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Bipolarity, Multipolarity, and Free Trade

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# BIPOLARITY, MULTIPOLARITY, AND FREE TRADE

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*Recent literature typically attributes the relative scarcity of open international markets to the prisoner's dilemma structure of state preferences with respect to trade. I argue that the prisoner's dilemma representation does not reflect the most critical aspect of free trade agreements in an anarchic international system: security externalities. Explicit consideration of these effects suggests that a bipolar international political system has an advantage relative to its multipolar counterpart with respect to the opening of markets among states. Less credible exit threats and stronger incentives to engage in altruism within its alliances explain the advantage of a two-power system.*

The real income gains that motivate free trade are also the source of the security externalities that impede it. Their ability to internalize these effects makes military alliances the natural basis of agreements to open international markets. The evolutionary prospects of alliances vary, however: ones that are the products of bipolar systems are more likely to evolve into free trade coalitions than are their multipolar counterparts. I argue that less credible exit threats and stronger incentives to engage in alliance altruism explain the advantage of a two-power system.

Several important limits of the argument should be made clear immediately. I argue at the systemic level: I attempt to isolate the political and economic incentives for free trade that occur at the level of the international system. I do not, therefore, consider the impact of unit-level factors on the pursuit of these incentives. For example, neither the role of special interest groups nor the organization of domestic exchange via hierarchies instead of markets is considered (Doyle 1986); Frieden 1988; Ruggie 1982). The conditions I assume are those of standard international trade theory (Ethier 1983),

and illustrative rather than systematic empirical referents are used. These restrictions are appropriate given my purpose: to demonstrate analytically the advantage of a bipolar international political system with respect to free trade.

## Open Markets, Prisoner's Dilemmas, and State Power

The earliest variant of hegemonic stability theory bases its representation of international trade as a Prisoner's Dilemma (PD) on the public good literature (Kindleberger 1973). It claims that a stable system of international free trade involves the supply of a public good. Such goods are joint in supply and nonexcludable, that is, (1) any individual's consumption of these goods does not preclude their consumption by others; and (2) no individual can be excluded or prevented from consuming such goods, whether he or she has contributed to their production or not. As a result, the preferences of each member of a large, or of any short-lived, group facing a public good problem conform to a PD. The corresponding payoff

**Table 1. The Prisoner's Dilemma**

Row	Column	
	Cooperate	Defect
Cooperate	2, 2	4, 1
Defect	1, 4	3, 3

*Note:* Payoffs are ranked from 1 (best) to 4 (worst); row's payoffs are listed first.

matrix is illustrated in Table 1. Given these payoffs, the dominant strategy of each player is to defect, or refuse to contribute to, the supply of the public good.

This leads to an equilibrium outcome of DD that is Pareto-inferior (i.e., another equilibrium exists in which at least one individual would be better off and no one would be worse off than at the existing equilibrium). In this equilibrium no one contributes, no public good is produced, and another—albeit unstable—Pareto-superior outcome exists (CC). To achieve a stable free trade equilibrium, hegemonic stability theory asserts, a hegemon or dominant state must exist (Kindleberger 1973, 305). This is the equivalent of Mancur Olson's privileged group; that is, a group "such that each of its members, or at least some one of them, has an incentive to see that the collective good is provided, even if he [alone] has to bear the full burden of providing it" (Olson 1971, 50). While they accept the PD representation, critics assert that the logic of public good analysis itself indicts hegemonic theory: because small, or *k*, groups can also provide public goods, either a hegemon or a small group of states can stabilize a free trade system (Keohane 1984; Snidal 1985; Yarbrough and Yarbrough 1987).

The PD representation can be derived as easily from standard international trade theory (Conybeare 1984). The latter points out that any state large enough to influence its terms of trade—the relative

price of its exports—maximizes its real income by imposing an "optimum" tariff, that is, a tariff set at a level that maximizes the net gain that accrues from the improved terms and reduced volume of trade.<sup>1</sup> If optimum tariffs are used by all states, however, an individually and collectively suboptimal outcome results: the volume of trade is reduced, but the terms of trade do not change.<sup>2</sup> The mutually preferred outcome of free trade is difficult to achieve because it is not a stable or Nash equilibrium of the one-shot game: each state is better off defecting to an optimum tariff if others do not. Thus, standard trade theory also characterizes trade among large states as a PD game.

Both the public good variant of hegemonic stability theory and standard international trade theory, however, analyze economic exchange in a political vacuum: they focus exclusively on the real income gains that accrue to a state that opens its borders to trade. Yet national power is engaged in free trade agreements because such agreements produce security externalities: the removal of trade barriers can affect not only the real income but also the security of the states concerned.<sup>3</sup>

The security externalities of trade arise from its inevitable jointness in production: the source of gains from trade is the increased efficiency with which domestic resources can be employed, and this increase in efficiency itself frees economic resources for military uses (Root 1984). Thus, trade increases the potential military power of any country that engages in it (Albert O. Hirschman, cited in Baldwin 1985, 211). In doing so, it can disrupt the preexisting balance of power among the contracting states (McKeown 1982, 225).<sup>4</sup>

Because it is locked into the insecurity that an anarchic international system almost invariably produces,<sup>5</sup> a great power is less likely to be concerned about the absolute income than about the relative power effects of trade. The structure of international politics makes all states

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aware that each seeks to exploit the wealth of others to enhance its own power. That trade is a means to this end is also common knowledge: as David Baldwin observes, private international trade "is by far the most [cost-]effective . . . way for one country to acquire the goods or services of another" (Baldwin 1985, 116). As a result, states do not calculate their payoffs from trade only in real income terms: relative power effects are likely to affect their calculations strongly.

The interwar period provides a compelling example of the power of the security dilemma to contribute to a free trade deadlock. The acrimony of the international economic diplomacy that preceded the 1933 World Economic Conference suggested that the conference would not secure a free trade truce. In the early interwar years, the payment of German reparations was the subject of repeated negotiations. Ostensibly a technical issue whose resolution depended upon expert testimony regarding Germany's ability to pay, the payment of reparations was in reality a highly political issue: the integrity of the entire Versailles settlement was at stake (Trachtenberg 1980, 122).

In negotiations that extended from the Paris Peace Conference of 1919 to the Lausanne Conference of 1932, the issue of reparations exposed the political roots of international economic diplomacy. Determined to minimize its involvement in continental politics, Britain insisted that the stabilization of Europe depended on the restoration of financial stability and economic prosperity to Germany. It opposed the provisions of the Versailles settlement that it believed either inhibited the economic recovery of, or contributed to financial instability in, Germany (Schuker 1976, 384). As a result, Britain was sympathetic to German demands for a reduction in reparations.

France, however, was reluctant to endorse any revision of the Versailles settlement favorable to Germany. Unable to

persuade either Britain or the United States to guarantee its security, France regarded the retention of the superior position accorded to it in the treaty as its only alternative. Thus, "the sanctity of treaties and the strict enforcement of the *status quo*" became the first principles of French foreign policy (Wolfers 1940, 19). Because it viewed any treaty revision as setting a dangerous precedent, France engaged in a determined effort to compel Germany to comply with its reparations obligations.

Repeated negotiations on German payments did little to reconcile the underlying conflicts of interests among the great powers. Neither Britain nor the United States came to appreciate the French sense of acute vulnerability; France never accepted the Anglo-American vision of an economically prosperous and politically satiated Germany; and Germany never deviated from its strategy of destroying the Versailles settlement.

Thus, the economic diplomacy that preceded the 1933 World Economic Conference left a very unpromising legacy: a pattern of intense conflict over fundamental security issues among the great powers. It is no surprise that conflict rather than cooperation marked the 1933 Conference as well, although factors other than historical precedent contributed to its conspicuous lack of success (Eichengreen 1988; Oye 1985).

The interwar example obviously does not imply that political conflicts necessarily obstruct the realization of gains from trade. In theory, these conflicts need not paralyze states. They can instead be resolved through the use of a two-step process in which states initially dismantle trade barriers between them; subsequently, each adjusts its defense strategy to accommodate any changes in the balance of power that occur as trade barriers fall. The danger that a window of vulnerability may open between stages, however, is a powerful deterrent to this approach: the

historical record suggests that such windows can open surprisingly quickly (Trachtenberg 1988).

An obvious alternative is to negotiate trade and security agreements simultaneously. Suppose, for example, that the Soviet Union and the United States wanted to trade freely with each other but were concerned that the balance of power between them might shift as a result. In theory, the two countries could resolve their fears by simultaneously negotiating an arms control accord. In effect, this solution compresses the sequential process just outlined into a single stage.

The costs of implementing this solution may be prohibitive, however. As the opening shots in the Uruguay Round make clear, the negotiation of a trade agreement alone, even among allies, is very complex; its success is uncertain at best. If the merger of negotiations itself does not affect the incentives to conclude either accord, an explicit linkage of trade and security issues between potential or actual adversary states raises the costs and lowers the probability of success by several orders of magnitude. Thus, assuming that gains from trade do not vary widely across potential negotiating partners, it is cheaper for states to negotiate with their allies on trade alone than to link trade and security issues in a comprehensive negotiation involving possible or actual adversaries.

The historical record demonstrates that more powerful incentives than the gains from trade have been necessary to control arms races. Analyses of the nineteenth and twentieth centuries conclude that the majority of arms races that have ended peacefully have done so because of changes in the macropolitical order—specifically, the emergence of a threat by a third state to both participants in the race (Downs, Rocke, and Siverson 1985). The rise of German power, for example, ultimately ended the British-French naval race of the midnineteenth-to-early-twenti-

eth centuries (Downs, Rocke, and Siverson 1985, 119–20).

Thus, although states can in theory successfully confront the problems inherent in the security externalities of free trade agreements, analysis and evidence suggest that such successes will be rare events in world politics. It is, as a result, not surprising that students of trade regimes either explicitly or implicitly link their analyses to the postwar Western alliance (cf. Haggard and Simmons 1987, 134; Keohane 1984; Yarbrough and Yarbrough 1986). Nor is it surprising that some observers argue that tariff cuts are more likely between allies than between states belonging to different military coalitions (McKeown 1982, 225).

Not all military alliances are equally likely to evolve into free trade coalitions, however. I shall argue that alliances produced by bipolar systems are more likely, and ones formed within multipolar systems are less likely, to so evolve.

### Great Powers, Alliances, and Free Trade

International systems are distinguished here in terms of individual states rather than in terms of alliances (Rapkin 1988). Thus, the definition of multipolar and bipolar systems used here follows that of Snyder and Diesing: the structure of an international system

is defined by the *number* of major actors in the system and the *distribution of military power* and potential among them. In a multipolar system there are several (more than two) 'Great Powers' whose military power is roughly equal, and whose rivalry and cooperation dominate politics in the system. . . . A bipolar system is one with only two Great Powers and a number of smaller states. (Snyder and Diesing 1977, 419–20)

If the security externalities of any free trade accord render military alliances the natural basis of such agreements, the PD incentive structure confronting states that

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seek security in a multipolar system makes alliance formation likely: the fragmentation of the system into rival alliances is much more likely than a tacit or explicit general assignment to abstain from such alliances (Snyder 1984, 462). That a similar dynamic has occurred in the postwar bipolar system is clear.

In principle, neither the alliances of a multipolar, nor those of a bipolar, system should enjoy an advantage with respect to the evolution of a corresponding free trade coalition: alliances in both systems render the security externalities that accrue to a state's trading partners positive rather than negative. Yet a bipolar system is advantaged relative to its multipolar counterpart on two dimensions relevant to the conclusion of an agreement to open intraalliance markets: (1) exit and (2) incentives of the great power members to forgo the use of their market power to exploit the smaller members of the alliance.

### The Costs of Exit

The threat that any member can exit or abandon an existing alliance to join an alternative one reduces the likelihood that allies will open their markets to each other: exit transforms the external security economies that would otherwise facilitate the conclusion of an accord into *diseconomies*. As exit opportunities recreate balance-of-power fears and also shorten the "shadow of the future," prospects for free trade even within international alliances seem dim.

As Snyder observes in his discussion of the alliance security dilemma, however, the risk of exit varies widely across international systems: the risk is higher in multipolar than in bipolar international political systems (Snyder 1984). Snyder's hypothesis has been confirmed empirically: studies of the nineteenth and twentieth centuries demonstrate that exit

is indeed more likely to occur in  $n$ -power than in two-power systems (Duncan and Siverson 1982).

The number of great powers is obviously not the only source of variations in alliance durability. In the postwar period, for example, the stability of the Western alliance is the product not only of shared strategic interests but also of the democratic polities and mixed economies common to its members; analogously, the Soviet Union's determination to maintain ideologically compatible states along its western frontier tightens bonds among members of the Warsaw Pact. But idiosyncratic factors alone do not explain the postwar alliance configuration: analytic arguments also predict that bipolar systems generally will produce more stable coalitions than will their multipolar counterparts.

First, as Snyder argues, bipolar coalitions are the product largely of systemic structure. Alliances in a multipolar system, however, are not structurally determined but are the result instead of "choice among several options" (Snyder 1984, 415). Typically, serious conflicts of interest among the great powers of any given system result from the anarchic character of international politics. As a consequence, the substitutability of great power allies is likely to decline with their number: the probability of finding another large power as compatible as the existing ally varies directly with the number of great powers that exist. Thus, the great powers of a two-power system are less likely than are those of an  $n$ -power world to be close substitutes for each other.

This can be represented spatially, where the distance between any two states is a measure of the conflict of interest between them. A bipolar system embedded in an anarchic world is likely to distribute its constituent great powers 180 degrees from each other. Thus, a very sharp distinction is likely to exist between the two

great powers of any bipolar system. As a consequence, each is likely to appeal to a very different set of potential allies, and the allies themselves will be highly constrained both with respect to their initial choice of an alliance partner and with respect to their ability to shift alliances thereafter.

The addition of one or more states to the system automatically increases the range of choice available to allies. Because this change necessarily reduces the distance between states relative to a bipolar system, it also increases the range of alliance choices and the opportunities for alliance shifts relative to a two-power world. As a result, coalitions in an  $n$ -power system, unlike alliances in a bipolar world, tend to be "unstable and vulnerable to policy disagreement" (Snyder 1984, 415).

A second reason that different exit risks exist is that the distribution of information about potential allies is likely to vary across systems. The industrial organization literature distinguishes between *search* goods and *experience* goods. Applied to international alliances, this distinction illustrates the impact of variations in information on coalitional stability. In economics, consumers have complete information about the characteristics of search goods before purchase (a dress, for example); experience goods are products whose characteristics become fully known to consumers only after purchase (a restaurant's quality, for example) (Tirole 1988, 106).

Because the amount of reliable information about potential great power allies is likely to be inversely related to their number, alliances are more likely in a bipolar system to resemble search goods and in a multipolar system to resemble experience goods. Thus, the passage of time leads to greater learning about alliance partners in a multipolar world than it does in a bipolar world. To the extent that alliance shifts are a function of the reduction of

uncertainty over time, they are more likely to occur in an  $n$ -power world than in a two-power world.

Finally, exit risks are likely to be lower in a two-power system because realignment is impossible for either great power. By default, alliance stability is also the exclusive responsibility of each: neither of the two great powers in such a system can expect any other state to prevent the defection of an ally from within its bloc (Snyder 1984). In a multipolar system, the interest in preserving alliance stability and the incentive to do so can be distributed across more than one great power. As a consequence, each may seek to transfer the burden of maintaining the alliance to the other.

Thus, a strong analytic argument, as well as empirical data, supports the hypothesis that the risk of exit varies across international systems. This variation, in turn, induces variation in the discount rates of alliance members. Allies in a multipolar system will tend to discount the future benefits accruing from open markets among them more heavily than will their bipolar counterparts. The relatively lower value they place on the future relative to the present reflects their recognition of the "likelihood that the future will not come" (Levi 1988, 13). The discount factors of allies in a bipolar system, in contrast, are not subject to the same downward bias: the greater stability of bipolar coalitions allows the value of future to approximate present benefits more closely.

An analysis of relative exit risks suggests that the security externalities of any free trade agreement are more likely to remain internalized within the alliances of bipolar systems than they are within alliances of multipolar ones. As a result, both the economic and political benefits of intraalliance free trade are likely to be discounted less heavily in a two-power than in an  $n$ -power world. Thus, the dimension of exit advantages a bipolar system with

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respect to the opening of markets between or among states.

### **Intraalliance Exploitation: Incentives and Constraints**

The presence of both great and small powers within an alliance raises the issue of exploitation in sharp relief. Assuming that "great" and "small" are good proxies for market power,<sup>6</sup> the tariff game between allies is an asymmetric one: a large state can, and a small state cannot, use tariffs to improve its terms of trade. In this game, the dominant strategy of the large state is to defect to an optimum tariff; the dominant strategy of the small state is to cooperate or adhere to free trade (Conybeare 1987, 35). Table 2 displays the payoffs to the small (row) and to the large (column) power. The logical outcome of the game is CD: the small state abjures and the large state erects tariff barriers. Under what conditions, then, will free trade occur within an alliance? What will persuade the intraalliance hegemon to forgo an optimum tariff?

*Incentives to exploit.* Critics of hegemonic stability theory argue that there are strong incentives for *any* hegemon to use an optimum tariff (Conybeare 1984, 1987). On economic grounds alone, however, a *non-myopic*, rational hegemon may reject such a tariff for the same reason that a domestic monopolist sets prices below their short-run maximizing levels: to deter competition.<sup>7</sup> By "limit" pricing, the monopolist seeks to convince potential entrants that its costs of production are lower than they are in reality (Milgrom and Roberts 1982). The incumbent firm's ability to sacrifice short-run gains in order to earn higher, long-run returns depends on the existence of costs to entry as well as on asymmetric information about its costs of production.<sup>8</sup>

A rational, nonmyopic hegemon may set its tariff at less than the short-run optimum level under analogous conditions: if,

**Table 2. The Tariff Game between Allies**

Row	Column	
	Cooperate	Defect
Cooperate	1, 3	3, 1
Defect	2, 4	4, 2

Note: Payoffs are ranked from 1 (best) to 4 (worst); row's payoffs are listed first.

for example, it has some private information about the elasticity of global demand-and-supply curves and if small countries organizing to exert countervailing power in world markets incur some costs in doing so.<sup>9</sup> That a hegemon might indeed have private information about global markets follows logically from its incentives to become informed about them; a small country, in contrast, has little incentive to acquire such information, because it assumes that it cannot affect its terms of trade. That significant transaction costs are incurred in the process of forming customs unions follows from the distributional effects (both within and across the custom union's potential members) evoked by the setting of uniform external trade barriers (McMillan 1986, 67).

The trading practices of both Britain and the United States suggest that the analogy to limit pricing is of more than just analytic interest. Midnineteenth-century Britain, according to one observer, maintained its tariffs at less than optimum levels in order to fix its "monopoly of manufactures on the rest of the world for a few more decades than its natural term" (William Cunningham, cited in McCloskey 1980, 304). The logic of limit pricing apparently became clear to the United States when it attempted, in the 1930 Smoot-Hawley tariff, to turn the terms of trade in its favor. This effort, among other factors, provoked the construction of trading blocs abroad and apparently induced the United States to try



to lower global barriers to trade after the war.

In short, because an attempt to exploit its power in the short run may undermine that power over time, a nonmyopic, rational hegemon may reject an optimum tariff. Although the limit pricing argument does not support an inference that free trade—the international analogue of competitive prices at the domestic level—will prevail, it does suggest that unilateral restrictions on the use of an optimum tariff can be in the strictly economic self-interest of a far-sighted, clear-thinking hegemon—whether within or outside an alliance.

Because the limit pricing analogue suggests that it may be cheaper to forgo an optimum tariff than standard trade theory implies, it also suggests that the incidence of decisions to do so for political reasons and the incidence of intraalliance altruism may be higher than would otherwise be expected. Experimental results indicate, for example, that the frequency of altruistic behavior is inversely related to its cost (Frohlich et al. 1984, 23). Thus, in its own self-interest, a great power may choose to forgo the use of an optimum tariff against its smaller allies.

*Constraints on exploitation.* A great power's ability to exercise its monopoly power depends not only on its economic incentives to do so but also on the constraints others can impose on it. In a variety of contexts (Levi 1983, 1988; Popkin 1986), constraints on the ability of the more-powerful to exploit the less-powerful are attributed to the dependence of the "rulers" on the welfare of those they rule and to the existence of competition or of "rivals to rule" (North 1981).

Analogous constraints limit the exploitation of the small by the large within alliances. The dependence of each great power on the welfare of its allies gives each an incentive to define its self-interest altruistically, where altruism means sim-

ply that its "utility function depends positively on the well-being" of its allies (Becker 1981, 173). Thus, the great power derives less utility from intraalliance income transfers than from other international income transfers (see Conybeare 1987, 88).

Indeed, each great power in an alliance may actually be better off if it renounces the use of trade barriers: the marginal utility to it of an increase in the income of an ally may be greater than the marginal utility to it of a smaller increase in its own income. Thus, all members of an alliance may be better off if the great power or powers pursue free trade, just as the utility of two individuals may be enhanced by a transfer of income from one to the other (Boadway and Wildasin 1984, 116). That this is plausible in the context of intraalliance trade is suggested by the efficiency losses associated with the use of tariffs (Caves and Jones 1973, 244) and by the large welfare improvements that typically accrue to small states as a consequence of trade.

Intraalliance altruism is more likely to be supplied within the coalitions of bipolar systems than within the coalitions of multipolar ones. Both the threat of exit and the hope that another great power member of the alliance will act altruistically make it improbable that interdependent utility functions will motivate "effective" altruism (i.e., an actual change in behavior [Becker 1981, 173]) in a multipolar world. Exit creates the risk that income forgone will redound to the advantage of another alliance. Vulnerability to free riding threatens the expression of altruism, because any great power is better off if another acts to advance the collective welfare of the alliance than if it does so itself; thus, as is true of coalition maintenance, each state may pursue its national rather than alliance interests (Collard 1978, 13).

The competitive constraint on exploitation, however, might appear to be strong-

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er in a multipolar system than in a bipolar one: the relative scarcity of exit options in the latter would seem to create ample opportunities for exploitation. As McKeown points out in a more general context, for example, Britain could impose "highly favorable commercial treaties with [sic] the South American states"; it was less successful with Spain and Portugal, who could seek French support if British demands became excessive (McKeown 1982, 214). The rivalry-to-rule constraint, though, does not arise exclusively from allies' opportunity costs of exit. It inheres as well in the competition between or among alliances as a whole that an anarchic international structure typically produces.

Although it is theoretically possible for the great powers of any system to collude in the exploitation of their allies, it is more likely that the noncollusive outcome will emerge (Snyder 1984, 462). In its attempt to balance the power of the opposing bloc, each great power is more likely to pursue the individually rational but collectively suboptimal strategy of investing in the welfare of its allies. The pattern of investment is likely to vary across systems, however.

Any great power member of a coalition in a multipolar world has strong incentives to discriminate among its allies in terms of its investment in them, as its allies presumably confront divergent opportunity costs of exit. In contrast, the incentive to discriminate in a bipolar world is much weaker, as allies are much more uniformly and securely locked into coalitions. Thus, in the trade arena, for example, investments in allies in a multipolar system are likely to be expressed in the form of discriminatory trade preferences; in a bipolar system, free trade is the more likely outcome.<sup>10</sup>

### Conclusion

The security externalities of agreements to open borders to trade, I argue, imply

that these agreements are more likely to occur within than between military alliances. More importantly, the evolution of alliances into free trade coalitions is more probable in a bipolar than in a multipolar system. Crucial to the advantage of a two-power system are the lower threat of exit and the stronger incentives for intra-alliance altruism that it confronts.

This analysis sheds some new light on several debates about the causes of free and controlled trade during the nineteenth and twentieth centuries. It effectively assigns a large role in the opening of post-war Western markets to the transition from a multipolar to a bipolar international security system that occurred simultaneously. It also implicitly attributes the breakdown of trade in the inter-war period partly to the existence of a multipolar security dilemma. It provides a good fit to arguments that Britain was neither a political hegemon nor a strong advocate of lowering trade barriers elsewhere during the nineteenth century (McKeown 1983; Russett 1985).

Of course, the argument can also be indicted on several counts. Any attempt to test it empirically will confront many problems familiar to students of international relations: for example, the small number of international systems during the period of modern international trade precludes statistical analysis, and it is difficult to use comparative case studies because of large variations in important variables between or among the cases. In addition, the problem of the single case—that of bipolarity—arises. One way to address the latter problem might be to break apart multipolar systems, since these systems vary in terms of alliance flexibility: ones that have experienced an "integrative spiral" should more closely resemble bipolar systems than ones that have not.

Problems also exist at the analytic level. Vulnerable to challenge are my implicit or explicit assumptions that incentives to exploit, the utility of allies, and the importance of security externalities can be held

constant across systems. The neglect of domestic factors is also susceptible to criticism, particularly because trade within the Soviet alliance system is determined by the same hierarchical controls that operate within the Soviet economy.

It is also true, however, that an effort to include all variables that might influence trade in the international system can succeed only at the price of analytic intractability. The merits of the analysis presented here, therefore, must be judged in terms of the importance, persuasiveness, and originality of the two arguments central to it: (1) that the representation of the problem of free trade as a PD game neglects the security externalities that arise in the international system and (2) that a two-power system has an advantage with respect to the opening of markets among states.

## Notes

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1. Technically, the size of the country to which the optimum tariff argument applies "is not the size of the country as a whole but rather its share of world trade in markets in which it exports and imports" (Deardorff and Stern 1987, 37).

2. This assumes a symmetrical distribution of market power. If an asymmetry exists, however, one state may be better off even after the cycle has been completed (Johnson 1953).

3. More generally, an external economy "is said to be emitted when an activity undertaken by an individual or firm yields benefits to other individuals or firms in addition to the benefits accruing to the emitting party" (Boadway and Wildasin 1984, 60). External diseconomies inflict injury rather than confer benefits.

4. These two paragraphs are based on Gowa 1989, 323.

5. See Jervis 1978 for discussion.

6. However, see n. 1.

7. This analysis of limit pricing is from Gowa 1989, 312-14.

8. Since potential entrants are aware of the incentives of established firms to engage in limit pricing, the established firm's strategy may not work. See Milgrom and Roberts 1982 for a complete, formal analysis of the limit pricing game under incomplete information.

9. In his most recent work, Conybeare notes that heavy export taxes may induce substitution that in turn, dictates the use of lighter taxes in the interest of maximizing long-run profits. Conybeare dismisses this argument unpersuasively: he claims that "long-term elasticity . . . arguments merely assert that the hegemon is not really a hegemon" (Conybeare 1987, 72).

10. This analysis assumes that the value of allies is constant across multipolar and bipolar systems (cf. Waltz 1979, 168). If, for example, the great powers of a bipolar system together command 60% of the world's power resources, available allies by definition command the remaining 40%. If three powers account for 60%, their potential allies still command the same proportion of power resources as do those in a bipolar system. For an extended discussion, see Snyder and Diesing 1977, chap. 6.

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