

# Democratic Foreign Policy Making

*Problems of Divided  
Government and International  
Cooperation*

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## Chapter 2

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# Domestic Veto Institutions, Divided Government, and the Status Quo: A Spatial Model of Two-Level Games with Complete Information

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The role of domestic institutions and politics has long been of interest to students of international politics and foreign policy formulation (Corwin 1917). Of course, some theories of international politics—especially the various strands of Realism (Layne 1993, 1994; Mearsheimer 2001; Morgenthau 1949; Waltz 1979)—assert that domestic politics has no impact at all on the politics among nations; instead, what matters almost exclusively are national power, especially the nation's economic and military capabilities. Other schools of thought, however, do allow some room for domestic politics to play a role. For example, arguments have long been made (see Lippman 1922, 1925), and empirical studies appear to demonstrate (Baum 2002; Graham 1989; Holsti 1996; Mueller 1973; Nincic 1992a; Page and Barabas 2000) that public opinion influences foreign policy decisions. More recently, some scholars have suggested that domestic economic conditions can affect a nation's propensity to use military force abroad (Davies 2002; James and Oneal 1991; Morgan and Bickers 1992; Ostrom and Job 1986; Russett 1990a) as well as its propensity to engage in cooperative international ventures (Lindsay, Sayrs, and Steger 1992). Some studies have even inverted this "diversionary" theory of conflict, suggesting that domestic political vulnerability may increase the probability of becoming a target of aggression (Chiozza and Goemans 2004; Gelpi 1997;

Huth and Allee 2003; Leeds and Davis 1997). Evidence also suggests that domestic institutional constraints may influence the likelihood of conflict between states (see Bueno de Mesquita et al. 2003; Dixon and Senese 2002; Morgan and Campbell 1991; Pickering and Kisangani 2005; Prins and Sprecher 1999; Schultz 1998; Schultz 2001).

While the relative importance of international versus domestic factors has been a matter of dispute with regard to questions of war and peace, there is more agreement that domestic factors often have a major impact on bargaining over international trade (Hansen 1990; Henning 1994; O'Halloran 1993; Patterson 1997; Rogowski 1989; Simmons 1994), over the role of international organizations (Botcheva and Martin 2001; Goldstein 1996; Oye 1986), and over the allocation of foreign aid (Apodaca and Stohl 1999; Bacchus 1997; Blanton 2000; Carroll 1966; Meernik, Krueger, and Poe 1998; Montgomery 1962; Ruttan 1996). Problems of international trade, for example, often evoke domestic conflicts due to distributional inequities stemming from national trade policies; as the former chair of the House Ways and Means Committee, Dan Rostenkowski (D-Ill.), once put it, "Trade is becoming very, very parochial. It's employment, it's our jobs" (quoted in Snow and Brown 1997).

As for international organizations, antipathy for the United Nations has long been evident in some congressional circles. For example, not only did Senator Jesse Helms (R-NC), as chair of the Senate Foreign Relations Committee (1995–2001), argue that the United Nations should be dismantled but he also found little value in international financial institutions as well. Furthermore, public opposition to American troops serving under a UN command, even for peacekeeping missions, remains strong (even though NATO remains quite popular with the American public).

Foreign aid has always been heavily influenced by domestic interest groups even though it was originally conceived as an arm of America's containment strategy for the cold war. For example, the agriculture and shipping industries were traditionally among the stronger supporters of international aid because the federal government bought domestically produced agricultural commodities and shipped them overseas on American freighters. And on particular regional issues the Israeli and Greek lobbies were important in sustaining funding levels and other supportive policies.

In addition to these broad issue arenas in which domestic interests and constraints have appeared to affect foreign policy decision making, there are several historic cases in which the Senate, due to its constitutional authority over the ratification of treaties, has played a major role in the making of foreign policy. The Senate's rejection of the League of Nations Treaty following World War I is perhaps the best-known example. More recent examples include the Carter administration's withdrawal of the draft SALT II treaty

from Senate consideration after the Soviet Union invaded Afghanistan, and the Clinton administration's acceptance of a State Department reorganization plan drafted by Senator Helms that he demanded as the price for his acquiescence to the Chemical Weapons Convention.

For at least some important classes of foreign policy decisions, then, it is generally agreed that domestic politics can play a significant role. It is also agreed that there are important cases in which the U.S. Senate has had a substantial impact on the outcome of presidential negotiations with other countries.

Yet until recently, this understanding of the impact of domestic veto institutions and divided government has remained at a rather general level. Indicative of the unresolved status of thought here is the fact that two contradictory hypotheses have been advanced regarding the impact that domestic veto institutions can have on national leaders' negotiations with other countries. Indeed, these two hypotheses coexisted in the literature for over three decades without even much recognition of their incompatibility.

The more traditional hypothesis—we dub it the "unified government" hypothesis—is that domestic veto institutions weaken the President's ability to negotiate effectively with foreign powers. This assertion about the virtues of unified government, and about the negative impact of divided government, has been advanced not only by presidents, as one might expect, but also by journalists and other commentators on public affairs in the United States (Lippman 1922, 1925), by students and practitioners of the diplomatic arts (Kennan 1984), and by a variety of other analysts (see e.g., Blechman 1990; Cheney 1990; Crovitz 1990; Destler, Gelb, and Lake 1984; Martin 1998; Rostow 1989). Some critics assailed what they saw as the congressional micromanagement of foreign affairs in the aftermath of the Vietnam War. A former director of the Arms Control and Disarmament Agency, Eugene Rostow, even insisted that the President had become merely a "figurehead graciously presiding over the activities of an omnipotent Congress" (quoted in Lindsay 1994: 161). Blechman (1990: 108) likewise argued that

From a national perspective, the struggle between the branches for power over arms control policy, particularly in its partisan implications, is extremely harmful. The country benefits when it can show a united face, especially to its potential adversaries.

Unified government is thus the ideal for these observers.

A contrary hypothesis—we call it the "divided government" hypothesis—was advanced by Thomas Schelling in his landmark study, *The Strategy of Conflict* (1960: 19), in which he argued, in effect, that divided government could actually *strengthen* the President's ability to negotiate effectively with

foreign powers:

The well-known principle that one should pick good negotiators to represent him and then give them complete flexibility and authority—a principle commonly voiced by negotiators themselves—is by no means as self-evident as its proponents suggest; the power of a negotiator often rests on a manifest inability to make concessions and meet demands.

Schelling (1960: 28) then observed that when the U.S. government negotiates with other governments,

If the executive branch is free to negotiate the best arrangement it can, it may be unable to make any position stick and may end by conceding controversial points because its partners know, or believe obstinately, that the United States would rather concede than terminate the negotiations. But, if the executive branch negotiates under legislative authority, with its position constrained by law, and it is evident that Congress will not be reconvened to change the law within the necessary time period, then the executive branch has a firm position that is visible to its negotiating partners.

These two incompatible hypotheses about the costs and benefits of unified and divided government coexisted in the international relations literature for almost three decades without any significant effort having been made at a resolution. And of course, these two hypotheses also coexisted uneasily with the Realists' argument that domestic institutions—whether exhibiting unified government or divided government—were irrelevant to the most consequential decisions involving international relations.

Fifteen years ago, however, in an essay titled "Diplomacy and Domestic Politics: The Logic of Two-Level Games" (1988), Robert Putnam drew the attention of students of foreign policy making and diplomacy back to the study of the impact of domestic politics on international negotiations. His essay reviewed some of the literature on domestic politics and foreign policy, and then sketched out in simple diagrammatic terms some ways of thinking about how domestic politics might affect international negotiations. He also attempted to delineate how several different domestic factors—such as the nature of the domestic veto institutions, and the preferences of, and coalitions among, the domestic actors—might affect a President's ability to negotiate effectively with a foreign power.

Putnam recognized that his essay did not present a definitive model of two-level games but should primarily be seen as an effort to stimulate further study; as he put it (1988: 435),

Formal analysis of any game requires well-defined rules, choices, payoffs, players, and information, and even then, many simple two-person, mixed-motive

games have no determinate solution. Deriving analytical solutions for two-level games will be a difficult challenge.

Putnam's essay stimulated considerable work on these two-level games (see e.g., Drezner 2003; Evans, Putnam, and Jacobson 1993; Milner 1997; Mitchell 2002; Trumbore 1998). And despite Putnam's pessimism here, his challenge did stimulate a substantial response by scholars skilled in the development of formal models; see Downs and Rocke (1995), Duchesne (1997), Lida (1993), Mayer (1992), Milner and Rosendorff (1996, 1997), Mo (1994, 1995), Trumbore and Boyer (2000), Tarar (2001a), and the contributors to a 1997 symposium on two-level games in the *Journal of Conflict Resolution*.

Almost all of these formal models (Pahre 1997, 2004a comprise the major exceptions) share a quartet of key assumptions. The first assumption is that the actors involved in policymaking have *divergent goals and interests*; that is, divided government is always assumed. The second assumption is that these actors are *uncertain* about each other's goals, bargaining strategies, aspiration levels, electoral viability, or other such variables. Putnam emphasized the importance of both sets of factors, and both are undoubtedly important in many particular cases. Unfortunately, however, since results from these models are normally influenced by both sets of factors, it often remains unclear to what degree each class of variables is responsible for the character of the results. That is, does some particular result reflect more the actors' divergent goals and interests—that is, divided government—or the uncertainty each actor has about the other actor or actors?

Some studies did treat uncertainty as a variable, and actually generated results for when there is no uncertainty. But the interpretability of these complete-information results was often undermined by the third and fourth assumptions. The third assumption involves the adoption of bargaining theories that make point predictions. The two most common bargaining theories adopted are the Stahl-Rubinstein noncooperative bargaining model (Rubinstein 1982; Stahl 1972), which has been used as a framework for several models of two-level games (see e.g., Duchesne 1997; Lida 1993; Mo 1994), and the Nash bargaining solution (Nash 1950), which has been used by other models (see e.g., Milner and Rosendorff 1996). One difficulty with these bargaining models is that they have not withstood empirical test especially well; as Alvin Roth (a leading experimental economist and expert on bargaining theories) has observed about the current generation of bargaining models, "Although some of their qualitative predictions have received some support, the existing models have performed poorly as point predictors" (Roth 2002). Another difficulty is that by focusing on point predictions, these models draw our attention away from the nature of the *constraints* that the preferences of the negotiators and the domestic veto institutions impose on the range of possible outcomes that could be

reached, no matter what particular bargaining model is assumed. As we will see in this chapter the extent of the constraints, and their impact on the fortunes of the negotiators, can vary quite dramatically, but these findings are concealed by the bargaining theories that have been adopted.

The fourth assumption, which has generally been made implicitly rather than explicitly in previous studies, is that *the current status quo policy* or the *current state of affairs*, or else some kind of *reversion point*, is irrelevant to policymaking. The most common approach, it appears, is to simply assume away any impact that the status quo policy, the current state of affairs, or reversion point may have. For example, the diagrammatic model of two-level games in Putnam's original work completely ignores any role for the status quo, while the Stahl-Rubinstein bargaining model assumes that any agreement is always better than no agreement at all; therefore, the location of the status quo does not affect the actors' negotiations. However, Putnam's original model does not make any sense without the incorporation of a status quo point or reversion point, and this chapter shows that if the status quo point or reversion point is assumed not to be irrelevant, the result is that its particular location (i.e., its relative value to each actor) can have a tremendous impact on what agreement—if any—negotiators are able to reach.

In our view, then, a model of two-level games is needed in which international negotiators and their domestic veto institutions may have divergent preferences (i.e., there may be either divided government or unified government), in which there is a status quo policy or some current state of affairs, some reversion point, that holds if international agreement is not reached, in which each actor has complete information about each other's policy preferences and about the relative value each places on the status quo, and which assumes nothing about what particular policy the international negotiators select from among the politically feasible set of policies. We think that this kind of model should have been among the first developed after publication of Putnam's 1988 article. The purpose of our chapter is to present such a model.

Our chapter is constructed as follows. In the first section, we describe the basic assumptions for our model and then present some simple results about when the status quo policy will be in equilibrium. After this, we systematically analyze what happens when bargaining between the two nations' chief executives takes place in a single issue dimension. First, we show what happens when there are no veto institutions; we also suggest that there is an alternative interpretation of this version of our model, in which each country has a unified government (in the sense that each country's veto institution has preferences identical to those of its chief executive). Second, we show what happens when the first country has a veto institution (alternatively, it has a divided government) but the second has no veto institution

(alternatively, it still has a unified government). Third, we show what happens when each country has a veto institution (alternatively, each country has a divided government).

In the section after that, we analyze what happens when bargaining between the two chief executives takes place in two issue dimensions. Finally, we integrate the one-dimensional results into a series of diagrams that summarize the overall relationships between the ideal points of the chief executives and the veto institutions, given all possible locations for the initial status quo policy. We then use these diagrams to construct our penultimate set of diagrams that show the conditions under which each chief executive is helped or hurt by unified and divided government.

Our results demonstrate that current understanding of the impact of domestic veto institutions on international negotiations is quite inadequate. In particular, our results do not provide substantial support either for the unified-government hypothesis or for Schelling's divided-government hypothesis or, for that matter, for the Realists' assertion that domestic institutions are irrelevant. Instead, each of these hypotheses turns out to be correct under some conditions but incorrect under many other conditions. In general, the impact of unified or divided government depends far more on the location of the status quo than anyone contributing to the current literature appears to have foreseen.

## Basic Assumptions and Initial Results on When the Status Quo Policy Is in Equilibrium

Within the United States, many different institutions and actors can be expected to affect negotiations with other countries. Foremost among them are the President and the Senate, but the House of Representatives, the federal courts, various executive branch agencies, numerous interest groups, and the mass public might be expected to play a role as well. For this chapter we focus just on the negotiation of international treaties, and for treaties the controlling provision of the Constitution is Article II, Section 2, which specifies that the President "shall have power, by and with the advice and consent of the Senate, to make treaties, provided two-thirds of the Senators present concur." Thus, for our model we focus on just the first two domestic institutions: the President and the Senate.

Following constitutional provisions and long-standing practice, we assume that it is the President who conducts the negotiations with the

Leader of some other country. When these negotiations are concluded, the President then submits a draft treaty to the Senate for ratification. For our model, we thus treat the President as an agenda-setter for the Senate: the Senate cannot amend draft treaties submitted to it, and so is put in a take-it-or-leave-it position by the President.<sup>1</sup>

Our focus on just the President and Senate does not necessarily mean that we are ignoring the views of the other domestic political actors. The reason is that the views of these other actors can often be expected to affect the preferences and choices of the President and members of the Senate, and thereby affect, albeit indirectly, the outcomes of treaty negotiations and any draft treaty's prospects for ratification. Nonetheless, we are not in any sense explicitly modeling how the President and Senators respond to the views of these other actors.

We will assume that there is just one other nation with which the President conducts treaty negotiations, and we assume that, like the United States, this other nation has a single chief executive—we will simply call her its "Leader"—who has sole authority to negotiate treaties on behalf of her nation. That is, she is the agenda-setter for her domestic veto institution just as the President is for the U.S. Senate.

We will construct a trio of models. We initially assume that neither the President nor this Leader has any domestic veto institution. This allows us to characterize the nature of international bargaining that is unconstrained by any domestic considerations.

Our second model assumes that the President must seek the Senate's approval for a draft treaty but the Leader has no such veto institution: if the Leader reaches agreement on a draft treaty with the President, the draft treaty can go into effect if the Senate ratifies it, while if the Senate refuses to ratify the draft treaty, the draft treaty does not go into effect and the status quo remains in force.

Our third model assumes that the Leader also has a veto institution with authority to ratify or reject any draft treaty that she negotiates with the President. In this case, if the Leader approves a draft treaty that she has negotiated with the President, the draft treaty can go into effect only if her nation's veto institution ratifies it and if the Senate ratifies it as well; if either veto institution refuses to ratify the draft treaty, it cannot go into effect, and so the status quo would remain in force.

However, instead of distinguishing these three models on the basis of the presence or absence of domestic veto institutions, there is an alternative interpretation: that each chief executive always has a domestic veto institution and that in some cases the veto institution has preferences that are identical to those of its chief executive whereas in other cases the veto institution has preferences that diverge from those of the chief executive. From

this perspective, the President in the first model has a Senate whose preferences are identical to his, and the Leader also has a domestic veto institution whose preferences are identical to hers; that is, each chief executive has a unified government. In the second model, the President has a divided government in that the Senate has preferences that are different from his, but the Leader still has a unified government. In the third model, both the President and Leader face divided governments: the President has a Senate with preferences that are different from his, and the Leader has a veto institution with preferences that are different from hers.

In the next section of this chapter, we assume that policymaking between the two nations takes place in a one-dimensional issue space. It can be plausibly argued, however, that a model requires at least a two-dimensional issue space to adequately represent international negotiations, and in the section after that we develop (albeit much more briefly) a version of our model in a two-dimensional issue space. As it turns out, our two-dimensional model seems to have implications rather similar to those of our one-dimensional model, hence we put our primary emphasis on developing the one-dimensional model.

To simplify our analysis (without excessive loss of generality) we assume that the Senate contains just one individual; hence, if this individual Senator votes in favor of a draft treaty, the constitutional two-thirds vote required for ratification by the Senate is (trivially) satisfied. We make a similar assumption about the Leader's veto institution: it will consist of just one individual, which means that whatever voting margin is required for treaty ratification, this requirement is also (trivially) satisfied.<sup>2</sup>

Each individual actor—the President, the Senator, the Leader, and the member of the Leader's domestic veto institution (if one exists)—is assumed to have a most-preferred policy in the issue space; this individual's most-preferred point is his or her ideal point. We will use  $P$  to indicate the President's ideal point,  $S$  to indicate the Senator's ideal point,  $L$  to indicate the Leader's ideal point, and  $V$  to indicate the ideal point of member of the Leader's domestic veto institution. These labels— $P$ ,  $S$ ,  $L$ , and  $V$ —will also serve as labels for the institution of which the individual actor is a member.

Each individual's goal is to get a policy adopted that is as close as possible to his or her own ideal point. The farther away some policy is in any direction from an individual actor's ideal point, the less the actor likes the policy; a farther-away policy gives the actor less utility than a closer-in policy. We make no assumption about whether the decrease in an actor's utility is symmetric or asymmetric around his or her ideal point. However, to simplify the drawing of our illustrations, our diagrams all assume that the decrease in an individual actor's utility is symmetric around his or her ideal point. When there is just one dimension, this means that a policy that is some distance to

the left of the actor's ideal point yields the same utility as a policy that is the same distance to the right of the actor's ideal point. When there are two dimensions, the symmetric-loss assumption means that each individual actor cares equally about the two issue dimensions. Thus, given some status quo policy,  $SQ$ , in a two-dimensional policy space, the set of policies that yield a utility equal to  $SQ$  for the actor is indicated by a circle through  $SQ$  and centered on the actor's ideal point; this circle is the actor's indifference curve through  $SQ$ . Of course, each individual actor has a large family of nested indifference curves around his or her ideal point, each particular indifference curve representing policies of equal utility to the individual.<sup>3</sup>

For any  $SQ$ , the set of policies that defeat it with the support of two or more of these institutional actors is the win-set of  $SQ$ , or  $W_{PS}(SQ)$ . Thus, the set of policies that the President and Senate both prefer to  $SQ$  is  $W_{PS}(SQ)$ ; the set of policies that the President, Senate, and Leader all prefer to  $SQ$  is  $W_{PSL}(SQ)$ ; and the set of policies that the President, Senate, Leader, and foreign veto institution,  $V$ , all prefer to  $SQ$  is  $W_{PSLV}(SQ)$ .

For any  $SQ$ , the set of policies that the President prefers to  $SQ$  is the President's preferred-to set of  $SQ$ ; for consistency in notation, we abbreviate it as  $W_P(SQ)$ —it is a "one person win-set." Similarly, the set of policies that the Senate prefers to  $SQ$  is the Senate's preferred-to set of  $SQ$ , or  $W_S(SQ)$ ; the set of policies that the other nation's Leader prefers to  $SQ$  is  $W_L(SQ)$ ; and the set of policies that the foreign veto institution prefers to  $SQ$  is  $W_V(SQ)$ . Thus, the set of policies that the President and Senate both prefer to  $SQ$ — $W_{PS}(SQ)$ —is equivalent to  $W_P(SQ) \cap W_S(SQ)$ . The set of policies that the President, Senate, and Leader all prefer to  $SQ$ — $W_{PSL}(SQ)$ —is equivalent to  $W_P(SQ) \cap W_S(SQ) \cap W_L(SQ)$ . And the set of policies that the President, Senate, Leader, and her veto institution,  $V$ , all prefer to  $SQ$ — $W_{PSLV}(SQ)$ —is equivalent to  $W_P(SQ) \cap W_S(SQ) \cap W_L(SQ) \cap W_V(SQ)$ .

A core is the set of options that cannot be upset by joint action of two or more of these institutions, given the preferences of the actors in these institutions. Thus, we can speak of a *Domestic Core*, which is the set of policies that cannot be upset by joint action of the President and Senate; we label it  $CORE_{PS}$ . When the other nation has a veto institution, we can speak of a *Foreign Core*, or  $CORE_{PL}$ ; this is the set of policies that cannot be upset by joint action of the Leader and her veto institution,  $V$ .

We can also speak of an *International Core*, which is the set of policies that cannot be upset by joint action of institutions from both nations. When neither nation has a veto institution, the *International Core* is labeled  $CORE_{PL}$ ; it is the set of policies that the President and Leader cannot jointly agree to replace by some other policy. When the United States alone has a

domestic veto institution (the Senate), the *International Core* is indicated by  $CORE_{PSL}$ ; this is the set of policies that the President, Leader, and Senate cannot jointly agree to replace by some other policy. And when the other nation has a domestic veto institution as well, the *International Core* is indicated by  $CORE_{PSLV}$ ; this is the set of policies that cannot be upset by joint action of the President, Senate, the foreign Leader, and her veto institution.

It is useful to understand the relationships between any of these cores and the win-set of any status quo policy in the institutions generating the core. If  $SQ$  lies in a core, this means (by definition) that there is no other option that can defeat  $SQ$ . Thus, if  $SQ$  is in the core,  $W_{PS}(SQ)$  must be empty; that is,  $W_{PS}(SQ) = \emptyset$ . If  $SQ$  is not in the core, then  $W_{PS}(SQ)$  is nonempty; that is,  $W_{PS}(SQ) \neq \emptyset$ . And if  $W_{PS}(SQ)$  is empty, there exists a core and  $SQ$  lies inside it.

Note that if  $SQ$  is located at the ideal point of either the President, the Senate, the Leader, or her veto institution, then the actor at whose ideal point  $SQ$  is located will not agree to any change in  $SQ$ ; the reason is that any change in  $SQ$  would leave that actor worse off. In effect, this means that when  $SQ$  is identical to the President's or Senate's ideal point,  $SQ$  is located in the *Domestic Core*, and that when  $SQ$  is identical to the Leader's or  $V$ 's ideal point,  $SQ$  is located in the *Foreign Core*.

Given these definitions and discussion, we can summarize our key arguments in the following way. One set of equilibrium conditions occurs when  $SQ$  lies in the *Domestic Core*:

*Proposition 2.1* (Domestic Equilibria).  $SQ$  is in equilibrium if  $SQ \in CORE_{PS}$ .

When this proposition holds, it means that  $W_{PS}(SQ) = \emptyset$ .

A second set of equilibrium conditions occurs when  $SQ$  lies in the *Foreign Core*:

*Proposition 2.2* (Foreign Equilibria).  $SQ$  is in equilibrium if  $SQ \in CORE_{PL}$ .

When this proposition holds, it means that  $W_{PL}(SQ) = \emptyset$ .

A corollary of Propositions 2.1 and 2.2 immediately follows:

*Proposition 2.3* (Individual Institutional Equilibria).  $SQ$  is in equilibrium if:

- (a)  $P = SQ$ , or
- (b)  $S = SQ$ , or
- (c)  $L = SQ$ , or
- (d)  $V = SQ$ .

When this proposition holds, it means that either (a)  $W_P(SQ) = \emptyset$ , or (b)  $W_S(SQ) = \emptyset$ , or (c)  $W_L(SQ) = \emptyset$ , or (d)  $W_V(SQ) = \emptyset$ .



A fourth set of equilibrium conditions occurs when  $SQ$  lies in the *International Core*:

*Proposition 2.4* (International Equilibria).  $SQ$  is in equilibrium if:

- (a)  $SQ \in CORE_{PIL}$  (when there are no veto institutions);
- (b)  $SQ \in CORE_{PSL}$  (when the United States has a veto institution);
- (c)  $SQ \in CORE_{PSLY}$  (when both countries have veto institutions).

When this proposition holds, it means that (a)  $W_{PIL}(SQ) = \emptyset$ , or (b)  $W_{PSL}(SQ) = \emptyset$ , or (c)  $W_{PSLY}(SQ) = \emptyset$ .

Finally, note that the *Domestic Core*— $CORE_{PS}$ —is located within both the *International Cores*,  $CORE_{PSL}$  and  $CORE_{PSLY}$ . The reason is that if the President and Senate cannot agree on a policy to upset  $SQ$ , then requiring in addition that any change in  $SQ$  be approved by the other nation's Leader as well (and perhaps by her veto institution too) does not somehow render it possible for the President and Senate to agree on some policy to upset  $SQ$ . That is, if  $SQ$  lies between P and L (on a one-dimensional line), then nothing can upset  $SQ$ , regardless of where the ideal points of the two nations' veto institutions are located. For the same reason, the *Foreign Core* of  $CORE_{LY}$  is located within the *International Core* of  $CORE_{PIL}$  is located in both the similar reasons, the *International Core* of  $CORE_{PIL}$  is located in both the  $CORE_{PSL}$  and  $CORE_{PSLY}$  *International Cores*. Finally, we note that  $CORE_{PIL}$  combined with  $CORE_{PS}$  produces  $CORE_{PSL}$ , and that  $CORE_{PIL}$  combined with both  $CORE_{PS}$  and  $CORE_{LY}$  produces  $CORE_{PSLY}$ . We can summarize these relationships among cores as follows:

*Proposition 2.5* (Core Relationships). The following relationships among cores hold:

- (a)  $CORE_{PS} \subset CORE_{PSL}$
- (b)  $CORE_{PS} \subset CORE_{PSLY}$
- (c)  $CORE_{LY} \subset CORE_{PSLY}$
- (d)  $CORE_{PIL} \subset CORE_{PSL}$
- (e)  $CORE_{PIL} \subset CORE_{PSLY}$
- (f)  $CORE_{PS} \cup CORE_{PIL} = CORE_{PSL}$ , and
- (g)  $CORE_{PS} \cup CORE_{LY} \cup CORE_{PIL} = CORE_{PSLY}$ .

Propositions 2.1–2.5 characterize the general nature of the relationships among  $P$ ,  $S$ ,  $L$ ,  $V$ , and  $SQ$ .

Finally, we define the *Negotiation set*—the *N-set*, for short—as consisting of the point (or points) for which the President and Leader have no mutually preferable alternatives, as constrained by the requirements of any domestic veto institutions. For each point outside the *N-set*, there exists a point (or points) inside the *N-set* that *both* the President and Leader find superior. However, if there is more than one point inside the *N-set*, they

will have conflicting interests over these points. For some conditions, the *N-set* will be empty, which means that no agreement to upset  $SQ$  can be reached.

The precise definition of the *N-set* will be tailored to the particular set of institutions involved. We first define and characterize the *N-set* when there are no veto institutions (i.e., just  $P$  and  $L$ ). Then we define and characterize the *N-set* when there is a Senate but no foreign veto institution (i.e.,  $P$ ,  $S$ , and  $L$ ). Finally, we define and characterize the *N-set* when there is both a Senate and a foreign veto institution (i.e.,  $P$ ,  $S$ ,  $L$ , and  $V$ ).

We should emphasize that our purpose here is not to make specific predictions about what particular policy will be selected by the President and Leader; only in a few situations will the *N-set* contain just one point. Instead, we seek to clarify the nature of the *constraints* that domestic veto institutions impose on the agreements that the chief executives might reach. It is the *range of allowable agreements* in which we are interested, *not the particular agreement* that the chief executives might reach within this allowable range. To make predictions about which particular agreement the chief executives might reach (as constrained by any domestic veto institutions), a further set of assumptions to characterize some kind of bargaining model would be needed. But then the results would in part reflect the assumptions of whichever bargaining model we happened to adopt, thereby rendering less clear the impact of the domestic veto institutions and unified or divided government.

## International Negotiations in One Issue Dimension

In this section we initially consider negotiations in just one issue dimension between the President and Leader when there are no domestic veto institutions or at least no domestic veto institutions about which the President and Leader must be concerned (e.g., there is unified government in both countries); so just one set of preference orderings for these two actors— $P$  and  $L$ —needs to be examined. Next we consider what happens to these negotiations in the presence of the Senate (the President has divided government but the Leader has unified government); three sets of preference orderings of these three actors— $L$ ,  $P$ , and  $S$ —need to be examined. We end the section by considering the negotiations in the presence of both the Senate and the foreign veto institution (each chief executive has a divided government); four sets of preference orderings for these four actors— $L$ ,  $P$ ,  $S$ , and  $V$ —need to be examined here.



### Negotiations between the President and Leader (with No Veto Institutions)

When there are no domestic veto institutions (i.e., no  $S$  or  $V$ ), or else each chief executive has a unified government, the President and Leader will bargain over the choice of points on the  $L$ - $P$  segment of the issue dimension (that is, over points in  $\text{CORE}_{P/L}$ ); in other contexts, this  $L$ - $P$  line— $\text{CORE}_{P/L}$ —is known as the *contract curve* for  $P$  and  $L$ .  $\text{CORE}_{P/L}$  has the property that, for every  $\text{SQ}$  not in  $\text{CORE}_{P/L}$ , there exists at least one point in  $\text{CORE}_{P/L}$  that both the President and Leader prefer to  $\text{SQ}$ . This means that, in the absence of constraints by any veto institutions (i.e., by  $S$  or  $V$ ), the President and Leader have a mutual interest in selecting some point in  $\text{CORE}_{P/L}$  (though assuming  $P \neq L$ , they will disagree about what this point should be).

However, not all points in  $\text{CORE}_{P/L}$  will necessarily be available for consideration by the President and Leader. Instead, what points in  $\text{CORE}_{P/L}$  the President and Leader consider to be available for joint consideration will also be a function of  $\mathbf{W}_P(\text{SQ})$  and  $\mathbf{W}_L(\text{SQ})$ . The reason is that neither chief executive will agree to a new policy that he or she considers to be worse than  $\text{SQ}$ . For this particular context, then, we define the  $N$ -set as the set of points in  $\text{CORE}_{P/L}$  that (a) are better than  $\text{SQ}$  for both the President and Leader, and for which (b) the President and Leader can find no mutually preferred alternative. More technically, we define the  $N$ -set as follows:

*Definition 2.1* ( $P$  and  $L$ ). The  $N$ -set is the set of points  $\cup \mathbf{x}_i$  ( $i = 1, \dots, k$ ) in  $\mathbf{W}_{P/L}(\text{SQ}) \cap \text{CORE}_{P/L}$  such that  $\mathbf{W}_{P/L}(\mathbf{x}_i) = \emptyset$ .

With only the President and Leader, then, the  $N$ -set contains just those points in  $\text{CORE}_{P/L}$  that are better than  $\text{SQ}$  for both the President and Leader.

When the  $N$ -set here is not empty, it will always contain more than one point, and the President and Leader will have differing preferences over which of these points to select (assuming that  $P \neq L$ ). In this case, the two chief executives will need to engage in some kind of bargaining if they are to achieve the mutual gains that the nonempty  $N$ -set makes possible. (As noted, though, we do not seek to model this bargaining process.)

While Definition 2.1 is the most general characterization of the  $N$ -set for just the President and Leader, in practice what policies in  $\text{CORE}_{P/L}$  are available for their consideration will be a function of either just  $\mathbf{W}_P(\text{SQ})$  or just  $\mathbf{W}_L(\text{SQ})$ . The reason is that when  $\text{SQ}$  lies outside  $\text{CORE}_{P/L}$ , one of these two actors will have an ideal point that is closer to  $\text{SQ}$  than the other actor (assuming  $P \neq L$ ). The result is that the preferred-to set of the actor

who is closer to  $\text{SQ}$  will constrain outcomes more than the other actor's preferred-to set. In fact, the preferred-to set of the actor whose ideal point is farther from  $\text{SQ}$  could be dropped from Definition 2.1 without changing the resulting  $N$ -set in the slightest. But since which actor's ideal point is closer to  $\text{SQ}$  may vary from case to case, we cannot predict a priori which actor's preferred-to set should be included in the expressions characterizing the  $N$ -set. Hence, we have included both preferred-to sets in Definition 2.1, in the form of  $\mathbf{W}_{P/L}(\text{SQ})$ , with the understanding that one of them—either  $\mathbf{W}_P(\text{SQ})$  or  $\mathbf{W}_L(\text{SQ})$ —will turn out to be functionally irrelevant in any particular case.

When  $\text{SQ}$  lies in  $\text{CORE}_{P/L}$ , this means that  $\text{SQ}$  cannot be upset. There are three general locations for such an  $\text{SQ}$ :  $\text{SQ}$  could be identical to the President's ideal point (see Proposition 2.3a),  $\text{SQ}$  could be identical to the Leader's ideal point (see Proposition 2.3c), or  $\text{SQ}$  could lie somewhere between  $L$  and  $P$  on the  $L$ - $P$  line (see Proposition 2.4a). In each case,  $\text{SQ}$  will be in equilibrium. Thus, when  $\text{SQ} \in \text{CORE}_{P/L}$ , the  $N$ -set will be empty.

There are some locations for  $\text{SQ}$ —they are always "extreme" locations (i.e., far from the  $P$ - $L$  line)—such that the  $N$ -set will necessarily consist of the entire  $\text{CORE}_{P/L}$ . To determine how extreme  $\text{SQ}$  must be for the  $N$ -set to contain all of  $\text{CORE}_{P/L}$ , consider the points in figure 2.1 that are closer to  $P$  than is  $L$ : this set of points is  $\mathbf{W}_P(L)$ , the set of points that  $P$  prefers to  $L$ . Now consider the points that are closer to  $L$  than is  $P$ : this set of points is  $\mathbf{W}_L(P)$ , the set of points that  $L$  prefers to  $P$ . It follows that the points that are either closer to  $P$  than is  $L$  or closer to  $L$  than is  $P$  (or equidistant between  $P$  and  $L$ ) is the set-union of these two sets of points, or  $\mathbf{W}_P(L) \cup \mathbf{W}_L(P)$ . If some  $\text{SQ}$  falls inside this set-union, it means that this  $\text{SQ}$  is either closer to  $P$  than to  $L$ , or closer to  $L$  than to  $P$ , or equidistant between them. In any case, the result is that  $\mathbf{W}_P(\text{SQ}) \cap \mathbf{W}_L(\text{SQ})$  would not include all of  $\text{CORE}_{P/L}$ . So if we want to identify the conditions under which all of  $\text{CORE}_{P/L}$  falls inside the  $N$ -set, the answer is that the following relationship must hold:

$$\text{SQ} \notin \{\mathbf{W}_P(L) \cup \mathbf{W}_L(P)\} \quad (2.1)$$

In other words, if  $\text{SQ}$  falls outside this region, then both  $\mathbf{W}_P(\text{SQ})$  and  $\mathbf{W}_L(\text{SQ})$  will contain all of  $\text{CORE}_{P/L}$ , which means that bargaining by the President and Leader will be unconstrained, hence they could potentially select any point in  $\text{CORE}_{P/L}$ .

We now explore in greater detail this baseline case in which the President and the Leader are bargaining with each other and do not have to worry about any veto institutions (either because there exist no veto institutions or because the veto institutions have ideal points at their respective chief

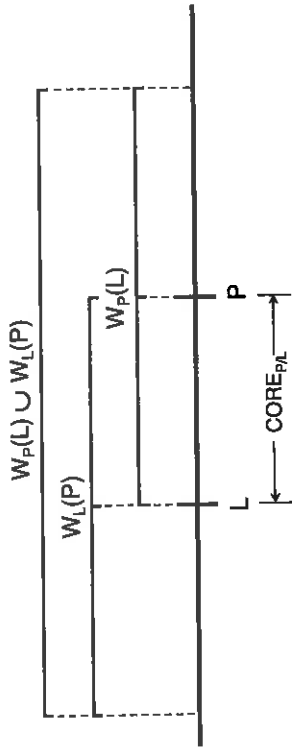


Figure 2.1 If SQ Lies Outside  $W_P(L) \cup W_L(P)$ , the N-set Includes All of  $CORE_{P/L}$ .

executives' ideal points). Our general approach is to assume some left-right order for the ideal points of the two institutional actors, and then systematically vary the location of SQ, moving SQ from right to left, given this particular order. The two relevant ideal points, L and P, can occur in just two different orderings: L-P and P-L. Since the results for one ordering are a mirror image of the results for the other, we need consider only one ordering, which will be L-P.

Note that in the diagrams that accompany the one-dimensional analysis, the heavy solid line indicates either  $CORE_{P/L}$ ,  $CORE_{P/S/L}$ , or  $CORE_{P/S/L/L}$  (depending on whether we have two, three, or four institutions), and the symbols "+++" indicate the range of points in the N-set. When the N-set contains just one point, which means that the President and the Leader will agree to select this point, this single mutually agreeable policy will be indicated by "\*".

Case 1: The ideal points are in the order L-P

Within this general case, there are five different locations for SQ that are important to examine; see the diagrams in figure 2.2.

Case 1a (see figure 2.2a). Here SQ lies to the right of  $W_P(L) \cup W_L(P)$  (i.e., the conditions in Equation 2.1 are met), which means that negotiations are not constrained to any particular segment of  $CORE_{P/L}$ ; the entire  $CORE_{P/L}$  is the N-set here. The President will thus argue for the choice of a policy at P, while the Leader will argue for the choice of a policy at L.

Case 1b (figure 2.2b). In this case SQ does not lie outside  $W_P(L) \cup W_L(P)$ , and so  $W_P(SQ)$  does not include all of  $CORE_{P/L}$ . Since SQ is closer to P than to L, the N-set here is the set of points defined by  $W_P(SQ) \cap CORE_{P/L}$ . The President will argue for the choice of a policy at the right-hand boundary of the N-set (which is his own ideal point), while the Leader

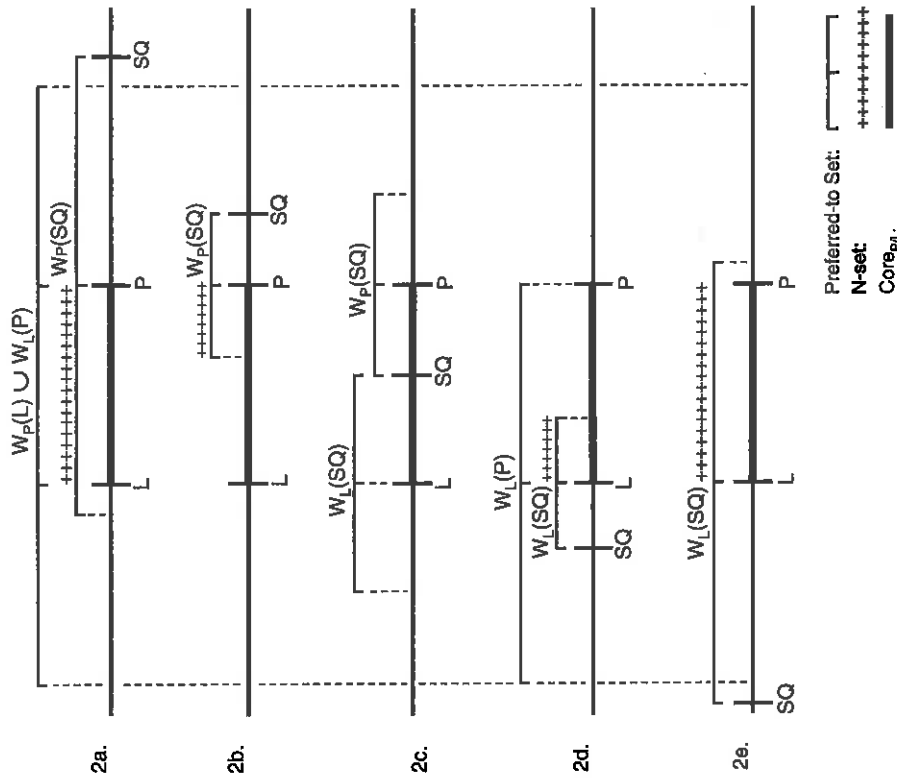


Figure 2.2 Case 1—For the L-P Ordering, there are Five Key Locations for SQ

will argue for the choice of a policy at the lefthand boundary of the N-set (which is the lefthand boundary of  $W_P(SQ)$  in  $CORE_{P/L}$ ).

Case 1c (figure 2.2c). Since SQ lies inside  $CORE_{P/L}$  here, SQ cannot be upset (see Proposition 2.4a). Hence, the N-set is empty: the President will want to move policy rightward from SQ, and the Leader will want to move policy leftward from SQ, so no mutual improvement is possible.

Case 1d (figure 2.2d). Since SQ lies to the left of L but falls inside  $W_L(P)$ ,  $W_L(SQ)$  will not include all of  $CORE_{P/L}$ . The N-set here is thus the set of

points defined by  $W_L(SQ) \cap CORE_{P/L}$ . The Leader will argue for the choice of a policy at the lefthand boundary of the  $N$ -set (i.e., for a policy at her own ideal point of  $L$ ), while the President will argue for the choice of a policy at the righthand boundary of the  $N$ -set (which is the righthand boundary of  $W_L(SQ)$  in  $CORE_{P/L}$ ).

Case 1e (figure 2.2e). Finally,  $SQ$  here lies to the left of  $W_P(L) \cup W_L(P)$  (i.e., the conditions in Equation 2.1 are met). Hence, the  $N$ -set includes all of  $CORE_{P/L}$ . In this case, the Leader will argue for the choice of a policy at  $L$ , while the President will argue for the choice of a policy at  $P$ .

### Negotiations between the President and Leader, with the Senate as a Veto Institution

We now consider what happens when the President faces a domestic veto institution, the Senate. Following the same logic as previously, we need to identify the  $N$ -set for the President and Leader, but the definition of the  $N$ -set must now take into account the constraints imposed by the Senate. The  $N$ -set here can be defined as follows:

*Definition 2.2* ( $P, S, L$ ). The  $N$ -set is the set of points  $\cup x_i$  ( $i = 1, \dots, k$ ) in  $W_{P/L}(SQ) \cap CORE_{P/S/L}$  such that  $W_{P/L}(x_i) = \emptyset$ .

In effect, the  $N$ -set here is the set of points in  $CORE_{P/S/L}$  that (a) are better than  $SQ$  for the President, Senate, and Leader, and for which (b) the President and Leader have no mutually preferred alternative.

When  $SQ$  lies in  $CORE_{P/S/L}$ ,  $SQ$  cannot be upset. For example,  $SQ$  could lie somewhere in  $CORE_{P/L}$  (i.e., it could be equal to  $P$ , it could be equal to  $L$ , or it could lie between  $P$  and  $L$ ); thus,  $SQ$  could not be upset because the President wants to move  $SQ$  in one direction while the Leader wants to move  $SQ$  in the opposite direction. Alternatively,  $SQ$  could lie somewhere in a  $CORE_{P/S}$  that lies outside  $CORE_{P/L}$ ; thus,  $SQ$  could not be upset because the President wants to move  $SQ$  in one direction while the Senate wants to move  $SQ$  in the opposite direction.

As before, there are some locations for  $SQ$  such that the  $N$ -set will necessarily be the entire  $CORE_{P/L}$ . For this to occur,  $SQ$  cannot be closer to  $P$ ,  $L$ , or  $S$  than they are to each other. More systematically, this means that we must consider the following six preferred-to sets:

- (1)  $W_P(L)$ , the set of points that  $P$  prefers to  $L$ ,
- (2)  $W_P(S)$ , the set of points that  $P$  prefers to  $S$ ,
- (3)  $W_L(P)$ , the set of points that  $L$  prefers to  $P$ ,

- (4)  $W_L(S)$ , the set of points that  $L$  prefers to  $S$ ,
- (5)  $W_S(P)$ , the set of points that  $S$  prefers to  $P$ , and
- (6)  $W_S(L)$ , the set of points that  $S$  prefers to  $L$ .

It follows that the set of points that are closer to  $P$  than is  $L$ , or closer to  $P$  than is  $S$ , or closer to  $L$  than is  $P$ , or closer to  $L$  than is  $S$ , or closer to  $S$  than is  $P$ , or closer to  $S$  than is  $L$  is the set-union of these sets, or  $W_P(L) \cup W_P(S) \cup W_L(P) \cup W_L(S) \cup W_S(P) \cup W_S(L)$ . If some  $SQ$  falls inside this set-union, it means that this  $SQ$  is either closer to  $P$  than to  $S$  or  $L$ , or closer to  $L$  than to  $S$  or  $P$ , or closer to  $P$  than to  $L$  or  $S$ . In any of these instances, the result is that  $W_P(SQ) \cap W_L(SQ) \cap W_S(SQ)$  would not include all of  $CORE_{P/L}$ . So for all of  $CORE_{P/L}$  to be inside the  $N$ -set, the following relationship must hold:

$$SQ \notin \{W_P(L) \cup W_P(S) \cup W_L(P) \cup W_L(S) \cup W_S(P) \cup W_S(L)\} \quad (2.2)$$

In other words, if  $SQ$  is farther away from  $P$ ,  $L$ , and  $S$  than  $P$ ,  $L$ , and  $S$  are from each other, then  $W_P(SQ) \cap W_L(SQ) \cap W_S(SQ)$  will contain all of  $CORE_{P/L}$ , which means that bargaining between the President and Leader will be unconstrained and any point in  $CORE_{P/L}$  could potentially be selected. Figure 2.3 provides an illustration. For this particular diagram, the complex expression in Equation 2.2 reduces to  $W_L(SQ) \cup W_S(SQ)$ . This happens because  $L$  and  $S$  are the "outside" actors in this diagram, which means that the preferred-to sets of the "interior" actor—who is  $P$ , in this case—do not affect the result.

When the President, Leader, and Senate are all involved in treaty negotiations, six different orderings of the  $P$ ,  $L$ , and  $S$  ideal points are possible: (1)  $L$ - $P$ - $S$ ; (2)  $S$ - $P$ - $L$ ; (3)  $L$ - $S$ - $P$ ; (4)  $P$ - $S$ - $L$ ; (5)  $S$ - $L$ - $P$ ; and (6)  $P$ - $L$ - $S$ . However, the first pair—(1) and (2)—are mirror images of each other, so we need consider only the  $L$ - $P$ - $S$  ordering. The second pair—(3) and (4)—are also mirror images, so we need consider only the  $L$ - $S$ - $P$  ordering. And the third pair—(5) and (6)—are likewise mirror images, so we need consider only the  $S$ - $L$ - $P$  ordering. We now examine these three orderings.

#### Case 2: The ideal points are in the order $L$ - $P$ - $S$

Within this general case there are seven different locations for  $SQ$  that are useful to consider; see the diagrams in figure 2.4.

Case 2a (see figure 2.4a). In this case,  $SQ$  lies so far to the right of  $S$  that  $W_S(SQ)$  includes all of the  $L$ - $P$  line (i.e., it includes all of  $CORE_{P/L}$ ); that is, the conditions in Equation 2.2 are met. Hence, the  $N$ -set includes the entire  $L$ - $P$  line. Of course, the Leader most prefers her own ideal point, and

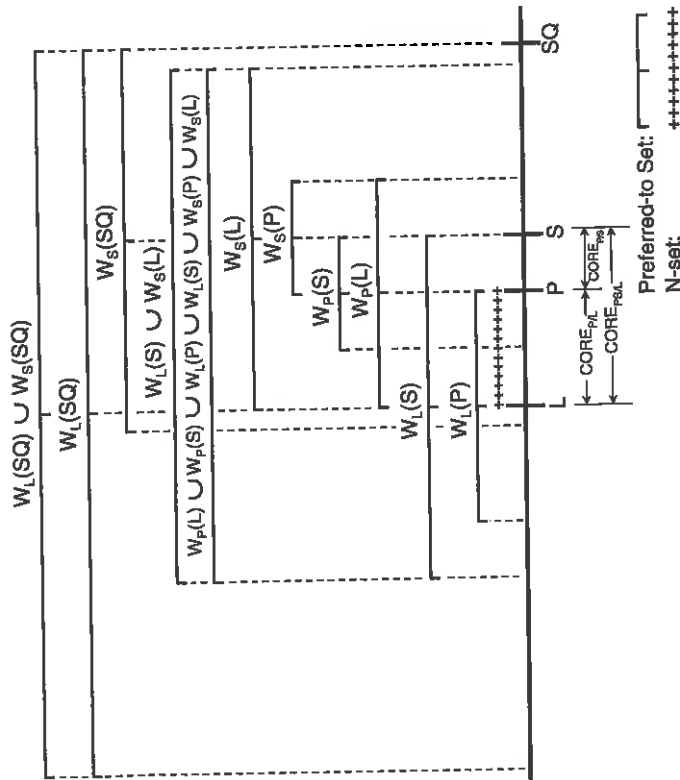


Figure 2.3 When SQ Lies Outside  $W_L(SQ) \cup W_S(SQ)$ , the N-set Includes All of  $CORE_{P/L}$ .

the President most prefers his own ideal point, so their bargaining over the N-set will involve which point on the L-P line to select.

Case 2b (figure 2.4b). Here SQ lies somewhat closer to S, and the resulting  $W_S(SQ)$  is smaller and does not include all of the L-P line (i.e., it no longer includes all of  $CORE_{P/L}$ ). What is produced is an N-set that is the segment of  $W_S(SQ)$  falling inside the L-P line. The President most prefers the righthand end of this N-set (which is identical to his ideal point), while the Leader most prefers the lefthand end of the N-set (which is the lefthand end of  $W_S(SQ)$  in  $CORE_{P/L}$ ).

Case 2c (figure 2.4c). In this case SQ is now so close to S that  $W_S(SQ)$  no longer intersects  $CORE_{P/L}$ . As a result, the President and the Leader both find that the point at the lefthand end of  $W_S(SQ)$ , indicated by the "x", is the best either can do. This is a case in which there is no need for any bargaining between the President and Leader: they will agree on this single point in the N-set.

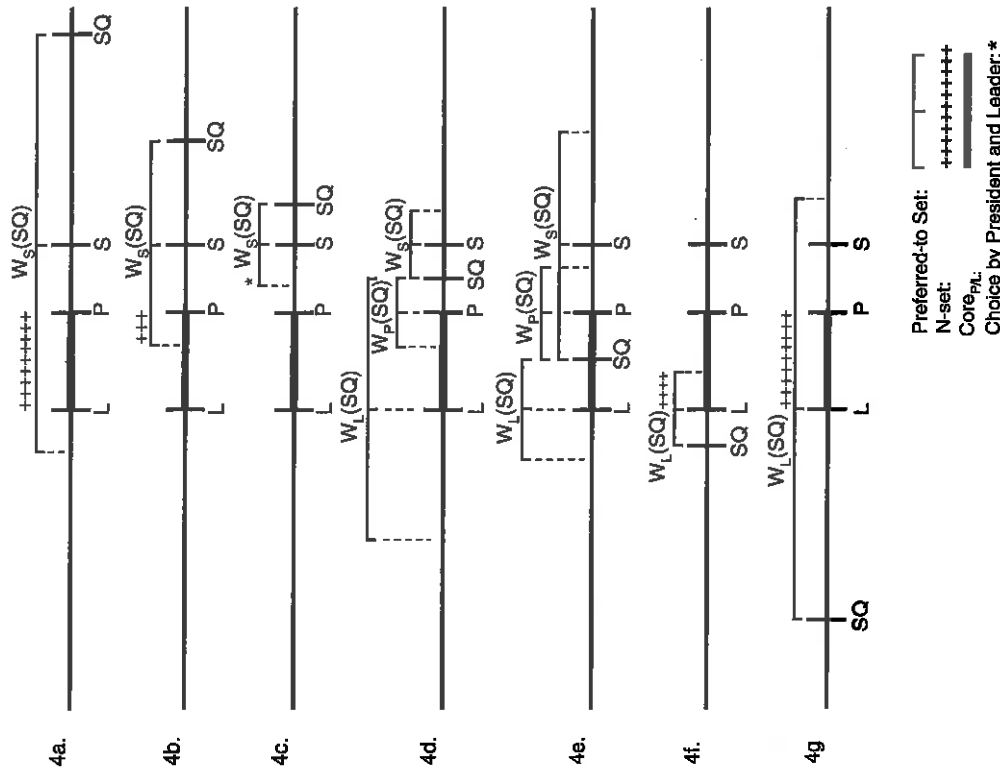


Figure 2.4 Case 2—For the L-P-S Ordering, there are Seven Key Locations for SQ

Case 2d (figure 2.4d). Here SQ lies between S, on the one hand, and L and P, on the other. While the Senate wants to move SQ rightward, the Leader and President want to move SQ leftward. In other words, SQ is in equilibrium because  $SQ \in CORE_{P/L}$ ; see Proposition 2.4b. Hence, no change in SQ will be possible.

*Case 2e* (figure 2.4e). In this case, **SQ** lies between **L** and **P**. While the Leader wants to move **SQ** leftward, the President and Senate both want to move **SQ** rightward. In other words, **SQ** is in equilibrium because  $\mathbf{SQ} \in \mathbf{CORE}_{PLS}$ ; see Proposition 2.4a. Again, no change in **SQ** is possible.

*Case 2f* (figure 2.4f). Here **SQ** lies a short distance to the left of **L**. In this case,  $\mathbf{W}_L(\mathbf{SQ})$  does not include all of  $\mathbf{CORE}_{PLS}$  thereby generating an *N*-set that is the segment of the *L*-*P* line lying inside  $\mathbf{W}_L(\mathbf{SQ})$ . The Leader will prefer the lefthand boundary of the *N*-set (which is located at her own ideal point), while the President will prefer the righthand boundary of the *N*-set (the righthand end of  $\mathbf{W}_L(\mathbf{SQ})$  in  $\mathbf{CORE}_{PLS}$ ).

*Case 2g* (figure 2.4g). In this last case, **SQ** lies so far to the left of **L** that the resulting  $\mathbf{W}_L(\mathbf{SQ})$  includes all of  $\mathbf{CORE}_{PLS}$ , thereby generating an *N*-set that is the entire *L*-*P* line; that is, the conditions in Equation 2.2 are met. The President will prefer the righthand boundary of this *N*-set, which is his own ideal point, while the Leader will prefer the lefthand boundary of this *N*-set, which is her own ideal point.

### Case 3: The ideal points are in the order *L*-*S*-*P*

Within this general case there are six different locations for **SQ** that are useful to distinguish; see the diagrams in figure 2.5. Note that since **S** lies between **L** and **P**, **S** is thereby included in  $\mathbf{CORE}_{PLS}$  which is the *L*-*P* line. (This also means that  $\mathbf{CORE}_{PS}$  is contained in  $\mathbf{CORE}_{PLS}$ .)

*Case 3a* (figure 2.5a). In this case, **SQ** lies so far to the right of **P** that  $\mathbf{W}_P(\mathbf{SQ})$  includes all of  $\mathbf{CORE}_{PLS}$ ; that is, the conditions in Equation 2.2 are met. Hence,  $\mathbf{W}_P(\mathbf{SQ})$  does not constrain the bargaining between the President and the Leader. As a result, the *N*-set includes the entire *L*-*P* line, which is  $\mathbf{CORE}_{PLS}$ . Of course, the Leader most prefers her own ideal point, and the President most prefers his own ideal point, so the bargaining between them will involve which point on the *L*-*P* line to select.

*Case 3b* (see figure 2.5b). Here **SQ** lies somewhat closer to **P**, and as a result  $\mathbf{W}_P(\mathbf{SQ})$  does not include all of  $\mathbf{CORE}_{PLS}$ . Thus, the *N*-set is the segment of  $\mathbf{W}_P(\mathbf{SQ})$  that lies inside the *L*-*P* line. The President most prefers the righthand end of this *N*-set (which is identical to his ideal point), while the Leader most prefers the lefthand end of the *N*-set (i.e., the lefthand end of  $\mathbf{W}_P(\mathbf{SQ})$  in  $\mathbf{CORE}_{PLS}$ , a point that here falls just to the left of **S** here). The Senate will ratify anything the chief executives propose: their proposal will always be better for the Senate than **SQ**.

*Case 3c* (figure 2.5c). In this case, **SQ** lies between **S** and **P**, which means that it is inside  $\mathbf{CORE}_{PSL}$  (i.e., the *L*-*P* line). Hence, **SQ** will be in equilibrium because  $\mathbf{SQ} \in \mathbf{CORE}_{PSL}$ ; see Proposition 2.4b.

*Case 3d* (figure 2.5d). In this case, **SQ** lies between **L** and **S**, which again means that it is inside  $\mathbf{CORE}_{PLS}$  (i.e., the *L*-*P* line). Hence, **SQ** is in equilibrium because  $\mathbf{SQ} \in \mathbf{CORE}_{PLS}$ ; see Proposition 2.4a.

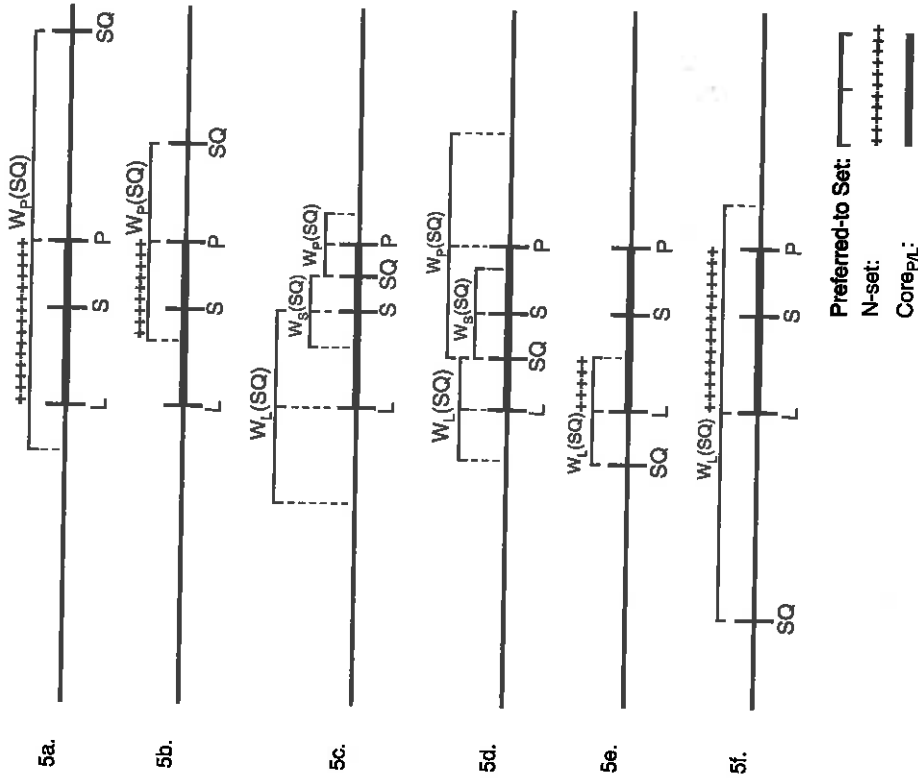


Figure 2.5 Case 3—For the *L*-*P*-*S* Ordering, there are Six key Locations for **SQ**

*Case 3e* (figure 2.5e). Here **SQ** lies a short distance to the left of **L**. In this case,  $\mathbf{W}_L(\mathbf{SQ})$  intersects  $\mathbf{CORE}_{PLS}$  thereby generating an *N*-set that is the segment of  $\mathbf{W}_L(\mathbf{SQ})$  that lies inside the *L*-*S*-*P* line. The Leader will prefer the lefthand boundary of the *N*-set (located at her own ideal point), while the President will prefer the righthand boundary of the *N*-set (i.e., the righthand end of  $\mathbf{W}_L(\mathbf{SQ})$  in  $\mathbf{CORE}_{PLS}$ ).

*Case 3f* (figure 2.5f). In this last case, **SQ** lies so far to the left of **L** that the resulting  $\mathbf{W}_L(\mathbf{SQ})$  includes all of  $\mathbf{CORE}_{PLS}$ , thereby generating an *N*-set that is the entire *L*-*P* line; that is, the conditions in Equation 2.2 are met. The Leader will prefer the lefthand boundary of the *N*-set (which is her own

ideal point), while the President will prefer the righthand boundary of this  $N$ -set (which is his own ideal point).

Case 4: The ideal points are in the order  $S$ - $L$ - $P$ . Within this general case there are six different locations for  $SQ$  that are useful to distinguish; see the diagrams in figure 2.6.

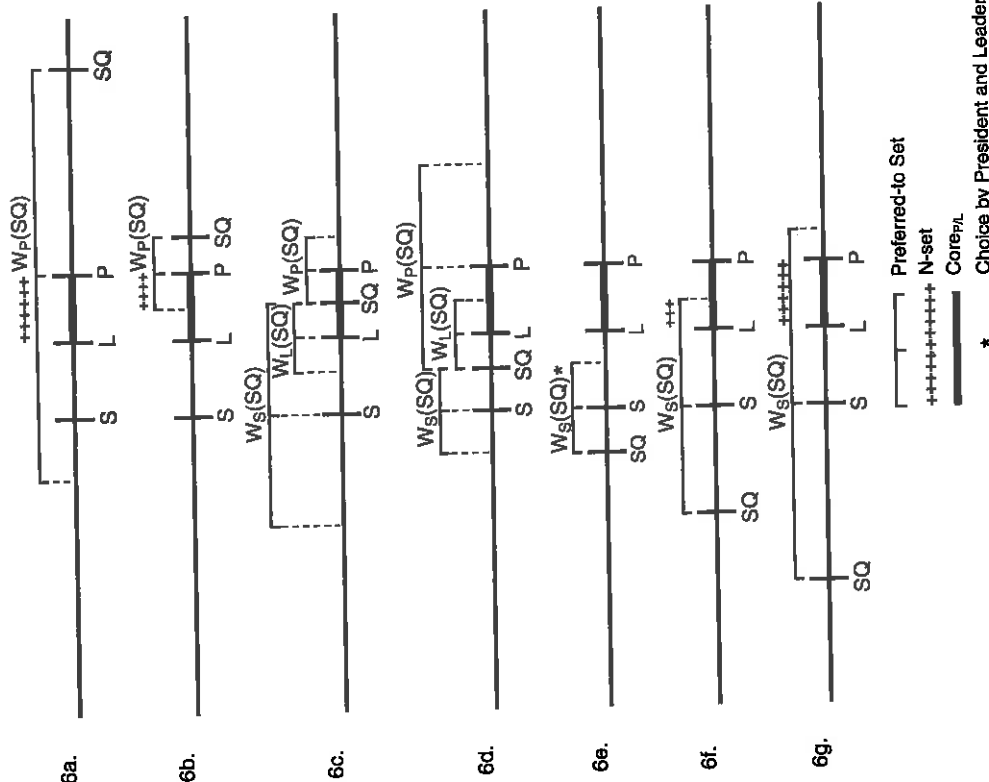


Figure 2.6 Case 4—For the  $S$ - $L$ - $P$  Ordering, there are Seven Key Locations for  $SQ$

Case 4a (see figure 2.6a). In this case,  $SQ$  lies so far to the right of  $P$  that  $W_P(SQ)$  includes all of the  $L$ - $P$  line segment; that is, the conditions in Equation 2.2 are met, so the  $N$ -set here is the entire  $L$ - $P$  line. Of course, the Leader most prefers her own ideal point in this  $N$ -set, and the President most prefers his own ideal point.

Case 4b (figure 2.6b). Here  $SQ$  lies so close to  $P$  that  $W_P(SQ)$  does not include all of the  $L$ - $P$  line (i.e., it no longer includes all of  $CORE_{P/L}$ ). This produces an  $N$ -set that is the segment of  $W_P(SQ)$  lying inside the  $L$ - $P$  line. The President most prefers the righthand end of the  $N$ -set (which is at his ideal point), while the Leader most prefers the lefthand end of this  $N$ -set (i.e., the lefthand end of  $W_P(SQ)$  in  $CORE_{P/L}$ ).

Case 4c (figure 2.6c). In this case,  $SQ$  lies between  $L$  and  $P$ , which means that it is inside  $CORE_{P/L}$  (i.e., the  $L$ - $P$  line). Thus,  $SQ \in CORE_{P/L}$  and so  $SQ$  is in equilibrium; see Proposition 2.4a. This means that the Leader and President will be unable to agree on any policy to replace  $SQ$ .

Case 4d (figure 2.6d). Here  $SQ$  lies between  $S$ , on the one hand, and  $L$  and  $P$ , on the other. Thus,  $SQ \in CORE_{P/L}$  and so  $SQ$  is in equilibrium; see Proposition 2.4b. While the Leader and President want to move  $SQ$  rightward, the Senate wants to move  $SQ$  leftward.

Case 4e (figure 2.6e). In this case,  $SQ$  lies to the left of  $S$  but close to it. The resulting  $W_S(SQ)$  does not intersect  $CORE_{P/L}$  but it does intersect the  $S$ - $L$  line segment. As a result, the  $N$ -set contains just one point, labeled “\*”. Hence, they will select this point.

Case 4f (figure 2.6f). Here  $SQ$  lies somewhat farther to the left of  $S$ , and the resulting  $W_S(SQ)$  includes a portion of the  $L$ - $P$  line. This produces an  $N$ -set that is the segment of  $W_S(SQ)$  that lies inside the  $L$ - $P$  line. The Leader most prefers the lefthand end of the  $N$ -set (which is at her ideal point), while the President most prefers the righthand end of the  $N$ -set (which is the righthand end of  $W_S(SQ)$  in  $CORE_{P/L}$ ).

Case 4g (figure 2.6g). Finally,  $SQ$  now lies so far to the left of  $L$  here that  $W_S(SQ)$  includes all of the  $L$ - $P$  line segment; that is, the conditions in Equation 2.2 are met. Hence, the  $N$ -set includes the entire  $L$ - $P$  line. Of course, the Leader most prefers her own ideal point in this  $N$ -set and the President most prefers his own ideal point.

### Negotiations between the President and the Leader, with the Senate and a Foreign Veto Institution

Finally, we must consider what happens when there are two domestic veto institutions, one for the President and one for the Leader; that is, each chief

executive has a divided government. Following the same logic as previously, we need to determine the  $N$ -set for the President and Leader, when their choices are constrained by both the Senate and its foreign counterpart. With all four of our institutional actors, the  $N$ -set is defined as follows:

*Definition 3* ( $P, S, L, V$ ). The  $N$ -set is the set of points  $\cup \mathbf{x}_i$  ( $i = 1, \dots, k$ ) in  $\mathbf{W}_{PRES}(SQ) \cap \mathbf{CORE}_{PRES/LV}$  such that  $\mathbf{W}_{P/L}(\mathbf{x}_i) = \emptyset$ .

In effect, the  $N$ -set here is the set of points in  $\mathbf{CORE}_{PRES/LV}$  that (a) are better than  $SQ$  for the President, Senate, Leader, and foreign veto institution, and for which (b) the President and Leader can find no mutually preferred alternatives.

As before, we first need to identify the locations for  $SQ$  such that the  $N$ -set will necessarily be the entire  $\mathbf{CORE}_{P/L}$ . For this to hold,  $SQ$  cannot be closer to  $P, L, S$ , or  $V$  than they are to each other. This means (unfortunately) that we must consider the following 12 preferred-to sets:

- (1)  $\mathbf{W}_P(L)$ , the set of points that  $P$  prefers to  $L$ ,
- (2)  $\mathbf{W}_P(S)$ , the set of points that  $P$  prefers to  $S$ ,
- (3)  $\mathbf{W}_P(V)$ , the set of points that  $P$  prefers to  $V$ ,
- (4)  $\mathbf{W}_L(P)$ , the set of points that  $L$  prefers to  $P$ ,
- (5)  $\mathbf{W}_L(S)$ , the set of points that  $L$  prefers to  $S$ ,
- (6)  $\mathbf{W}_L(V)$ , the set of points that  $L$  prefers to  $V$ ,
- (7)  $\mathbf{W}_S(P)$ , the set of points that  $S$  prefers to  $P$ ,
- (8)  $\mathbf{W}_S(L)$ , the set of points that  $S$  prefers to  $L$ ,
- (9)  $\mathbf{W}_S(V)$ , the set of points that  $S$  prefers to  $V$ ,
- (10)  $\mathbf{W}_V(P)$ , the set of points that  $V$  prefers to  $P$ ,
- (11)  $\mathbf{W}_V(L)$ , the set of points that  $V$  prefers to  $L$ ,
- (12)  $\mathbf{W}_V(S)$ , the set of points that  $V$  prefers to  $S$ .

It follows that the set of points that are closer to  $P$  than is  $L$  or  $S$  or  $V$ , or closer to  $L$  than is  $P$  or  $S$  or  $V$ , or closer to  $S$  than is  $P$  or  $L$  or  $V$ , or closer to  $V$  than is  $P$  or  $L$  or  $S$  is the set-union of these points, or

$$\mathbf{W}_P(L) \cup \mathbf{W}_P(S) \cup \mathbf{W}_P(V) \cup \mathbf{W}_L(P) \cup \mathbf{W}_L(S) \cup \mathbf{W}_L(V) \cup \mathbf{W}_S(P) \cup \mathbf{W}_S(L) \cup \mathbf{W}_S(V) \cup \mathbf{W}_V(P) \cup \mathbf{W}_V(L) \cup \mathbf{W}_V(S).$$

If some  $SQ$  falls inside this set-union, it means that this  $SQ$  is either closer to  $P$  than to  $S$  or  $L$  or  $V$ , or closer to  $L$  than to  $S$  or  $P$  or  $V$ , or closer to  $P$  than to  $L$  or  $S$  or  $V$ , or closer to  $S$  than to  $P$  or  $L$  or  $V$ . So, for all of

$\mathbf{CORE}_{P/L}$  to fall inside the  $N$ -set, the following relationship must hold:

$$SQ \notin \{ \mathbf{W}_P(L) \cup \mathbf{W}_P(S) \cup \mathbf{W}_P(V) \cup \mathbf{W}_L(P) \cup \mathbf{W}_L(S) \cup \mathbf{W}_L(V) \cup \mathbf{W}_S(P) \cup \mathbf{W}_S(L) \cup \mathbf{W}_S(V) \cup \mathbf{W}_V(P) \cup \mathbf{W}_V(L) \cup \mathbf{W}_V(S) \} \quad (2.3)$$

In other words, if  $SQ$  is farther away from  $P, L, S$ , and  $V$  than  $P, L, S$ , and  $V$  are from each other, then  $\mathbf{W}_P(SQ) \cap \mathbf{W}_L(SQ) \cap \mathbf{W}_S(SQ) \cap \mathbf{W}_V(SQ)$  will contain all of  $\mathbf{CORE}_{P/L}$ . Since the resulting  $N$ -set thus contains all of  $\mathbf{CORE}_{P/L}$ , the President and the Leader could potentially select any point in  $\mathbf{CORE}_{P/L}$ . Figure 2.7 provides an illustration. Notice that for the  $V$ - $L$ - $P$ - $S$  ordering in this diagram, the complex expression in Equation 2.3 reduces to  $\mathbf{W}_V(S) \cup \mathbf{W}_S(V)$ , since  $V$  and  $S$  are the "outside" actors in this particular diagram, the preferred-to sets of the "interior" actors do not affect the overall result. So if  $SQ$  lies outside  $\mathbf{W}_V(S) \cup \mathbf{W}_S(V)$  here, the  $N$ -set will include the entire  $L$ - $P$  line.

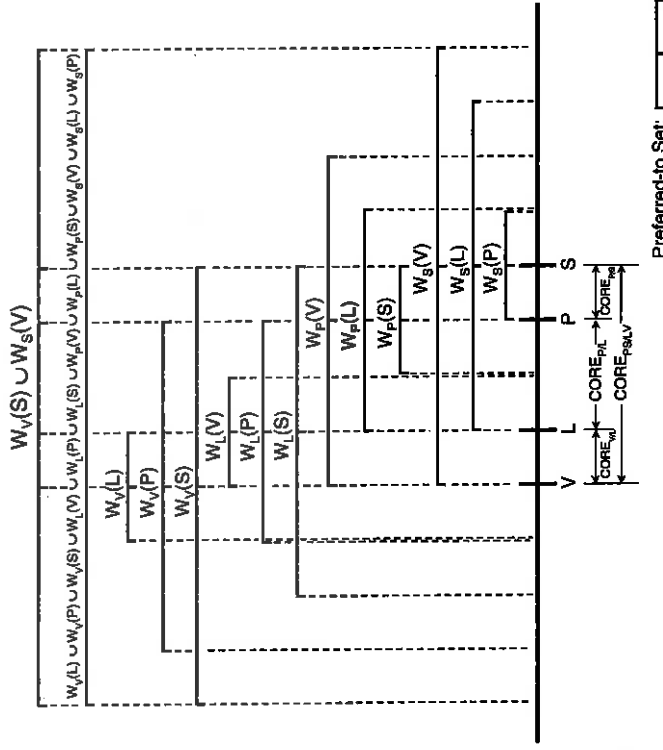


Figure 2.7 When  $SQ$  Lies Outside  $\mathbf{W}_V(S) \cup \mathbf{W}_S(V)$ , the  $N$ -set Includes All of  $\mathbf{CORE}_{P/L}$



As before, it will be important to consider the different orderings of the  $P$ ,  $L$ ,  $S$ , and  $V$  ideal points that are possible. There are 24 possible orderings:

- (1)  $L-P-S-V$  (5)  $V-S-P-L$  (9)  $L-V-S-P$  (13)  $P-S-V-L$  (17)  $P-V-L-S$  (21)  $S-L-V-P$
- (2)  $L-P-V-S$  (6)  $S-V-P-L$  (10)  $L-V-P-S$  (14)  $S-P-V-L$  (18)  $P-V-S-L$  (22)  $L-S-V-P$
- (3)  $L-S-P-V$  (7)  $V-P-S-L$  (11)  $P-L-V-S$  (15)  $S-V-L-P$  (19)  $P-S-L-V$  (23)  $V-L-S-P$
- (4)  $L-S-V-P$  (8)  $P-V-S-L$  (12)  $P-L-S-V$  (16)  $V-S-L-P$  (20)  $V-P-L-S$  (24)  $S-L-P-V$

Note that the second column is a mirror image of the first, the fourth column is a mirror image of the third, and the sixth column is a mirror image of the fifth. Hence, even with these mirror images taken into consideration, there are still 12 possible orderings that we should consider.

However, we can further simplify here by considering just the relationships between two generic chief executives and two generic veto institutions, without attaching country-specific labels to any of them. The reason we can simplify in this manner, and do so without any loss of generality, is that our general results are not affected by the identity of any particular Leader or any particular veto institution in an ordering: all that matters is the four preferred-to sets (whatever their particular identifying labels) and their intersection with the *International Core* of the two chief executives. It follows that there are just four orderings to consider (using  $P$  as the label of the generic chief executive and  $V$  as the label of the generic veto institution). (1)  $P-P-V-V$ ; (2)  $P-V-P-V$ ; (3)  $P-V-V-P$ ; and (4)  $V-P-P-V$ .

We now examine these four orderings in turn. Because the general logic should be clear by now, only an abbreviated discussion will be provided for each particular case. In the accompanying diagrams, the chief executives and veto institutions will have more specific labels (i.e., either  $P_1$  or  $P_2$ , and either  $V_1$  or  $V_2$ ) to make clear which particular ideal point is being referenced, but it should be understood for each case that  $P_1$  and  $P_2$  could be interchanged, as could  $V_1$  and  $V_2$ , without any change in the general results. Note that the *International Core* without any veto institutions will be labeled  $CORE_{P/P}$  and the *International Core* with two veto institutions will be labeled  $CORE_{P/P/V}$ .

*Case 5: The ideal points are in the order  $P_1-P_2-V_1-V_2$*

There are six different locations for  $SQ$  that are useful to examine; see the diagrams in figure 2.8.

*Case 5a* (see figure 2.8a).  $SQ$  lies so far to the right of its nearest actor,  $V_2$ , that the conditions in Equation 2.3 are met. Hence, all of  $CORE_{P/P/V}$ —which is the  $P_1-P_2$  line in the diagram—is included in  $W_{V_2}(SQ)$ , and is thus in the  $N$ -set.

*Case 5b* (figure 2.8b). This  $SQ$  lies closer to  $V_2$ , with the result that  $W_{V_2}(SQ)$  here includes only the righthand segment of  $CORE_{P/P/V}$ . This

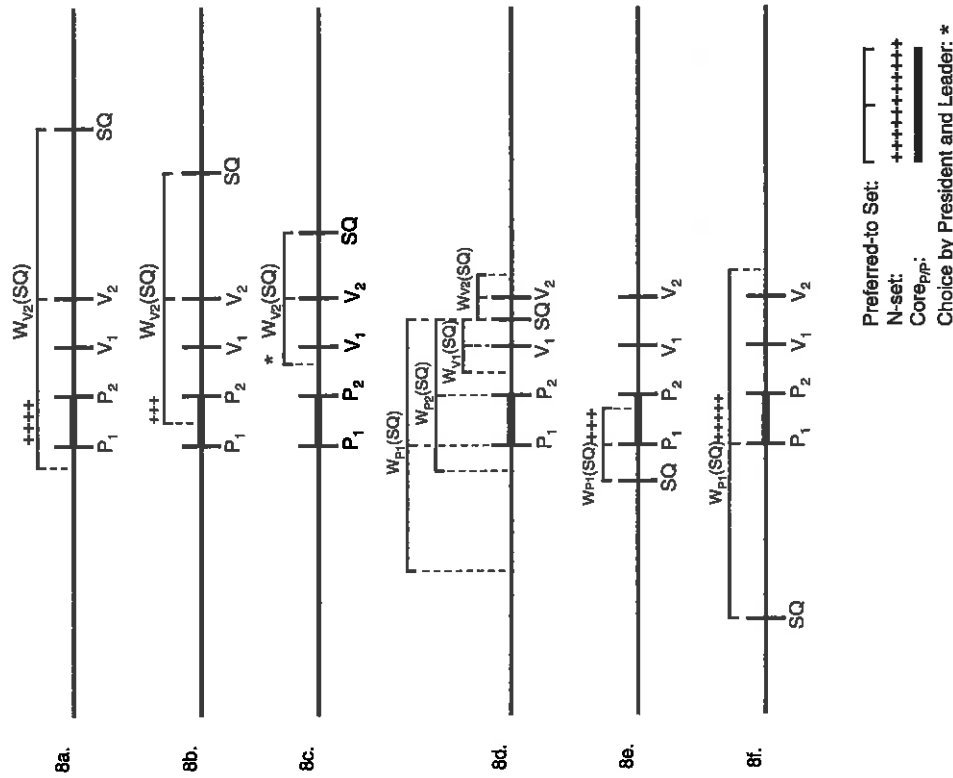


Figure 2.8 Case 5—For the  $P_1-P_2-V_1-V_2$  Ordering, there are Six Key Locations for  $SQ$

means that the  $N$ -set includes only the segment of  $W_{V_2}(SQ)$  that lies inside the  $P_1-P_2$  line.

*Case 5c* (figure 2.8c).  $SQ$  here is still to the right of  $V_2$  but so close to it that  $W_{V_2}(SQ)$  does not intersect  $CORE_{P/P}$  at all. Hence, the two chief executives will agree on the policy at the lefthand end of  $W_{V_2}(SQ)$ , as shown by the "a\*" in the diagram.

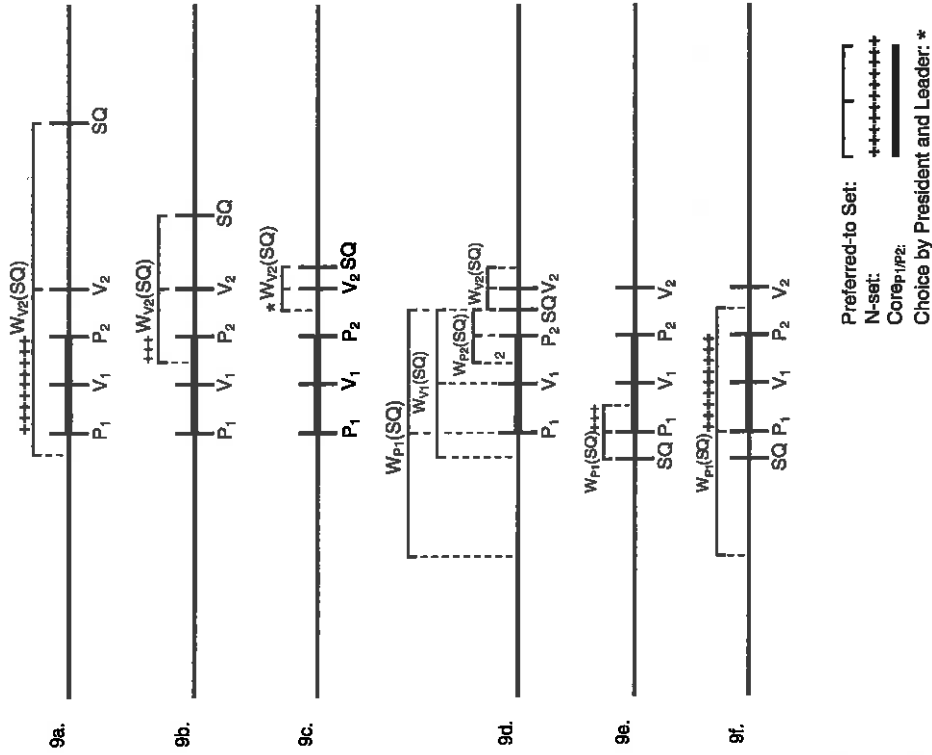


Figure 2.9 Case 6—For the  $P_1$ - $V_1$ - $V_2$ - $P_2$  Ordering, there are Six Key Locations for SQ

Preferred-to Set:  $\square$   
 N-set:  $+++++$   
 CORE<sub>P1/P2</sub>:  $+++++$   
 Choice by President and Leader: \*

Case 7b (figure 2.10b). This SQ lies closer to  $P_2$ , with the result that  $W_{P_2}$  (SQ) includes only the righthand segment of CORE<sub>P1/P2</sub>. This means that the N-set includes only the segment of  $W_{P_2}$  (SQ) that lies inside the  $P_1$ - $P_2$  line.

Case 7c (figure 2.10c). When SQ lies anywhere on or between  $P_2$  on the right and  $P_1$  on the left, it cannot be upset. In effect, it lies in CORE<sub>P1/P2</sub> and so, by Proposition 2.4c, it will be in equilibrium. See the SQ between  $V_1$  and  $V_2$ , for example.

Case 5d (figure 2.8d). When SQ lies anywhere on or between  $V_2$  on the right and  $P_1$  on the left (such as the SQ between  $V_1$  and  $V_2$  shown in the diagram), such an SQ cannot be upset. In effect, SQ lies in CORE<sub>P1/P2</sub> and so will be in equilibrium, as described by Proposition 2.4c.

Case 5e (figure 2.8e). This SQ lies somewhat to the left of  $P_1$ , with the result that  $W_{P_1}$  (SQ) intersects only the lefthand segment of CORE<sub>P1/P2</sub>. This means that the N-set includes only the segment of  $W_{P_1}$  (SQ) that which lies inside the  $P_1$ - $P_2$  line.

Case 5f (figure 2.8f). This SQ lies so far to the left of  $P_1$  that the conditions in Equation 2.3 are met, with the result that  $W_{P_1}$  (SQ) includes all of CORE<sub>P1/P2</sub>. This means that the N-set includes the entire  $P_1$ - $P_2$  line.

Case 6: The ideal points are in the order  $P_1$ - $V_1$ - $P_2$ - $V_2$ . There are six different locations for SQ that are useful to examine; see the diagrams in figure 2.9.

Case 6a (see figure 2.9a). SQ lies so far to the right of the nearest actor,  $V_2$ , that all of CORE<sub>P1/P2</sub>—which is the  $P_1$ - $P_2$  line—is included in  $W_{V_2}$  (SQ), and is thus in the N-set.

Case 6b (figure 2.9b). This SQ lies closer to  $V_2$ , with the result that  $W_{V_2}$  (SQ) includes only the righthand segment of CORE<sub>P1/P2</sub>. This means that the N-set includes only this segment of  $W_{V_2}$  (SQ) that lies inside the  $P_1$ - $P_2$  line.

Case 6c (figure 2.9c). SQ here is still to the right of  $V_2$  but so close to it that  $W_{V_2}$  (SQ) does not intersect CORE<sub>P1/P2</sub> at all. Hence, the two chief executives will agree on the policy at the lefthand boundary of  $W_{V_2}$  (SQ), as shown by the “\*” in the diagram.

Case 6d (figure 2.9d). When SQ lies anywhere on or between  $V_2$  on the right and  $P_1$  on the left, it cannot be upset. In effect, it lies in CORE<sub>P1/P2</sub> and so will be in equilibrium, as described by Proposition 2.4c. See the SQ between  $V_1$  and  $V_2$ , for example.

Case 6e (figure 2.9e). This SQ lies somewhat to the left of  $P_1$ , with the result that  $W_{P_1}$  (SQ) intersects only the lefthand segment of CORE<sub>P1/P2</sub>. This means that the N-set includes only the segment of  $W_{P_1}$  (SQ) that lies inside the  $P_1$ - $P_2$  line.

Case 6f (figure 2.9f). This SQ lies so far to the left of  $P_1$  that  $W_{P_1}$  (SQ) includes all of CORE<sub>P1/P2</sub>. This means that the N-set includes all of CORE<sub>P1/P2</sub>.

Case 7: The ideal points are in the order  $P_1$ - $V_1$ - $P_2$ - $V_2$ . There are five different locations for SQ that are useful to examine; see the diagrams in figure 2.10.

Case 7a (see figure 2.10a). SQ lies so far to the right of the nearest actor,  $P_2$ , that all of CORE<sub>P1/P2</sub>—which is the  $P_1$ - $P_2$  line—is included in the N-set.

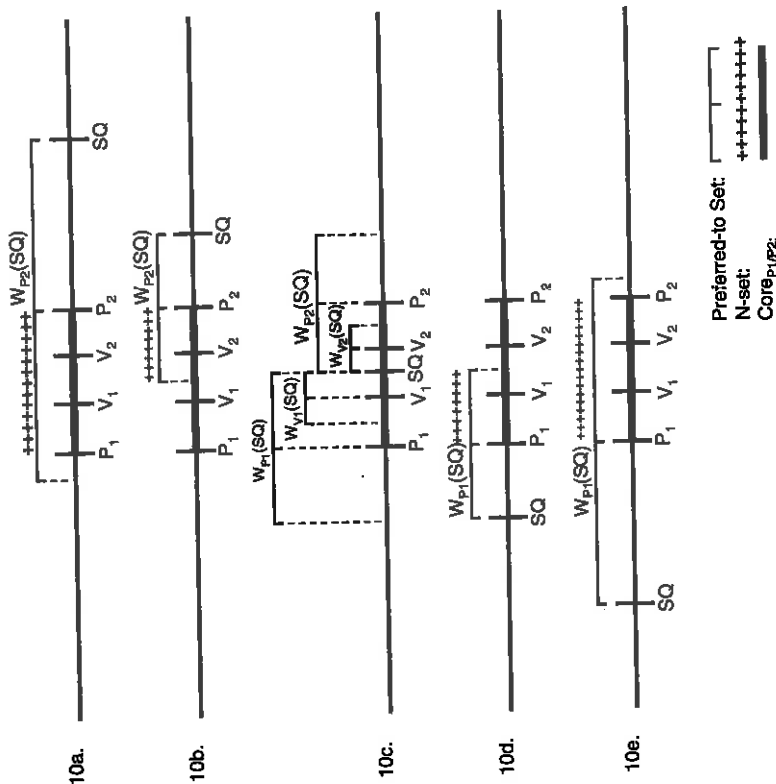


Figure 2.10 Case 7—For the  $P_1$ - $V_1$ - $V_2$ - $P_2$  Ordering, there are Six Key Locations for SQ

Case 7d (figure 2.10d). This SQ lies somewhat to the left of  $P_1$ , with the result that  $W_{P_1}(SQ)$  intersects only the lefthand segment of  $CORE_{P1/P2}$ . This means that the N-set includes only the segment of  $W_{P_1}(SQ)$  that lies inside the  $P_1$ - $P_2$  line.

Case 7e (figure 2.10e). This SQ lies so far to the left of  $P_1$  that  $W_{P_1}(SQ)$  includes all of  $CORE_{P1/P2}$ . This means that the N-set includes all of  $CORE_{P1/P2}$ .

Case 8: The ideal points are in the order  $V_1$ - $P_1$ - $P_2$ - $V_2$ . There are seven different locations for SQ that are useful to examine; see the diagrams in figure 2.11a.

Case 8a (see figure 2.11a). SQ lies so far to the right of  $V_2$  that all of  $CORE_{P1/P2}$ —which is the  $P_1$ - $P_2$  line—is included in the N-set.

Case 8b (figure 2.11b). This SQ lies closer to  $V_2$ , with the result that  $W_{V_2}(SQ)$  includes only the righthand segment of  $CORE_{P1/P2}$ . This means

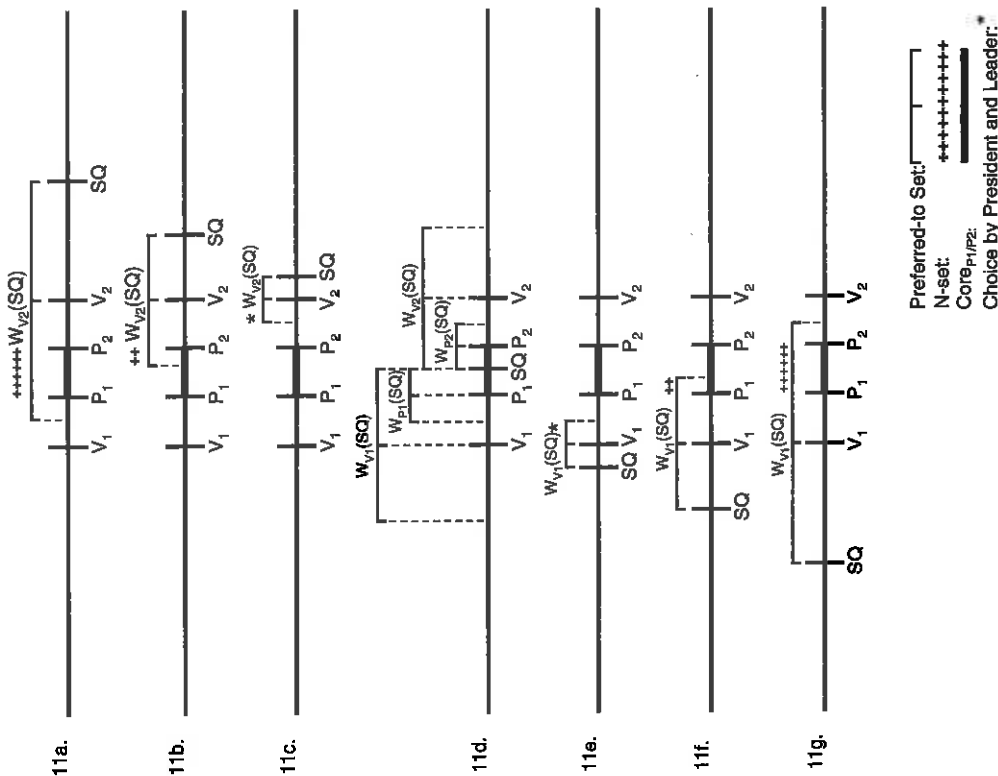


Figure 2.11 Case 8—For the  $V_1$ - $P_1$ - $P_2$ - $V_2$  Ordering, there are Six Key Locations for SQ

that the N-set includes only the segment of  $W_{V_2}(SQ)$  that lies inside the  $P_1$ - $P_2$  line.

Case 8c (figure 2.11c). The SQ here is still to the right of  $V_2$  but so close to it that  $W_{V_2}(SQ)$  does not intersect  $CORE_{P1/P2}$  at all. Hence, the two chief executives will agree on the policy at the lefthand end of  $W_{V_2}(SQ)$ , shown by the “\*” in the diagram.

Case 8d (figure 2.11d). When **SQ** lies anywhere on or between  $V_2$  on the right and  $V_1$  on the left, it cannot be upset. In effect, it lies in  $CORE_{P/P_1/P_2}$  and so, by Proposition 2.4c, will be in equilibrium. See the **SQ** between  $P_1$  and  $P_2$  for example.

Case 8e (figure 2.11e). The **SQ** here is to the left of  $V_1$  but so close to it that  $W_{V_1}(SQ)$  does not intersect  $CORE_{P/P_1/P_2}$  at all. Hence, the two chief executives will agree on the policy at the righthand boundary of  $W_{V_1}(SQ)$ , as shown by the "\*" in the diagram.

Case 8f (figure 2.11f). This **SQ** lies somewhat farther to the left of  $V_1$ , with the result that  $W_{V_1}(SQ)$  intersects the lefthand segment of  $CORE_{P/P_1/P_2}$ . This means that the  $N$ -set includes the segment of  $W_{V_1}(SQ)$  that lies inside the  $P_1$ - $P_2$  line.

Case 8g (figure 2.11g). This **SQ** lies so far to the left of  $V_1$  that  $W_{V_1}(SQ)$  includes all of  $CORE_{P/P_1/P_2}$ . This means that the  $N$ -set includes all of  $CORE_{P/P_1/P_2}$ .

### International Negotiations in Two Issue Dimensions

The preceding analysis of treaty negotiation in one dimension spells out the logic of these two-level, complete-information games in substantial detail. The same basic logic applies to treaty negotiation in two dimensions as well. The major difference is that, precisely because of the presence of two dimensions, there are more degrees of freedom, and so it is not nearly as clear what particular kinds of cases need to be examined for a thorough and systematic analysis. Hence, in this section we merely provide a number of examples to convey the flavor of how domestic institutions may constrain international negotiations in two dimensions.

Nonetheless, our examples here do show that the general range of outcomes that can emerge in one-dimensional games can also arise in these two-dimensional games as well. The major qualitative difference we observe is that while in one dimension, whenever the  $N$ -set lies outside  $CORE_{P/P_1/P_2}$  the  $N$ -set will consist of just a single point (see figures 2.4c, 2.6e, 2.8c, 2.9c, 2.11c, and 2.11e), in two dimensions an  $N$ -set lying outside  $CORE_{P/P_1/P_2}$  will usually consist of a line (i.e., it will consist of more than a single point).

### Negotiations between the President and Leader, with No Veto Institutions

We first examine some examples of negotiations between the President and Leader when there are no veto institutions (or both chief executives have

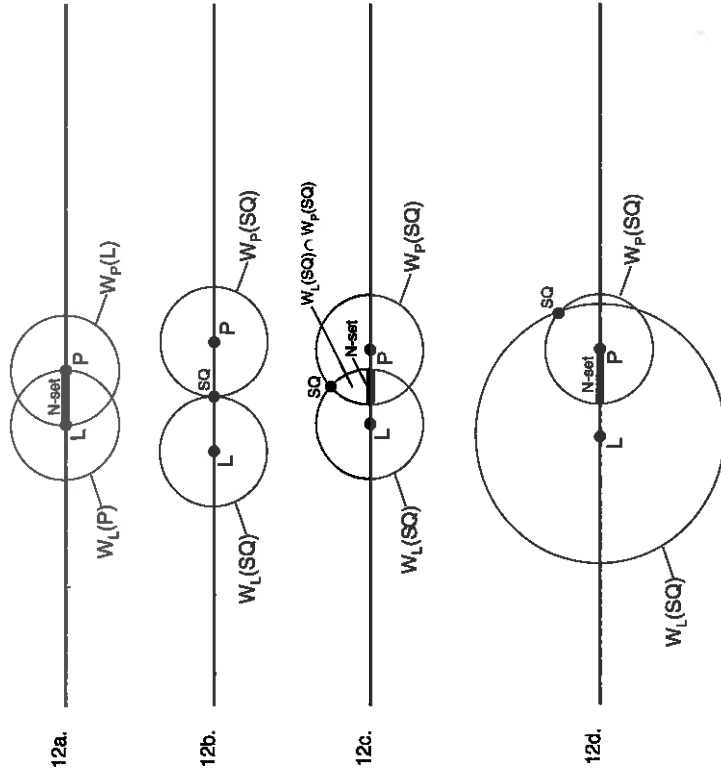


Figure 2.12 Case 9—The  $N$ -set with  $L$  and  $P$  in Two Dimensions

unified governments). As was the case for one dimension, the line connecting  $L$  and  $P$  is  $CORE_{P/P_1}$  and unconstrained bargaining between the President and the Leader will lead to outcomes on the  $L$ - $P$  line. When there are no veto institutions, Definition 2.1 for the  $N$ -set holds, and the  $N$ -set will always be part or all of the  $P$ - $L$  contract curve (just as is the case with one dimension), and the  $N$ -set will be indicated by the heavy solid line. For illustrations consider the following diagrams in figure 2.12.

Case 9a (see figure 2.12a). Recall that the  $N$ -set will include all of  $CORE_{P/P_1}$ —that is, all of the  $L$ - $P$  line—when  $SQ \notin \{W_L(P) \cup W_P(P)\}$ ; see Equation. In the diagram here, **SQ** lies outside  $\{W_L(P) \cup W_P(P)\}$ ; hence, the  $N$ -set includes all of  $CORE_{P/P_1}$ .

Case 9b (see figure 2.12b). If **SQ** lies anywhere on the line connecting  $L$  and  $P$ , which is  $CORE_{P/P_1}$ , it will be in equilibrium: the President will want to move **SQ** rightward, while the Leader will want to move **SQ** leftward. In the diagram here, the  $N$ -set is thus empty.

Case 9c (figure 2.12c). In this case,  $SQ$  lies between  $L$  and  $P$  (on the horizontal dimension) but above  $L$  and  $P$  (on the vertical dimension). The lens-shaped region below  $SQ$  is the set of points that both  $P$  and  $L$  prefer to  $SQ$ ; that is, this region is  $W_L(SQ) \cap W_P(SQ)$ . The  $N$ -set will thus be the segment of the  $L$ - $P$  line (i.e., of  $CORE_{PSL}$ ) that lies inside this lens-shaped region of  $W_L(SQ) \cap W_P(SQ)$ .

Case 9d (figure 2.12d).  $SQ$  here is somewhat more extreme on the horizontal dimension. Because  $SQ$  is closer to  $P$  than to  $L$ , the President is the more constraining institution. The  $N$ -set that results is the segment of  $CORE_{PSL}$ —that is, of the  $L$ - $P$  line—which lies inside  $W_P(SQ)$ .

### Negotiations between the President and Leader, with the Senate as a Veto Institution

When the Senate is the veto institution, Definition 2 for the  $N$ -set holds. See the illustrative diagrams in figure 2.13. In these diagrams, if  $P$ ,  $L$ , and  $S$  all lie in a straight line, then the resulting  $CORE_{PSL}$  will be a straight line. When  $P$ ,  $L$ , and  $S$  do not lie in a straight line, then the resulting  $CORE_{PSL}$  will be the triangle formed by the  $P$ ,  $L$ , and  $S$  ideal points. When  $CORE_{PSL}$  is a triangle in the following diagrams, we lightly shade the triangle.

Case 10a (figure 2.13a). In this case,  $SQ$  is in a location such that the conditions in Equation 2.2 are met:  $SQ$  lies outside  $W_L(P) \cup W_L(S) \cup W_P(L) \cup W_P(S) \cup W_S(L) \cup W_S(P)$ , hence, all of  $CORE_{PSL}$  will be in the  $N$ -set. The Senate here does not constrain bargaining between the President and Leader.

Case 10b (see figure 2.13b). The  $L$ - $P$ - $S$  triangle here is  $CORE_{PSL}$ , and any  $SQ$  inside this triangle will be in equilibrium. While there could be as many as two institutions that want to move such an  $SQ$  in some particular direction, there will never be three institutions that want to do so; at least one of the institutions will always veto a proposal to upset  $SQ$ . Hence, the  $N$ -set will be empty in this case.

Case 10c (figure 2.13c). In this case,  $W_L(SQ) \cap W_P(SQ)$  intersects a middle segment of  $CORE_{PSL}$  and the Senate does not constrain bargaining between the President and Leader. The resulting  $N$ -set lies in the middle of the  $L$ - $P$  line, that is, in the middle of the  $CORE_{PSL}$  line.

Case 10d (figure 2.13d). With a Senate and an  $SQ$  that both lie to the right of  $P$ ,  $W_S(SQ)$  constrains the  $N$ -set to the righthand end of  $CORE_{PSL}$ .

Case 10e (figure 2.13e). This case illustrates an  $N$ -set that does not include any part of  $CORE_{PSL}$ , which is the  $L$ - $P$  line. The reason is that  $W_S(SQ)$  constrains bargaining to the small circle around  $S$ , and this circle

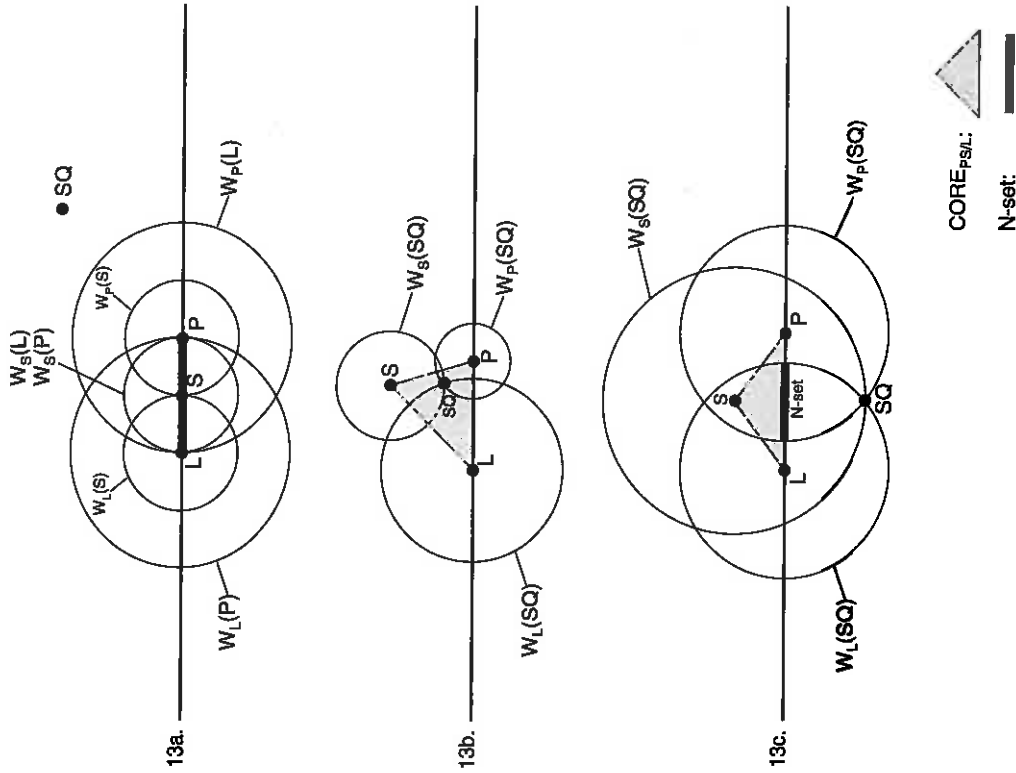
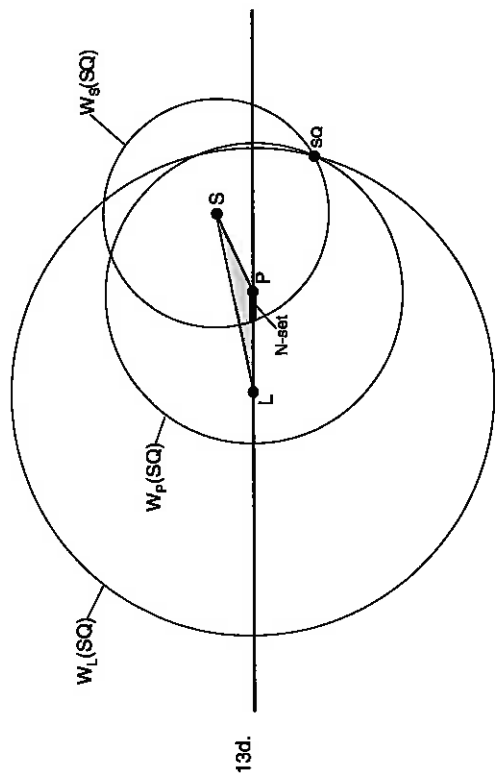
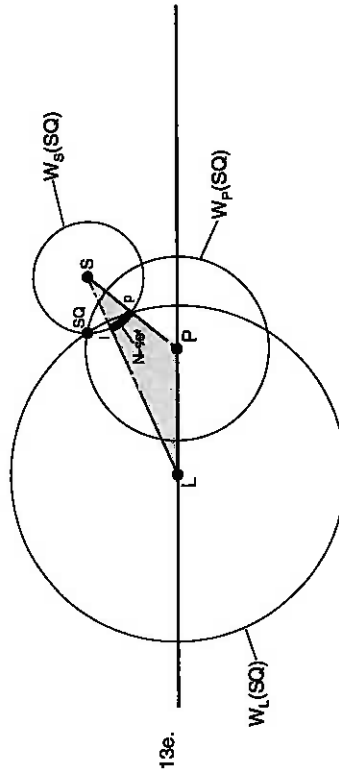


Figure 2.13 Case 10—The  $N$ -set with  $L$ ,  $P$ , and  $S$  in Two Dimensions

does not include any part of the  $L$ - $P$  line. The Leader's best point in this circle—that is, in  $W_S(SQ)$ —is the point labeled  $l$ , while the President's best point in this same circle is labeled  $p$ . The  $N$ -set is the heavy curved line connecting the  $l$  and  $p$  points: it is the part of the boundary of the  $W_S(SQ)$  circle that lies inside the triangular  $CORE_{PSL}$ . This is the  $N$ -set because for



13d.



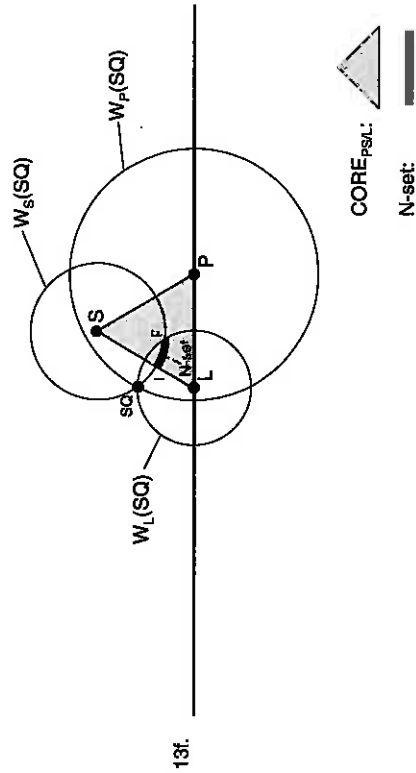
13e.



Figure 2.13 Continued

every other point inside  $W_S(SQ) \cap \text{CORE}_{PS/L}$ , there is some point on this line connecting  $l$  and  $p$  that both the Leader and President prefer and, for every point on this  $l-P$  line, there is no other point that the Leader and President both prefer.

Case 10f (figure 2.13f). This case illustrates another  $N$ -set that does not include any part of  $\text{CORE}_{PS/L}$ .  $W_S(SQ)$  again constrains bargaining to the



13f.

Figure 2.13 Continued

circle around  $S$ . The Leader's best point in this circle—that is, in  $W_S(SQ)$ —is point  $l$ , while the President's best point in this circle is point  $p$ . The  $N$ -set is the part of the boundary of the  $W_S(SQ)$  circle that lies inside both  $W_L(SQ)$  and  $\text{CORE}_{PS/L}$ , as shown by the heavy curved line that connects the  $l$  and  $p$  points. This is the  $N$ -set because for every other point inside  $W_S(SQ) \cap W_L(SQ) \cap \text{CORE}_{PS/L}$ , there is some point on this  $l-P$  line that both the Leader and President prefer and, for every point on this  $l-P$  line, there is no other point that both the Leader and President prefer.

### Negotiations between the President and Leader, with a Veto Institution for Each Country

When there are two veto institutions, Definition 2.3 for the  $N$ -set holds; see figure 2.14 for two illustrative diagrams. In each case, the lightly shaded  $L-P-S-V$  quadrilateral is  $\text{CORE}_{PS/LV}$ .

Case 11a (see figure 2.14a).  $SQ$  here is located inside the shaded quadrilateral,  $\text{CORE}_{PS/LV}$ . Any  $SQ$  located inside this quadrangle will be in equilibrium: as many as three of these institutions could prefer some other point to  $SQ$ , but there is no location for  $SQ$  such that all four of these institutions will prefer some other point to  $SQ$ . Hence, the  $N$ -set is empty for any location of  $SQ$  inside the shaded area.

Case 11b (figure 2.14b). In this example,  $\text{CORE}_{PS/LV}$  is again a shaded quadrilateral, but  $SQ$  now lies outside the quadrilateral. The small lens sloping southeastward from  $SQ$  is the set of points that  $P$ ,  $L$ ,  $S$ , and  $V$  all prefer

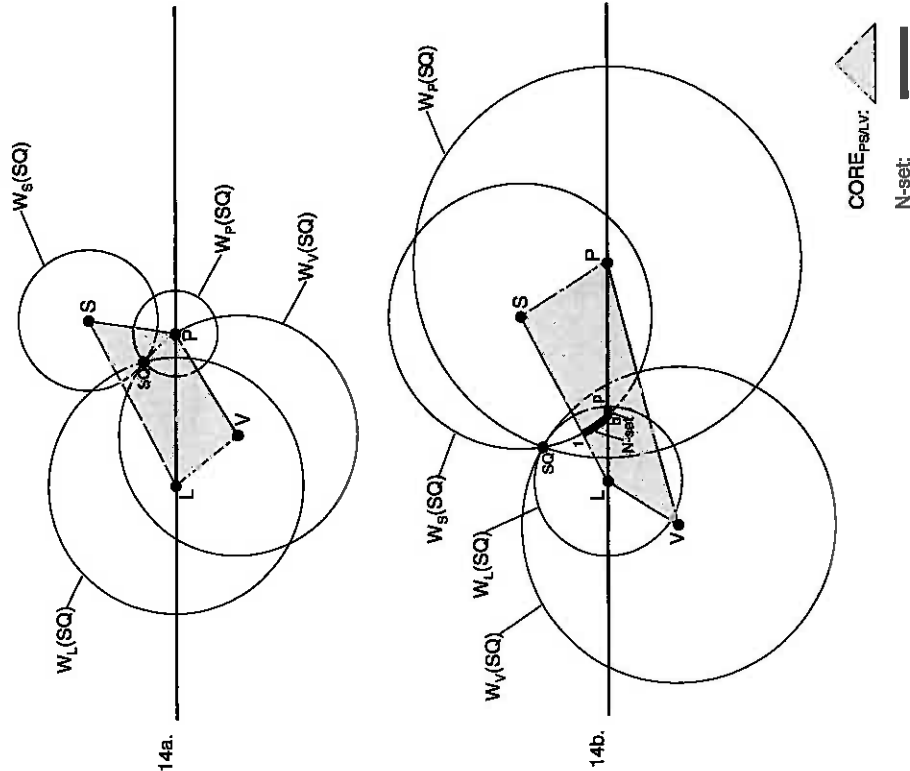


Figure 2.14 Case 11—The N-set with L, P, S, and V in Two Dimensions

to SQ; it is  $W_P(SQ) \cap W_L(SQ) \cap W_S(SQ) \cap W_V(SQ)$ . The N-set must lie inside  $W_P(SQ) \cap W_L(SQ) \cap W_S(SQ) \cap W_V(SQ) \cap \text{CORE}_{PSLV}$ . Note that the Leader's best point in this area is point  $l$  on the L-S boundary, and note also that the President's best point in this area is point  $p$  on the L-P line. Interestingly, the N-set here is a kinked line. One segment extends from point  $l$  to the point labeled  $b$  on the L-P line (i.e., on  $\text{CORE}_{PSLV}$ ); it follows the boundary of  $W_S(SQ)$  from  $l$  to  $b$ . The other segment extends from point  $b$  to point  $p$ ; it follows the L-P line ( $\text{CORE}_{PSLV}$ ) from  $b$  to  $p$ . This kinked line is the N-set because for every other point inside  $W_S(SQ) \cap W_L(SQ)$ , there

is some point on this kinked  $l$ - $b$ - $p$  line that both the Leader and President prefer and, for every point on this  $l$ - $b$ - $p$  line, there is no other point that the Leader and President both prefer.

### Generalizing the Results

The conceptual foundations for analyzing two-level games with complete information have now been established. We have determined when the status quo policy will be in equilibrium if there are no veto institutions (or there is unified government in each country), if there is one veto institution (or there is divided government for the President and unified government for the Leader), and if there are two veto institutions (or there is divided government for both the President and Leader). And when the status quo policy is not in equilibrium, we have characterized the set of policies—the N-set—over which the President and Leader should be expected to negotiate.

We can now use these results to address the central issues regarding the impact of divided and unified government, and of domestic veto institutions more generally, on international negotiations in one dimension. In particular, we address the following questions: (1) under what conditions will a national Leader's negotiating position be strengthened by divided government; (2) under what conditions will the national Leader's negotiating position be weakened by divided government; (3) under what conditions will divided government make an international agreement impossible; and (4) under what conditions will divided government have no effect at all on the outcome of international negotiations? We focus on just the one-dimensional cases since knowing how to conduct a systematic analysis is much clearer.

### The General Impact of the Status Quo

Our analysis in the preceding sections highlights how changes in the location of the status quo will affect outcomes. The impact of the status quo is most clearly seen in the one-dimensional cases described in part III. For each case in that section, we held the actors' ideal points constant while systematically changing the location of the status quo. In general, the impact of these changes in the status quo policy is quite variable:

- some locations for SQ lead to an N-set that consists of the entire  $\text{CORE}_{PSLV}$  (e.g., figures 2.2a, 2.4a, 2.5a, 2.6a, 2.8a, 2.9a, 2.10a, and 2.11a);



- some locations for **SQ** lead to an  $N$ -set that is a small segment of **CORE<sub>PIL</sub>** favoring the President but not the foreign Leader (e.g., figures 2.2b, 2.4b, 2.5b, 2.6b, 2.8b, 2.9b, 2.10b, and 2.11b);
- some locations for **SQ** lead to an  $N$ -set that is a small segment of **CORE<sub>PIL</sub>** favoring the foreign Leader but not the President (e.g., figures 2.2d, 2.4f, 2.5e, 2.6f, 2.8e, 2.9e, 2.10d, and 2.11f);
- some locations for **SQ** lead the chief executives to agree on some policy outside **CORE<sub>PIL</sub>** that favors the President (e.g., figures 2.4c, 2.8c, 2.9c, and 2.11c);
- some locations for **SQ** lead the chief executives to agree on some policy outside **CORE<sub>PIL</sub>** that favors the foreign Leader (e.g., figures 2.6e and 2.11e); and,
- some locations for **SQ** lead to no change in policy at all because the chief executives cannot agree on some policy that they both prefer to **SQ** and that the veto institutions (if any) would also prefer to **SQ** (e.g., figures 2.1c, 2.4d, 2.4e, 2.5c, 2.5d, 2.6c, 2.6d, 2.8d, 2.9d, 2.10c, and 2.11d).

We may summarize the meaning of these results in the following manner:

*Observation 2.1.* If the two chief executives do not have identical ideal points, there exist locations for **SQ** (see Propositions 1–4) for which no mutually beneficial agreement is possible (i.e., for which the  $N$ -set is empty).

*Observation 2.2.* Holding institutional ideal points constant, changes in the location of **SQ** can have a dramatic impact on the existence, size, and location of the  $N$ -set, and thus on which chief executive, if either, benefits from the final outcome.

### The Impact of the Status Quo on a Chief Executive's Negotiating Position

While these first two observations summarize the general impact of changes in the size and location of the  $N$ -set, they do not tell us much about how changes in the location of **SQ** can affect the fortunes of any particular chief executive. To clarify this matter we graph the relationships between the location of **SQ** and the location of the  $N$ -set with respect to the ideal points of  $P$ ,  $L$ ,  $S$ , and  $V$ . This produces figure 2.15 (which graphs the **SQ**/ $N$ -set relationships for Case 1, in which there are no veto institutions), figures 2.16, 2.17, and 2.18 (which graph the **SQ**/ $N$ -set relationships for Cases 2, 3, and 4, in which there is one veto institution), and figures 2.19–2.22 (which graph the **SQ**/ $N$ -set relationships for Cases 5, 6, 7, and 8, in which there are two veto institutions). In these diagrams, the location of **SQ** is depicted on the horizontal axis, relative to the locations of the ideal points

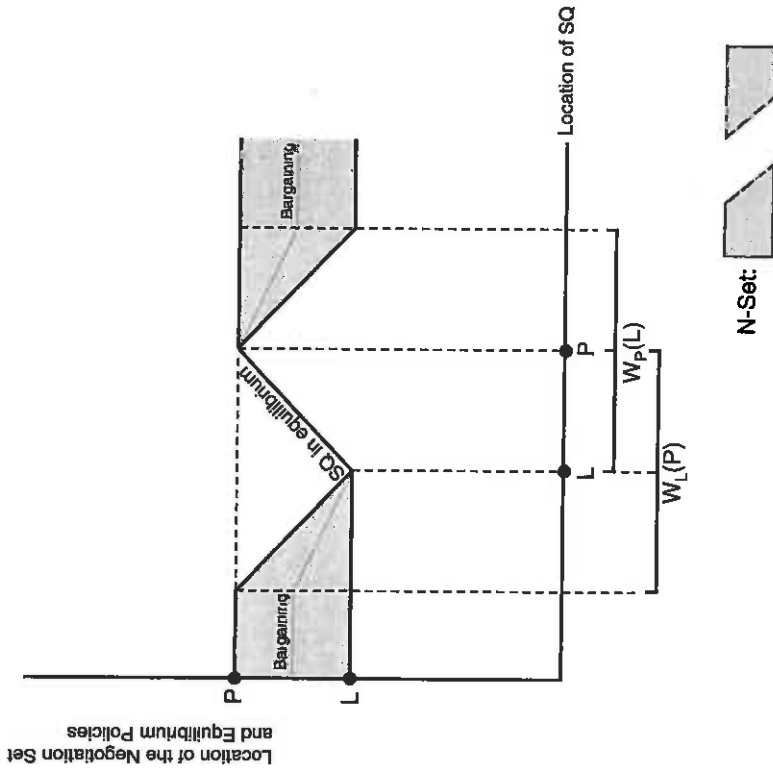


Figure 2.15 How the Location of the  $N$ -set Changes as the Location of **SQ** Changes—Case 1

of the chief executives and any veto institutions, while the location of the resulting  $N$ -set and other outcomes (for each horizontal-axis **SQ**) are graphed on the vertical axis.

To illustrate, consider Case 1 (involving just  $L$  and  $P$ ), which is analyzed in figure 2.15; it integrates the five diagrams in figure 2.2. With **SQ** starting out on the far right on the horizontal axis, the  $N$ -set on the vertical axis initially spans the entire  $L$ - $P$  line (that is, it includes all of **CORE<sub>PIL</sub>**). Neither chief executive is advantaged here. As **SQ** moves leftward toward  $P$  (on the horizontal axis), the  $N$ -set begins to shrink upward toward  $P$  (on the vertical axis) when **SQ** passes the righthand boundary of  $W_P(L)$ , and as **SQ** approaches  $P$ , the remaining points in the  $N$ -set are closer and closer to  $P$ . In this region, then, the President gains an increasing advantage over the foreign Leader as **SQ** approaches  $P$ . When **SQ** reaches  $P$ , however, the  $N$ -set is empty and no agreement can be reached, and as **SQ** continues to move

leftward past  $P$  and toward  $L$ ,  $SQ$  continues to be in equilibrium until it reaches  $L$ , which means that the President is increasingly disadvantaged, and the Leader increasingly advantaged, simply due to the increasingly leftward locations of  $SQ$ . When  $SQ$  moves leftward beyond  $L$ , the  $N$ -set begins to expand upward (increasingly benefiting the President) until  $SQ$  reaches the left-hand boundary of  $W_L(P)$ , whereupon the  $N$ -set again includes all of  $CORE_{PL}$ . When  $SQ$  moves beyond the left-hand boundary of  $W_L(P)$ , neither chief executive is advantaged.

Next consider Case 2 (which has one veto institution, the Senate) in figure 2.16. With  $SQ$  again starting out on the far right on the horizontal axis, the  $N$ -set on the vertical axis initially spans the entire  $L$ - $P$  line (that is,  $CORE_{PL}$ ). Neither chief executive is advantaged here. When  $SQ$  moves leftward past the right-hand boundary of  $W_S(L)$ , the  $N$ -set begins to shrink

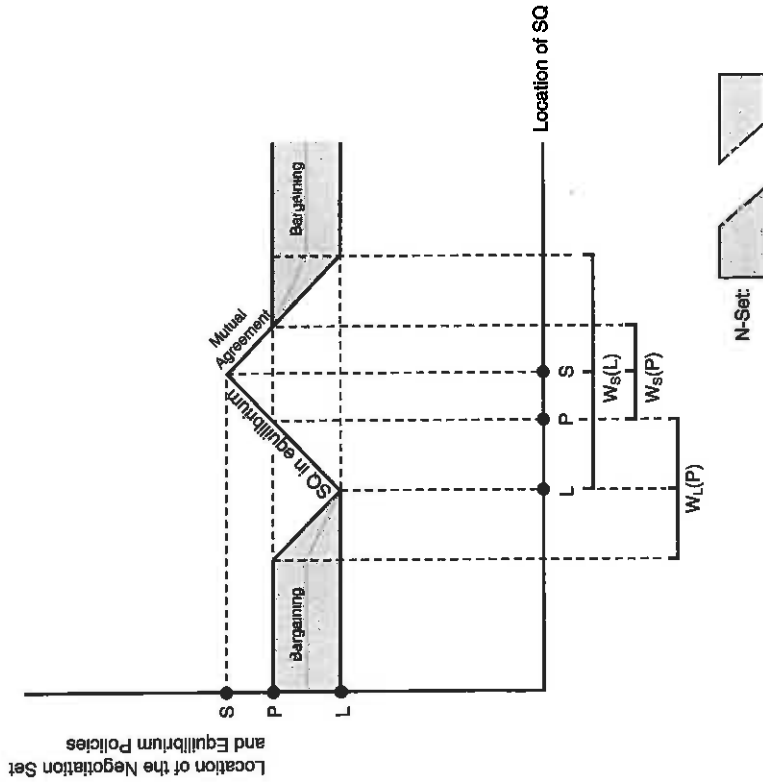


Figure 2.16 How the Location of the  $N$ -set Changes as the Location of  $SQ$  Changes—Case 2

upward until it reaches a point, at the left-hand boundary of  $W_S(P)$ , at which the Leader would agree to a choice at the President's ideal point; thus, the President is increasingly advantaged. As  $SQ$  continues to move leftward toward  $S$ , the  $N$ -set (now just one point) continues upward toward the Senate's ideal point, and both the President and Leader are increasingly disadvantaged. Next, as  $SQ$  moves from  $S$  leftward to  $L$ , it is in equilibrium this entire distance: in this range, the President is first advantaged (until  $SQ$  reaches  $P$ ) and then disadvantaged (as  $SQ$  moves from  $P$  toward  $L$ ). As  $SQ$  moves leftward past  $L$ , the  $N$ -set begins to expand upward toward  $P$ , and once  $S$  reaches the left-hand boundary of  $W_L(P)$ , the  $N$ -set again includes the entire  $L$ - $P$  range (i.e., includes all of  $CORE_{PL}$ ). In this final region, neither chief executive is advantaged. Figures 2.17–2.22 similarly graph Cases 3 through 8 involving one and two veto institutions.

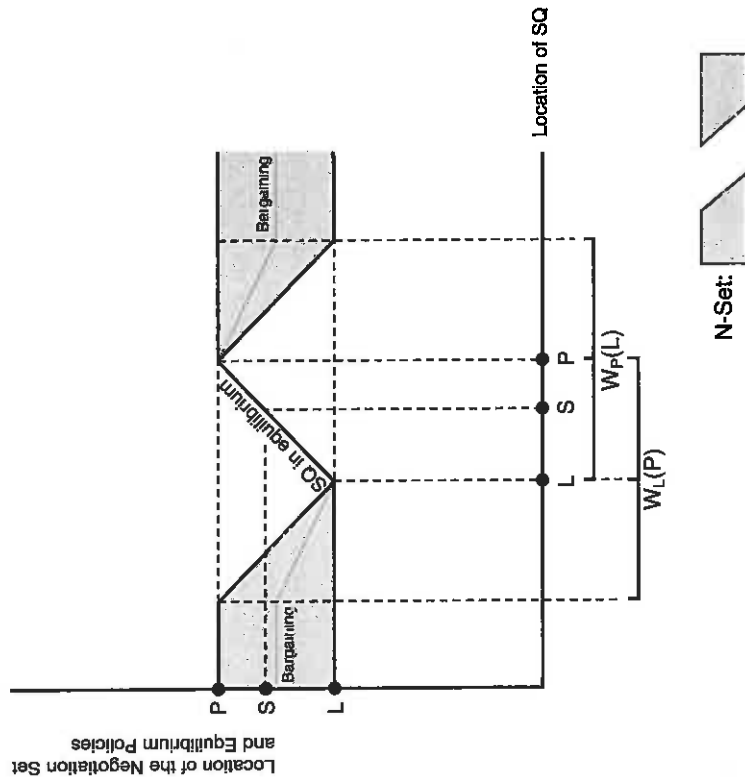


Figure 2.17 How the Location of the  $N$ -set Changes as the Location of  $SQ$  Changes—Case 3

Inspection of figures 2.15–2.22 reveals that changes in the location of **SQ** have a complex pattern of impacts on outcomes. In particular, it is important to note the following:

*Observation 2.3.* Holding institutional ideal points constant, as **SQ** moves leftward (or rightward), there is not a monotonic relationship between changes in the location of **SQ** and changes in the location of the  $N$ -set and other outcomes.

That is, as **SQ** moves leftward, the resulting  $N$ -sets and equilibrium outcomes (i.e., an **SQ** that cannot be upset) move both upward and downward.

If we narrow our perspective and focus just on the relationship between changes in the location of **SQ** and the closeness of the  $N$ -set or equilibrium outcomes (i.e., an **SQ** that cannot be upset) to the ideal point of any single actor, we similarly note that as **SQ** moves away from any actor's ideal point in either direction, the impact of **SQ**'s changing location on the  $N$ -set again lacks monotonicity. To show this, let us assume (only for the purposes of this example) that when the  $N$ -set contains multiple points (i.e., the shaded regions in figures 2.15–2.22), the President and Leader adopt a "split-the-difference" negotiating strategy, thereby selecting a point in the middle of the  $N$ -set; in figures 2.15–2.22, this particular outcome is shown by the dashed lines that bisect the shaded regions labeled "bargaining."

For example, consider figure 2.15. Begin with an initial **SQ** at  $P$ , and first move **SQ** rightward from  $P$ . The resulting outcome (on the vertical axis) declines toward the middle of the  $N$ -set (due to the split-the-difference assumption) and then remains there. Moving **SQ** leftward from  $P$ , the outcome (on the vertical axis) declines steadily downward to  $L$ , and then moves back upward to the middle of the  $N$ -set and remains there as **SQ** moves indefinitely leftward.

Similarly, in figure 2.16, an **SQ** starting at  $P$  and moving rightward first produces outcomes that move upward away from  $P$  toward  $S$ , then back downward toward  $P$ , and then farther downward to the middle of the  $N$ -set (in the shaded region), and then remaining there as **SQ** moves indefinitely rightward. Starting at  $P$  but moving leftward, the outcome declines from  $P$  to  $L$ , then increases upward to the middle of the  $N$ -set, where it remains as **SQ** moves leftward indefinitely.

Figures 2.17 and 2.18 show similar patterns (for the remaining cases for one veto institution), as do figures 2.19–2.22 (for the cases with two veto institutions). Figure 2.22 shows the most complex pattern of all: it graphs the **SQ**/ $N$ -set relationship when there are two veto institutions, each located outside **CORE**<sub>PLI</sub>.

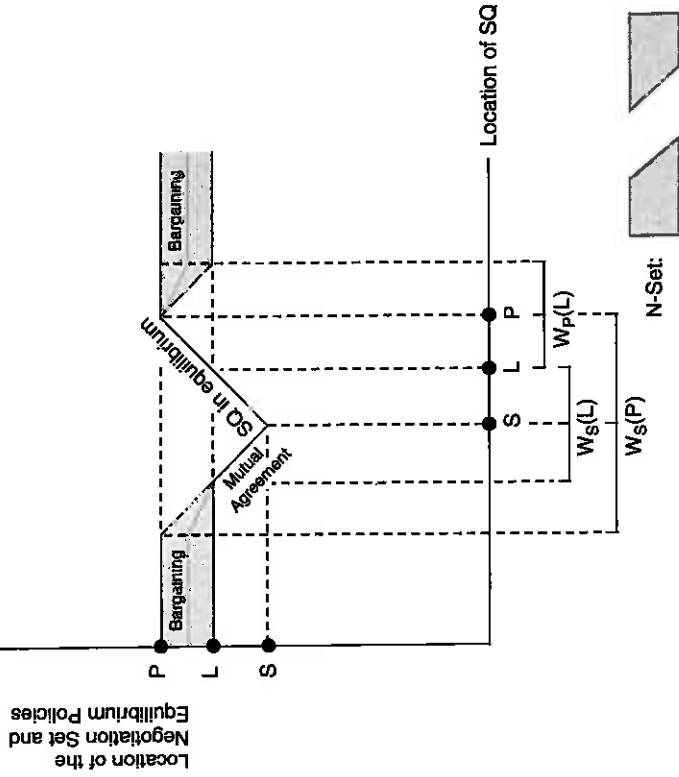


Figure 2.18 How the Location of the  $N$ -set Changes as the Location of **SQ** Changes—Case 4

In fact, this nonmonotonic impact of changes in the location of **SQ** appears whether we focus on the fortunes of either chief executive or on any veto institution. Of course, each institutional actor is guaranteed to do best—see the vertical axis in each diagram—when **SQ** is located at his or her ideal point: since each such actor has a veto over changes in **SQ**, each actor could simply veto any proposals to move **SQ** away from his or her ideal point. But with locations of **SQ** that are farther and farther away from any actor's ideal point, the decrease in utility which that actor suffers (or at least is likely to suffer, given the indeterminacies of bargaining over points in the  $N$ -set) is not monotonic: utility will decrease but in some cases it can go back up again as well. We can summarize our overall results here as follows:

*Observation 2.4.* Holding institutional ideal points constant, there is not a monotonic relationship between changes in the location of **SQ** and how

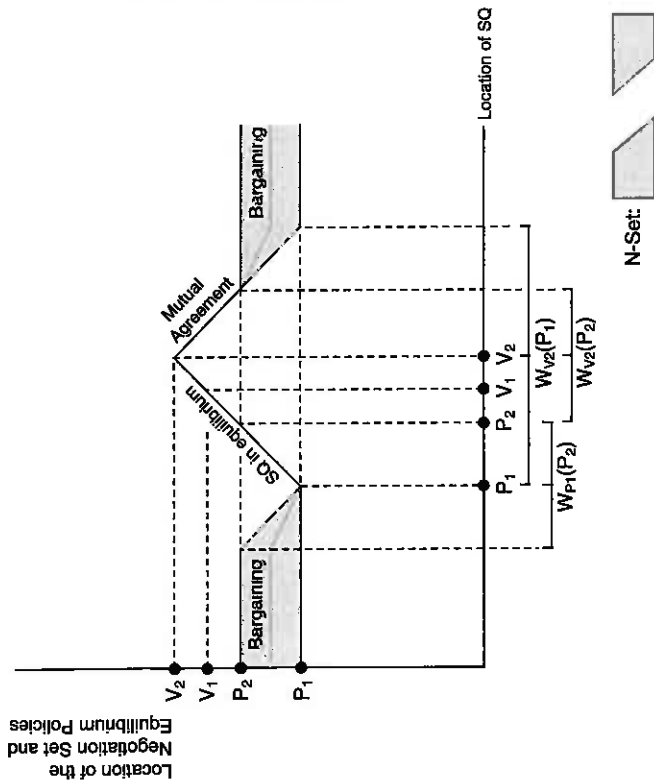


Figure 2.19 How the Location of the N-set Changes as the Location of SQ Changes—Case 5

close the N-set outcomes, and any other equilibrium outcomes, are to the ideal point of any one actor.

### The Impact of Divided or Unified Government

It is important to note that there are conditions under which adding or subtracting veto institutions—which is equivalent to transitioning from unified to divided government—will have *no* impact on the pattern of outcomes. Consider what happens when we add a veto institution *inside* CORE<sub>P/L</sub>: for instance, compare figure 2.15, which has no veto institutions, to figure 2.17, with one “internal” veto institution, and to figure 2.21, with two “internal” veto institutions. This is as if the President went from a unified government (figure 2.15) to a divided government (figure 2.17), but with the Senate now located *between* the President and the foreign Leader,

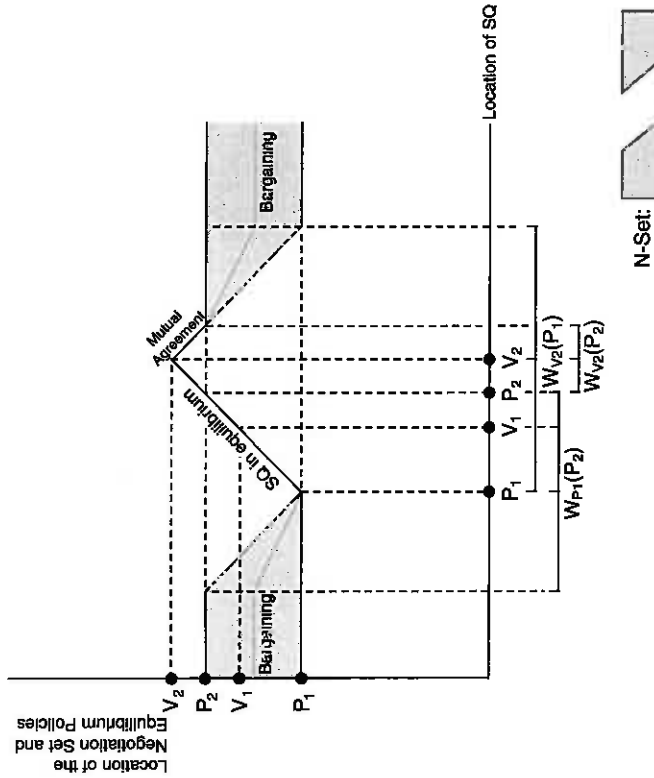


Figure 2.20 How the Location of the N-set Changes as the Location of SQ Changes—Case 6

and then a foreign veto institution is added between the President and Leader (figure 2.21). But note that the possibilities of mutual agreement between the President and leader are not changed. In general, then, adding “internal” veto institutions—inside CORE<sub>P/L</sub>—never affects the SQ/N-set relationships at all. Hence, we conclude:

*Observation 2.5.* Adding veto institutions “inside” CORE<sub>P/L</sub> has no impact on outcomes (as defined by the N-sets and by the regions in which SQ is in equilibrium).

In contrast, however, adding veto institutions *outside* CORE<sub>P/L</sub> will generally change the relationships between SQ and the N-set. For instance, note in figure 2.15 that there are no areas of mutual agreement: either SQ is in equilibrium (in the L-P range), so no negotiated agreement is possible at all, or else the N-set contains multiple points over which the two chief executives

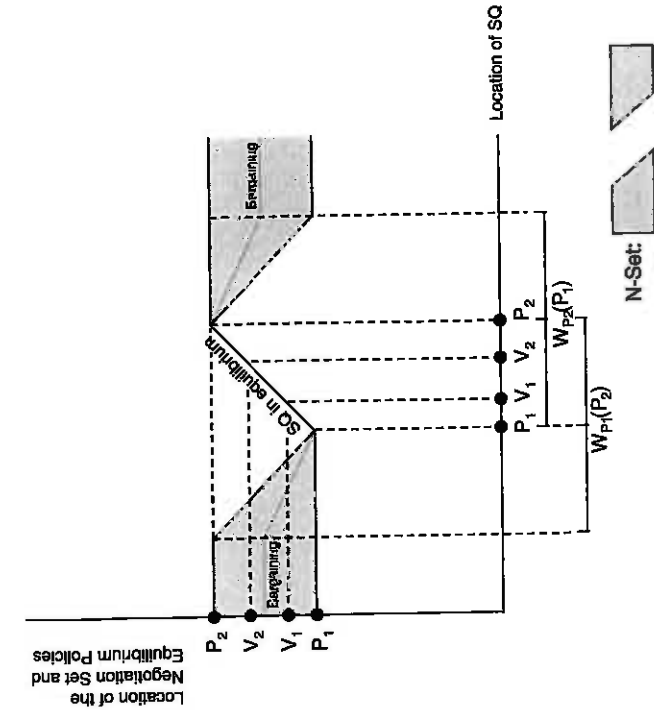


Figure 2.21 How the Location of the N-set Changes as the Location of SQ Changes—Case 7

will disagree. Adding one "external" veto institution outside  $CORE_{PL}$  adds a region in which mutual agreement is sometimes possible; see, for example, figure 2.16 on Case 2 and figure 2.18 on Case 4. Adding two "external" veto institutions (see figure 2.19 on Case 5 and figure 2.20 on Case 6) creates an expanded region in which mutual agreement will be reached, given the figure 2.15 baseline. In figure 2.22 (on Case 8), adding the two veto institutions, one on either side of  $CORE_{PL}$ , adds two separate regions, one on either side of  $CORE_{PL}$ , in which mutual agreement will be reached. Hence we have:

*Observation 2.6.* There exist conditions under which adding veto institutions "outside"  $CORE_{PL}$  (i.e., to the left and/or to the right of the  $L-P$  line) creates some possibilities of mutual (nonconflictual) agreement between the President and Leader.

Interpreting this in terms of unified and divided government, it means that some possibilities of mutual (nonconflictual) agreement can be created if

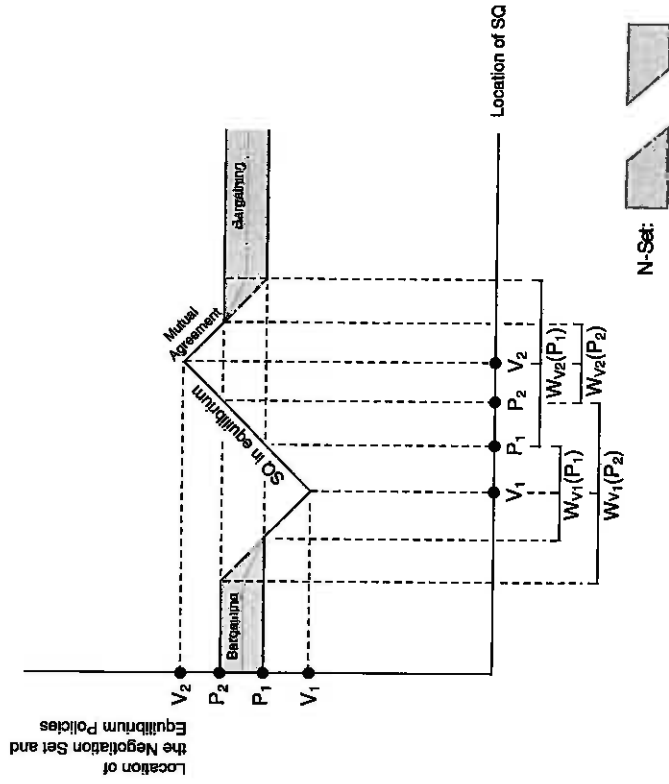
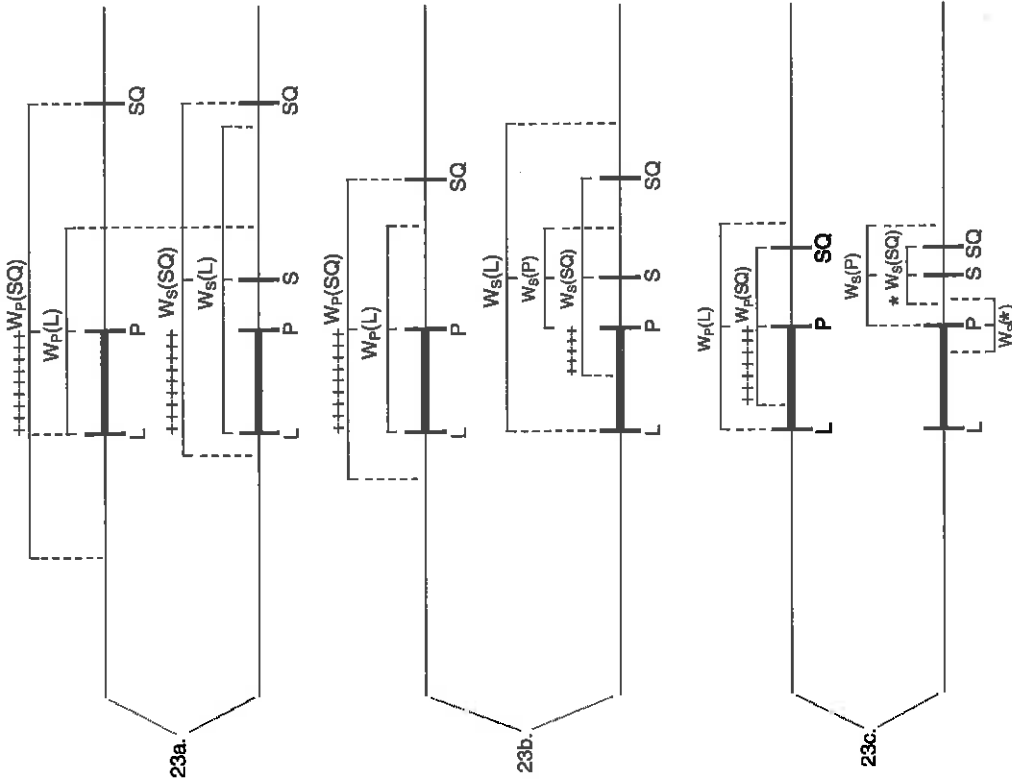


Figure 2.22 How the Location of the N-set Changes as the Location of SQ Changes—Case 8

the government transitions from unified to divided, as long as the veto institutions move to the "outside" of the  $L-P$  contract curve.

Next, recall that the unified-government hypothesis and Schelling divided-government hypothesis are both claims that adding domestic veto institutions will affect the national Leaders' success in international bargaining. The unified-government hypothesis is that adding a domestic veto institution will weaken a President, while the divided-government hypothesis is that adding a domestic veto institution will strengthen a President. A more refined combination of these two hypotheses might be that adding a domestic veto institution between the President and Leader will weaken the President, while adding a domestic veto institution outside the President (away from the foreign Leader's position) will help the President. Let us consider these claims in light of our model.

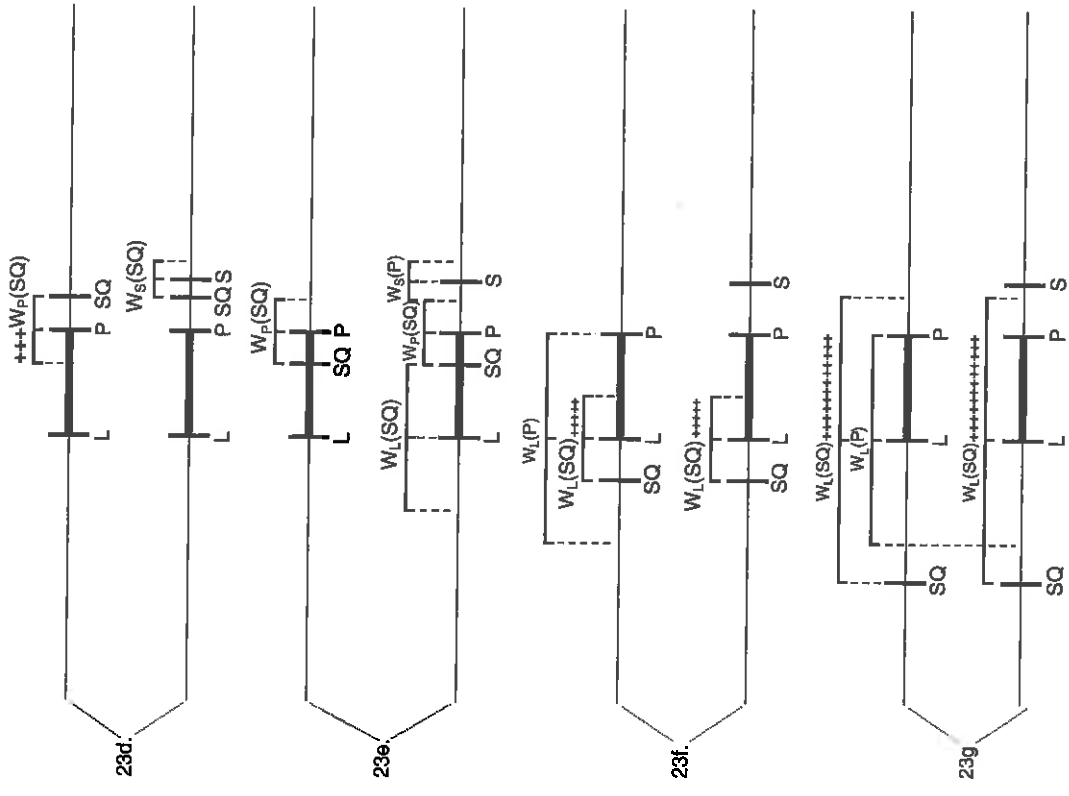
Figure 2.23 presents a series of seven paired examples in which we show what happens when we begin with a case with no veto institutions (so we have just  $L$  and  $P$ , i.e., a unified government) in the top diagram, and then



Preferred-to Set:  $\square$  Core<sub>P/L</sub>:  $\square$   
 N-set:  $+++++$  Choice by President and Leader: \*

Figure 2.23 Changes in the N-set When S is Added Outside the L-P Line

we add a Senate in the bottom diagram (alternatively, the Senate moves from a location at P to a location to the right of P, thereby creating a divided government). For each pair of examples, we assume a fixed set of locations for the President and Leader; what differs across the pairs of examples



Preferred-to Set:  $\square$  Core<sub>P/L</sub>:  $\square$   
 N-set:  $+++++$  Choice by President and Leader: \*

Figure 2.23 Continued

is that we assume a status quo policy at different locations (moving **SQ** from right to left).

We find that there are seven regions characterized by different kinds of outcomes:

- In Figure 2.23a, **SQ** in the top diagram is located outside  $\mathbf{W}_P(\mathbf{L})$ , so the  $N$ -set is the entire  $L$ - $P$  line. In the bottom diagram, **S** is added to the right of the  $L$ - $P$  line. But because the same **SQ** from the top diagram is located outside  $\mathbf{W}_S(\mathbf{L})$  in the bottom diagram, the  $N$ -set is still the entire  $L$ - $P$  line. Hence, the  $N$ -sets in both the top and bottom diagrams include the entire  $L$ - $P$  line (i.e., all of **CORE**<sub>PTL</sub>). As a result, the addition of the Senate—that is, this move from unified to divided government—does not make any difference to either the President or Leader. (Recall that while adding veto institutions *inside* **CORE**<sub>PTL</sub> does not affect outcomes at all, as noted by Observation 5, figure 2.23a here is an instance in which the veto institution is added *outside* **CORE**<sub>PTL</sub> and yet the outcome remains unaffected.)
- In figure 2.23b, **SQ** in the top diagram still falls outside  $\mathbf{W}_P(\mathbf{L})$ , so the  $N$ -set is the entire  $L$ - $P$  line. In the bottom diagram, however, the same **SQ** falls inside  $\mathbf{W}_S(\mathbf{L})$  but outside  $\mathbf{W}_S(\mathbf{P})$ . Hence, the  $N$ -set in the bottom diagram is constrained toward  $P$ . This means that, with this **SQ**, the addition of the Senate helps the President and hurts the Leader because less of the resulting  $N$ -set is located close to  $L$ .
- In figure 2.23c, **SQ** in the top diagram falls inside  $\mathbf{W}_P(\mathbf{L})$ , so the  $N$ -set is the segment of the  $L$ - $P$  line inside  $\mathbf{W}_P(\mathbf{SQ})$ . In the bottom diagram, **SQ** falls to the right of  $S$  but inside  $\mathbf{W}_S(\mathbf{P})$ . Hence, the  $N$ -set in the bottom diagram consists of the single point labeled “\*” at the lefthand end of the  $\mathbf{W}_S(\mathbf{SQ})$  preferred-to set. The Leader is clearly hurt by this change to divided government: the  $N$ -set has moved from the entire region between  $L$  and  $P$  (top diagram) to the single point to the right of  $P$  (bottom diagram). However, the impact on the President is indeterminate: on the one hand, the portion of the  $L$ - $P$  line that lies to the left of the lefthand boundary of  $\mathbf{W}_P^*(*)$  is no longer feasible (which benefits the President), but the far-right-hand segment of that now-infeasible  $N$ -set (in particular, the points on the  $L$ - $P$  line that are inside  $\mathbf{W}_P^*(*)$ ) is better for the President than the point at “\*.” Without knowing precisely what agreement the President and Leader would have reached in the top diagram, it is impossible to judge whether the outcomes in the bottom diagram are better or worse for the President.
- In Figure 2.23d, with **SQ** in the top diagram, the  $N$ -set is the portion of the  $L$ - $P$  line that lies inside  $\mathbf{W}_P(\mathbf{SQ})$ . In the bottom diagram (with **S** added), **SQ** is in equilibrium: the Senate wants to move policy rightward

from **SQ** while the President and Leader want to move it leftward. The addition of the Senate thus eliminates the top diagram's  $N$ -set from consideration by the President and Leader. Both the President and leader are hurt by the addition of the Senate here (i.e., by the Senate's creation of divided government by its move from  $P$  to the location at  $S$  in the bottom diagram). The Leader is hurt because the  $N$ -set stretching leftward from  $P$  (top diagram) is replaced by an equilibrium **SQ** to the right of  $P$  (bottom diagram). And the President is hurt because the  $N$ -set in the top diagram yields several points that are better for the President than **SQ**, while the bottom diagram contains only **SQ**.

- In figure 2.23e, **SQ** is located between  $L$  and  $P$ , and so cannot be upset. This means that adding the Senate (i.e., moving the Senate from  $P$  to its location at  $S$  in the bottom diagram) will make no difference to the President or Leader.
- In figure 2.23f, **SQ** is located to the left of  $L$  but within  $\mathbf{W}_L(\mathbf{P})$ . Since the constraining actor in both the top diagram (without  $S$ ) and bottom diagram (with  $S$ ) is the Leader, adding the Senate (i.e., moving the Senate from  $P$  to its location at  $S$  in the bottom diagram) makes no difference to either the President or Leader.
- In figure 2.23g, in both the top and bottom diagrams **SQ** is located to the left of  $L$  and outside the  $\mathbf{W}_L(\mathbf{P})$  preferred-to set. Since  $\mathbf{W}_L(\mathbf{P})$  contains the entire  $L$ - $P$  line (**CORE**<sub>PTL</sub>) in either case, adding the Senate makes no difference to either the President or Leader.

Figure 2.24 condenses these various outcomes from Figure 2.23 into one summary diagram. Figure 2.24 indicates that five regions are relevant to the issue of whether the presence of the Senate at the indicated location (i.e., the movement of the Senate from  $P$  to the indicated location, as in a change from unified government to some kind of divided government) makes any difference to the President and Leader. For any **SQ** in what we have labeled region I, adding the Senate at the indicated location (moving the Senate to here from  $P$ ) makes no difference to either the President or the leader. For any **SQ** in region II, adding the Senate at the indicated location helps the President and hurts the Leader. For any **SQ** in region III, adding the Senate at the indicated location has an indeterminate impact on the President but hurts the Leader. For any **SQ** in region IV, adding the Senate at the indicated location hurts both the President and Leader. For any **SQ** in region V, from  $P$  leftward indefinitely, adding the Senate at the indicated location makes no difference to the President or the Leader.

Figure 2.25 is the summary diagram of what happens when we begin with no veto institutions and then add (move) two veto institutions, one ( $S$ ) to the right of the President,  $P$ , and one ( $V$ ) to the left of the Leader,  $L$ .<sup>4</sup>



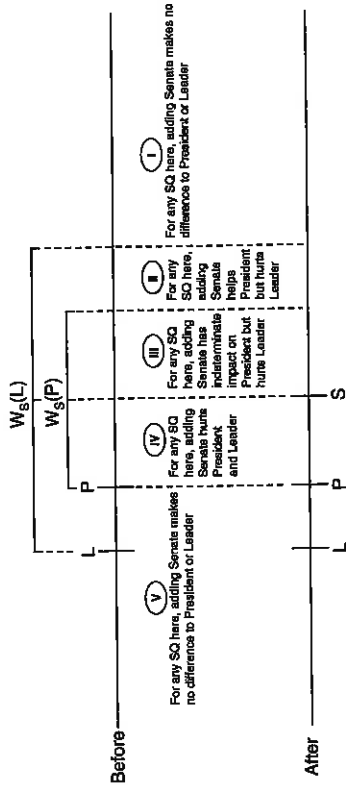


Figure 2.24 Summary of Outcomes When S is Added to the Right of L and P

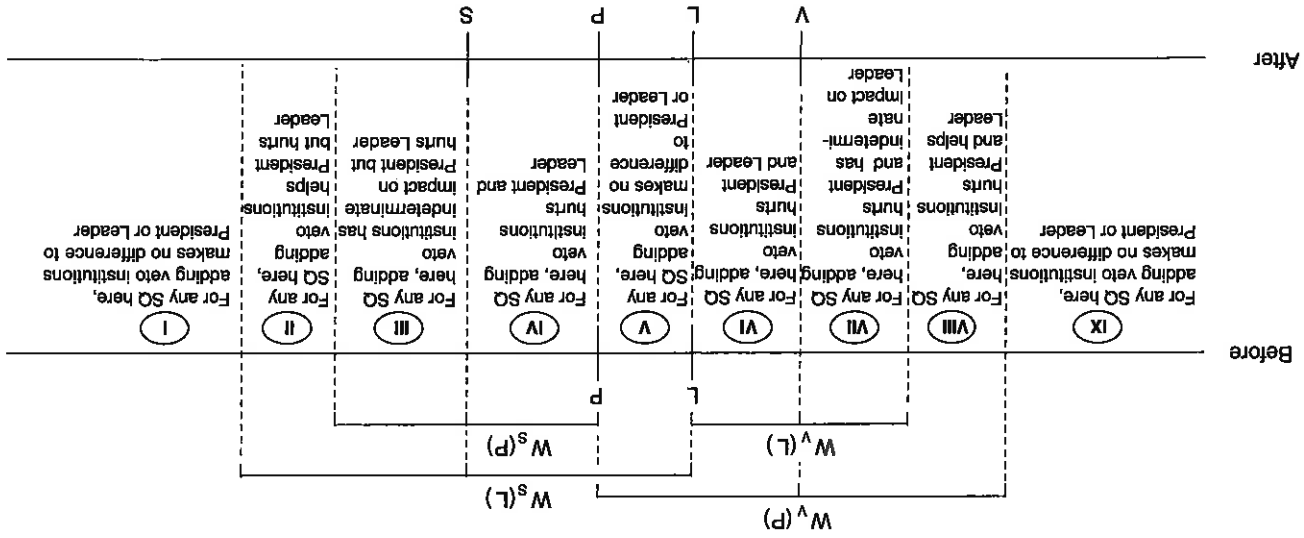
There are nine significant regions in figure 2.25:

- for any SQ in region I, adding S and V makes no difference to either the President or the Leader;
- for any SQ in region II, adding S and V helps the President and hurts the Leader;
- for any SQ in region III, adding S and V has an indeterminate impact on the President but hurts the Leader;
- for any SQ in region IV, adding S and V hurts both the President and the Leader;
- for any SQ in region V, adding S and V makes no difference to either the President or the Leader (because SQ remains in equilibrium);
- for any SQ in region VI, adding S and V hurts both the President and the Leader;
- for any SQ in region VII, adding S and V hurts the President and has an indeterminate impact on the Leader;
- for any SQ in region VIII, adding S and V hurts the President and helps the Leader; and
- for any SQ in region IX, adding S and V makes no difference to the President or the Leader.<sup>5</sup>

In figure 2.26, involving the addition (movement) of a veto institution, V, to the left of the Leader, given the presence of a Senate, S, to the right of the President, P, there are five significant regions:

- for any SQ in region I, adding V makes no difference to either the President or the Leader;
- for any SQ in region II, adding V hurts both the President and the Leader;

Figure 2.25 Summary of Outcomes When V is Added to the Left of L and S is Added to the Right of P



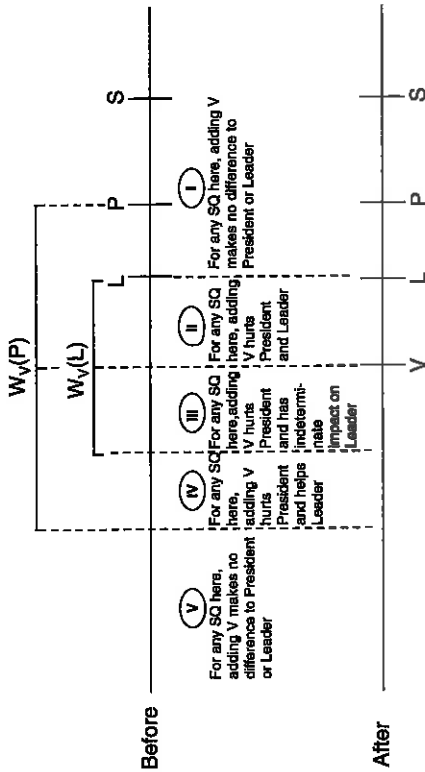


Figure 2.26 Summary of Outcomes When V is Added to the Left of L, P, and S

- for any SQ in region III, adding V hurts the President and has an indeterminate impact on the Leader;
- for any SQ in region IV, adding V hurts the President and helps the Leader; and
- for any SQ in region V, adding V makes no difference to the President or the Leader.

In Figure 2.27, involving the addition (movement) of a Senate, S, to the right of the President, P, given the presence of a veto institution, V, to the left of the Leader, L, there are also five significant regions:

- for any SQ in region I, adding S makes no difference to either the President or the Leader;
- for any SQ in region II, adding S helps the President and hurts the Leader;
- for any SQ in region III, adding S has an indeterminate impact on the President but hurts the Leader;
- for any SQ in region IV, adding S hurts both the President and the Leader;
- for any SQ in region V, adding S makes no difference to the President or the Leader.

Finally, we note that since adding veto institutions *between* the President and Leader will not change outcomes at all (see figure 2.21), we do not present a diagram of the (non)impact of these additions.

These results should provide a final resolution of the debate over the impact of divided and unified government, and of domestic veto institutions

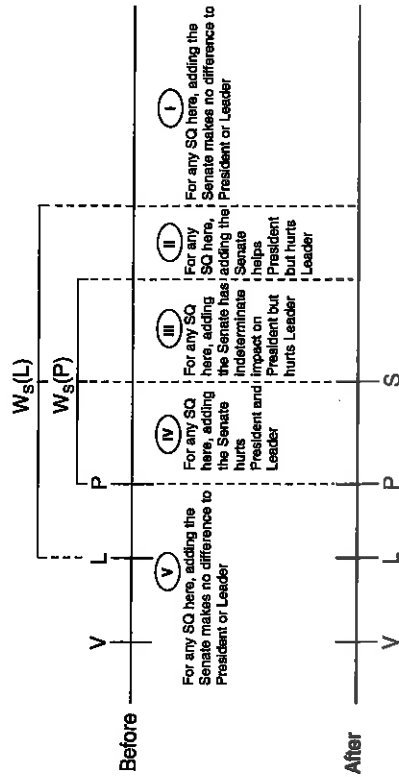


Figure 2.27 Summary of Outcomes When S is Added to the Right of V, L, and P

on international negotiations more generally, given complete information and one issue dimension. In our view, these results demonstrate that neither the national-unity hypothesis nor Schelling's divided-government hypothesis even begins to comprehend the complexity of the outcomes that can emerge. We would summarize these results as follows:

**Observation 2.7.** Depending on the location of the status quo, creating divided government by adding (or moving) either one or two veto institutions can be expected to yield almost every possible combination of outcomes, including helping the President and hurting the Leader, helping the Leader and hurting the President, hurting both the President and Leader, helping both the President and Leader, helping the President but having an indeterminate impact on the Leader, and helping the Leader but having an indeterminate impact on the President.

Note that we have been discussing the impact of *adding* veto institutions, that is, of transitioning from unified government to divided government. But in fact, the same results hold when moving in the other direction, from divided to unified government:

**Observation 2.8.** Depending on the location of the status quo, creating unified government by subtracting (or moving) either one or two veto institutions can be expected to have almost every possible combination of outcomes, including helping the President and hurting the Leader, helping the Leader and hurting the President, hurting both the President and Leader, helping both the President and Leader, helping the President but having an indeterminate impact on the Leader, and helping the Leader but having an indeterminate impact on the President.

In general, it appears that adding or subtracting veto institutions never has an indeterminate impact on *both* the President and Leader. That is, this indeterminate impact on both the President and Leader seems to be the only impact that does *not* occur.

### The Impact of Changing Institutional Ideal Points

Thus far, we have considered what happens when the location of the status quo changes and what happens when we add or subtract veto institutions—that is, a move from unified to divided government, or vice versa—at varying locations inside and outside **CORE**<sub>PL</sub>. Next we consider the following question: what happens when we change the location of the ideal points of the various institutional actors?

Figures 2.15–2.22 can be used to address this question as well, and they provide a simple answer:

*Observation 2.9.* Changes in locations of particular institutional ideal points do not change the *qualitative* patterns in the outcomes, as long as the overall left-right *order* of institutional ideal points is retained.

This means, for example, that as long as Case 2 retains the overall *L-P-S* ordering (for figure 2.16), Case 3 retains the overall *L-P-S* ordering (for figure 2.17), and so forth, the overall appearance of each diagram will not change. Some parts of each diagram may get “stretched” and other parts may get “squeezed” or “condensed” as the institutional ideal points change, but the diagram will have the same basic elements. That is, each diagram will have some combination of a region in which **SQ** is in equilibrium, a region in which the chief executives will have to engage in some negotiation to select an outcome (and perhaps a region in which mutual agreement is possible), and the sizes of these regions will get bigger or smaller as ideal points change, but the basic structure of each diagram will stay the same.<sup>6</sup>

### The Irrelevance of Which Veto Institution Is Attached to Which Chief Executive

Our final observation is one that is suggested by the manner in which we handled the original cases (Cases 5 through 8) involving two veto institutions. We argued that nothing was lost by erasing the distinctions between chief executives as well as the distinctions between veto institutions. Instead

of having to analyze 24 different orderings, only four orderings needed to be examined.

However, this does lead to an interesting—and, in some ways, unexpected—result that bears some emphasis. The key point is that, within the confines of our model, *it does not matter which nation's veto institution is located where*, in the particular sense that reversing the labels of the two veto institutions does not affect outcomes at all. For example, if it is the Senate that is located to the U.S. President's right and the foreign veto institution that is located to the Leader's left, our general results and observations would not change at all if it were the foreign veto institution that is located to the President's right and the Senate that is located to the Leader's left. Both the foreign veto institution and the Senate have veto powers, and both must approve treaties, so which veto institution is located where is irrelevant (as long as the required margin of approval—as with the two-thirds margin for the U.S. Senate—is the same in both veto institutions). The same holds for the interchangeability of the chief executives' ideal points: the general pattern of outcomes remains the same. Hence we have:

*Observation 2.10.* The ideal points of each country's chief executives are interchangeable, as are the ideal points of each country's veto institutions: as long as the required margin of approval is the same in the two veto institutions, such switches will have no impact on the equilibrium conditions for **SQ**, or on the size or location of the *N*-set.

### Conclusion

The unified-government hypothesis and Schelling's divided-government hypothesis are both correct, under some conditions, but both are incorrect under many other conditions. As far as we can determine, no one (certainly including ourselves) foresaw the wide variety of outcomes that should be expected from the addition of one or two veto institutions (i.e., of changing from unified to divided government). Nor did anyone foresee the alternating mixture of outcomes that result as the status quo moves across the issue dimension: the unified-government hypothesis holds for a couple of *disconnected* regions, as does the divided-government hypothesis. Nor did anyone foresee the possibility that the addition of domestic veto institutions (i.e., changing from unified to divided government) would sometimes *help both chief executives* and would sometimes *hurt both chief executives*. As it turns out, there is not one simple generalization that can be made about the

impact of domestic veto institutions, or of divided or unified government, on a chief executive. Instead, a remarkably wide range of impacts can be expected, and the impacts are all critically mediated by the location of the status quo policy (or the current state of affairs) relative to the locations of the ideal points of the chief executives and the veto institutions.

In our view, these results have some rather significant implications for those scholars who are attempting to determine *empirically* what impact, if any, domestic veto institutions and divided government actually have on international negotiations. Our results demonstrate that—to exaggerate only slightly—almost anything can happen, even in just one dimension. Thus, if an empirical study discovers that domestic veto institutions and divided government have had some particular kind of impact on, say, international trade negotiations, this is only to be expected: since we have demonstrated that a very wide range of things can be expected to happen, an empirical demonstration that one of these things has actually happened cannot be judged to be much of an advance in our knowledge.

It follows that if we wish to determine whether domestic veto institutions and divided government are actually having the impact that they should be predicted to have, empirical studies will have to take into account two key sets of variables. First, we have demonstrated that different orderings of the main actors' ideal points can affect whether or not the status quo policy is in equilibrium, and if the status quo policy is not in equilibrium, what set of policies the President and Leader might consider in trying to replace the status quo. This suggests that, in conducting a statistical study that tests whether domestic veto institutions and divided government actually have an impact on outcomes, the analyst should use a control for the preference orderings that are empirically observed; the reason is that our model's predictions about whether the Senate or foreign veto institution will influence outcomes critically depends on these orderings. Failure to control for these orderings may lead to meaningless results.

Second, we have demonstrated that the location of the status quo policy (or current state of affairs) also plays a crucial role in affecting outcomes. This means that, in statistically testing whether the presence of a domestic veto institution such as the Senate has an impact on outcomes, the analyst should also control for the location of the status quo. Failure to do so may also lead to meaningless results.

In sum, while our analysis here has been entirely theoretical, it may be our model's potential role in improving the quality of empirical studies that it will find its greatest usefulness.

## Chapter 3

# Do Democracies Trade More Freely?

B. Peter Rosendorff

Do democracies trade more freely? If so, what are the characteristics of the democratic polity that are relevant to trade policy? This chapter surveys the empirical evidence to address the first question, and presents a simple model of trade and politics to address the second.

Democracies are, in general, characterized by divided polities. Two specific forms of this divided polity—separation of powers across decision makers and electoral accountability of leaders—are key to the trade-liberalizing tendencies of these regimes. The presence of a divided polity alters the reversion points—which in turn shifts the agendas for trade liberalization. The effect is to make democracies both more willing to cooperate in Preferential Trading Agreement (PTA) formation, to liberalize unilaterally, as well as better able to extract concessions from nondemocracies. Divided polities affect both unilateral and bilateral strategies and outcomes in the trade liberalizing arena.

Within economics, the political origins of trade barriers have been thoroughly investigated. The approach usually follows a similar pattern: take a simplified Heckscher-Ohlin or Ricardo-Viner specific factors model to describe the economic environment, and overlay some political structure to explore the formation of barriers to free trade: direct democracy by Mayer (1984), political support from competing groups as in Hillman (1982) or Grossman and Helpman (1994), lobbying by Bhagwati (1982), Findlay and Wellisz (1982), Magee Brock and Young (1989). In so doing, the economic approach has been to focus on the pressures brought to bear on vote- or support-maximizing politicians to supply policy. Hence the