL (row 2 or 4 of Figure 3, upper left). While the LAB-MIN strategy

<sup>13</sup> Zagare, *Game Theory*, pp. 64–70.

<sup>14</sup> I have assumed that Mrs Thatcher is certain to remain leader of the Conservatives at least until the next general election. Since, unlike Mr Heath, she has not lost an election, she seems invulnerable to a coup even if she has become an electoral liability. For her to resign simply because of electoral adversity would be totally out of character. But if she fails to 'win' the next election – if the Conservatives are put out of office – then the stilettos are likely to be wielded. However, if Labour came to power as a minority government and another election seemed imminent – the 1974 situation – she could probably hold on, since a change of leader on the eve of an electoral campaign might be regarded as damaging to the Conservatives' prospects.

<sup>15</sup> On removal of dominated strategies from a player's choices see Hamburger, *Games as Models of Social Phenomena*, pp. 58–60.

can indeed produce a minority Labour government *if* the Alliance plays the same strategy as well (column 2), the result would be a Conservative minority government if the Alliance played LAB/ALL (column 4). The Labour moderates have no means of choosing between these two strategies because they cannot be certain what the Alliance will do.

They cannot be certain because *both* Owen *and* Steel lack a dominant strategy as well and only the CON-MIN strategy (column 1) is dominated for both. Since the Conservatives will select the CON-MIN strategy (it remains dominant for them), strategy CON/ALL (column 3) is out for either Owen or Steel. (Given complete information, that is, knowledge of opponents' preference ordering, the Alliance leaders can ascertain which the Conservatives will choose to play.) If the Alliance plays LAB-MIN, the resultant Labour minority government is the third preference for either leader. On the other hand, if they insist on a share of power (strategy LAB/ALL), Steel gets his first preference and Owen his second. Faced with such Alliance determination, rational play for the Labour moderates is to agree to such an arrangement. Failure to do so – playing any strategy other than LAB/ALL – produces a Conservative minority government, the third preference of the Labour moderates and a worse result than co-operation with the Alliance.

While a Labour–Alliance coalition is an acceptable result for both the Labour moderates and the Alliance leaders, the fundamentalists in both parties would prefer CON-MIN, a brief term for a relatively powerless Conservative government, rather than having to compromise with enemies in a coalition. The Labour moderates and Owen–Steel might be able to impose their preferences or even get majority support for them, but they cannot be certain of carrying all their followers with them. Should sizeable numbers of MPs from one or both parties rebel, the Parliamentary arithmetic could be significantly altered.

Barring major dissension within one of the other Parliamentary parties, however, the Conservatives appear to be out of luck. Whether they can continue in office is apparently out of their hands and they can only passively await developments. The payoff matrix in Figure 3 seems to suggest that they enjoy better prospects than this. More than three-quarters of the outcomes (49 of 64) are the Conservatives' most preferred result – I, CON-MIN. Yet despite their apparent strong tactical position, they face an outcome of either LAB-MIN or LAB/ALL. Thus does a shift from incomplete to complete information undercut the Conservatives' position.

The most likely situation, however, is somewhere between incomplete and complete information. Let us call it partial information. The parties *do* have some idea of what their opponents want, but politics does make strange bed-fellows and no one can be entirely certain what the others are up to. This fact gives the Conservatives an opportunity to try to salvage the situation by means of *tacit deception*.<sup>16</sup> A player using tacit deception announces a

<sup>16</sup> The advantage of tacit deception is that 'other players cannot detect the deception unless they know the user's true preference order'. A player acting in accord with an announced false

false preference ordering and then *acts in accord* with it. In this way the player seeks a manipulated sophisticated outcome yielding a better payoff than that resulting from an unmanipulated outcome. In this case the Conservatives, while actually retaining the preference ordering previously attributed to them, suggest that Labour extremism is such a threat to the country that a working majority in the Commons to ensure effective government and avoid uncertainty is essential. The party, therefore, claims that an arrangement with the Alliance to produce this is preferable to a Conservative minority Government of uncertain tenure. Thus the Conservatives are perceived by the others to be playing the strategy for CON/ALL (lower left in Figure 3).

If the Labour fundamentalists are in command (and playing their dominant strategy LAB-MIN), then either Owen or Steel must play strategy CON/ALL. This gives the former his first preference and the latter his second, so both avoid their least preferred outcomes. The result is a deal between the Conservatives and the Alliance. While the Conservatives have not obtained their most desired outcome, tacit deception has enabled them to gain their second preference rather than their third as otherwise seemed likely. As for Labour, their fundamentalists' intransigence this time has saddled the party with the worst possible outcome.

This gives the Labour moderates the opportunity to argue that their preference ordering should be followed, since it makes tacit deception a bit more of a gamble for the Conservatives.<sup>17</sup> If the moderates play their strategy LAB-MIN, then the results would not differ from when the Labour fundamentalists are in charge and nothing would have been gained. But such play is not required for the moderates, because, lacking a dominant strategy, they can play LAB/ALL as readily as LAB-MIN. Should they play the former, then the Alliance leaders are divided. Owen continues to prefer the strategy for CON/ALL (column 3) to obtain his top preference, but Steel would now rather play LAB/ALL (column 4), thereby obtaining *his* most preferred result. From the Conservative standpoint the results would be their fourth or second preferences. Thus they cannot be certain that they will obtain a manipulated sophisticated outcome, but they do have a better chance of staying in office than if they did not practise tacit deception.

As to the likely outcome of a conflict over strategy between the Alliance leaders, Steel could point out to Owen that an Alliance strategy of CON/ALL would mean forcing Alliance fundamentalists to accept their fourth preference rather than just talking them into acquiescing in their third preference. Should preference ordering foreclose such knowledge. Thus tacit deception differs from 'making a false announcement but acting consistently with . . . true preferences. Since other players can easily detect an action that contradicts the deceiver's preference order, this strategy is called *revealed deception*.' Zagare, *Game Theory*, p. 69.

<sup>17</sup> The Labour moderates do not know, of course, that the Conservatives are practising tacit deception. Their argument to their fundamentalist colleagues is simply that when the Conservatives are playing their CON/ALL strategy, as is perceived to be the case, the moderate preference orderings for Labour offers a better outcome than do fundamentalist ones.

Owen, none the less, refuse to concede to Steel's negotiating strategy, then the Alliance would be unable to make an agreement with either of the leading parties. And a breakdown of negotiations, remember, produces the default option: a Conservative minority government and the Conservatives' true first preference. Again, the potential benefit to the Conservatives of tacit deception is clear: sufficient distrust and misunderstanding could be generated to keep themselves in office without having to share power. But if such fishing in troubled waters fails to work because the Alliance is cohesive and Owen's preferences do not prevail, the result would be a Labour–Alliance coalition. *Everyone* in Labour receives either their second or third preference – a better result for all than when the party's strategic choice is guided by the fundamentalists' preferences.

#### CONCLUSIONS: WHO GETS HUNG?

These analyses do *not* allow us to predict what will happen in the event of a hung Parliament. The players' preference orderings have had to be inferred and could be mistaken. Furthermore, game theory assumes competent and rational players, that is, people who can ascertain their best interest and act in the way most calculated to obtain it. Counter-productive behaviour, however, is well known in politics as in other aspects of life. Furthermore, the parties might not adequately analyse, or even be aware of, the full range of strategies available to their opponents.

None the less, this analysis does yield some non-obvious conclusions and some insights into possible partisan manoeuvrings in the event of a hung Parliament. Game theory analysis can indicate probable outcomes depending upon the particular assumptions made about specific bargaining situations. A brief summary of the games analysed in this study will help to clarify this.

#### *Assumptions and Outcomes of Games Analysed*

##### *All Games*

Assumptions: Conservatives largest party  
 Conservatives + Alliance *or*  
 Labour + Alliance = 326 MPs or more

##### *The Constitutional Game*

Assumptions: two players  
 sequential play  
 perfect information

Outcomes: If Labour fundamentalists prevail,  
 then Conservative minority government  
 If Labour moderates prevail,  
 then Conservative–Alliance coalition  
 limited concession on electoral reform



*The Week-in-Politics Game*

- Assumptions: two players  
simultaneous play  
imperfect information
- Outcomes: Bidding war for Alliance support  
Substantial concession on electoral reform  
UNLESS, Conservatives gamble that fundamentalists  
shape Labour strategy,  
then Conservative minority government

*The Every-Man Game*

- Assumptions: three players  
simultaneous play  
incomplete information
- Outcome: Conservative minority government

*The Machiavellian Game*

- Assumptions: three players  
simultaneous play  
complete information
- Outcomes: If Labour fundamentalists prevail,  
then Labour minority government  
If Labour moderates prevail,  
then Labour–Alliance coalition
- Assumptions: three players  
simultaneous play  
partial information  
Conservative tacit deception
- Outcomes: If Labour fundamentalists prevail,  
then Conservative–Alliance coalition  
If Labour moderates prevail  
then Alliance internal conflict  
Labour–Alliance coalition likely,  
BUT potential for Conservative  
minority government

When the focus is on the two large parties only, the Conservatives turn out to have the luxury of not making an offer to the Alliance and yet remaining in power as a minority government, provided that Labour is dominated by its fundamentalists. Should Labour's moderates be in charge, or should doubt develop that Labour might defect and deal with the Alliance, then the Conservatives come under strong pressure to make an offer of their own to the Alliance. If both parties approach the Alliance, a bidding war becomes likely and it is hard to see how that could be stopped short of an offer to the Alliance of PR.

The Alliance would thus be well advised to make clear in advance of such

bargaining that it can be bought for less than PR. Ironically, hinting that it can be bought on the cheap enables it to exact a better price. Such a stance encourages each of the leading parties to fear that the other is likely to defect because it believes that an agreement can be gained with only a partial, even symbolic, concession of electoral reform. Yet once a party enters the negotiations, the dynamics of bargaining drive it to make as good an offer as possible to avoid failure.

If the Alliance is added to the analysis as an active player, the Conservatives' best hope of remaining in power as a minority government occurs when no allowance is made for sophisticated strategies and it is assumed that the parties are totally in the dark about their opponents' preferences. When the parties can employ sophisticated strategies because they know exactly what their opponents want, the result is a Labour government. Whether it is a minority one or a coalition with the Alliance depends upon whether Labour's fundamentalists or its moderates are shaping the party's strategy. However, should the parties be unsure that they have correctly intuited their opponents' preferences, as seems possible given the strong incentive to deceive, the Conservatives can seek a manipulated result through tacit deception – a claim that they want a coalition with the Alliance in the event of a hung Parliament. Such a tactic has the potential of keeping the Conservatives in power either through a deal with the Alliance or by creating sufficient tensions within the other parties that a Conservative minority government results by default.

The analysis suggests rather more potential for a Labour government than might have been thought in the event of a hung Parliament, *even* when Labour is assumed to be the second largest party. Furthermore, the analysis demonstrates that it is in the Conservatives' interest to make a coalition offer to the Alliance even if that action is *not* their true first preference. A refusal to make such an offer is likely to produce a worse result for them – a Labour minority government or a Labour–Alliance agreement. This is despite the fact that common sense would seem to suggest that as the incumbent and largest party they should be in a commanding position.

The Conservatives would, therefore, do well to reverse their apparent strategy during the latter stages of the 1983 election campaign. Then they claimed to prefer a Labour to an Alliance opposition and appeared to be willing to protect Labour from total disaster.<sup>18</sup> Since the Alliance, not Labour, challenges the Conservatives in most of the constituencies in southern England, the Conservatives might regard the Alliance as the greater threat. Whether the Conservatives can, therefore, bring themselves to consider any cooperation with the Alliance, which would tend to legitimate its role in British politics, is a moot question. But the analysis suggests that they need to recon-

<sup>18</sup> In addition to my comments 'The Alliance Campaign, Watersheds, and Landslides: Was 1983 a Fault Line in British Politics?' p. 93 in Austin Ranney, ed., *Britain at the Polls, 1983: A Study of the General Election* (Durham, NC: Duke University Press, 1985), see also Michael Pinto-Duschinsky, 'The Conservative Campaign', in Ranney, *Britain at the Polls, 1983*, pp. 53–4, 57–9.

cile themselves to this if they want to retain office. Furthermore, the longer they delay in ending their hostility to the Alliance, the more likely they are to encourage a bidding war with the Labour moderates for Alliance support in the event of a hung Parliament. And in those circumstances even the Iron Lady would be hard pressed to prevent a concession of PR.

Thus the Alliance would appear to have good prospects not only of gaining a share in power if the election produces a hung Parliament but also of obtaining substantial concessions on electoral reform. Of course, an adamant stance by both Labour and the Conservatives could prevent this. But to employ such a high risk strategy, Mrs Thatcher and Mr Kinnock will need nerves every bit as strong as those that sent a task force 7,000 nautical miles.