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Interdependence and Conflict[1]

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The questions of whether and how interdependence affects international conflict have received increased attention since the end of the Cold War. Yet, adherents to various schools of political and economic research have frequently talked past one another. After reviewing theoretical arguments linking interdependence and conflict, drawn from both liberalism and realism, this essay analyzes the findings of twenty empirical studies (formal models, case studies, and quantitative research). Although the majority of these studies tend to support the hypothesis that interdependence, measured in terms of trade, inhibits violent conflict, they leave many important questions unanswered or with ambiguous answers. The essay concludes that further research is needed, not only to sort out how the costly and beneficial aspects of interdependence combine to affect interstate conflict, but also to identify the relationships among the various dimensions of interdependence and conflict themselves.

A glance at the major newspapers indicates that economic interdependence has gained in salience for political actors, and this conclusion is supported by the growth in scholarly literature on the topic. The question of how interdependence affects international conflict has received increasing attention in an era when the strategic preoccupations of the Cold War seem to be less important. Yet, scholars of power politics, and of interdependence have frequently neglected the areas of substantive overlap. The phrase "power politics" has taken on many meanings, but in general it can be taken to mean "the use and threat of force against other governments" (Domke 1988:15–16). As such, it encompasses concerns typically included with security studies as a subfield of international relations (Caporaso 1995). Studies of interdependence have been concerned primarily with economic issues, and trade is the aspect of interdependence that scholars have most often addressed. Thus, the two literatures have focused on different types of questions, with scholars frequently talking past one another. In economics, trade theory generally assumes that international political considerations are "transient and random in nature" and, therefore, safely ignored relative to long-run market factors (Summary 1989:179). In international relations theory economic interdependence

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is usually expected to have some effect on international political phenomena, although authors differ on the direction and strength of the expected relationship.

This essay examines the extant literature on the relationship between interdependence and conflict in order to determine whether such a relationship exists, and if it does, whether it is positive or negative. Toward this end, the essay has three major sections. The first section reviews competing theoretical arguments concerning the causal mechanisms that are believed to link interdependence with international conflict. The second section reviews the formal and empirical literature regarding these theoretical claims and concludes that the position advocated by liberalism is strongly supported by the existing literature. Because outstanding empirical and theoretical questions remain, however, elevating this hypothesis to the status of a social scientific "law" would be premature. The discussion in the third section focuses on areas for further research, paying particular attention to the ways in which empirical work can inform the theoretical debate.

A few words are necessary at the outset about the scope of this review. Other types of links between power politics and economics are clearly possible, but they do not deal with the relationship between interdependence and conflict. Thus, readers should look elsewhere for detailed discussions of hegemonic stability theory (Lake 1993), dependency (Cardoso and Faletto 1979; Evans 1979), world-systems (Wallerstein 1979) and other historical-structural approaches to long cycles in politics and economics (Thompson 1988; Pollins 1996), as well as literatures on arms trade (Krause 1992; Laurence 1992), the economic bases of military power (Knorr 1992), questions concerning micro- and macroeconomic defense policy (Kapstein 1992), the potential for a peace dividend (Chan 1995), economic tools of power politics (Baldwin 1985), and the domestic determinants of trade.

Concepts and Contending Theoretical Perspectives

Interdependence

Many scholars have attempted to clarify the concept of interdependence and explain its causal importance in international politics. Some follow Robert Keohane and Joseph Nye (1977), defining the components of interdependence as "sensitivity" and "vulnerability." Sensitivity is the extent to which one country is affected by the actions of another, whereas vulnerability is the extent to which a country can insulate itself from the costly effects of events that occur elsewhere. Interdependence then "means mutual dependence" (Keohane and Nye 1977:9), a condition in which countries are both highly sensitive and vulnerable to each other.

Keohane and Nye's "mutual dependence" is very similar to David Baldwin's (1980) definition of interdependence, which is distilled from a review of many earlier works; namely, interdependence refers to "international relationships that would be costly to break" (Baldwin 1980:484). Put another way, interdependence means that "the opportunity costs of autonomy are prohibitively high" (Baldwin 1980:489). Even though economic interdependence enlarges a country's economic possibilities, it creates a matrix of constraints that most countries can influence only slightly, if at all. Thus, the country can "abandon unilaterally the tacit international code of good behavior only if it is prepared to accept the adverse reaction of other countries" (Cooper 1968:4). Albert Hirschman's (1980 [1945]) classic work also points out that the concept of interdependence has both beneficial and potentially costly components. Theoretical frameworks linking interdependence to conflict have difficulty dealing with this dual aspect of interdependence. As will be seen below, theoretical causal mechanisms tend to focus on

either the positive (mutual benefits) or negative (asymmetric or costly) aspects of interdependence.

Another theoretical difficulty is that in principle interdependence can be taken as a systemic property, as a description of dyadic relationships, or as a property of specific nations (see Stein 1993). Theoretical reasons for favoring one of these formulations over another are not well developed, creating difficulties for scholars trying to compare results from empirical work. Although liberalism expects interdependence to be evident at all three levels of analysis, the theoretical arguments discussed below are not clear on how the connection between levels is made. Similarly, the realist position does not provide theoretical connections between interdependence and conflict at different levels of analysis.

A further problem with the concept of interdependence becomes evident when one does empirical research: the types of international ties involved in an interdependent relationship remain unclear. The Keohane and Nye definition is intentionally broad enough to encompass economic, diplomatic, and military relations between and among states. Although Baldwin uses the term "costly" and phrases such as "opportunity costs," there is no reason to suspect that he refers only to economic ties. The review of the theoretical literature that follows indicates that the broad definitions of interdependence work well enough in sketching out the expected causal relationships in international politics, but the theoretical links between or among types of interdependence are not well developed.

Arguments Derived from Liberalism

Variations on liberalism form the most frequently used theoretical arguments linking the concept of interdependence to international political outcomes such as war. All of these arguments hypothesize that interdependence decreases international conflict. The liberal arguments found in the existing literature are often derived from Immanuel Kant's writings, but other early theorists also contributed to the debate. Michael Doyle (1983a, 1983b, 1986) has recently reiterated Kant's causal arguments, stressing that the different strands all fit together to form a coherent whole. In general, within the set of liberal writings one can discern four specific causal arguments that constitute more or less clearly defined subtypes of liberalism: political, economic, sociological, and sophisticated liberalism. Because they are not necessarily mutually exclusive, these theoretical arguments should be seen as complimentary rather than competing causal mechanisms linking interdependence with international political outcomes. The different forms of liberalism are similar enough that they share assumptions about the importance of individuals, about the importance of wealth, and about how a free market produces mutually beneficial interactions (Stein 1993:255).

Political, economic, sociological, and sophisticated liberalism all propose the hypothesis that interdependence decreases international conflict, or at least decreases incentives for conflict. Important differences in the causal argument, however, can be found both among and within the four subtypes; and to further complicate matters, the four subtypes, although distinct in principle, can be found together in particular empirical studies. Moreover, the different causal strands may reinforce one another, thus making it difficult to test which mechanism or combination of mechanisms is at work. The discussion below outlines the proposed causal mechanisms within each of the liberal arguments, and then points out remaining theoretical problems that cause difficulties for empirical work. The propositions derived from liberalism are then contrasted with the realist counterarguments.

Political Liberalism. Political liberalism, or republican liberalism (Keohane 1990), depends on the expectation that republics are more disposed toward peace than autocracies (Keohane 1990:176). According to Kant, a liberal political order has two primary components that help reduce international conflict. First, individuals must have fundamental civil rights and must be viewed as equal before the law. Second, the state must be republican in the sense that the effective sovereigns of the state "derive their authority from the consent of the electorate . . . " thus ensuring against tyranny (Doyle 1983a:207–208). Both Kant and Richard Cobden viewed a dominant aristocracy as having adverse effects on international politics. For Cobden, "International conflict, the intricacies of the Balance of Power system, constant interference in the affairs of other nations, extensive colonial conquest and colonial jealousies were . . . the natural effects of aristocratic government" (Cain 1979:233). Republican forms of government—by allowing individuals to restrain the sovereign's power—were expected to help dampen the "passions" for war that were thought to be an inherent part of the aristocracy (see Hirschman 1977, 1982).

The domestic strand of political liberalism is expected to interact with international political liberalism to improve the prospects for peace (Doyle 1986:1160). Accordingly, when liberal states respect each other's rights, "individuals are free to establish private international ties without state interference," creating a "web of mutual advantages and commitments that bolsters sentiments of public respect" (Doyle 1983a:213). This web of interactions, perhaps it might be called interdependence, is seen as having contributed to a mutual respect among liberal democracies that has prevented major military conflict among them (Doyle 1983a:213).

Other scholars view the international political constraints on states as arising from international institutions. Keohane (1990:182) has pointed out that for most liberals, cooperation based on common interests requires more than a simple recognition of those interests. Thus, "regulatory liberalism," or "neoliberal institutionalism" (Betts 1993/94), emphasizes the importance of rules that govern patterns of international exchange (Keohane 1990:179). Hirschman (1977:51) also suggests that states gain from following international rules of the game because those rules help eliminate "passionate" behavior and bolster state action based on interests (see also Keohane 1990:179). Given that war is neither in the interests of the people nor in the national interest, interdependence is expected to decrease war among liberal states.

Economic Liberalism. Economic liberalism also descends from Kant and other early political philosophers, and it is consistent with the arguments of the classical economists. Kant maintained that there must be two economic institutions of liberalism. First, the domestic and international economies must be based on the recognition of private property rights. Second, economic decisions must be as free as possible from bureaucratic control and be based on the forces of supply and demand (Doyle 1983a:208). Thus, it is clear that for Kant political and economic liberalism ought to reinforce one another. Still, several distinctly economic causal mechanisms linking interdependence to war can be distilled from the literature.

Early arguments that connected economic liberalism with less war were based on the hope that international commerce would somehow quell the passion for conquest that seemed so prevalent in the seventeenth and eighteenth centuries (Hirschman 1977:79). The precise mechanism by which commerce was expected to generate goodwill among men was not well specified, but generally it was viewed as a "powerful moralizing agent" that would help improve society by contributing to good manners, industriousness, frugality, and punctuality among other things (Hirschman 1982:1465). This fairly unspecific version of the virtues of economic

liberalism can be found in the writings of David Hume, the Baron de Montesquieu, and Adam Smith, and it carries the notion that peace gradually emerges from commerce in a natural process (Keohane 1990:180). For Montesquieu, "commerce . . . polishes and softens . . . barbarian ways" (quoted in Hirschman 1977:60), and thus ". . . the natural effect of commerce is to lead to peace" (quoted in Keohane 1990:177).

In addition to the "natural effects" type of mechanism, Montesquieu, Smith, Spinoza, and James Steuart linked the mobility of capital in modern capitalist systems to increasing peace among nations (Hirschman 1977). As bills of exchange came into use, and movable wealth became increasingly important relative to land, the argument was that commercial activities could elude violence by being sent anywhere relatively quickly (Hirschman 1977:75). Rulers could no longer suddenly appropriate capital through violent means or by conquest of territory. Furthermore, capital would tend to flow toward safe areas, producing an interest in peace on the part of rulers by ensuring that prosperity would come only to "good" governments (Montesquieu, quoted in Hirschman 1977:72). The mobility of capital made war a less viable option for rulers to acquire wealth, and therefore it made war less likely.

Another strand of economic liberalism develops the idea that a highly commercial system produces incentives for peace rather than war because war is against the enlightened self-interest of states. For Cobden, free trade was expected to help end warfare in two ways. First, free trade would help by "undermining the income and position of the ruling landlord class" such that the aristocrats would not be able to raise an army and fight effectively (Cain 1979:234). Second, free trade was expected to help by bringing nations into a relationship of economic dependence in which they would recognize that their own wealth and prosperity depended on others (Cain 1979:234; Stein 1993:253). Because disruption of commercial ties by war would be against a country's interest, dependence would lead to a reduction in conflict.

The tradition of tying commerce to a nation's interest in peace continued into the twentieth century. Norman Angell (1933 [1908]) argued that economic interdependence creates a situation in which the use of military means will not improve a conqueror's wealth. Because the "financial and industrial security of the victor is dependent upon financial and industrial security in all considerable civilized centers," Angell (1933 [1908]:91) maintained that the only viable policy for conquerors to pursue was to leave the wealth and territory in the possession of its occupants. This belief formed the foundation for his thesis that increasing territory is no longer the way to increase wealth, given that political administrations change but victory does not ensure a transfer of property from one owner to another (Angell 1933 [1908]:91).

Richard Rosecrance (1986) also produced a liberal argument based on the cost-benefit analysis done by states with respect to the use of force in the international system. In this systemic version of liberalism, a liberal open economy is necessary to increase trade (Rosecrance 1986:213). As trade increases in the system and interdependence—both economic and military—grows, war becomes a relatively costly way for states to pursue their interests. Because trade is then a more efficient way to gain their objectives than war, states will opt for more peaceful international relations. Carl Kaysen (1990:51) broadened this argument to include nineteenth-century changes in the economy, polity, society, and culture that fundamentally changed the calculus of war such that it became a less viable option, at least among the advanced industrialized states.

Sociological Liberalism. The sociological version of liberalism emphasizes the importance of the links among people that are necessary to sustain a commercial

relationship. The ties among people in commercial relationships are thought to be inherently pacific (Stein 1993:249). This argument can also be found in the work of Montesquieu and goes with the assumption discussed earlier that commerce naturally leads to peace because it softens the manners of individuals (Hirschman 1977:60). The main thrust of sociological liberalism is that "the simple act of communication paves the way to international cooperation by increasing each people's knowledge of others and their ways, customs, practices, and concerns" (Stein 1993:249).

Karl Deutsch (1953, 1968) has provided key examples of this version of liberalism, but his discussions also include the possibility that close contacts among people may lead to conflict if the interests involved are antagonistic. Even when antagonistic interests are present, however, ". . . conflicts can still be reduced by increasing the salience and weight of parallel or interlocking interests among the countries concerned" (Deutsch 1968:156). In this way, collaboration among people can be made so "frequent and rewarding" that it mitigates trends toward conflict and may even lead to more direct forms of political integration (Deutsch 1968:155).

Another sociological strand of liberalism stresses the important effects of sociocultural evolution for dampening international conflict (for example, Mueller 1988, 1989). In the first stage of the process, war becomes "unthinkable" because it is calculated to be ineffective or undesirable. Then, through a process of social and cultural evolution, war becomes "subrationally unthinkable," rejected because it "remains subconscious and never comes off as a coherent possibility" (Mueller 1989:240). John Mueller (1988:72,70) has concluded that the major powers in the post–World War II period may have "forgotten how to get into a war" as a result of needs, desires, and concerns that are broader than military concerns and that contribute to a general stability.

Sophisticated Liberalism. Sophisticated liberalism refers to an explicit and nondeterministic combination of political and economic liberalism that is essentially optimistic but that also recognizes a certain potential for conflict (Keohane 1990). This version of liberalism includes both international political institutions and rules as well as the open exchange of goods and services (Keohane 1990:166). Peace and liberalism are linked through the mechanism of institutions that facilitate economic exchange and that encourage broader international cooperation. "The rules of international exchange and institutions must be based on the principle of state sovereignty, but they provide an incentive structure that promotes international cooperation, as well as prosperity" (Keohane 1990:166). Keohane's sophisticated version of liberalism seems to come closest to the full version of liberalism found in Kant's writings. The three "definitive articles of peace" described by Kant incorporate notions of both political and economic liberalism (Doyle 1986:1157–1161).

This version of liberalism, however, is tempered with cautions that, in spite of the liberal reasons for expecting peace, there may also be liberal reasons for going to war (Doyle 1986). The extension of liberal economic interests may require the extension of a certain political order, and this can produce conflict between states. Likewise, if the political order is threatened, force may be required to defend it (Keohane 1990:188). Thus, even though liberalism is oriented toward peaceful international relationships, its effects are not necessarily benign (Keohane 1990:188). In addition, sophisticated liberalism is more sensitive to the costly effects of interdependence than political, economic, or sociological liberalism. Interdependence is still expected to decrease war, but it is not a guarantee against war or conflict more generally.

Remaining Issues. The discussion above indicates that liberalism provides quite a few possible causal mechanisms by which interdependence is expected to decrease war or conflict between states. For political liberalism, political institutions—domestic and international—create incentives for cooperation among states, reducing the likelihood of war. Economic liberalism focuses on the commercial activities—free trade and finance—that create interests within society that restrain rulers from going to war. Sociological liberalism expects increased contact among individuals to create a sense of community, thus decreasing the likelihood of war. One strong implication that can be drawn from Kant's initial arguments and the sophisticated version of liberalism is that, when more of the different types of causal mechanisms are present and working in conjunction with one another, interdependence will have an even stronger negative effect on interstate conflict.

In addition to the main hypothesis of liberalism that interdependence decreases war, others can be developed from the discussion above. For example, the liberal arguments presuppose an environment in which trade is an efficient way to move goods from country to country. If this is the case, then the direction of causality also runs from peace to interdependence, suggesting a process of mutual causality in which peace and interdependence reinforce each other once the cycle gets started. Another proposition, highly relevant to policymakers, is that economic liberalism and political democratization must go together for liberal expectations to be achieved (Betts 1993/94:36). If untying the knot joining economic to political aspects of sophisticated liberalism makes war more likely, it would be dangerous to expect either economic or political liberalism to be adequate for reducing war.

Despite these potential paths by which interdependence is expected to decrease war, however, several theoretical issues remain underdeveloped. One theoretical problem Arthur Stein discussed (1993) is that arguments derived from liberalism attempt to understand political phenomena such as international conflict or cooperation primarily in terms of economic interactions. Relating trade, which is a function of individual activities, to international conflict, which is an activity of states, requires a theory of state/society relations that has not been addressed in most of this literature.

Stein (1993) has suggested three propositions that help provide a starting point for linking state and society: first, interdependence is the product of state policy; second, interdependence generates societal and governmental pressures for its limitation and its continued growth; and, third, interdependence, therefore, generates new forms of conflict that states must manage to sustain the process of global specialization (Stein 1993:266). It is in the second proposition that state/society links are found. Different types of government can be expected to be more or less responsive to the pressures of interdependence and will vary in how they deal with those pressures. Because continuing global specialization requires a certain stability, however, states have an interest in managing economic processes without resorting to war.

In this view, which parallels sophisticated liberalism, conflict is generated in a liberal international system, but war is not necessarily the outcome. This proposition points to another theoretical problem, namely, that the relationships among different types of conflict (for example, economic and military) and war are not well developed in the arguments based on liberalism, yet they are crucial for understanding the link between interdependence and war. Considering that the focus in liberalism is typically on explaining how international cooperation can develop and be sustained, this oversight is not surprising. And even though sophisticated liberalism does recognize the possibility that interdependence might produce as well as deter conflict, it too does not fully address the theoretical links between interdependence, different types of conflict, and escalation to war.

Indeed, liberalism's arguments do not explicitly address the fact that international conflict and cooperation may be produced by different processes. They assume that incentives for cooperation—economic and political—will produce more cooperation and, therefore, less war. Because conflict and cooperation are not necessarily generated by the same processes, however, this theoretical assumption must be justified more fully. States may engage in conflict and cooperation at the same time, and interdependence may be related to both outcomes. The liberal causal mechanisms tend to downplay the potential costly effects of interdependence, leading to a neglect of this theoretical question.

A further theoretical difficulty arises when we try to synthesize the concept of power politics with the theoretical arguments concerning economic interdependence (Caporaso and Levine 1992). This problem has contributed to difficulties in integrating economics and power politics more generally. Economists have been largely unable to exploit arguments about the integrative effects of markets because "Under perfect competition there is no room for bargaining, negotiation, remonstration or mutual adjustment and the various operators that contract together need not enter into recurrent or continuing relationships . . ." (Hirschman 1982:1473). Political processes such as bargaining and negotiation are possible only when there are departures from the purely competitive theoretical model that is the base of liberal economics. Thus, those arguments of liberalism that rely on economic ties and interests tend to disregard political feelings and aspirations, yet the political implications of relative economic gains cannot be ignored when opportunities for market manipulation exist (Moran 1996:185). Until we have developed a theoretical framework for truly integrating economic and political processes, it will be difficult to understand fully the relationship between economic interdependence and international war, or conflict more generally.

The Counterarguments from Realism

In international relations, the positions concerning the relationship between interdependence and war based on realism and neorealism provide the most relevant counterarguments to those of liberalism. In contrast to liberalism, realism tends to focus on the causes of war rather than international cooperation. Thus, realists emphasize the conflictual aspects of international transactions whereas liberals clearly emphasize the beneficial aspects. From this different starting point, realists come to the conclusion that interdependence either increases the likelihood of war or is not related to war initiation. In efforts to understand the processes that lead to war, realists have developed a well-known litany of assumptions about world politics that is outlined briefly here to clarify the contrast with liberal assumptions.

In realism, nation-states are the key actors in the international system. They struggle for power in an anarchic world system that produces the need for security policies based on the "self-help" principle (see Dougherty and Pfaltzgraff 1990:81). Wars happen because nothing prevents them whenever "countries would rather fight than relinquish competing claims" (Betts 1993/94:37). Power is assumed to determine which country will prevail in a conflict. Peace is most likely to result from a distribution of power that "convinces states that the costs of enforcing or resisting claims exceed the gains" (Betts 1993/94:37). Realists differ with respect to which particular distribution of power—unipolar, bipolar, or multipolar—will most likely restrain states, but they agree on the centrality of the distribution of power for keeping peace.

The first proposition from realism linking interdependence and war stems from the belief that interdependence causes more conflict rather than less. For philosophical foundations, realists draw on the works of Jean Jacques Rousseau, who

argued that ". . . interdependence breeds not accommodation and harmony, but suspicion and incompatibility" (Hoffman 1963:319). Thus, economic liberalism is seen as a driving force behind changes in the relative power of states because of its "dynamic impact on national development" (Betts 1993/94:39). Over time, interdependence engenders dependence—a situation of inequality—between states rather than symmetrical interdependence. Rousseau viewed inequality between states as a source of insecurity and thus a key source of world conflict. Although he recognized that commerce brought wealth, he concluded that the inequality it also brought was more dangerous for world politics (Hoffman 1963:329). Kenneth Waltz (1970:214) has posited that interdependence as studied by liberals is really a complex mix of dependence and independence. From the realist perspective, power over rivals comes from a position of relative independence, and dependence creates vulnerability or a lack of power. In short, interdependence is not a matter of mutual and symmetrical interactions as liberalism assumes, and the power inherent in asymmetric economic relationships does matter for international politics, particularly the onset of war.

Hirschman (1980 [1945]) demonstrated the potential power inherent in a relationship when one state is dependent on trade. Among more recent authors, Robert Gilpin (1977:39–42) has pointed out that, according to the economic nationalists, interdependence leads to increasing insecurity because trade yields uncertainty about the continued supply of important strategic goods. This heightened insecurity leads to a greater potential for military conflict.

A similar realist counterargument, related to both sociological and economic liberalism, is that no necessary logical connection exists among increased international interactions, the development of community, and decreased conflict (Stein 1993:252). In fact, for neorealists like Waltz, increasing closeness between individuals simply multiplies the opportunities for conflict, and therefore the likelihood of war. This position is clearly stated in the well-known passage: "The fiercest civil wars and the bloodiest international ones have been fought within arenas populated by highly similar people whose affairs had become quite closely knit together" (Waltz 1970:205). For realists, sociological and commercial ties do not generate enough congruent interests to counteract the conflictual ones, and an increased likelihood of war is the result.

The second, and alternative, hypothesis from realism is that interdependence has no systematic effect on war because the causes of war lie in political and military-strategic considerations. Barry Buzan (1984), for example, has maintained that in the post–World War II era there has been no uniform decline in the use of force except among the major powers. Up to now, the absence of wars among the major powers can best be explained not by interdependence but by military (nuclear) deterrence as well as the bipolar distribution of power (Buzan 1984:605; see also Waltz 1993). For Buzan (1984:617–618), "The essence of the problem is that a liberal economy must try to organize itself on a scale that far outreaches the level of political organization available in the highly fragmented state system." Thus, political and strategic factors will be more important for understanding outcomes. If economic factors such as interdependence are important, they will be important only at the margins. This belief follows from the view that strategic interests are the primary cause of war. It also fits with the argument that economic considerations are sacrificed for security interests at times of serious conflict (Holsti 1986).

To summarize, the realist counterarguments to liberalism's hypothesis take two forms. First, interdependence heightens the likelihood of war by increasing the number of opportunities for conflict, as well as by producing inequalities and conflicting interests. Second, interdependence is unrelated to war and other forms of military conflict, which are driven primarily by security concerns. But, as with

liberalism, the realist theoretical understanding of the relationship between interdependence and conflict has problems. Realist arguments focus on how interdependence produces international inequalities and conflicts of interest; yet empirically not all inequalities and clashes of interest result in war. Particularly in light of the argument that strategic interests take precedence, the theoretical connection between war and potential clashes of economic interests needs to be developed further.

Perhaps a more fundamental theoretical problem with the realist propositions is that they depend on the assumption that economic influence translates into political influence at the international level. Harrison Wagner's (1988:462) bargaining theory analysis indicates that asymmetrical economic interdependence does not necessarily imply that one actor "will be able to exercise political influence over another." This difficulty parallels liberalism's problem with linking private economic actors and state actions but, in this case, concerns the links between market power and military actions. Market power is determined by the ability to manipulate the terms of trade to create favorable outcomes. Wagner (1988:482) has cautioned that ". . . one must be careful about equating market power with bargaining power—government evaluations of foreign trade may be significantly different from market evaluations registered in supply and demand curves." Theoretical specification of how economic asymmetries are translated into political power is still underdeveloped. In part this may be a function of continuing disciplinewide problems with defining power.

Summary

This review of the theoretical links between interdependence and war indicates very few overlapping expectations between the propositions from liberalism and those from realism. Liberals, emphasizing the mutual benefits to be gained from trade between and among countries, expect economic interdependence to produce strong incentives for peace and, therefore, less conflict. Each causal strand of liberalism's argument emphasizes how individuals or governments react to maximize the benefits of interdependence. In direct contrast, many realists emphasize the potentially costly aspects of interdependence, along with the power asymmetries and friction that economic relationships can generate. The resulting hypotheses are that interdependence causes more conflict or that this relationship is either insignificant or holds only at the least important margins. To a certain extent, the formal and empirical results reviewed below also reflect these differing emphases on either the costly or the beneficial components of interdependence. Yet, it is the models that include both costs and benefits that produce statistically significant results, indicating that focusing on a simple liberal or realist formulation may be inadequate for understanding the puzzle.

Formal and Empirical Studies

The questions of whether and how interdependence influences international conflict have been addressed using formal models, statistical analyses, and case studies. This article looks at twenty of these studies. In addition to examining whether the evidence supports the hypotheses of liberalism or realism, the review explores how differences in the operationalization of key variables and the specification of the models may explain divergent findings. Specific tests for sociological liberalism's argument are not reviewed here because research activity on it seems to have died down since Karl Deutsch and his colleagues found a fairly consistent lack of support for that hypothesis in relation to European integration (see Stein 1993:251–252).

Of the twenty studies reviewed, ten support the liberal hypothesis; six produce mixed or conditional results; only four support the realist hypotheses. Although far more of the studies are consistent with the liberal than the realist arguments, a detailed look at them suggests that important questions remain unanswered. Thus, declaring liberalism the theoretical "winner" is premature. On the basis of these studies, however, it is reasonable to conclude that liberalism—tempered with a concern for the potential costs of interdependence—works better than the realist arguments for explaining the link between interdependence and war. The research questions that emerge from this review are explored further in the concluding section of the essay.

Support for Liberalism's Hypothesis

Formal models linking interdependence to conflict have generally aimed at modeling some form of economic liberalism and, thus, are not clear comparisons of the liberal and realist positions. Rather, they present formal justification for liberalism's hypothesis that interdependence reduces conflict. The models usually focus on trade as the most important component of interdependence, and despite differences in the actors whose behavior is modeled, they tend to support the proposition that trade will decrease international conflict.

One approach to modeling explored the effects of trade on economic actors within a given country. Ruth Arad and Seev Hirsch (1981) developed several formal models that evaluate whether trade can enhance peace between former belligerents. The models capture the impact of trade on the states' welfare with respect to consumers, producers, exporters, and importers. When gains from trade are high, trade creates societal groups that have a vested interest in peace and will support peaceful policies pursued by the government. Increased trade does not automatically result in cooperation, however. Conflict may occur over the "division of costs and of gains, assumption of new risks, and creation of new vested interests" (Arad and Hirsch 1981:441). Thus, the effect of these vested interests on domestic support for peace is indeterminate unless the government compensates the losers in economic transactions (Arad and Hirsch 1981:445). In short, these models suggest a note of caution, even though they generally support the liberal hypothesis that trade induces peace.

Another modeling effort began with the overall social welfare gains from trade that are expected to accrue to trading nations (Polachek 1980:60–62, 1992). This model is based on the theory of comparative advantage; thus it assumes that each of the nations involved gain social welfare benefits from trade. The presumption is that trade occurs in an environment that is initially peaceful. Introducing conflict into such a peaceful environment would negatively affect the terms of trade by raising trading costs, leaving at least one of the countries worse off. "The implicit price of being hostile is the diminution of welfare associated with potential trade losses" (Polachek 1980:60). Based on the model, Solomon Polachek (1992:91) has argued that the greater the welfare loss, the greater the costs of conflict, and thus the smaller the incentive for conflict. Dale Copeland (1996) developed a similar formal model that adds the expected future benefits from trade. Copeland's model also supports the liberal argument that trade reduces war when long-term benefits are expected to be high.

These formal analyses are supported by a number of empirical studies that have found a negative relationship between interdependence (typically aspects of trade) and conflict, regardless of the level of analysis, the model specification, or the indicators used for the key variables. In general, however, the specific causal mechanisms of liberalism are not tested directly. Rather, trade and conflict are

measured in ways intended to capture whether overall patterns of international interactions support the main liberal hypothesis that interdependence reduces war. Most studies do not examine exactly how gains from trade, either current or expected, are translated into constraints on the international conflict behavior of states. Let us review these empirical studies in more detail.

Focusing on individual countries rather than pairs of countries, William Domke (1988:119) measured interdependence in three ways: exports as a proportion of national income, the percent change in exports as a proportion of gross national product (GNP), and exports as a percentage of GNP when corrected for economic size (Domke 1988:125–130). The dependent variable was the decision to go to war, and the analysis used trade data for the year prior to the decision to go to war, as well as for years in which major-power wars occurred between 1877 and 1974. The probit results supported the hypothesis that "governments of economies that export less are more likely to make decisions for war" (Domke 1988:131). The results were strongest for the post–World War II period. They remain problematic, however, as Stein (1993:263) has pointed out, because the hypothesis was tested only for years in which war occurred. Including only those years in which wars were under way makes it difficult to assess the causal pattern. Once a war has begun, it is unclear whether lower trade by the participants is the cause or the consequence of the war.

Edward Mansfield's study on this topic focused on the systemic level of analysis and also supported the position of economic liberalism. Mansfield (1994) used two systemic level indicators for interdependence: the openness of world trade, and the ratio of global exports to total global production. The dependent variable was the mean number of wars beginning per year in five-year periods from 1850 through 1964, using several data sets on war for comparative purposes (Mansfield 1994:125). To control for other systemic factors that realists argue are important and that have been found to be significant empirically, five other variables were included: hegemony, polarity of the system, the concentration of capabilities among the major powers, changes in power concentration, and changes in power shares among the major states. The regression results indicated that the level of international trade is inversely related to the incidence of major-power wars, although the openness of the system is not statistically significant (Mansfield 1994:126). This study provides support for the systemic version of the liberal argument linking increased trade to less conflict, and is important because it controls for variables usually regarded as the strategic causes of war.

Similar to Domke (1988), Mansfield (1994:174) found that, in years of major-power wars, less trade is conducted, and wars involving major powers reduce the level of global trade. Unlike Domke, however, Mansfield (1994:184) inferred that the evidence suggests that "the relationship between trade and wars involving major powers is multidirectional." Performing a regression analysis that reversed the causal arrow and took trade as the dependent variable, the results indicated that warfare is negatively related to trade at three- and five-year lags (Mansfield 1994:169). In short, the initial state of peace presumed by liberalism does seem to be important for increasing interdependence.

Support for the liberal argument in relations between pairs of countries comes most clearly from studies by Polachek and his coauthors, who have found a consistent negative relationship between trade and conflict in a series of studies. Polachek (1980) provides the formal and statistical models on which the later work is based. An early bivariate regression analysis, using data from 1958 through 1967, indicated that the value of exports (imports) was significantly and negatively related to an indicator of net dyadic conflict derived from the Conflict and Peace Data Bank (COPDAB) (see Azar 1980). A three-stage least squares estimation

showed that causality runs from trade to conflict, rather than the reverse (Polachek 1980:66). Although he tried to test the hypothesis that trade in strategic goods is more important than trade in general in reducing conflict, the results did not clearly indicate whether the strategic nature of the goods traded has an impact.

Mark Gasiorowski and Polachek (1982) continued this line of investigation using very similar indicators and models but in the context of asymmetric interdependence: trade between the Soviet and U.S.-led blocs during the era of détente (1967 through 1970). Again, the regression results indicated that trade was negatively associated with conflict. The relationship appeared to be nonlinear, however, with trade having a stronger effect in moderating Warsaw Pact behavior than U.S. conflict behavior (Gasiorowski and Polachek 1982:721). The researchers concluded that countries that are more dependent on trade are more deterred from conflict. Granger causality tests showed that causality ran from trade to conflict rather than from conflict to trade. In this study, some correlational evidence suggested that the types of goods traded make a difference: U.S. exports of capital goods were most strongly correlated with Warsaw Pact conflict; imports of food, feed, and beverages were least strongly correlated (Gasiorowski and Polachek 1982:726–727).

Two other studies build on this previous research. Polachek (1992), examining the years 1948 through 1978, and Polachek and Judith McDonald (1992), taking a sample of country pairs in 1973, employed models that are very similar to those used in Polachek's early work, but they added import demand elasticities as an independent variable. Thus, welfare gains were represented by import demand elasticities as well as the usual trade variables: the dyadic value of imports and exports. The theoretical expectation was that, holding trade levels constant, the more inelastic the import demand curves (that is, the less ability a country had to lower its imports or substitute other goods for current imports), the smaller the probability of conflict (Polachek 1992:109–110). Regression equations using pooled data along with time series and simultaneous equation models again revealed that dyads engaged in the most trade had the least conflict, even when controlling for country attributes (Polachek 1992:99). Polachek and McDonald (1992:279) concluded that including import price elasticities makes the "magnitude of the relationship far stronger than before." The earlier Gasiorowski and Polachek (1982) finding that the relationship between trade and war is nonlinear was strongly supported as well (Polachek 1992:114; Polachek and McDonald 1992).

Taking these studies as a whole, Polachek and his coauthors have found a strong and consistently negative dyadic relationship between trade and net conflict. Furthermore, the studies contradict evidence such as Mansfield's (1994) that the causation may be reversed or reciprocal. From a theoretical perspective, a rather unexpected result in this research is that the relationship between interdependence and conflict is nonlinear, a possibility that will be discussed below as an issue that needs further study. One problem with the models used by Polachek and his coauthors, however, is that they do not contain variables that control for other potential causes of conflict between countries (for example, strategic factors). Thus, the results may be biased.

A recent study by John Oneal and his colleagues (1996) did include control variables that are theoretically presumed to explain conflict or that have been found to be linked to conflict in empirical research. Oneal's examination of pairs of countries focused only on "politically relevant" dyads between 1950 and 1985 and was primarily concerned with how political liberalism (that is, mutual democracy) and economic interdependence jointly affect the likelihood of a dyad engaging in a "militarized interstate dispute." Following Gochman and Maoz (1984), militarized interstate disputes included explicit, government-sanctioned interna-

tional threats and displays, as well as actual uses of military force. Politically relevant dyads were pairs of contiguous states as well as pairs in which at least one state was defined as a major power by the Correlates of War project (Oneal et al. 1996:14). In essence, the analysis tested a version of sophisticated liberalism that controls for geographic contiguity, the dyad's ratio of military capabilities, relative economic growth, and whether the countries in the dyad were allies. The indicator of trade dependence for each country was the value of dyadic exports and imports as a proportion of gross domestic product (GDP). A measure of dyadic interdependence was calculated by adding the two nation's dependence scores and then dividing by the difference plus one (Oneal et al. 1996:15–16). The relationship between interdependence and involvement in militarized interstate disputes was negative and statistically significant, supporting the conclusions of Polachek and his coauthors. In addition, Oneal and his colleagues (1996:21) found that even trade *dependency* reduces the likelihood of dyadic conflict, indicating that asymmetric relationships may also inhibit conflict in politically relevant dyads.

Support for the Realist Counterarguments

Only two of the twenty studies reviewed here found unmixed evidence for the realist proposition that interdependence actually increases conflict and the likelihood of war. In an early attempt to apply statistical techniques to this question, Bruce Russett (1967) reported that states in the same trading cluster between 1946 and 1965 were at least twice as likely to be engaged in military conflict as other states. Because the trading clusters in his study included quite a few colonial relationships, Russett (1967:126–127) noted that trade may be more likely to induce responsiveness when it has a relatively equal as opposed to unequal effect on the parties involved. In other words, the colonial situation may not adequately reflect the liberal assumption that interdependence involves mutual dependence. Furthermore, given that trade is highly correlated with geographical contiguity, which is itself positively related to conflict, the results on trade interdependence could have been spurious (see also Oneal et al. 1996:13).

Similarly, one case study provides support for the hypothesis that trade increases conflict. Anne Uchitel (1993:243) argued that dependence on strategic material imports—rather than interdependence in general—will create "incentives for states to adopt expansionist policies and offensive military strategies." Dependence on the world economy for export markets does not create such instability because supplies of strategic goods are not directly threatened. Nazi Germany, Imperial Japan, and Great Britain in the interwar period were presented as illustrations of the argument. Uchitel's brief descriptions indicated that Nazi Germany and Imperial Japan were dependent on foreign sources of strategic goods, and both adopted offensive military strategies to ensure adequate supply. On the other hand, because of its colonies Great Britain had to worry more about paying for strategic supplies than having access to them, so it developed a more defensive strategy geared toward a long war of attrition.

Uchitel's (1993:258) conclusions were that the costs and benefits of interdependence are not equally distributed among countries, and this inequality produces dangers in a complex system. Although her argument emphasized the costly effects of interruptions in strategic supplies, it is consistent with studies indicating that the importance of trade varies by sector (Polachek 1980; Polachek and McDonald 1992). Her results, however, were in the opposite direction, with dependence here being related to more hostile and unstable international actions rather than war avoidance.

Three studies, however, do seem to support the realist expectation that interdependence is unrelated to conflict, or at least to military conflict. Of these studies, only one is statistical in nature (based on dyads), and two are case studies. In the statistical research, Soo Yeon Kim (1995) estimated probit equations for both conflict and trade between 1948 and 1986 and then examined the possibility of a simultaneous relationship. A dichotomous variable measuring conflict was constructed using the militarized interstate dispute data set (Kim 1995:10); trade was the sum of annual exports and imports between dyad members measured in current U.S. dollars (Kim 1995:7). Such variables as type of government (democracy or not), alliance membership, geographic contiguity, capability ratio (indicating power parity between members of the dyad), and relative wealth of dyad members were included as control variables. When treating conflict as the dependent variable, lagged values of trade over five years were used (Kim 1995:9). Disregarding reciprocal effects, the findings were very similar to Polachek's (1980, 1992): "higher levels of current trade are related to a lower likelihood of conflict" (Kim 1995:12). When accounting for reciprocal effects in a simultaneous equation model, however, current trade, even though still negatively associated with conflict, was no longer statistically significant. Kim (1995:14) argued that the lack of statistical significance indicates that we need to reconsider the role of economic interdependence in the conflict process.

The two case studies that concluded that interdependence is unrelated to war attempted to determine whether decision makers are in fact restrained from making war by the perceived costs of disrupting interdependent relationships. Jean-Marc Blanchard and Norrin Ripsman (1995) developed a "strategic goods test" to measure the vulnerability component of interdependence. They argued that, although sensitivity can impose costs on states (Keohane and Nye 1977), it is vulnerability in terms of strategic goods which affects states' incentives to use force (Blanchard and Ripsman 1995:2). The strategic goods test is a complex system for identifying the goods that are most important for war at a given time, evaluating the alternative sources of these goods for each country, then deciding whether the sources would be cut off in the event of international conflict.

Ripsman and Blanchard (1995) used the strategic goods test as the indicator of vulnerability in describing two cases in which states were on the verge of war. They used historical accounts and collections of war documents to conduct case studies that "examine the impact of economic interdependence on decision-making" among German leaders during the July Crisis of 1914 that led to World War I and among German, British, and French leaders during the Rhineland Crisis of 1936 (Ripsman and Blanchard 1995:2). The failure of Britain and France to oppose German remilitarization of the Rhineland in 1936 provided a case in which war did not result. Ripsman and Blanchard (1995:3, 20) concluded that, despite their awareness of vulnerability, German leaders did not consider it relevant when they decided to go to war in 1914; ideological and security concerns overrode the constraints of dependence. Similarly, British and French economic sensitivity played almost no role in the Western reaction to German actions in 1936. Rather, strategic concerns and deference to public opinion were more important in decision making (Ripsman and Blanchard 1995:36). Unfortunately, this conclusion leaves open the question of how economic ties affect public opinion. If public opinion is influenced by the benefits (costs) of interdependence, as modeled by Arad and Hirsch (1981), then a case could still be made that Britain's decision was constrained in the ways political and economic liberals would expect. This is not the interpretation that Ripsman and Blanchard made of the findings however.

Mixed or Conditional Evidence

Six of the twenty empirical analyses of the relationship between interdependence and conflict present mixed evidence or evidence that the negative relationship is conditional. These analyses include both dyadic statistical studies and case studies. A key characteristic of most of these studies is that they consider the mutually beneficial *and* potentially costly aspects of interdependence. Given that both costs and benefits are found to be statistically significant in determining how interdependence affects conflict, these studies point to important ways in which future research can help clarify the theoretical relationship.

In a country-level study, Gasiorowski (1986) attempted to measure both the costs and benefits of interdependence, using such indicators as the price elasticity of demand, trade-partner concentration, commodity concentration of exports, and short- and long-term capital flows from the rest of the world in addition to the total value of trade. Conflict was also operationalized in a more complex manner than either net conflict or the presence or absence of a militarized interstate dispute. Using COPDAB data, Gasiorowski (1986:34) constructed a weighted measure of the conflicts Country A directed toward all of its trade partners between 1960 and 1977.

Several findings from Gasiorowski's study contradict, or at least qualify, the expectations of liberalism. First, all the interdependence variables except import price elasticity *positively* affected conflict when controlling for the level of economic development. Second, higher short-term capital flows made countries *more likely* to be hostile toward their trade partners than lower short-term flows, suggesting that dependence makes countries more, rather than less, hostile. On the other hand, in line with the liberal hypothesis, trade interconnectedness was significantly and negatively associated with conflict, but only when the costly effects of interdependence were statistically controlled. The evidence from this study indicates the importance of including different components of interdependence. Yet, because the dependent variable combines military, diplomatic, and economic conflict, it remains unclear how the different components of interdependence affect the various types of conflict (see also Oneal et al. 1996).

Lois Sayrs (1989) modeled conflict and cooperation separately, arguing that trade need not necessarily affect cooperation, even if the liberal hypothesis holds with respect to conflict. Unlike others, she also distinguished between military and economic forms of conflict. Her two regression equations used pooled data for randomly drawn trading dyads between 1950 and 1975, with a COPDAB indicator of conflict as one dependent variable and a COPDAB measure of cooperation as the other. The key indicator of interdependence was the trade volume for each dyad. "Memory" and "reciprocity" in the trading relationship were included to indicate the dyad's political relationship. Memory was simply the total cooperation that a given actor directed toward a target state during a particular period of time (Sayrs 1989:175). Reciprocity, the notion that one country responds to the actions of another, was measured as the total cooperation or conflict directed from the target state to the actor during that same period (Sayrs 1989:175). The initial regression results provided some support for the liberal proposition because trade appeared to diminish conflict slightly when controlling for the political dimension of the dyadic relationship. Trade, however, had no effect on cooperation (Sayrs 1989:163), which presents a problem for most of the hypotheses drawn from liberalism. Interdependence, after all, is expected to decrease conflict between states precisely because common interests in the gains from trade are assumed to promote cooperation.

Furthermore, even though Sayrs (1989:164) found that trade was statistically significant for economic conflict, it was not related to military conflict. This result

tends to support the second realist hypothesis. Likewise, the effects differed depending on whether the actor and target states were high or low volume traders (Sayrs 1989:167). When controlling for trade volume, the results suggested that dominance by the high volume partner, rather than cooperation induced by interdependence, better explained the negative relationship between trade and conflict (Sayrs 1989:167). Thus, it seems that even though interdependence appears to reduce conflict (at least economic conflict), that reduction may be the result of dominance in the relationship as expected by realists. Just as Gasiorowski's work points to the importance of including different aspects of interdependence, Sayrs's study demonstrates that different dimensions of the dependent variable (conflict) may also make a difference in the results.

Like Sayrs, Michael de Vries (1990) examined interdependence as it relates to both conflict and cooperation. In his study, interdependence between pairs of states in the Americas and Western Europe between 1950 and 1960 was measured using political, military, institutional, and diplomatic ties in addition to economic ones (de Vries 1990:432). The dependent variable was a scale indicating the combined intensity of conflict and cooperation between the two countries (de Vries 1990:433) rather than two separate measures as in Sayrs (1989). Using multidimensional scaling techniques, de Vries (1990:437) found strong commonalities among the four aspects of interdependence and a stable structure of interdependence throughout the decade. Furthermore, he (de Vries 1990:437) reported a curvilinear relationship between interdependence and the intensity of cooperation or conflict, concluding that "interdependence . . . acts as a catalyst, intensifying international processes irrespective of their integrative or disintegrative direction." The notion that interdependence intensifies both conflict and cooperation is not particularly well addressed in either the liberal or the realist theoretical frameworks. Thus, de Vries's results indicate a strong need for further theoretical development.

The work of Katherine Barbieri (1995, 1996a, 1996b, 1996c) employed a model that was very similar to that used by Oneal and his colleagues (1996). Although Barbieri (1996a) concluded that her results tend to support the realist proposition that interdependence increases conflict (participation in militarized interstate disputes), her research has "mixed" implications for the liberal/realist debate because she found that subcomponents of interdependence have differing effects. Barbieri (1995, 1996a) used dyadic data and measured conflict in two ways: as the presence or absence of a militarized interstate dispute between states, and as the presence or absence of war. She conceived of interdependence and dependence as points on a continuum and differentiated between salience (the importance of the trade partners) and symmetry (one minus the difference in trade shares). These two factors, multiplied together, provided her indicator of interdependence (Barbieri 1995:12). The control variables included geographical contiguity, joint democracy, alliance membership, and the relative military capabilities of the dyadic partners. Inclusion of these control variables allowed Barbieri to look more closely at whether it was trade or some other factor that produced the observed relationship. Barbieri's 1995 and 1996a papers are very similar with respect to models and conclusions, but the first includes the years 1950–1985 in addition to the 1870–1938 period covered in the latter.

For the pre–World War II period, Barbieri's (1995:17; 1996a:40) results support the conclusion that the "salience and symmetry of the relationship initially inhibit conflict, as either dimension increases, the interaction effect reveals that the potential for conflict also increases." For the post–World War II period, however, only symmetry was statistically significant, inhibiting conflict during those years. In both time periods the coefficients for the control variables were generally significant statistically and in the expected direction. Thus, it seems that symmetry is a critical

part of the puzzle linking interdependence to conflict. This finding is consistent with the presumptions of liberalism that trade is mutually beneficial, but it is also consistent with the realist argument that asymmetries in trade relationships can lead to conflict.

Because the interaction between symmetry and salience is positively related to conflict, in direct contrast to the findings of Oneal and his colleagues, Barbieri (1996b) did a comparative analysis. She determined that much of the variation in results between the two research endeavors could be attributed to the use of politically relevant dyads in the Oneal study and a sample of all dyads in her own. In conjunction with Sayrs's (1989) findings on the importance of the nature of the dyadic relationship, Barbieri's (1996b) results suggest that more needs to be learned about how the symmetric or asymmetric nature of a dyadic trading and political relationship affects the impact of trade interdependence on conflict between two states.

Two case studies also provide evidence that both the costs and benefits of interdependence must be considered in relating interdependence to conflict. The authors of these case studies began by recognizing that some cases are better explained by realism, others by liberalism. They developed theoretical arguments that attempted to take into account points made by both theoretical perspectives and tested their arguments using evidence from particular cases. Dale Copeland (1996) and Paul Papayoanou (1996) concluded that examining decisionmakers' awareness of only the current level of interdependence is inadequate. The causal path is in fact more complicated.

Copeland (1996) developed a theory of trade expectations in which the expected value of future trade was an important causal variable that, in conjunction with current levels of interdependence, helps explain decisions for war. He constructed a formal model that began with the liberal argument that interdependence gives states incentives to avoid war, but he added the realist point that the potential costs of being cut off from vital resources can lead states to go to war to secure those goods (Copeland 1996:6). Adding the expected future value of trade yielded the new proposition that high levels of interdependence foster peace only if the expectations for future trade are high. If expectations for future trade are low, states are more likely to engage in war, even if current levels of trade are high. Thus, "high interdependence can be either peace-inducing or war-inducing, depending on the expectations of future trade" held by state decision makers (Copeland 1996:7). Copeland presented brief case studies of German decision makers prior to World Wars I and II. Using historical sources, he found that the leaders did take the expected future value of free trade into consideration. The decision makers determined that high dependence, coupled with a low expected value of future trade, made war a viable policy option. This theoretical formulation and the conclusions drawn from the case studies lend support to the study by de Vries (1990), who found that interdependence could intensify either peaceful or warlike tendencies between countries.

Along similar lines, Papayoanou (1996:75) developed an argument that explicitly incorporated the interaction between economic interdependence and domestic political institutions. In his version of sophisticated liberalism, Papayoanou posited a causal mechanism that included the pattern and level of economic ties as well as the domestic political institutions that might constrain political strategists as they decided whether to go to war. This argument took into account the realist claims that states have strategic reasons to go to war, but maintained that ". . . economic ties and political institutions determine whether strategists have the capacity to balance against threats they perceive, and whether they might pursue expansionist goals" (Papayoanou 1996:75). Papayoanou analyzed examples from Britain

and Germany prior to World War I and concluded that Germany was not constrained by interdependence because of both the pseudo-democratic political institutions that strengthened the economic nationalists and the recognition that Britain would most likely be constrained. Because of their more truly democratic institutions, British policymakers were constrained by individuals and groups with commercial interests, both inside and outside the government.

The Copeland and Papayoanou case studies are consistent with sophisticated liberalism and with one another. Both policymakers' expectations about future gains from interdependence and their domestic political constraints are operating in decisions to wage war. Their results may help explain why other case studies that focus only on levels of interdependence find that interdependence is not related to decisions for or against war. We can conclude that high (or low) levels of interdependence are considered by decision makers, but that they are viewed in the context of future expectations and political constraints. Taken together, these case studies again demonstrate that the process by which interdependence affects war is more complex than either those espousing realist or liberal explanations expect.

Finally, two additional case studies are relevant even though they address only a part of the liberal causal mechanism linking interdependence and war. Specifically, these studies focused on whether conquest through war is too costly to be a viable policy option in a modern capitalist system as Angell (1933 [1908]) and others have argued. These inquiries also presented somewhat mixed results for the liberal/realist debate when considered together.

In the first study, Alan Milward (1977:ch. 5) examined whether conquest was profitable for Germany and Japan in World War II. He analyzed the contribution of the occupied territories to the war effort of the conquering country in terms of labor, finances, raw material supplies, and opportunities for business expansion. In the case of the German occupation of France, Milward (1977:144–145) found that the yield from exploiting the relatively large and developed French economy was extremely high, and that the costs may have been less than the benefits. The occupation of the smaller countries (Norway, Belgium, and the Netherlands), however, did not add as much to the German war effort (Milward 1977:146).

For Japan, Milward (1977:165) found that initially the "seizure of the southern areas in the first year of warfare did . . . correct certain raw material deficiencies in the Japanese economy." The larger goal of commercial expansion, however, depended on the maintenance of the Co-Prosperity Sphere. When supplies from the territories could no longer reach Japan during the war, exploitation of strategic materials diminished and Japan experienced serious economic difficulties (Milward 1977:167). Although Milward provided only a rough estimation of the costs and benefits of wartime exploitation of conquered territories, the implication is that as late as World War II some countries could benefit—at least initially—from war. But, the evidence also seems to suggest that as conflict is extended through time, the costs begin to outweigh the benefits. War may still "pay" the conqueror if it is over quickly. Because Germany and Japan eventually were defeated in World War II, however, these case studies tell us nothing about the eventual costs and benefits for an occupying power that wins the war.

In the second study, Peter Liberman (1993:150) maintained a strong realist position, arguing that conquest has been particularly profitable in modern times. According to Liberman, modernization makes victory more profitable because it increases economic surpluses and makes coercion and repression more efficient. For example, by conquering part of modern Germany in World War II, the Soviet Union was able to extract about 6 billion marks per year between 1947 and 1953 (Liberman 1993:138). Even if the costs for controlling East Germany are subtracted, this was still

a considerable gain for the Soviets (Liberman 1993:139). Like Milward, Liberman pointed to the benefits that Germany was able to extract from its European conquests as evidence that being victorious in war still provides benefits to countries. Neither Liberman nor Milward, however, addressed the point raised by liberalism that the modern system makes trading a more efficient way to obtain economic objectives. Even if conquest pays in the short term for modern victors, it is unclear that war is a more efficient way to produce these gains than trade.

Summary

The extant formal and empirical research on the relationship between trade and international conflict raises more questions than it answers. Nevertheless, some general points can be made. First, analysis undertaken in the liberal tradition seems to support liberalism's hypothesis that interdependence reduces conflict, although some of the studies taking a more realist perspective indicate no systematic relationship. Thus, statistical studies that emphasize the beneficial aspects of trade interdependence seem to support the liberal hypothesis (for example, Polachek 1980, 1992; Gasiorowski and Polachek 1982; Polachek and McDonald 1992), although case studies that start from a realist point of view tend to support realist hypotheses (for example, Uchitel 1993; Ripsman and Blanchard 1995).

This problem is somewhat ameliorated by a second point: controlling for both the costly and beneficial aspects of interdependence is critical for understanding the nature of the relationship between interdependence and conflict. The formal models that emphasize the benefits of trade to society support economic liberalism (for example, Polachek 1980), but models that include different societal actors find that interdependence can also create domestic conflict that must be mitigated by the government in order for the public to support peace (Arad and Hirsch 1981). Similarly, in the statistical literature, Gasiorowski (1986) finds that the costly aspects of interdependence must be controlled to find a negative relationship between trade and conflict, and Barbieri (1995, 1996a) finds that how symmetrical the trading relationship is affects the likelihood of conflict, a finding supported in part by Sayrs (1989).

A final general point is that interdependence is a multifaceted concept. It not only involves both costs and benefits for countries, but it consists of more than trade volumes between countries. When indicators of interdependence include political as well as economic dimensions, de Vries (1990) finds that interdependence serves as a catalyst that intensifies both conflict and cooperation. When control variables measuring other forms of international relationships—such as alliance membership and joint democracy—are included in dyadic models, they may be accounting for some of these political aspects of interdependence (for example, Barbieri 1995, 1996a, 1996b, 1996c; Oneal et al. 1996). Clearly, interdependence is a broader analytic concept that involves more than the level of trade. To make empirical and theoretical progress in understanding the link between interdependence and conflict, this complexity must be recognized and incorporated into future studies.

Directions for Further Research

Although the results of a majority of the studies reviewed here support the liberal hypothesis that interdependence decreases conflict, many also pose important questions and qualifications. These questions make it premature to declare liberalism the theoretical winner; they also point to important areas for further research. Many of these questions might be called points on which empirical clarification is

needed given that they involve gaps or inconsistencies in the current literature. These empirical questions, however, also provide an important opportunity for theoretical refinement or reformulation. This final section looks at several broad topic areas that will be important for future research aimed at advancing our understanding of how interdependence affects conflict.

Interdependence. The first set of questions involves the gaps in our theoretical and empirical knowledge concerning the independent variable: the concept of interdependence. One problem that becomes clear from reviewing the extant literature is that the different conceptions of what it means for a relationship to be interdependent have a critical impact on research outcomes. In short, these differences are not simply semantic; they affect both how the concept is operationalized and what points are emphasized in the analysis. For example, in the research reviewed here interdependence has been both thought about and operationalized primarily in terms of trade or financial ties. Even within this narrow range, however, the different studies use a wide variety of indicators—such as trade volumes, trade values, systemic trade levels, trade as a proportion of GDP, and trade in strategic goods. Because the studies differ in other ways as well, it is difficult to discern how much of the variance in the results can be attributed to the different indicators used for interdependence. Future research that compares the impact of this range of indicators, as in Mary Tetreault (1980) and Barbieri (1996b), would help determine whether the inferences made are specific to the indicator used or attributable to interdependence more generally.

The tendency to operationalize interdependence solely in terms of trade and finance, however, raises other questions because of the multifaceted nature of interdependence in the conceptual literature. Many other types of interactions may involve countries in situations of "mutual dependence" (see Baldwin 1980). Different types of interdependence, such as military and diplomatic interdependence, may not necessarily have the same impact on international relationships as economic interdependence (Waltz 1970:208). For example, international efforts to address cross-border environmental issues create a mutual dependence among countries just as trade does. Some evidence already indicates that ecological scarcities are exacerbated by growing economic interdependence, providing a motive for conflict over scarce resources (Homer-Dixon 1994). Thus, neglecting one type of interdependence or emphasizing interdependence in only one arena may blind us to the possibility that the various dimensions may interact, creating a far more complex situation. Examining differences among the various facets of interdependence will provide more leverage for understanding which types of interdependence are more or less likely to reduce war and what combinations might provide the best deterrent for conflict more generally. In short, a broader but also more finely tuned empirical specification of interdependence could help generate conceptual and theoretical advances.

In addition, despite the extant research that emphasizes the nature of the goods being traded, such as Polachek (1980), Ripsman and Blanchard (1995), and Uchitel (1993), we still have little knowledge about whether trade in certain types of goods has a significant impact on conflict. If trade in strategic goods creates conflict, it would support the realist hypothesis, but it would not necessarily undermine the arguments and expectations of liberalism if trade in other types of goods tends to inhibit conflict. Neither theoretical framework, however, explains why the impact of interdependence on conflict might vary depending on the type of good being traded.

Any notion of interdependence clearly must include both its costs and its benefits, as the more sophisticated forms of realism and liberalism recognize. Yet, even

the sophisticated form of liberalism does not provide a clear case for why, or under what conditions, the benefits of interdependence can be expected to outweigh the costs. Similarly, realism simply assumes that strategic interests outweigh the benefits of interdependence, and that the costly aspects of interdependence therefore produce conflict. Our theoretical development must incorporate the empirical finding that both the costs and the benefits are important for understanding the relationship between interdependence and conflict.

Finally, we also need to explore further how symmetrical or asymmetrical a relationship can be and still be deemed "interdependent." Part of the theoretical debate between realism and liberalism revolves around the difference between "dependence," with its connotations of exploitation, and "interdependence," with its implications of mutual and symmetrical benefits. Empirical evidence such as Barbieri's (1995, 1996a) does indicate that symmetry is an important facet of interdependence. Moreover, Sayrs (1989) found that dominance in dyadic relationships may be more important than trade in determining conflict. Thus, symmetrical trade relationships may create incentives for less conflict, while asymmetrical relationships may increase tensions and therefore conflict. This proposition requires further study, and the results will have important implications for the theoretical arguments.

Conflict. The second general area in which further research is required relates to the dependent variable: conflict. Theoretically, liberalism does not specify what types of conflict are most likely to decrease in the presence of high levels of interdependence. The work reviewed above suggests that differences in how the dependent variable is operationalized may account for some of the differences in results. The indicators of conflict used in the extant research range from the *level* of conflict and the *probability* of war or militarized interstate dispute to a *scale* of conflict and cooperation between countries and the *type* of conflict (economic or military). Clarifying theoretical expectations and empirical applications is critical for understanding how interdependence affects relations among states. For instance, Stein (1993:290) argues that interdependence may generate international economic conflict at the same time that it makes war less likely. If this is the case, then not only will the indicator of conflict that one uses make a difference in the results, but the difference will be important substantively. Several of the works discussed hint at this difference, especially between economic and military conflict (Arad and Hirsch 1981; Polachek 1980; Polachek and McDonald 1992; Sayrs 1989), but the implications need to be drawn out and tested explicitly. It is also possible, as Hirschman (1982:1483) suggests, that two contradictory processes are at work. Markets may have both pacifying and conflict-prone effects, and both may exist together. At given times, however, one process might dominate the other. If this is the case empirically, then both the realist and the liberal theoretical perspectives must be modified to explain it.

Theoretical and Methodological Issues. Finally, the review of the literature suggests a number of theoretical and methodological issues that will require targeted research to resolve. One such research agenda involves the testing of the causal mechanisms assumed by the liberal and realist hypotheses in a more explicit manner. When case studies look for interdependence-induced interests that support peace and constrain high-level decision makers, they find that interdependence appears to have no impact on decisions about war. Yet, statistical studies at the country, dyadic, and systemic level do tend to support the proposition that a negative relationship exists between interdependence and war. Alternative causal mechanisms are at least implied in the various theoretical strands of liberalism,

and to resolve the apparent discrepancy they need to be tested directly. For instance, several case studies suggest public opinion is considered by decision makers. These studies, however, leave open the question of how international economic ties might affect public opinion—the causal mechanism through which political liberalism connects interdependence to less war. Research directed at questions like this seems likely to be country specific; yet if enough countries are examined, it could help produce theoretically important generalizations.

Similarly, further research needs to explore the potential for a curvilinear relationship between interdependence and war as well as the possibility of reverse or reciprocal causality. Several of the studies reviewed here indicate that the relationship between interdependence and war is curvilinear rather than linear, and some indicate that the relationship may also be reciprocal. A reciprocal relationship is not inconsistent with the liberal hypothesis, although the realist hypotheses do not address it as clearly. Given that a curvilinear relationship is not explicitly expected by either liberals or realists, however, both of these results present a clear opportunity for theoretical and empirical research aimed at clarifying the theoretical relationship.

A note on methodological diversity is in order here as well. Although methodological diversity can create difficulties in comparing results directly, it is important that future work include all types of analysis. Some parts of the puzzle lend themselves to case studies, whereas others are addressed more appropriately through statistical studies or formal models at the dyadic or systemic level of analysis. For instance, case studies can examine whether and how interdependence constrains foreign policy decision makers, and dyadic analysis can examine the independent effect of interdependence on conflict while controlling for other aspects of the relationship. To be more confident of the results, we must have evidence from as many methodologies as possible, and at different levels of analysis. Because no clear theoretical reason exists to expect interdependence to operate at only one level of analysis, we should expect the results of country-specific case studies to be consistent with the results of dyadic- and systemic-level studies. If this is not the case, theoretical explanations must be developed to account for the differences.

Finally, the most important theoretical question remains one of how to integrate economic and political processes in our models. As noted above, economic theories begin by assuming politics does not matter in the long run, but the empirical studies reviewed here indicate that, as one would expect given a Kantian liberal perspective, a combination of political and economic variables are at work. Accordingly, it may be most useful to begin theoretical reformulations by thinking about how economic processes work within the political system, rather than how political processes create deviations from the perfectly competitive market of economists. More specifically, Stein's (1993) three propositions linking state actions to interdependence and conflict can and should be tested, and the results used to refine our theories. For example, how are societal demands that stem from interdependence translated into state action? How do governments manage the conflict—both domestic and international—that may be generated by the costs of interdependence? Likewise, Putnam's (1988) two-level game analytic framework may provide additional illustrative leverage, given that it explicitly connects decision makers to both domestic and international political considerations. For example, do governments use interdependence as a means to bolster domestic support for more or less peaceful foreign policies? Under what conditions do strategic objectives override domestic interests in economic cooperation? Finally, the theoretical and empirical links between economic and political types of power must be more fully specified. For example, are market power and political power linked in a causal fashion? Does interdependence increase economic conflict and decrease military conflict?

Is economic conflict more or less likely to escalate to military conflict in interdependent relationships? Answering questions like these will help us enormously as we struggle to understand better the nature of the relationship between interdependence and war.

Interdependence, conflict, and the relationship between them are more complex than has generally been assumed. Liberalism has emphasized the benefits of interdependence and realism has emphasized the costs, but neither theoretical framework has developed an argument that explains how both the costs and the benefits of interdependence are related to international conflict. Until we are willing to create and test more complex models, we are not likely to make theoretical progress in sorting out this question.

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