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SOPHISTICATED COMMITTEES AND
STRUCTURE-INDUCED EQUILIBRIA IN CONGRESS

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SOPHISTICATED COMMITTEES

AND STRUCTURE-INDUCED EQUILIBRIA IN CONGRESS[*]

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The preceding articles vividly illustrate the continuing interest
of political scientists in the ways in which institutions in general
constrain political behavior and shape political outcomes. With
respect to Congress in particular, two distinct approaches to the
study of institutions emerge. Shepsle's pioneering work on
structure-induced equilibria is theoretical; Fenno's and Polsby's
research is more directly based on real-world observations of
Congress. No doubt some readers have a predilection for one approach
or the other, but regardless of which is favored, differences between
the observations of the latter and the theory of the former are
bothersome. For example, Fenno's committees are all different;
Shepsle's are all the same. Polsby's Congress changes over time;
Shepsle's abstract institution is static. In the extreme, skepticism
about Shepsle's theory raises doubts regarding the usefulness of

abstractions such as finite coverings, correspondences and orthogonal
bases for understanding Congress.

To demand that Shepsle's theory pertain to all sessions of
Congress or to all decision-making settings within any given session
is, of course, unreasonable. But in light of the indisputable
empirical truths that Congress does change and congressional
committees do differ, a more modest request is appropriate, namely, a
request for a demonstration of the empirical relevance of formal
theories of institutions.

This article addresses the somewhat narrower topic of whether a
theory of legislatures, a la Shepsle, can usefully and intelligibly
accomodate the diversity in real-world legislatures, and whether in
doing so it can retain its ability to predict political outcomes. I
argue that Shepsle's theory is indeed useful for understanding
Congress, in spite of its various limitations and simplifications,
some of which are defended and others of which are corrected.
Ultimately, I show how a proposed theoretical extension, while
abstract, nevertheless says something concrete about how the
institutionalization in Congress can stabilize congressional outcomes.
The essay begins with a nontechnical review of Shepsle's theory and
its main result, and proceeds to extend the theory to situations in
which committees are more attentive and responsive to the preferences
of noncommittee members. New theoretical results are presented for
"simple institutional arrangements" (SIAs) with sophisticated
committees, and Fenno's House committees and Polsby's comments on

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[*]This paper is being prepared for a volume of research on Congress,
edited by Mathew D. McCubbins and Terry Sullivan. It is to be
included in a section on institutionalization, which also will include
reprints of Shepsle (1979), Polsby (1968), and excerpts from Fenno
(1973).

institutionalization are reconsidered in light of the revised theory.

I. Ingredients

An implicit assumption in Sheple's theory is that political outcomes (congressional decisions, for example) result from three types of ingredients: the preferences of decision-makers for various policies, the institutional features that specify when, how, and by whom decisions are made, and the strategies decision-makers employ within the confines of institutional features in their attempts to obtain preferred outcomes. Shepsle's main theoretical result is that the imposition of institutional features -- most notably the committee system and jurisdictional system — says a lot about what policies are selected. Specifically, these institutional ("structural") features create ("induce") a predictable and stable outcome ("equilibrium") in a large class of situations in which their absence would guarantee virtually complete unpredictability and instability of outcomes. Since the theory places few constraints on the configurations of decision-makers' preferences, institutional features are properly credited for inducing equilibria. Thus to the degree that the assumptions of the theory are defensible, the importance of institutional features cannot be doubted.

Of course, neither Fenno nor Polsby doubt the importance of institutional features. Polsby, for example, writes that

> [i]t is hard — indeed for the contemporary observer, impossible -- to shake the conviction that the House's institutional

structure does matter greatly in the production of political outcomes (p. 165).

This is not to say, however, that observers of Congress are at ease with Shepsle's theoretical characterization of preferences, institutions and strategies. We therefore raise the question: How closely does Shepsle's institutional arrangement resemble the U.S. Congress? For an answer we examine the theory in light of Congress itself. Unlike Shepsle who demands a high level of generality from his theoretical results, we introduce the ingredients of the theory at a relatively specific, concrete, and nontechnical level. First we examine the assumptions about preferences, second institutional features, and finally (in a later section) strategies. Only in the latter case do my assumptions differ significantly from Shepsle's.

Preferences. The initial assumption is that a legislature consists of a set of members who make decisions about different policies. Specific policies are represented as points in a geometric space; areas of policy (issues) are represented as different dimensions (axes) in the space. Figure 1a is a simple two-dimensional example in which the only policies on which this legislature makes decisions are domestic spending and military spending. Domestic spending is represented by the horizontal axis; military spending is represented by the vertical axis. Any point on an axis represents a policy, that is, a decision to spend the amount specified by the numerical value of the point. Selection of an overall spending policy consists of selecting a point in this two-dimensional space. The

point A, for example, represents domestic expenditures of $400 billion and military expenditures of $350 billion.

[figure 1]

Different members typically want different policies. Similarly, any individual member prefers some policies to others. We assume that there is a minimal degree of consistency in each individual's preferences. Consistency of preferences can be expressed in a number of ways, one of the simplest of which is the notion of single-peakedness. Consider the preferences of a single legislator on domestic spending. Suppose that the level of domestic spending he prefers most is $300 billion. If, as in figure 1b, we again represent domestic spending on the horizontal axis, but now let the vertical axis reflect the degree to which the member likes (or values) various policies on the horizontal axis, we can straightforwardly plot the legislator's preference curve for domestic spending. Notice that the solid curve reaches its sole maximum directly above the $300 billion point on the policy axis. Thus the point x^* at $300 billion on the horizontal axis is the legislator's ideal point. Furthermore, the degree to which the legislator values other policies never increases as alternatives get farther and farther from his ideal point.

What if preference curves were not single-peaked? The dotted curve in figure 1b, means that even though spending, say, $350 billion is preferred by the legislator to spending $400 billion (consistent with single-peakedness up to this point), the member nevertheless prefers spending $500 billion to $400 billion. Clearly, this violates

Figure 1

Policies and Preferences

a. A Two-dimensional Policy Space
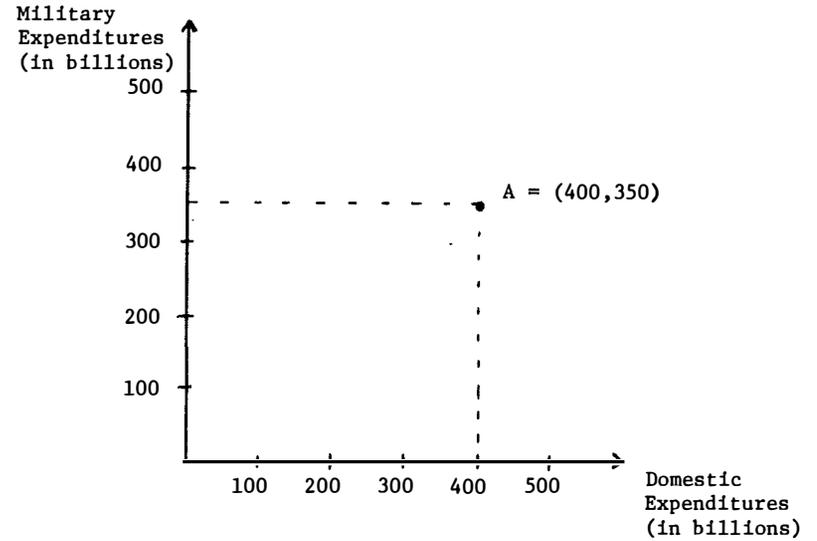
b. Single- and Non-single-peaked Preferences
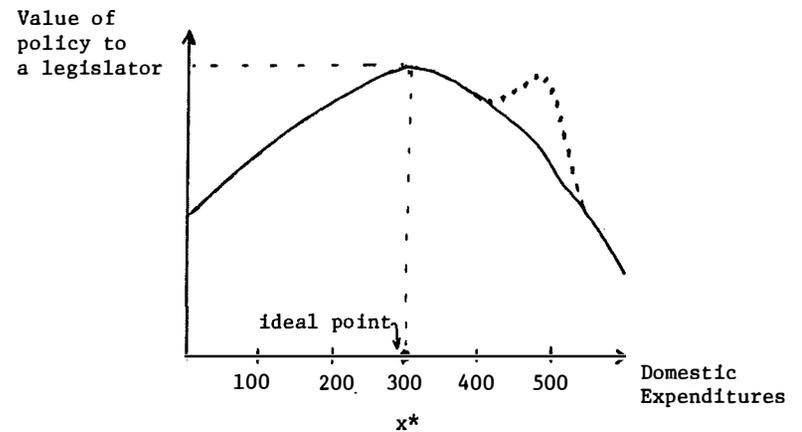
intuitive notions about consistency. As other research in this volume

persuasively suggests, legislators aggressively seek their jobs and

are increasingly preoccupied with keeping them (see, for example,

Polsby, p. 166). It therefore seems reasonable to assume that such

inexplicable preferences are not common among congressmen. Thus, to

reiterate, every legislator has an ideal point in the policy space.

Moreover, a legislator's preference for a policy always declines as

the distance between the policy and his ideal point increases.

The theoretical significance of the assumption is illustrated in

figure 2, which shows five members who have single-peaked preferences

and ideal points x_1^*, ..., x_5^*. The figure also shows a status quo

point, S^o, which represents existing policy, and a proposal or bill,

B, which represents an attempt to change S^o. (Only later are we

concerned with the origin of B.)

[figure 2]

Suppose that whenever a member has a chance to vote for one of

two alternatives he votes for the alternative he prefers, that is, the

one that projects upward to a higher point on his single-peaked

preference curve. Then, under commonly used amendment processes,

something predictable happens. In a vote that pairs S against B, B

obtains the votes of members 3, 4, and 5 and wins. Suppose, however,

that B can be amended. Members 1 and 2 see that C is preferable not

only for themselves but also for member 3, so they propose it as an

amendment, whereupon members 1, 2, and 3 vote to accept it. Next

members 4 and 5 might counterpropose D, which with member 3's vote

Figure 2

Example of a Median Voter Outcome
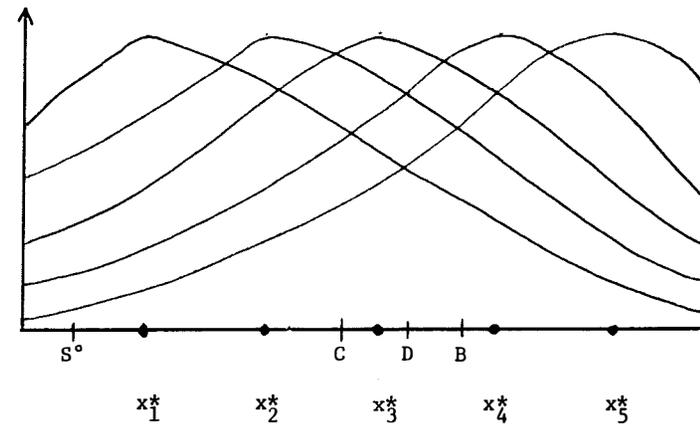
defeats C. This process might continue, but by now the dynamic, if not the outcome, is clear. Eventually member 3's ideal point itself will be offered and selected as an amendment, after which no point will defeat it.

The general statement of this phenomenon is Black's median voter theorem[1] -- so called because it says that with members arrayed on a policy dimension in such a way that their preferences are single-peaked, and with an open amendment process such as the one just described, the outcome is always the ideal point of the median voter — the voter for whom half of the other voters' ideal points are on either side of his. Surprisingly, this rather simple result is instrumental for many of the more complicated, institutionally rich results in Shepsle's article.

Institutional features. The nature of legislators' preferences over alternatives in a policy space is one of the most basic ingredients of political decision-making and, not coincidentally, the one on which most formal political theory focused prior to Shepsle. We know, however, that there is more structure to congressional decision-making than preferences alone reflect. Fenno's and Polsby's research provide details of several "structurers". The committee system divides labor by assigning different members to different committees. The jurisdictional system ensures that different committees work on different problems and decide on different policies. Thus, actual decision-making in Congress is at least a two-stage process: committee members (a subset of the full membership)

decide first; the full membership then accepts, rejects, or — depending on the rules -- amends the decision of a committee. Among other things, the rules determine the circumstances under which members may or may not offer amendments to committees' legislation. Shepsle shows that institutional features, too, can be expressed formally. To bring the discussion closer to Congress we provide some examples.

A committee is a subset of legislators; the committee system is the mechanism that divides the full membership into subgroups. For example, the committee system assigns Jim Jones, Jim Wright, Jack Kemp,... to the Budget Committee; Jamie Whitten, Silvio Conte, David Obey,... to the Appropriations Committee; John Dingell, James Broyhill, Henry Waxman,... to the Committee on Energy and Commerce, and so on.

The jurisdictional system is structurally similar to the committee system, but assigns policy dimensions, instead of legislators, to committees. Tax policy is assigned to the Ways and Means Committee, thereby granting Ways and Means the exclusive privilege of making initial proposals (bills) on tax policy. Similarly, education policy and labor policy are matters taken up by the Education and Labor Committee; defense policy is the jurisdiction of the Armed Services Committee, etc.

This characterization of committee and jurisdictional systems is remarkably flexible. Nothing formally prohibits a legislator from serving on more than one committee. Indeed, almost all congressmen

serve on two or more committees. A dimension of the policy space may be assigned to more than one committee, also. For example, the Science and Technology Committee in the House has jurisdiction over some matters of education -- such as authorizations for the National Science Foundation which funds several science education programs even though the Education and Labor Committee, claims the same jurisdiction (with mixed success).

Complicated jurisdictional arrangements confound not only the efforts of members of Congress to pass legislation, but also the attempts of political scientists to predict congressional outcomes. Therefore, it is understandable that while present theoretical tools enable us to define complex combinations of committee and jurisdictional systems, present theoretical results rest on assumptions of simpler institutional arrangements. In particular, we assume that a special, restricted combination of committee and jurisdictional systems is in effect, called a simple institutional arrangement, abbreviated SIA.

To understand precisely what an SIA is, recall that the policy space is n-dimensional. Although figure 1a shows only two broadly defined dimensions, the congressional policy space is better represented as several narrower ones. For example, total domestic spending is an amalgam of spending decisions by several committees: the Judiciary Committee makes initial decisions on authorizations for the Justice Department, the Energy and Commerce Committee makes initial decisions on toxic waste clean-up, and so on. The assumption

of SIAs pertains to the relationship between, and the numbers of, committees and jurisdictions. Specifically, an institutional arrangement is considered simple if each committee has one and only one unique unidimensional jurisdiction. Thus committees do not share jurisdictions, and no committee's jurisdiction contains more than one policy dimension. This implies a one-to-one-to-one relationship between committees, jurisdictions and policy dimensions. Simple institutional arrangements, therefore, are very simple -- so simple, in fact, that one may argue that they bear little resemblence to Congress. Congress, unlike SIAs, has some multidimensional and overlapping jurisdictions, and some recent reforms have made them more common. Nevertheless, there are several reasons for focusing on SIAs.

First, all models are simplifications. If a model abstracts essential features from a real world situation, then simplicity is no detriment.[2] To specify the essential features entails judgment, of course. But inasmuch as few congressional scholars would omit the committee and jurisdictional systems from their list of essential features, we may rest assured that we are off to a good start.

Second, closer consideration of behavioral as well as structural features of Congress suggests that the assumption of unidimensional and nonoverlapping jurisdictions is not so unrealistic after all. Even though jurisdictions of specific committees may not be unidimensional in the sense that the Education and Labor Committee, for example, writes legislation both on education and labor policy, there is a tendency for committees to address one policy at a time.

The existence of multidimensional jurisdictions, then, does not imply that committees with such jurisdictions produce multidimensional legislation.

Third, even if policies within broad areas such as education, labor, energy, and transportation are technically multidimensional, legislators often evaluate policies as if they were unidimensional. For example, during the 2nd session of the 98th Congress, the Maritime Authorization Bill (HR 5723) contained specific provisions for construction subsidies, loan guarantees, and development funds (all for American shipbuilders), as well as restrictions on foreign flag vessels. Theoretically, each provision might be considered a separate dimension: the amount of construction subsidies, the degree to which loans are guaranteed, etc. In practice, however, most members probably evaluated the legislation more parsimoniously; their main interest was in how much the provisions as a whole helped American shipbuilders. Therefore, the situation approximates a unidimensional one, even though a strict interpretation casts it in a multidimensional framework.[3]

Legislators may also address relatively complex and possibly multidimensional legislation by ignoring all but one major dimension. Legislation is often noncontroversial on all but a single point, so the array of preferences on the single controversial dimension is all that matters in practice. An example of this process is the House Judiciary Committee's treatment of the Senate's authorization bill for the Justice Department (S 951). The bill contained many provisions,

but only one aroused much attention, namely, a provision that would have ended court-ordered busing for the purpose of achieving racial balance in schools. Thus, as with the ship-building example, the way in which legislators are likely to perceive bills often makes a putatively multidimensional decision unidimensional in practice.

In sum, while neither Shepsle nor I would argue that all congressional committee and jurisdictional arrangements fall into the class of SIAs, a sufficient number do so that we may proceed comfortably with the assumption.

Thus far we have seen how the committee and jurisdictional systems determine the assignment of members and policies to committees, thereby imposing some order on congressional decision-making. Little has been said, however, about how members may (and may not) behave in these minimally structured settings. What institutional features comparably structure strategies -- the expression of preferences -- as committee and jurisdictional systems structure the opportunities for members to make initial choices about policy? One answer is the rules. In two-stage decision-making, rules shape strategies by defining the set of alternative proposals that members in the second, floor stage may offer to the bill produced by committee in the first stage. Shepsle discusses several kinds of "amendment control rules," three of which are most prevalent in Congress: open, germaneness, and closed. The meaning of each becomes clear in the context of the policy space.

The open rule is the least constraining rule. In a

multidimensional policy space, it permits any amendment. Thus when it is in effect, as is normal in the Senate, amendments may be offered by any member on the floor who is recognized by the chair. Moreover, the amendment need not pertain to the legislation under consideration. An amendment to a jobs bill, for example, might call for the repeal of withholding of taxes on interest and dividends.[4]

The germaneness rule also permits amendments, but it requires that they pertain closely to the issue under consideration. In SIAs, the germaneness rule allows any amendment that leaves policy unchanged on all dimensions other than the one currently under consideration. If, for example, the House is operating under the germaness rule (as it normally does) and is debating a bill for appropriations for military assistance to El Salvador, members are permitted to propose amendments changing the level of assistance to El Salvador. To propose an amendment to reduce subsidies to tobacco farmers in North Carolina, however, would be nongermane and in violation of the rule. The germaneness rule, then, provides some opportunities for noncommittee members to shape legislation, but constrains their efforts to the issue at hand.

No such opportunities are available under the closed rule, which dictates that members on the floor simply accept or reject the committee bill. Strategic opportunities for noncommittee members, therefore, are minimal. In contrast, strategic opportunities for the committee that reports the bill are sometimes substantial.

The continuum that emerges from the discussion of rules is the degree of openness of the rule. As rules change from closed to germaneness to open, more amendments are permitted, and the requirement that the policy content of the amendments pertain closely to the legislation is relaxed. Although the rules represent only three points on the continuum, (and we focus on only two below), the continuum reflects other, relatively complicated congressional rules. Scholars who observe congressional rules first-hand and write about them more concretely, classify the rules in a manner consistent with the continuum. For example, in a series of studies of "complex rules" in the House, Stanley Bach discusses rules as being either "expansive" or "restrictive". The degree of expansiveness or restrictiveness is consistent with movement towards the open or closed end of the continuum.[5]

II. Structure-Induced Equilibria

Having reintroduced the principal ingredients in Shepsle's theory, we next reconsider its main result — the existence of structure-induced equilibria. Our demonstrations and discussion are designed to answer several questions. First, exactly how do the institutional features, such as committee system, jurisdictional system and rules, channel outcomes to specific points or regions in the policy space? Second, what does it mean for an outcome to be an equilibrium? And finally, how credible is the result in light of what Fenno, Polsby, and others write about Congress?

Outcomes under the germaneness rule. In figure 3a, x's represent

ideal points of committee members and o's represent ideal points of legislators who participate in decision-making only on the floor.[6] CM represents the ideal point of the committee median voter, FM is the ideal point of the floor median voter, S^o is the status quo point at the initial time period, and B is the bill reported to the floor by the committee.

[figure 3]

According to Shepsle's assumptions, decision-making proceeds as follows. First the committee convenes and decides to report its median proposal to the floor, thus the bill is located at CM. This is a straightforward application of Black's theorem within committee. Once sent to the floor, the bill is subject to amendment under the germenaness rule, so floor members may propose any amendment that changes policy on only this dimension. Again, Black's theorem generates the prediction: the amendment process continues until a majority votes in favor of the floor median proposal (FM), after which no proposal defeats it. The outcome, therefore, is FM, which in turn becomes S, the new status quo point.

The occurrence of such an outcome under the germaneness rule is straightforward. That the outcome is an equilibrium is somewhat more complicated. We therefore examine in some detail what it means for an outcome to be in equilibrium. This entails consulting, backtracking, and sometimes negating Shepsle's key definitions in order to devise a generally applicable test for situations, such as figure 3, in which we want to know whether an outcome, S, after some prior session of

Figure 3

Committee Bills and Floor Outcomes
in Shepsle's Institutional Arrangements

a. Germaneness Rule
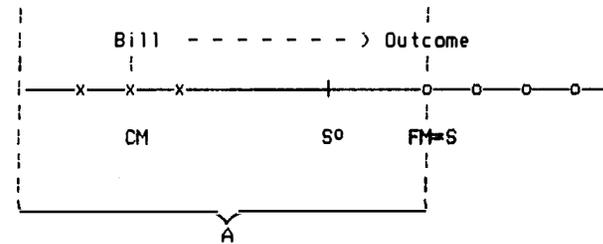
b. Closed Rule
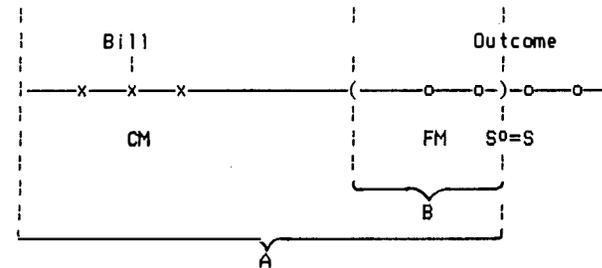
decision-making is a structure-induced equilibrium. Shepsle states that

Definition 1. "The status quo . . . is a structure-induced equilibrium [SIE] if and only if it is invulnerable" (p. 36).

Working backward and paraphrasing, we find that

Definition 2. The status quo is vulnerable (and hence not an SIE) if either condition R or RA, defined as follows, is satisfied:
R: there exists a replacement, that is, a point that
(1) is in the jurisdiction of the committee,
(2) the committee chooses over the status quo,
(3) the house chooses over all valid amendments and over the status quo.

RA: there exists a replacement by amendment, that is, a point that
(1) is in the jurisdiction of the committee,
(2) the committee chooses over the status quo,
(4) has a valid amendment that the house chooses over the point and over the status quo.

Conversely, we can say

Definition 3. The status quo is invulnerable (and hence an SIE) if neither R nor RA is satisfied, that is, if
~R: there is no replacement, that is, no point such that (1) and (2) and (3) above are each satisfied,

and

~RA: there is no replacement by amendment, that is, no point such that (1) and (2) and (4) above are each satisfied.[7]

Notice how the symbols simplify matters. Because conditions (1) and (2) are identical under replacement (R), replacement by amendment (RA), no replacement (~R) and no replacement by amendment (~RA), we

use the same labels. But notice also the differences between replacement and replacement by amendment (and their negations) due to conditions (3) and (4). A replacement is a point that defeats all competitors; a replacement by amendment is a point chosen by a committee for which there is an amendable version that defeats both the original point (the bill) and the status quo.[8]

With reference to these definitions, existence and nonexistence of SIE in various settings is easily demonstrated. Shepsle rigorously proves the existence of SIE in settings such as figure 3, so we cannot doubt existence in these situations. Nevertheless it is a useful exercise to focus on the definition of invulnerability to see why S cannot be replaced — neither directly nor by amendment.

Clearly, there are points in the jurisdiction of the committee, and there are points that a majority on the committee prefers and would choose over the status quo. Any point to the left of S (region A) is preferable to the committee because CM, and therefore a committee majority, is to the left of S. Since conditions (1) and (2) are satisfied, we must contradict both (3) and (4) to demonstrate invulnerability of S. Conditions (3) and (4) both require that the floor choose the replacement (or an amended version thereof) over the status quo. But recall that the new status quo lies precisely at the floor median position. Black's theorem tells us that no point can defeat the median voter's ideal point, so S = FM cannot be replaced, neither by a committee's bill nor by some amendment to the committee's bill. This indeed contradicts conditions (3) and (4) and demonstrates

that there is no replacement, and no replacement by amendment, for S. Therefore S is invulnerable and, according to definition 1, an SIE.

The implication of this finding for the larger legislature is that attempts to upset this S, or any other S in any other jurisdiction, will always fail if the specified institutional arrangement is in effect, if the configuration of preferences does not change, and if members continue to exercise the strategies implicit in the theory. The key is that the combination of committee and jurisdictional systems structures the legislature in such a way that the same process of decision-making goes on independently in several committees and jurisdictions. Therefore, not only is the S on this dimension invulnerable; all S's in jurisdictions governed by the germaneness rule are in equilibrium -- but importantly, equilibrium induced by a special combination of structural features: the committee system, the jurisdictional system, and the germaneness rule.

Outcomes Under the Closed Rule. Careful readers will have noticed some potentially important qualifications in the previous argument, one of which is the restricted focus on the germaneness rule. Indeed, Shepsle's main theorems about SIE pertain only to situations in which the germaneness rule is in effect. Are structure-induced equilibria guaranteed to exist in closed rule settings also? Figure 3b and our restatement of Shepsle's definitions provide the answer. The configuration of preferences is identical to that in figure 3a, but the initial status quo point, S^o, is different. As before, the assumptions dictate that the bill is at the committee

median position. But now members cannot amend it. In an up-or-down vote on the bill, everyone to the right of FM as well as the floor median voter himself votes "nay" and the bill is defeated. The outcome and new status quo point is therefore the same as the initial status quo point. On the grounds that S^o and S are the same, may we infer that this S, too, is an SIE? Not until we apply the test.

Returning to definition 2 (vulnerability), we first search for a replacement. If we find one, then S is vulnerable and cannot be an SIE. Here too there are points in the jurisdiction of the committee that the committee would choose over the status quo. Any point on the line except for S itself is a valid committee proposal,[9] so condition (1) is satisfied. Condition (2) is satisfied also; all points in region A would be chosen by the committee over S. Next, condition (3) requires that some point that satisfies (1) and (2) defeat all possible amendments and the status quo point. Since there can be no amendments under the closed rule, the first part of (3) is trivially satisfied. Furthermore, with respect to the second part of (3), several points can defeat the status quo. One obvious candidate whose attractiveness was demonstrated in the discussion of the germaneness rule is FM, which indeed would defeat S on the floor. Therefore we have found a replacement and shown S to be vulnerable and therefore not an SIE.[10]

The seemingly limited scope of structure-induced equilibria to germaneness situations suggests at least one of two things, both of which turn out to be closely related to institutionalization and the

stability of congressional outcomes. First, perhaps closed rule

situations are fundamentally less predictable and stable than

germaneness rule situations. The existence of SIE under the latter

but not the former supports this conjecture. Alternatively (but not

necessarily contrastingly), perhaps the assumptions of the theory

about legislators' behavior are not plausible in light of what Fenno

and others write about congressmen. We address assumptions about

strategy next, after which we are better equipped to reconsider

institutionalization and stability of outcomes.

III. Sophistication in Committees[11]

A perplexing feature in the situations in figure 3 is the myopic

behavior of the committees. Why would experienced and knowledgeable

committees act as these committees acted? In figure 3a, the committee

reported a bill consistent with its members' preferences, but

substantially different from what members on the floor wanted.

Thereafter, the bill was amended substantially, much to the chagrin of

the committee. With a similar lack of foresight, the committee in

figure 3b reported a bill destined to fail, when, at minimum, it could

have reported a bill equal to FM and obtained an outcome preferable to

all committee members — indeed preferable to a majority of members of

the legislature, too. The question, then, is whether decision-makers

in the first (committee) stage of a two-stage decision-making process

take into account probable second-stage actions. Fiorina and Plott

concisely outline the problem:

. . . [N]aturally occurring political committees do not exist in
splendid isolation. Instead, they are frequently embedded in
some larger ongoing institutional context. This embedding raises
the following potentially critical question: if the committee
decision is regarded by the members as only one stage in a
sequence of games, might behavior in the committee reflect
strategic considerations from the larger game? If so, a model
which explains the behavior in the larger game might produce
implications for the committee stage which differ substantially
from those implied by models successful in explaining the process
of isolated committees (1978, p.593).

Maintaining our congressional focus, we now address several

related questions: What are some alternative strategies exercised in

committees? What are the necessary conditions for the exercise of

foresight in uniquely beneficial ways? Finally, when and why do

different strategies result in different outcomes? While the

questions are phrased somewhat abstractly, the underlying motivation

could hardly be more concrete and is nicely summarized in excerpts

from Manley's classic study of Wilbur Mills and the Ways and Means

Committee:

"As I see it," Mills has said, "our job is to work over a bill
until our technical staff tells us it is ready and until I have
reason to believe that it is going to get enough support to pass.
Many of our bills must be brought out under a closed rule, and to
get and keep a closed rule you must have a widely acceptable
bill. It's as simple as that. ... It's a waste of time to
bring out a bill if you can't pass it." (p. 448)

And to ensure passage in the House, Mills was acutely attuned to House

members' preferences.

"He counts the heads in the Committee and he counts the heads in
the House, he's always counting." (p. 446)

The revised theory incorporates the two key elements of strategy to which Manley alludes: a willingness of committees to win, and their corresponding attentiveness to preferences of legislators outside of the committee. It does so, however, by building onto, rather than reconstructing, Shepsle's theory.

Traditionally, theorists of voting discuss two strategies: sincere voting (sometimes called "naive" or "myopic") and sophisticated voting (sometimes called "strategic"). A voter who employs a sincere strategy when faced with two alternatives always votes for the alternative he prefers, even though its winning at the immediate stage of voting may in effect ensure its replacement by some inferior proposal at some subsequent stage. In contrast, the sophisticated voter votes for the alternative that he thinks will ultimately lead to the selection of a preferable alternative. Sophisticated strategies therefore often prescribe ostensible misrepresentation of one's preference at some stages of voting.

Using the same rationale as that used in the conventional definitions of sophisticated voting, we shall define a new form of sophistication that is uniquely suited to simple institutional arrangements in which either the germaneness or the closed rule is in effect. Just as sophisticated voting in the conventional sense requires that voters are aware of how the outcome of immediate votes affects the choices available in subsequent stages, sophistication of committees requires foresight on the part of committee members. In

particular, we assume that members of a sophisticated committee ask: If we select a bill for referral to the floor, can it win, or how will it be amended? If the members judge that the bill cannot win or that it will be amended in an unsatisfactory manner (relative to other feasible alternatives, including the status quo) then the sophisticated committee may adopt another course of action or, possibly, inaction.

The development of precise definitions of sophisticated committee behavior takes place in two stages. First, examples are studied and general definitions of situations that are "ripe" for sophisticated behavior are stated for germaneness and closed rules. Second, a single, complete definition of committee sophistication is stated in terms of the two definitions of ripeness.[12]

Committee sophistication under the germaneness rule consists of knowing when to obstruct, that is, to choose not to report a bill to the floor because of the expectation that it would be amended unacceptably. Reconsider the decision-making situation in figure 3a. We know that under Shepsle's assumptions, which include Black's theorem applied within committee, the committee myopically reports its median motion, after which the amendment process on the floor causes the bill to converge to the floor median. With a modicum of foresight, however, the committee would choose not to report a bill at all. As a result, S^o would remain in effect and a committee majority would be more satisfied with the outcome. (Note that the example is not as contrived as it may appear. For example, even if the right-

most committee and floor members were interchanged, a majority on the committee would still prefer the status quo outcome under obstruction to the floor median outcome under referral.)

If committee sophistication under the germaneness rule consists of knowing when to obstruct, then a precise specification of the conditions under which obstruction is favorable for a majority on the committee is a necessary step towards defining committee sophistication. Our study thus far has shown that the key points are FM, CM and S^o. The key decision-maker is the committee median voter, who considers the relative distances between his ideal point, and FM and S^o -- distances which determine his preference between alternatives. In general, if the committee median voter prefers the initial status quo (S^o) to the floor median voter's ideal point (FM), the situation is ripe for obstruction, since only then does a majority of committee members prefer S^o to FM. Formally,

> Definition 4. A situation under the germaneness rule is <u>ripe for obstruction</u> if and only if $|CM-S^o| \leq |CM-FM|$.

Incorporation of foresight into the committee decision-making calculus can be beneficial in some closed rule situations, too. But sophistication under the closed rule involves not the binary choice of whether or not to obstruct, but instead the choice of where to place the bill. Although this form of sophistication is relatively complicated, the examples in figure 4 lead us to a general definition of situations that are ripe for strategic placement. Again, the relative locations of CM, FM and S^o determine the strategic

possibilities. The exploratory procedure is to fix FM and S^o and to move CM from right to left, continually considering the strategic situation of the committee.
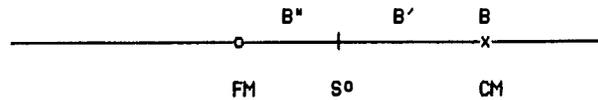
[figure 4]

Whenever the status quo is in the middle position of the three key points, as in 4a, the committee position is hopeless and its actions, unless perverse, are inconsequential. For example, B = CM loses on the floor since a majority of voters are on or to the left of FM, which in turn is to the left of the sole alternative motion, S^o. Such is the case even if the committee moderates its proposal, as with B'. In fact, the committee's bill can win only if placed to the left of S^o, such as B". But the victory is hollow, since at least half of the committee members prefer no bill (S^o) to B". Clearly, this situation is futile for the committee.

In 4b, however, CM is between FM and S^o, and the inability of floor members to amend the committee's bill is an obvious advantage for the committee. Since the floor median voter is on the far side of the bill (relative to S^o), a winning coalition for the bill over the status quo is guaranteed and the committee obtains its median outcome. The situation is similar in Figure 4c in which FM is in the middle, but because the floor median voter still prefers CM to S^o, the committee is again in a favorable position. Indeed, the committee's situation is so favorable that it gets its median even without exercising foresight; even Shepsle's sincere committees would obtain committee median outcomes.

Figure 4

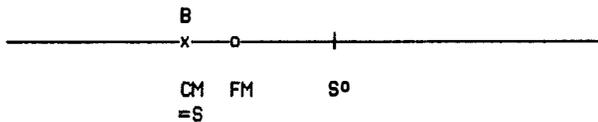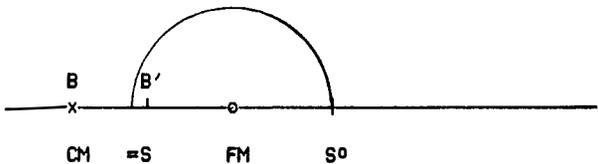### Committee Situations under the Closed Rule

a. Futile

b. Favorable
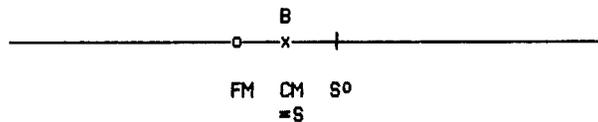
c. Favorable

d. Ripe for Strategic Placement

Finally, in figure 4d the committee members can benefit from the judicious exercise of foresight and a willingness to jettison its median bill in favor of one that is strategically placed. A necessary condition is for FM to occupy the middle position. Given that, the sufficient condition is determined by the relative distances $|CM-FM|$ and $|FM-S^O|$. If the former is greater than the latter, as in 4d, then the committee can exploit the situation. We know that the committee loses if it reports its sincere bill, $B = CM$, since such a proposal is farther from the floor median voter's ideal point than is the status quo. A sophisticated committee, however, has the foresight to obviate such an outcome by moderating its bill so that the floor median voter barely prefers its strategically placed bill, B', to the status quo. Spatially, the bill should be slightly closer to FM than FM is to S^O. Arithmetically, the bill is $B' = FM - |FM-S^O| + \varepsilon$, where ε is a distance minimally detectable to the floor median voter. If B' were referred to the floor, it would secure the votes of a majority of voters, and the majority coalition in the committee would be more satisfied with this outcome than with S^O.

The discussion of figure 4 is condensed and generalized in three definitions, the last of which is the basis for the subsequent definition of committee sophistication.

> Definition 5. A committee's situation is _futile_ under the closed rule if and only if
> a. $CM > S^O \geq FM$, or
> b. $CM < S^O \leq FM$.
> (S^O is in the middle.)

Definition 6. A committee's situation is <u>favorable</u> under the closed rule if and only if

a. $FM \leq CM \leq S^O$ or $FM \geq CM \geq S^O$, or
b. $CM \leq FM \leq S^O$ and $|CM-FM| \leq |FM-S^O|$, or
c. $CM \geq FM \geq S^O$ and $|CM-FM| \leq |FM-S^O|$.

(CM is in the middle, or FM is in the middle and nearer to CM than to S^O.)

Definition 7. A situation is <u>ripe for strategic placement</u> under the closed rule if and only if

a. $CM < FM < S^O$ or $CM > FM > S^O$, and
b. $|CM-FM| \geq |FM-S^O|$

(FM is in the middle and is at least as far from CM as from S^O.)

Now, with reference to the definitions of ripeness under each rule, we define committee sophistication.

Definition 8. A <u>committee is sophisticated</u> if it exploits ripe situations as follows:

a. If the situation is ripe for obstruction (Definition 4), it reports no bill.
b. If the situation is ripe for strategic placement (Definition 7), it reports:
i. $B = FM - |FM-S^O| + \varepsilon$, if $FM > CM$, and
ii. $B = FM + |FM-S^O| - \varepsilon$, if $FM < CM$.[13]

IV. New SIAs with New SIE

Having fully exposed the ingredients of preferences, institutional features, and strategies, we now explore the diversity and the relevance of the extended theory. Figure 5 highlights the extension from Shepsle's two institutional arrangements with sincere behavior, which differ only according to the rule governing the amendment process, to my four simple institutional arrangements which are determined by both rules and strategies.

Our interest in committees as key institutional features in the congressional process suggests that we can roughly gauge the

usefulness of the theory by the ease and meaningfulness with which actual congressional committees can be assigned to one of the four cells. For example, which committees receive closed rules for their legislation? Which committees engage in sophisticated behavior? Although the figure contains some answers to these questions, the discussion of why certain committees were placed into certain cells is deferred until some loose ends of the extended theory are tied up.

[figure 5]

Recall that Shepsle restricted his focus to the top half of figure 5, and that his theorems on the existence of SIE pertained only to germaneness situations (SIA A). Furthermore, we demonstrated that in closed rule settings with committee members who vote sincerely (SIA B), SIE do not exist, in general. The natural follow-up is to assess the equilibrium properties of SIAs C and D to see whether the existence of SIE is attributable to rules only (e.g., SIE exist under the germaneness rule but not under the closed rule) or, perhaps, to some heretofore unspecified <u>combinations</u> of rules and strategies.

The procedure for determining whether SIE exist in settings in which committees are sophisticated is only slightly different from the earlier one. While the central thrust of Shepsle's definitions remains intact, the meaning of condition (2) in definitions 2 and 3 is different under the assumption of committee sophistication. Implicit in condition (2) is the committee's choice function, which tells which of any two points a committee chooses. In the context of the definition, one such point is S^O. In Shepsle's institutional

Figure 5

Simple Institutional Arrangements
and Fenno's Committees

RULE

	Germaneness	Closed
Sincere	A * Education & Labor Foreign Affairs Post Office	B
Sophisticated	C * Appropriations ? -> Interior ? ->	D * Ways and Means

COMMITTEE
STRATEGY

* Existence of Structure-Induced Equilibria

arrangements, the committee's choice is always determined exclusively by the preferences of committee members. When committees are sophisticated, however, the committee's bill is not always the median, as committee members' preferences alone dictate. Rather, the choice is conditioned also by noncommittee members' preferences, which determine whether a situation is ripe, nonripe, futile or favorable, and which inform the committee what will happen to various feasible bills on the floor. The revised choice function for the committee is included in definition 8, to which we refer as we examine the equilibrium properties of the new SIAs.

In SIA C (germaneness rule, sophisticated committees), the situation must of course be ripe or not ripe. If it is not ripe, committee behavior is identical to that in SIA A, in which Shepsle proved the existence of SIE. Therefore we need to address only situations that are ripe for obstruction, such as figure 3a. Since sophisticated committees obstruct in such situations, S is the same as S^o and remains fixed over time. But the question is not simply whether it is durable but more importantly whether it is invulnerable in Shepsle's sense. The answer is "yes" for the simple reason that choice of some point over the status quo by the committee is a necessary condition for vulnerability. Since a sophisticated committee never chooses any point over S in situations ripe for obstruction (definition 8a), the necessary condition for vulnerability is not satisfied. S therefore is invulnerable and an SIE. More generally, type C SIAs always have SIE. Considered jointly with

Shepsle's result, then, this finding indicates that the ability of the germaneness rule to induce equilibrium is not strategy-dependent; sincere and sophisticated behavior alike result in SIE when the germaneness rule is in effect.

Only one institutional arrangement remains: closed rule situations in which committees are sophisticated. One of three situations must exist: futile, favorable, or ripe. In futile situations, such as figure 4a, the committee senses its futility, minimizes decision costs, and reports no bill. As in the germaneness situation, then, condition (2) cannot be satisfied and S is invulnerable in closed rule, futile situations.[14]

In favorable situations (figures 4b and 4c), either S^o = CM to begin with or S = CM after one session. In either case a sophisticated committee never reports a bill. So this S, too, fails condition (2) for vulnerability and is therefore an SIE.

Finally, under ripe situations (figure 4d), the strategically placed bill becomes the new status quo point, S, after one session, whereupon the situation changes from ripe to futile. Since we just showed that the status quo point in futile situations is an SIE, the demonstration is complete. Thus, no matter what the initial situation -- futile, favorable or ripe -- after one and only one session of decision-making there exists a structure-induced equilibrium in SIA D, as well as in SIAs A and C.

V. Implications and Evidence

Although intuitively one might expect that incorporation of diverse strategies would undermine the predictability and stability of political outcomes, the theoretical analysis suggests the opposite. If anything, outcomes under sophisticated behavior ought to be _more_ stable than outcomes under sincere behavior. But alas the time has come to put some empirical meat on these theoretical bones.

We learn from Polsby's study that the contemporary House has become "institutionalized." Boundaries are well defined, in part because turnover has declined and members' incentives to stay in the system have increased. Concomitantly, the House became internally complex; committees are no longer _ad hoc_ tools of the leadership but rather are permanent, increasingly specialized units with fixed jurisdictions and membership determined primarily by "automatic rather than discretionary methods" (p. 145). A major effect of such change has been to "facilitat[e] the growth of stable ways of doing business" (p. 153). Polsby's reasoning (not to mention his choice of words) paves the way for a practical response to my introductory call for theoretical relevance. Specifically, might there be a relationship between Polsby's "stable ways of doing business" and Shepsle's and my stable outcomes, that is, between observed real-world institutionalization and theoretical equilibria? If a connection does exist -- and it seems that all of us suspect that it does, though perhaps for somewhat different reasons -- then how might theory and data be combined to support its existence?

Based on the fact that committees are the central components both
of the institutionalized House and of SIAs, we seek an answer by
examining the fit between committees in Congress and committees in
simple institutional arrangements. To the degree that congressional
committees belong to stable institutional arrangements (that is, SIAs
with SIE), the hypothesis that institutionalization contributes to
stable outcomes receives support. We therefore expect to see
committees in cells with SIE (A, C, and D) but not in cells without
SIE (B). (Or if there were committees in B, we would expect to see
erratic outcomes on issues over which those committees have
jurisdiction.)

Fenno's six committees comprise a readily available and well-
known sample for this exercise. Initially, we classify the committees
as sophisticated or sincere according to the degree to which their
members have reached a consensus on their decision rules. Fenno
writes that decision rules differ widely but are nevertheless
generalizable.

> Despite the uniqueness of each committee's decision rules, two
> interesting patterns did emerge -- interesting because both of
> them distinguish Appropriations, Ways and Means, and Interior on
> the one hand from Education and Labor, Foreign Affairs, and Post
> Office on the other. Each of the first three committees has
> achieved a consensus on its decision rules; each of the latter
> three committees has not. Furthermore, the decision rules of the
> first three committees are all, in one way or another, oriented
> toward insuring success on the House floor; the decision rules of
> the latter three are not (p. 80).

The absence of a consensus on decision rules in the Education and
Labor, Foreign Affairs, and Post Office committees is evidence of

sincere behavior by committees. Without the consensus, members of the
committee are not likely to recognize and exploit ripe situations.
They are too preoccupied with the "harsh rules of policy combat" (p.
127) in the committee stage to worry about whether, or in what amended
state, their bills will pass on the floor. Fenno's quotation and
interpretation of a member of one such committee supports the
characterization of these committees as strategically sincere.

> On Education and Labor, members normally fight about anything at
> any stage. In the words of one veteran, "You can't get a
> resolution praising God through this committee without getting a
> three-day battle over it." As another senior member put it,
> "It's a free-for-all; every man for himself." (p. 86)

But in the Ways and Means, Appropriations, and Interior
committees, the desire for success on the floor, and a recognition
that success requires the exercise of a specific set of decision rules
in committee, are evidence of sophisticated committee behavior. If
committee members want their committee's position to prevail on the
floor, and know how to make it prevail, then they must possess the
foresight characteristic of sophisticated behavior. Thus Fenno writes
that

> [a] set of decisions coming from an influence-seeking, House-
> oriented, corporate committee will be packaged for the floor more
> carefully than will a set of decisions emerging from a policy-
> seeking non-House-oriented, individualistic committee (p. 240).

These excerpts -- and the rich set of observations on which they
are based — support the placement of Appropriations, Ways and Means,
and Interior committees in the lower, sophisticated portion of figure

5, while Education and Labor, Foreign Affairs, and Post Office clearly belong on top.

Categorization on the basis of rules is less clear-cut whereas <u>pure</u> closed rules are rarely granted to legislation.[15] Recall, however, that a continuum underlies what is presented in figure 5 as a dichotomy. Thus to the extent that some committees are relatively likely to receive closed rules for their legislation -- as the Ways and Means Committee was when Fenno studied it (but see Rudder; 1977) -- <u>or</u> to the extent that committees tend to receive relatively closed rules (rules that restrict the number of amendments or inhibit the offering of amendments), the committees belong towards the closed end of the continuum. With this interpretation and further support from Fenno, we place Ways and Means in SIA D.

> More than any other committee, Ways and Means members see themselves as working <u>for</u> the House. "On our Committee, we have a responsibility to the House; we have to do the best we can." The closed rule, of course, provides strong reinforcement for this perception. If Committee bills are to be offered on a take-it-or-leave-it basis, members must make certain that they are "taken" without unnecessary misgivings (p. 85).

Classification of the committees on Interior and Appropriations is confounded by the fact that neither committee regularly receives closed rules. Both, however, are sufficiently cognizant of and responsive to preferences of noncommittee members that, in practice, their legislation is rarely amended successfully and significantly. Fenno writes that the Interior Committee "cultivates an image of routinized, expert deliberations" (p. 63) and that the effect of its

image is to reduce controversies on the floor. For example "in 1965, Wayne Aspinall said that since he had become Chairman [of Interior] (in 1959) he had 'only lost two bills -- two inconsequential bills'" (p. 260). And in an earlier study of the Appropriations Committee, Fenno reported that about 90 percent of its dollars and cents recommendations were accepted without change on the floor (1966, p. 450). So there can be little doubt that these two committees belong in SIAs C <u>or</u> D. Whether classification in D is more appropriate than in C remains an open question, depending on how one wishes to define rules. Strictly speaking, they are germaneness rules; practically speaking (for reasons the present theory does not incorporate), they are relatively closed.

Fortunately, in neither case does this one small gray area undermine the two larger findings. First is the close correspondence between Fenno's permeable committees and my type A SIAs, and between his corporate committees and my sophisticated SIAs (types C and D). Second is the broader observation that according to this sample of committees, the dominant institutional arrangements in Congress exhibit stable <u>mixes</u> of institutional and strategic features. Three of four SIAs yield structure-induced equilibria, and no committee (neither in this sample nor in Congress itself, for that matter) belongs in the sole, potentially unpredictable SIA.

To conclude we reconsider Shepsle's profound synopsis that ". . . institutional arrangements . . . conspire with the preferences of individuals to produce structure-induced equilibrium." Now, in

light of our theoretical extension bolstered by Fenno's and Polsby's
empirical insights, the set of conspiring ingredients seems to be
larger and the resulting equilibria more pervasive. Not just
preferences and institutional arrangements, but also _strategies_,
conspire to produce predictable and stable outcomes. Combined with
the observed incidence of stable institutional arrangements in
Congress, this revised synopsis should help to reduce skepticism about
the empirical relevance of emerging formal theories of legislatures.

FOOTNOTES

1. See Duncan Black (1958), _The Theory of Committees and Elections_.

2. See Fiorina (1975).

3. See "House Bill Drops Ship-building Subsidies," _Congressional
   Quarterly Weekly Report_, October 2, 1982, p. 2443. For other
   examples, see "Turf Fight Results in Limited Highway Funds,"
   Ibid., October 9, 1982, pp. 2635-6, and "Senate Eases Foreign
   Bribery Law", _New York Times_, November 24, 1981, p. D1.

4. See "Interest Withholding Dispute Stalls Senate Action,"
   Congressional Quarterly Weekly Report, March 12, 1983, pp. 491-
   94.

5. See Bach (1981a, 1981b).

6. Throughout the essay, we focus on unidimensional situations.
   Bear in mind, however, that many decisions can be made
   simultaneously in different committees and jurisdictions.
   Together with the special properties of SIAs, this ensures that
   all results can be generalized to n dimensions.

7. Definition 3 is the negation of definition 2. Its form is
   somewhat different since the statements "$\sim$(p or q)" and "$\sim$p and
   $\sim$q" are logically equivalent. Thus vulnerability is R or RA;
   invulnerability is $\sim$(R or RA), which is equivalant to $\sim$R _and_ $\sim$RA.

8. Shepsle does not use the term "replacement by amendment," but his verbal explanation of the second part of the definition of vulnerability is consistent with the term. See p. 36.

9. On p. 33, Shepsle defines a proposal as a <u>change</u> in S^O.

10. More generally, any point in the closed interval comprising region B is a replacement for S^O, where the lower boundary of the region is defined as the point at which the floor median voter is indifferent between that point and S^O.

11. The inclusion of sophisticated committees in Shepsle's theory appears to be an instance of independent and simultaneous discovery. See Krehbiel (1983) and Denzau and Mackay (1983). Denzau and Mackay also present an expected utility perspective on committee strategy.

12. Throughout the discussion we assume that members' preference curves are not only single-peaked but also symmetric. This assumption can be relaxed and the definitions can be generalized, but generalization requires more complicated notation and sacrifices the straightforward notion of preference as a function of policy distance.

13. For theoretical completeness (and out of practical interest) we define committee sophistication in nonripe situations also. In nonripe situations under the germaneness rule, the committee reports CM; it knows the bill will converge to FM during the amendment process, but in actual settings may reasonably expect it not to converge entirely, since noncommittee members often defer to committees. In closed rule, futile situations, the committee does not report a bill; it knows the bill is doomed so chooses to reduce its workload. In closed rule, favorable situations, the committee reports no bill if CM = S^O and reports CM otherwise.

14. Alternatively, a definition of committee sophistication might state that the committee reports CM even though it knows it will lose. Condition (2) is then satisfied, but neither conditions (3) nor (4) are. There would be no replacement because the House always chooses S^O over CM; nor could there be replacement by amendment, since there can be no amendment. Thus with either definition, SIE exist in futile situations.

15. See, for example, Oleszek (1984, p. 111).

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