11

Patterns of Bicameralism[1]

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This chapter investigates the impact on the final outcome of different methods of resolving differences between the two chambers in bicameral systems. The general method of resolving intercameral difference is the navette system, according to which a bill is shuttled from one chamber to the next. This procedure can be continued until agreement is reached, or can be complemented by a specific stopping rule: one chamber decides, there is a conference committee (i.e. a joint committee of both houses), or there is a joint session. The impact of each of these procedures will be analysed. As a general rule, the impact of upper chambers on legislation is a minor one, but almost never negligible. In addition, the impact depends on institutional features of the navette, as well as how impatient each chamber is to reach an agreement.

Ten of the eighteen countries in our sample have bicameral legislatures. This proportion, at over 50 percent, is significantly higher than the actual worldwide proportion of 35 percent (Money and Tsebelis 1992). The list of bicameral legislatures includes all the major West European countries: Germany, France, Italy, Spain, and the UK. In addition, smaller countries like Ireland, the Netherlands, Switzerland, Austria, and Belgium, whether federal or not, include an upper chamber in their Parliament. Finally, some Scandinavian countries (Norway, and Iceland (until 1991)) have an ambiguous arrangement according to which their parliament is elected as one chamber, but then divides itself into two parts holding separate meetings.

In a nutshell Figure 11.1 presents the problem to be considered with respect to bicameral legislatures. Following the assumptions of Tsebelis (in this volume) we will represent each chamber by a single "ideal point", that is, a point in space at which it would prefer to have the legislative outcome located. If this

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Figure 11.1:   Simplified Decision Making in a Bicameral Legislature
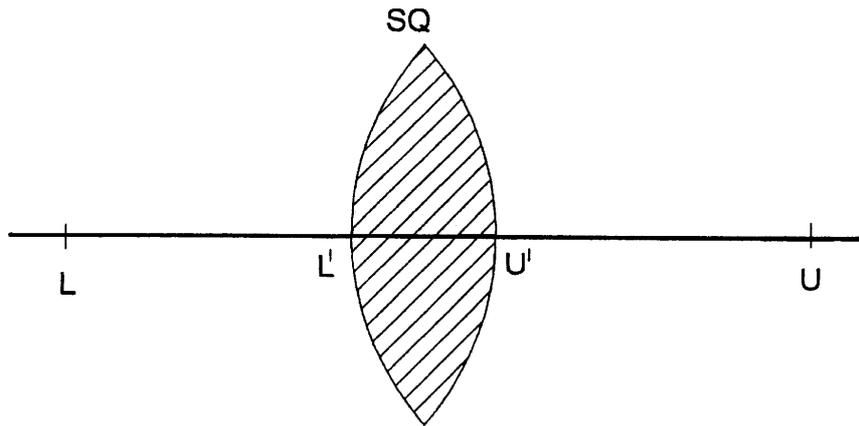
choice is impossible, the chamber would prefer to see legislation producing points as close as possible to this ideal point. More precisely, each chamber is indifferent towards various points located at an equal distance from its own ideal point. Suppose that in an n-dimensional space (two dimensional in our Figure) the two houses have different ideal positions, indicated by U and L for the upper and lower chambers respectively. The reason that the two houses may have different ideal points is that they may be representing different constituencies as will become clear in the next section, or be involved in different games (for example, the one in an electoral game, the other not (Tsebelis 1990)). For the moment, the fact that the multiplicity of legislators' preferences in each chamber has been reduced to a single point should be disregarded.

Suppose also that the status quo (the previous bill) is located at the point SQ of the Figure. Can one somehow make an educated guess as to which point will be selected by these two chambers to replace the status quo? For a unicameral legislature the answer to the same question would be simple: the single chamber (L for the sake of this argument) would move the status quo from SQ to its own ideal point. For a bicameral legislature, we may be able to narrow the choice down to that segment of the line that connects U and L, which is included inside the circles with centres U and L who pass through the status quo (segment L'U' in the figure). But which one of these points would be chosen? Moreover, what characteristics of the chambers does one need to investigate in order to narrow down the possible outcomes?

More generally, if one does not make the simplified assumption of collective players having unique ideal points, are we justified (and under what conditions) in holding the expectation that the outcome will be located in the L'U' segment? This chapter will provide an affirmative answer to the last question. The expectation that the outcome will be "around" the segment L'U' is reasonable under a wide set of assumptions. In addition, we will try to narrow down the interval of the final outcome even further, and provide a point estimate. However, we will do this on the basis of more restrictive assumptions about the interaction of the chambers.

The final outcome of the investigation is that institutional features of the two chambers' interaction, such as where a bill is introduced, how many times it goes to each chamber, and who has the final word, systematically affect the outcome. In addition, the location of the outcome depends on political factors, such as how impatient each chamber is for a compromise.

The chapter is organised into three sections. The first describes the different mechanisms for resolving differences between the two chambers in the ten bicameral legislatures of our sample. The second uses results from formal literature to investigate the impact of these procedures on the final outcome. The third section concludes the study.

1. The Multiple Mechanisms of Bicameral Negotiations

In Figure 11.1 there are two distances: the distance between the ideal points of the two chambers and the distance of the status quo from the line connecting the two chambers' ideal points. Each of these distances may be large or small. If the two chambers have ideal points close to each other (as will happen if they have the same political makeup), then it will be relatively easy for the two chambers to reach an agreement, because the question each will be facing is whether to accept a new solution which is not far away from their ideal point, or to preserve a very undesirable status quo (because of their disagreement). Conversely, if the status quo is close to the line L'U', a compromise between the two chambers becomes more difficult because the common gain from altering the status quo is not large enough to compensate for the differences of opinion (the points along the line L'U').

If the ideal points of the two chambers are far away from each other, then the specific institutional provisions that regulate the interaction in pursuit of a compromise between the two chambers are of paramount importance. If, on the other hand, the two ideal points are close to each other, then the specific mechanisms of reconciliation become less important. In following this, this section is organ-

ised into two parts. The first part studies how close the ideal points of the two chambers are in different countries. The second part examines the different mechanisms of reconciliation.

A.. Closeness of the Upper and Lower House

Lijphart (1984) has called legislatures, in which the two chambers have the same political makeup, congruent, otherwise he calls a bicameral legislature incongruent. Money and Tsebelis (1992) speak about efficiency gains when one moves on from the status quo to the line L'U' and redistributive movements when the movement is along the line L'U' where the two chambers have conflicting interests. The two ideas are closely related: congruent legislatures are those where significant efficiency gains from a change of the status quo can be made; incongruent legislatures are those where the distance between the two chambers is large compared to the efficiency gains.

In countries with strong party discipline, like all the countries of our sample, a very good predictor of the two chambers' closeness is their partisan makeup. It is possible that even legislatures with different compositions will agree on some issues (imagine that an old law has become obsolete, even parties with different positions may agree about how it should be changed; or imagine a strong exogenous shock like the oil crisis, it is possible that different parties would have similar ideas about how to increase revenues or decrease spending). However, such agreements are not very likely. Consequently, it is only a very similar partisan makeup, along with strong parties that guarantees closeness of ideal points.

A similar partisan makeup is likely to be produced if elections for the two chambers are held simultaneously, and if the electoral system for the two chambers is the same. Only the two hybrid bicameral legislatures of Iceland and Norway follow a path guaranteeing congruence. In these countries there is a single election, and the legislature only divides itself into two parts after the election.

In all other countries of our sample (10), the lower house directly represents the people, whilst the upper house is the product of either indirect elections (France, Austria, Netherlands), appointment (by the Länder in Germany, by the Queen in the UK), or partial appointment (Ireland, Spain, Belgium). In addition, in federal countries the upper house represents different territorial units (Switzerland, Germany, Belgium). Only in Italy is the upper house entirely the result of direct popular elections.

Table 11.1: Overcoming Disagreements Between Houses on Bills

Country (1)	Mode of selection of upper house	Congruence	Decision system
Austria	indirect election by provincial leg. proportional rep.	no	navette (lower house decisive)
Belgium	direct proportional (4/7) indirect (2/7) cooptation by senate (1/7)	yes	navette
France	indirect election by electoral colleges	no	navette (followed by joint committee or lower house decisive)
Germany	appointed by state governments	no	navette (followed by joint committee or lower house decisive)
Iceland (*)(**)	unified chamber divides itself after election (1/3 upper house, 2/3 lower house)	yes	navette (followed by 2/3 maj. decision in unified chamber)
Ireland	direct election (49/60) appointment (11/60)	no	navette (followed by joint committee or lower house decisive)
Italy	direct election proportional rep.	yes	navette

Country (1)	Mode of selection of upper house	Congruence	Decision system
Netherlands	indirect election by provincial councils pro-portional rep.	yes	navette (upper house decisive)
Norway (*)	nominated by unified chamber after election from among its own members (1/4 total membership)	yes	navette (followed by 2/3 maj. decision of combined chambers
Spain	direct election simple majority (208/256); ap-pointed by reg'l assemblies (48/256)	no	navette (followed by joint committee)
Switzerland (*)	direct election two per canton [1]	no	navette (followed by joint committee)
UK	hereditary and appointed	no	navette (lower house decisive)

(1) Information for all countries except (*) taken from Tsebelis and Money (1992).

(*) Information for these countries was taken from Tsebelis and Rasch questionnaires

(**) Iceland followed this system until 1991

Note:
1) 2 per canton, 1 per "Halbkanton"

In conclusion, existing procedures of upper and lower chamber selection in all but two countries (Iceland and Norway) do not guarantee small ideological distances (or congruence). However, examination of the post-World War II results indicates that the distances between upper and lower houses have been small in another three countries: Belgium, Netherlands, and Italy. As a consequence, in Table 11.1, 5 of these countries are classified as having congruent legislatures.

B. *Mechanisms of Reconciliation*

There is a common mechanism for the resolution of intercameral differences. It is called the navette system, and it consists of sending a bill, as modified, from the one chamber to the other. Each chamber makes an offer to the other which either accepts it (in which case the legislative game ends with the adoption of the bill), or modifies it and offers it as a counter-offer (in which case the legislative game continues). This mechanism of reconciliation may either continue indefinitely (the legislatures of Italy, and Belgium are examples of this arrangement), end immediately (in the Netherlands the lower chamber makes an offer to the upper who accepts or rejects it), or continue for a finite number of rounds. If agreement is not reached by the prespecified number, some other closing rule is applied. In some cases (Spain, the UK, Austria, and sometimes France), the lower house makes the final decision; in others (Norway, Iceland, and although it is outside our sample Australia) there is a joint session of the two houses of Parliament; in others still (sometimes France, sometimes Germany, and Switzerland) there is a joint committee, or committee of reconciliation, which develops a compromise that is offered on the floor of both houses for final approval. This enumeration exhausts all the mechanisms of negotiation between the two houses. Table 11.1 provides more precise information.

The differences in the reconciliation procedures are remarkable, despite the fact that the term "navette" appears in every country. For example, we described the Dutch system as navette; in this system, the lower house makes a proposal to the upper house which accepts or rejects it. We also described the Italian system as navette; in this system the two houses make alternating offers until an agreement is reached. From this account it becomes obvious that the same name covers very different procedures in different countries, and that the differences depend on the institutional details of the navette, such as for how many rounds a bill may be shuttled back and forth, and who makes the final decision.

With respect to the final decision, only in the Netherlands is this delegated to the upper chamber. Austria, the UK, Ireland, and Spain delegate the final decision to the lower chamber. In France and Germany either the lower house has the last word, or the matter is delegated to a conference committee. In Belgium and Italy the navette has no stopping rule (i.e. it can continue indefinitely). In the two

hybrid bicameral parliaments of Norway and Iceland, the two chambers meet in a joint session. Finally, in Switzerland persistent disagreement is resolved by a conference committee.

Table 11.2 provides both the institutional details of the navette system and the stopping rule prevailing in each country. From this table it becomes clear that in six of the countries (Belgium, the Netherlands, Iceland, Italy, Norway, Switzerland), agreement of both chambers is required for the adoption of a law. In four countries (Austria, Ireland, Spain, the UK), the lower house has the final word and can overrule the upper house. Finally, in France and Germany legislation is produced either by both chambers, or by the lower house overruling. However, the mechanism of case selection differs in the two countries. In France, a conference committee is set up first (the government has to request such a procedure) and only if this committee fails to produce an acceptable compromise can the Government ask the National Assembly to make the final decision. In Germany, laws relating to the federal structure of the country (Zustimmungsgesetze, Art. 77, 3) require the agreement of the upper house (Bundesrat). In practice, more than 50% of all laws fall into this category.

If the lower house can overrule upper house objections, it is obvious that the relative power of the upper house is severely circumscribed. Lijphart calls such legislatures asymmetric (Lijphart 1984: 97-99). On the other hand, if the upper house cannot be overruled, legislation cannot be produced without a compromise between the two houses.

Combining the arguments presented in the first and second parts of this section, we come to the conclusion that disagreements are to be expected only in legislatures with large ideological distances between the two chambers (the legislatures labelled incongruent in Table 11.1). These disagreements are not as important if the upper house can be overruled (asymmetric legislatures; see Table 11.2). If none of these two conditions apply, important disagreements between the two chambers are to be expected. The countries that belong in this category of incongruent and symmetric legislatures are France, Germany, and Switzerland.

In all three of these countries, the final mechanism for the resolution of intercameral differences is the conference committee.[2] It is therefore important to take a closer look at this institution. As Table 11.3 indicates, in all three countries, the conference committee is composed of an equal number of representa-

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2   In France this is not exactly the case, because the government can always ask the National Assembly to make the final decision (art 45.4). However, this is a decision with a political cost, and governments prefer to avoid it.

Table 11.2a: Institutional Features of the Navette (Non-Financial)

Country (1)	Introduction of non-financial legislation	Number of rounds	Final decision	Comments
Austria	lower house	1	lower house, if upper house objects within eight weeks	delay only
Belgium	either house	indefinite	no stopping rules	
France	either house	indefinite 3 (2 if urgent)	joint committee then lower house	government decides where to introduce bills, number of rounds and whether lower house decides
Germany	government bills in upper house; otherwise either house	1	joint committee then either lower house decides, or concerning federalism, mutual veto	
Iceland (*)(**)	either house	2	joint meeting in united chamber	
Ireland [1]	either house	1	lower house	delay only: if Senate rejects President can abort, except if Dáil has 2/3 majority
Italy	either house	indefinite	no stopping rules	

Country (1)	Introduction of non-financial legislation	Number of rounds	Final decision	Comments
Netherlands	lower house	1/2	upper house, but no power to amend	
Norway (*)	lower house	2	plenary session of united chamber (2/3 majority)	
Spain	lower house (except inter-territorial)	3	lower house decides by absolute majority	
Switzerland (*)	either house	3	joint committee	
UK	either house	2 or 3/2	lower house after one year	delay only

(1) Information for all countries except (*) taken from Tsebelis and Money (1992).

(*) Information taken from Tsebelis and Rasch questionnaires.

(**) Iceland followed this system until 1991.

Table 11.2b:

Country (1)	Introduction of financial legislation	Number of rounds	Final decision	Comments
Austria	lower house	0	lower house	
Belgium	traditionally lower house	indefinite	no stopping rules	
France	lower house	indefinite 3 (2 if urgent)	joint committee or lower house	government decides number of rounds; time limit
Germany	simultaneous for budget; upper house otherwise	1	lower house for budget otherwise upper house has veto	
Iceland (*)(**)	budget introduced in united chamber	2	united chamber	
Ireland	lower house	1	lower house after 21 days	delay only
Italy	alternately in lower and upper houses	indefinite	no stopping rules	
Netherlands	lower house	1/2	upper house	
Norway (*)	united chamber (Storting)	2	united chamber	

Country (1)	Introduction of financial legislation	Number of rounds	Final decision	Comments
Spain	lower house	1	lower house decides by absolute majority	
Switzerland (*)	either house	3	joint committee	
UK	lower house	1	lower house after one month	delay only

(1) Information for all countries except (*) taken from Tsebelis and Money (1992)

(*) Information taken from Tsebelis and Rasch questionnaires

(**) Iceland followed this procedure until 1991

Table 11.3: Information on Conference Committees

Country (1)	Number of members (upper and lower chambers)	Standing (Y/N)	Decision making	Appointed by	Composition
France	7 from each chamber	N	1/3 quorum, simple majority	relevant committees draw up lists, members decided by poll (in Senat decided by poll if 30 members call for a vote)	after 1981 proportional to party strength in both chambers (before maj. of National Assembly over-represented)
Germany	16 from each chamber	Y	quorum 7 members per chamber, simple majority	the mediation committee is permanent (chosen by coalition leadership)	lower chamber, proportional to party strength; upper house one per Länder (state).
Switzerland	13 from each chamber	N	simple majority	delegations of the relevant committees	proportional to political party strength

(1)   Information taken from Tsebelis and Rasch questionnaires.

tives from each chamber, and decides by a simple majority of all their members (a per chamber quorum is required). In all three countries, the conference committee makes the final proposal to both chambers. At that stage, no amendments can be accepted, and the compromise proposal is voted under closed rule. The responsibility to craft the compromise in its final form places considerable power in the hands of the committee.[3] Consequently, the leadership of each house makes sure that members of this committee are selected proportionally from the different parliamentary groups. Indeed, a different representation may lead the members of the committee to compromises that are not acceptable to one or both of the parent chambers.[4]

To summarise the argument so far, there is a wide variation in what upper houses represent, ranging from aristocracy (UK), to professional associations (Ireland), to predominantly rural populations (France), to states (Germany, Switzerland). In a majority of cases, the two houses have different political makeups, and are therefore expected to disagree on legislation. Whether the disagreements are significant or not, a variety of institutional provisions, covered by different forms of the navette system, are used for resolution of differences. The next section provides an insight into the differences in outcomes entailed by these procedures.

2. Bicameral Bargaining Outcomes

In this section we will try to investigate the possible outcomes of negotiation between the two chambers. In the first part we will explain the problem in the most complicated (and realistic) form. We will review the assumptions implicit in reducing it to the simple form of Figure 11.1.[5] In the second part we will make these assumptions, along with some additional ones that are necessary to bring us to a unique solution.[6] At the end of the exercise, we will have a better idea of the

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3 For a discussion of the power of the power to propose see Tsebelis (this volume) where the argument is made that in parliamentary regimes the government is powerful *because* it has the power to propose legislation, that is, because it controls the parliamentary agenda.

4 For example, before 1981, the right wing majority in the French National Assembly was selecting its representatives in the conference committee in such a way that the compromises adopted by majority were subsequently often rejected by the Senate.

5 This part follows closely Tsebelis (1993).

6 This part will be a recapitulation of work done by Money and Tsebelis in different combinations (Money and Tsebelis forthcoming, and Tsebelis and Money 1995).

policy consequences of the vast array of institutional arrangements covered by the name "navette", that is, all intercameral negotiating processes.

A.. Narrowing down the Possible Outcomes

The basic problem in identifying the possible outcomes of a majoritarian decision-making process, such as decisions in a legislature (whether unicameral or bicameral), is the fact that collective preferences (unlike individual ones) are not transitive. Consequently, while a legislature can prefer outcome a over b and outcome b over c by majority rule, it is still possible for the same legislature to prefer outcome c over a.[7] The outcome of such a set of preferences is that decision-making is not stable, as any outcome can be upset (that is, majority preferred) by another outcome. Furthermore, the process never ends, it can repeat itself by going through the same steps over and over again.

This was the reason why the core became a basic concept in social choice theory and cooperative game theory. The core of a legislature is a set of outcomes that cannot be defeated. Note that in this definition there is no mention of the mechanism by which a legislature actually arrives at the core. However, once a legislature is on a core outcome, then it will remain there as long as the preferences of the legislators remain the same.

Plott has shown that for unicameral legislatures the necessary and sufficient conditions for the existence of a core are very restrictive (Plott 1967:790). He discovered that for an n-dimensional legislature with an odd number of members to have a core (a point that cannot be majority defeated by any other point), the core has to be on the ideal point of at least one member and that the remaining even number of members ... "can be divided into pairs whose interests are diametrically opposed." In the absence of these restrictive conditions, majority rule could cycle anywhere in an n-dimensional space (McKelvey 1976; Schofield 1978).

In the absence of a core, social choice theory has developed other, weaker concepts of stability. The most important has been the uncovered set (Miller 1980; Shepsle and Weingast 1984; Ordeshook and Schwartz 1987; Cox 1987). The uncovered set is a set of points that cannot be defeated directly and indirectly by any other point. Consequently, the points u of the uncovered set either belong to the core (cannot be defeated directly), or if there is a point v that defeats u, then there is at least one point w that defeats v but that can be defeated by u. This

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7   Imagine that the legislature is composed of three legislators, the first with preferences a over b over c, the second with preferences b over c over a, and the third with preferences c over a over b. This legislature deciding by majority rule would exhibit the preferences of a preferred over b over c over a; in technical terms it would "cycle."

literature has demonstrated that if legislators were sophisticated, under certain agendas the outcome would be inside the "uncovered set". McKelvey (1986) has proven that in an n-dimensional space, the uncovered set is centrally located.

More restrictive assumptions produce outcomes in some subset of the uncovered set (Banks 1985; Schwartz 1990). The latest of these results, and for our purposes the most significant, is Schwartz's Tournament Equilibrium Set (TEQ). Schwartz assumes that contracts between legislators are enforceable (cooperative decision making), but that legislators are free to recontract, that is, if they find a proposal that a majority coalition prefers, they can write an enforceable contract to support it. He also assumed that any two proposals can be directly compared. He calculated the smallest set within which this cooperative recontracting process is likely to produce outcomes. He called this set TEQ, and he proved that it is a subset of the uncovered set.

Bicameral legislatures have not been the object of such exhaustive formal studies. However, non-formal analyses indicate that American institutions were explicitly designed to avoid the problem of cyclical majorities. Hammond and Miller (1987) cite McGrath (1983:Ch. 3) who argues that Madison was acquainted with the Condorcet paradox and that the Constitution (separation of powers and bicameralism) can be interpreted as an effort to avoid the instability of majority rule. With respect to bicameralism, Madison argues that "the improbability of sinister combinations will be in proportion to the dissimilarity of the two bodies" (Federalist No. 62). Riker (1992a and b) has argued that bicameralism delays decisions and in more than one dimension gives the opportunity for further discussion until an equilibrium solution emerges. Finally, jurists like Levmore (1992) and Frickey (1992) think of bicameralism as "preserving the status quo or stalling hastily-fashioned legislation" and compare it with supermajoritarian decision rules.

The most extensive formal analysis of the American Constitution can be found in Hammond and Miller (1987) who find a series of necessary conditions for the existence of a core in a two-dimensional bicameral system. One of their results generalises a finding by Cox and McKelvey (1984) that if the Pareto sets of the two chambers do not intersect there will always be a core in two dimensions.[8] Hammond and Miller claim that their proof is a confirmation of Madison's intuition (from Federalist No. 62; see above). However, Hammond and Miller do not generalise their arguments to more than two dimensions.

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8   In two dimensions the hyperplanes become lines. Hammond and Miller (1987) generalise because they show that even when the two Pareto sets intersect, provided the two chambers are sufficiently "far apart" from each other, there may be a core. The interested reader should consult the article.

A proof of Madison's intuition in more than two dimensions was presented by Brennan and Hamlin (1992). They argue that the Hammond and Miller results can be generalised to n dimensions as long as the Pareto sets of the two chambers do not overlap. However, Tsebelis (1993) has shown that their proof was incorrect, and that the conditions for the existence of a bicameral core are almost as restrictive as the Plott conditions. Tsebelis (1993) has also shown that if a bicameral core exists, it will be a segment of a straight line, or a point. Finally, he has shown that the uncovered set of a bicameral legislature (and therefore also TEQ) is contained within an area centrally located inside the legislature.

Figure 11.2: Area Within Which the Uncovered Set of Bicameral Legislature Is Located

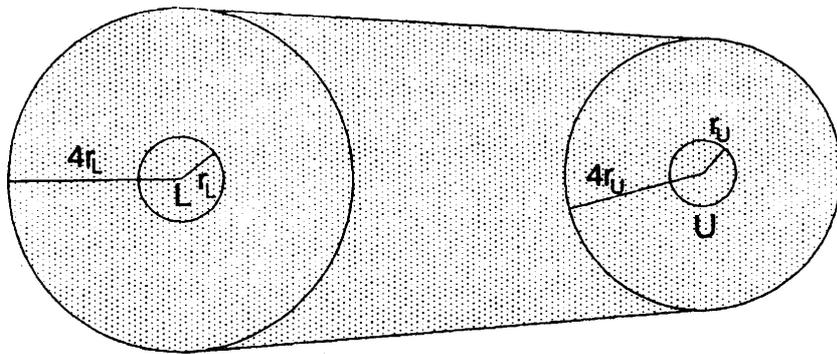

Figure 11.2 provides a visual representation of the Tsebelis argument. One can define the yolk of each chamber of a bicameral legislature in n dimensions as the smallest sphere in n dimensions intersecting with all median hyperplanes.[9] If one calls r_U the radius of the yolk of the upper chamber and r_L the radius of the yolk of the lower chamber, the uncovered set of the bicameral legislature (and therefore TEQ) is contained within the shaded area, where the two circles have as their centre the centre of the yolk of each chamber, and radius 4r where r is the radius of the yolk of the corresponding chamber. The reader can verify that the shaded

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9 "Median" is defined as a hyperplane which leaves a majority of members of the chamber on it and on one side of it, and a majority of members of the chamber on it and the other side of it.

area always has one dimension (the line connecting the centres of the two yolks) longer than any other.[10]

The relevance of this analysis is that whether it is the core (which in multiple dimensions rarely exists) or the uncovered set or TEQ (which always exist), bicameralism produces one privileged dimension of conflict. This dimension expresses the differences of the two chambers, or more specifically, the differences of the median voters of the two chambers.[11] Consequently, if one assumes cooperative decision-making (enforceable agreements), the outcome of bicameral negotiations will be located within the shaded area of Figure 11.2.

How reasonable is it to assume enforceable agreements? I would argue that the existence of disciplined parties guarantees that agreements among them will only very rarely not be enforced. Consequently, the prediction that the outcome of bicameral decision-making will be located within the shaded area of Figure 11.2 is a good one.

Let us explain this prediction in simple representations of the policy space. First, let us assume that the policy space has one dimension (left-right). In this case, it is easy to locate the median voter of each chamber. In addition, the yolk will be of radius 0, and centred on the median ideal point. From Figure 11.2 we can predict that the bicameral outcome will be located somewhere between the medians of the two chambers. This is not a surprising result, however, the fact that in a simple case the model produces the same outcome as our intuition should increase our confidence in the model.

Let us now consider the case of a simple two-dimensional policy space where the two chambers have distinct policy positions, as is the case in Figure 11.3. In this case, there is a core, namely the segment LU, and the model predicts that the outcome will be located on this segment. The reason for this is simple. For any point over or under the line LU, its projection on the line is majority preferred in each chamber, so any point outside the line can be defeated by concurrent majorities of the two chambers by its projection. Similarly, any point to the left of L or to the right of U can be defeated by L or U by concurrent majorities in both chambers.

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10 At the limit, if one circle is contained within the other, the uncovered set is contained within the outside circle and all dimensions are the same.

11 Strictly speaking, the median in n dimensions does not exist (if it does it is the core). However, one can think of the yolk as the multidimensional equivalent of the median.

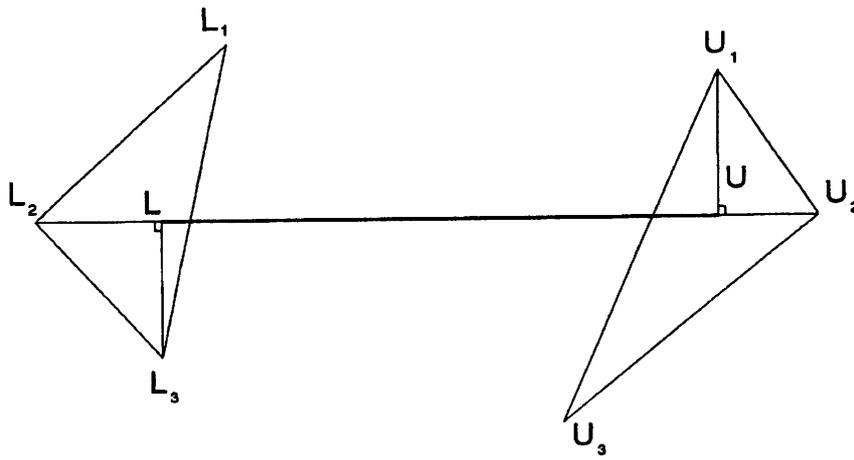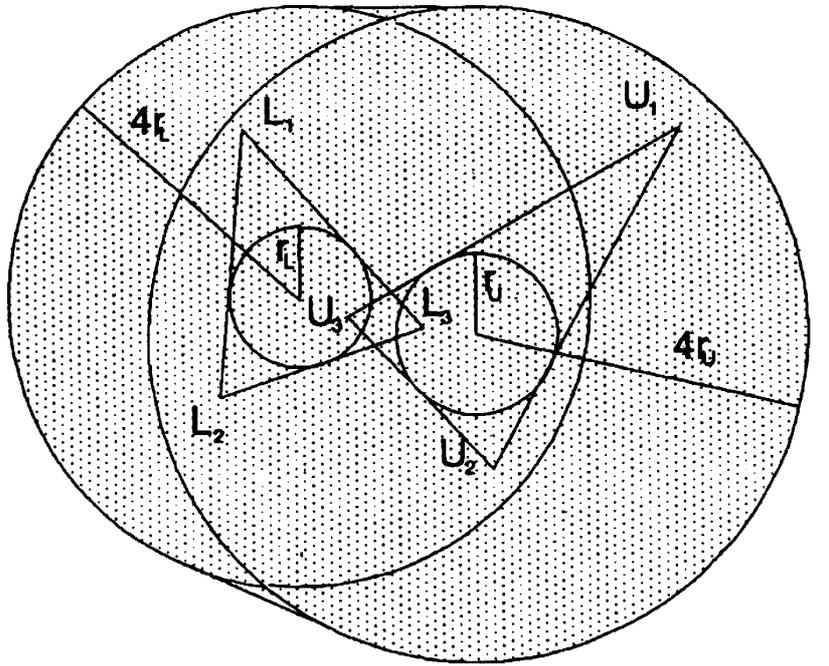*Figure 11.3:* Core of a Bicameral Legislature

Figure 11.4: Uncovered Set of a Bicameral Legislature (Core Does Not Exist)

Finally, let us consider the case of a more complicated two-dimensional policy space, as presented in Figure 11.4. The difference from the previous Figure is that the two chambers have preferences closer to each other. In this case, there is no core, and one has to find the area within which the uncovered set is located. The circles inscribed inside the two triangles representing each chamber are the corresponding yolks, and the wide shaded area is the prediction generated by the model. It may appear that this prediction is not very restrictive. However, two points should be made before we jump to conclusions. First, as discussed in the beginning of this section, in the absence of a core, the outcome of bicameral deliberations can wander anywhere in space; in addition, we needed the assumption of cooperative decision-making in order to restrict the outcome that much. Second, the size of the yolk generally decreases with the number of members of each chamber, and consequently, for realistic chamber sizes (in the order of hundreds), the prediction is not only the best we can do, but also quite good. However, the next part will take the objection of weak prediction seriously, make additional assumptions, and make a point prediction about the outcome of bicameral negotiations.

B. The Outcomes of the Navette

In the previous section we argued that bicameralism stresses one dimension of conflict (the line connecting the centres of the yolks of each chamber). Here we will take this finding for granted. We will assume conflict along one dimension (the redistributive game of the introduction), as here there is either only one policy dimension, or, on the basis of the previous argument, the two chambers are negotiating along the line UL.

Tsebelis and Money (1995) have modelled this process as bargaining between the two houses. The basic premise of their model, which is based on Rubinstein (1982; 1985), is that both houses of the legislature are eager to reach agreement. A bill today is better than a bill tomorrow as the reasoning goes.

There are a number of reasons why each house values legislation today over legislation tomorrow. If the issue is politically divisive, early agreement limits the level of fallout radiating from the legislation. In the case of fiscal or administrative crises, quick agreement resolves the crisis. Public opinion is important as well. Parties come to power with a political manifesto that promises specific pieces of legislation; failure to pass legislation will be interpreted by the public as political failure and lead to declining popularity. Finally, as time passes, the firmness of legislators' political commitments may decline, causing legislators to change their votes and thus making successful passage less likely. All these factors suggest that a deal today is preferred to a deal tomorrow.

The driving mechanism of Tsebelis and Money's model (from now on TM) is the following. Suppose that the difference for the lower house between an agreement in round 1 and round 2 is y, then this house should be willing to give a concession of the same magnitude in order to speed up the process and agree in round 1 instead of round 2. Obviously, the same argument is true about the other house as well. Moreover, the more impatient each house is, the more concessions it will be willing to make in order to reach a compromise. If the houses know each other's impatience, they can anticipate the final outcome of the bargaining process and get there immediately. If, however, each house does not know how impatient the other is, the process can continue for several rounds. If the level of impatience of each house is known by the other, the TM model permits the calculation of the final outcome on the line UL as a function of the level of impatience of each house, as well as the institutional features of the navette (where the bill is first introduced, how many times it goes through each chamber, what the final outcome of the stopping rule is). Here we will focus on a series of comparative statics statements, that is, statements that keep all other factors the same, and vary only one (institutional) parameter of the model.

A terminological clarification is necessary at this point. TM speak of a "round" of the navette when a bill is introduced back in the same house again. They use the term "time period" when a bill is introduced from one house to the other. Obviously, one round is equivalent to two time periods. An integer number of rounds means that there is a stopping rule (joint committee, session etc.), and that the house that has first reading is also the one that applies this stopping rule. Table 11.2 indicates that most countries have an integer number of rounds. We will present the comparative statics statements of the TM model along with the intuition behind them, the interested reader should consult the article for the proofs.

Proposition 1. When the lower house has the final word, the power of the upper house increases with the number of negotiating rounds.

Even in the case where the lower house ultimately decides, the constitutional provision of upper house review requires the lower house to send its version of the legislation to the upper house. This procedure delays the passage of legislation. Given the desire of the lower house to proceed as quickly as possible, it can offer the upper house some concessions in the initial legislation in exchange for upper house agreement to approve the legislation immediately. In the absence of concessions, the upper house can return the legislation to the lower house without approval, thus delaying agreement and making the final outcome less useful to the lower house. Each constitutionally required round of upper house review increases the delay and decreases the utility of the bill for the lower house. Thus, the lower house will be willing to make more concessions as the number of con-

stitutionally possible rounds increases. Even when the lower house is granted the ultimate power of decision, the upper house is not impotent. It can use its power of review to extract concessions from the lower house.

Proposition 2. If there is another stopping rule (conference committee, joint session, etc.), the most powerful house loses power as the number of negotiating rounds increases.

The derivation of this proposition requires the knowledge (by both houses) of the likely compromise when a stopping rule is applied. This knowledge may be in the form of a probability distribution over a series of possible outcomes. If, for example, disagreement is resolved by a joint session which favours the more numerous lower house, its power is decreased as the number of negotiating rounds increases. Again, this is because both houses are eager to reach agreement and the more powerful house will offer concessions in order to achieve rapid agreement.

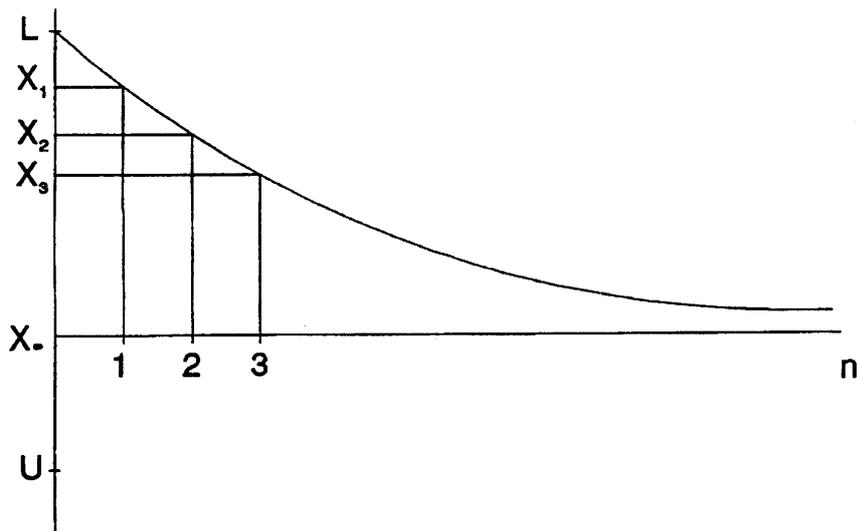*Figure 11.5:* Point of Compromise as a Function of n Number of Rounds

Figure 11.5 provides a graphic representation of the two propositions. Consider that the stopping rule specifies the exact point of compromise X_0 (if the lower house has the final word $X_0 = L$). The model permits the calculation of the compromise point X_∞ if the navette could last forever (see Table 11.2). Each additional round pushes the compromise outcome further away from X_0, towards X_∞.

Proposition 3. If there is an integer number of possible negotiating rounds, the house where the bill is first introduced has an advantage. This advantage is independent of the stopping rule, and increases with the number of rounds.[12]

The intuition behind this proposition is more difficult to express. The reasons have to do with the fact that as time goes by, the level of concessions a house is willing to make in order to avoid an additional round declines (see Figure 11.2). So, the house that has first reading is able to extract from the other the maximum concession. This is the first reading advantage. For the same reason, each potential additional round pushes the negotiation outcome more towards the first reader than towards the second. Over time this difference increases, so the first reader advantage increases.

A more interesting and realistic application of the same framework is where one house does not know the other house's level of impatience. In this case, the navette will continue until the uninformed chamber obtains a better understanding of the opposing chamber's impatience. Therefore, the length of the navette process depends on the amount of incomplete information of the game; the less well informed a chamber is, the more likely the process will take more rounds to complete.

The TM model makes a series of assumptions about the micromechanisms of negotiations and comes to several conclusions concerning the power of each house as a function of the institutional rules selected by the government and the impatience of each player. According to this theory, legislators will tend to defect over time, reducing the likelihood of successful passage. Moreover, greater impatience produces greater concessions; with the lower house invariably offering concessions to the upper house, even if it can prevail in the end.

Taking the French case, TM distinguish two types of impatience that drive the bargaining game between the Senate and the National Assembly. The first is systemic impatience, which they attribute to the breadth and strength of the current political coalition. If the dominant party (coalition) has a large majority, defections have little effect on the ultimate passage of legislation; it can afford to be patient. Similarly, if one party dominates the political coalition, defection by coalition members is less threatening. In the opposite case, where the political opposition is strong, and the coalition partners large, defections threaten the passage of legislation and the dominant party is impatient to see its legislation passed.

The second type of impatience is bill specific. Some bills are more important to the lower house than others; the lower house will grant more concessions for these bills in order to obtain senatorial agreement and a quick passage of the leg-

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12 If the number of negotiating rounds is not an integer, which house has the advantage depends on the impatience of both houses.

islation. The TM model has been applied successfully to French legislation, and results conforming to the predictions of the model have been presented both at the case study level (Money and Tsebelis, forthcoming) and at the aggregate level (Tsebelis and Money, 1995).

3. Conclusions

There is significant evidence indicating that even those upper houses considered to be weak, like the British House of Lords, the Federal Council in Austria, or the First Chamber in the Netherlands, have all obtained concessions from powerful lower houses or even aborted legislation. The question of why upper houses which do not have the formal power to abort legislation have been able to exercise influence in legislation has usually been attributed to their wisdom, and the strength of their considered opinions.[13] The institutional approach that we present here provides an alternative explanation of this puzzle. In addition, the three propositions introduced by the TM model permit us to make comparisons of the relative powers of the two houses of different bicameral legislatures. For example, in countries like the United Kingdom, Austria, and Spain, when a bill is introduced in the lower house first, their navette systems are identical except for the number of readings required by the upper house. The TM model leads to the expectation that the countries that require two readings, like the UK, have stronger upper houses than countries that require only one reading (Austria and Spain). Similarly, in those countries where legislation can be introduced in either house, the shift in power from one house to the other is more important in countries without stopping rules, like Italy, and Belgium, than in countries with three readings like France; and a change in the initiating house in France is more important than in Ireland with only one reading.

The expectations generated by propositions 1, 2, and 3 of the TM model are not tested here, and to our knowledge they have not been tested anywhere. These propositions rely on very strong ceteris paribus assumptions about the impatience of each chamber (time discount factors). The appropriate testing of these propositions requires an analysis of bills as they come out from each stage of the navette process. So far very few case studies of legislative decision-making have been done in European legislatures.

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13 Mastias and Grangé (1987); see also Money and Tsebelis (forthcoming) for additional references.

References

Banks, J. S. (1985), 'Sophisticated Voting Outcomes and the Covering Relation', *Social Choice and Welfare* 1, 295-306.

Brennan, Geoffrey and Alan Hamlin (1992), 'Bicameralism and Majoritarian Equilibrium', *Public Choice* 74, 169-179.

Cox, Gary W. (1987), 'The Uncovered Set and the Core', *American Journal of Political Science* 31, 402-422.

Cox, Gary W. and Richard D. McKelvey (1984), 'A Ham Sandwich Theorem for General Measures', *Social Choice and Welfare* 1, 75- 83.

Ferejohn, John A., Richard D. McKelvey and Edward W. Packel (1984), 'Limiting Distributions for Continuous State Markov Voting Models', *Social Choice and Welfare* 1, 45-67.

Frickey, Philip P. (1992), 'Constitutional Structure, Public Choice, and Public Law', *International Review of Law and Economics* 12, 163-65.

Hammond, Thomas H. and Gary J. Miller (1987), 'The Core of the Constitution', *American Political Science Review* 81, 1155-1174.

Inter-Parliamentary Union (1986), *Parliaments of the World. A Comparative Reference Compendium. 2nd edition* (Aldershot: Gower House).

Koehler, D. H. (1990), 'The Size of the Yolk: Computations for Odd and Even-Numbered Committees', *Social Choice and Welfare* 7, 231-45.

Levmore, Saul (1992), 'Bicameralism: When Are Two Decisions Better Than One?', *International Review of Law and Economics* 12, 145-62.

Lijphart, Arend (1984), *Democracies: Patterns of Majoritarian and Consensus Government in Twenty-One Countries* (New Haven/London: Yale University Press).

Mastias, Jean and Jean Grangé (1987), *Les Secondes Chambres du Parlement en Europe Occidentale* (Paris: Economica).

McGrath, Dennis R. (1983), *James Madison and Social Choice Theory: The Possibility of Republicanism. Unpublished Dissertation* (Department of Political Science, University of Maryland).

McKelvey, Richard D. (1976), 'Intransitivities in Multidimensional Voting Models and Some Implications for Agenda Control', *Journal of Economic Theory* 16, 472-482.

-- (1979), 'General Conditions for Global Intransitivities in Formal Voting Models', *Econometrica* 47, 1085-1112.

-- (1986), 'Covering, Dominance and Institution-Free Properties of Social Choice', *American Journal of Political Science* 30, 283- 314.

Miller, Nicholas R. (1980), 'A New Solution Set for Tournaments and Majority Voting', *American Journal of Political Science* 24, 68-96.

Money, Jeanette and George Tsebelis (1992), 'Cicero's Puzzle: Upper House Power in Comparative Perspective', *International Political Science Review* 13:1, 25-43.

-- (forthcoming), 'The Political Power of the French Senate: Micromechanisms of Bicameral Negotiations', *Journal of Legislative Studies.*

Plott, Charles R. (1967), 'A Notion of Equilibrium and its Possibility Under Majority rule', *American Economic Review* 57, 787-806.

Riker, William H. (1992a), 'The Justification of Bicameralism', *International Political Science Review* 13, 101-116.

-- (1992b), 'The Merits of Bicameralism', *International Review of Law and Economics* 12, 166-168.

Rubinstein, Ariel (1982), 'Perfect Equilibrium in a Bargaining Model', *Econometrica* 50, 97-109.

-- (1985), 'A Bargaining Model with Incomplete Information About Time Preferences', *Econometrica* 53, 1151-1172.

Schofield, Norman (1978), 'Instability of Simple Dynamic Games', *Review of Economic Studies* 45, 575-594.

Schwartz, Thomas (1990), 'Cyclic Tournaments and Cooperative Majority Voting: A Solution', *Social Choice and Welfare* 7, 19-29.

Shepsle, Kenneth A. (1979), 'Institutional Arrangements and Equilibrium in Multidimensional Voting Models', *American Journal of Political Science* 23, 27-59.

Shepsle, Kenneth A. and Barry R. Weingast (1981), 'Structure Induced Equilibrium and Legislative Choice', *Public Choice* 37, 503-519.

-- (1984), 'Uncovered Sets and Sophisticated Outcomes with Implications for Agenda Institutions', *American Journal of Political Science* 28, 49-74.

-- (1987a), 'The Institutional Foundations of Committee Power', *American Political Science Review* 81, 85-104.

-- (1987b), 'Why Are Congressional Committees Powerful?', *American Political Science Review* 81, 935-945.

Trivelli, Laurent (1975), *Le Bicamérisme. Institutions Comparées. Étude Historique, Statistique et Critique des Rapports entre le Conseil National et le Conseil des États* (Lausanne: Payot).

Tsebelis, George (1990), *Nested Games: Rational Choice in Comparative Politics* (Berkeley: University of California Press).

-- (1993), 'The Core, the Uncovered Set and Conference Committees in Bicameral Legislatures', *Paper presented at APSA.*

Tsebelis, George and Jeanette Money (1995), 'Bicameral Negotiations: The Navette System in France', *British Journal of Political Science* 25:1, 101-129.