

Interdependence and Conflict: An Introduction

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Over the past few decades, there has been a surge of interest in the relationship between economic interdependence and political conflict. One view that has gained considerable popularity and empirical support is that heightened interdependence fosters cooperative political relations. Voiced with increasing regularity in both academic and policy circles, this claim has been used to help justify the formation of the European Economic Community, Richard Nixon's opening to China, Willy Brandt's *Ostpolitik*, and Henry Kissinger's conception of détente with the Soviet Union. Nonetheless, critics of this argument have not been stilled. Some observers maintain that, rather than fostering cooperation, increased interdependence generates political discord. Even more widespread is the argument that economic exchange has no strong bearing on the high politics of national security.

This debate is hardly new. For centuries, the nature and strength of the links between interdependence and conflict have been the subject of heated disagreement. Until lately, however, these links remained the subject of remarkably little systematic scrutiny. In recent years, a growing number of studies have attempted to fill this gap in the literature, but they have yet to resolve various crucial questions. Most important, how and to what extent does interdependence influence political antagonism? What are the causal mechanisms driving this relationship? And what is the most appropriate way to test this relationship? The purpose of this book is to shed new light on these key issues.

In this introduction, we survey the recent literature on the effects of economic interdependence on political conflict, placing primary emphasis on these questions and on the theoretical and empirical developments needed to answer them. Our central arguments are threefold. First, existing research has

focused too much on addressing whether there is a relationship between interdependence and conflict and too little on identifying the underlying micro-foundations of any such relationship. Particularly important in this regard is the need to specify more fully both the domestic and the international political bases of the nexus between interdependence and conflict. Second, the existing literature has placed far too little stress on the contingent nature of the relationship between interdependence and the use of armed force. Recent studies strongly suggest that the strength and direction of the relationship may change over time and across different types of conflict and that the relationship may depend on both domestic and international factors. Third, too little attention has been paid to the definition and measurement of both interdependence and conflict. More specifically, scholars have yet to resolve in what form and in what sense interdependence is expected to influence conflict of which type and at what level of intensity.

The following chapters make considerable headway in resolving these issues. This is not to suggest that the authors are of a single mind. They approach this issue from different disciplinary perspectives and theoretical traditions; they focus on different causal mechanisms; and they employ a wide variety of methodological tools. However, these disagreements serve to create a dialogue that enriches our understanding of the relationship between interdependence and conflict. Equally, this volume helps resolve a broader set of debates over the merits of liberal and realist explanations of international relations, the causes of war, and the political economy of national security. It also sheds light on key policy issues, especially those regarding the instruments and application of economic statecraft.

The Conceptual Links between Interdependence and Conflict

Central to much of the literature on interdependence and conflict is the long-standing claim that open international markets and heightened economic exchange inhibit interstate hostilities. Liberals have been the most forceful advocates of this thesis and have stressed a variety of different causal mechanisms in developing it.¹ One argument—cast primarily at the level of the nation-state—is that economic exchange and military conquest are substitute means of acquiring the resources needed to promote political security and economic growth (e.g., Staley 1939). As trade and foreign investment increase, there are fewer incentives to meet these needs through territorial expansion, imperialism, and foreign conquest (Rosecrance 1986). Conversely, barriers to

international economic activity stimulate conflicts of interest that can contribute to political-military discord (Viner 1951, 259). Another liberal argument—cast largely at the level of the country-pair, or dyad—is that economic intercourse increases contact and promotes communication between private actors in different countries, as well as between governments. Rising contact and communication, in turn, are expected to foster cooperative political relations (Doyle 1997, chap. 8; Hirschman 1977, 61; Stein 1993; Viner 1951, 261).

Still another theme stressed by many liberals is that commercial openness generates efficiency gains that, in turn, render private traders and consumers dependent on foreign markets. Because political antagonism risks disrupting economic relations among participants and jeopardizing the gains from trade, these actors have reason to press public officials to avoid military conflicts. For their part, public officials—who rely on societal actors for political support and have an interest in bolstering their country's economic performance—have reason to attend to such demands. This argument, which is addressed at length in the following chapters, has been a centerpiece of liberal views on war for centuries. Montesquieu, for example, claimed that “the natural effect of commerce is to lead to peace. Two nations that trade together become mutually dependent: if one has an interest in buying, the other has an interest in selling; and all unions are based on mutual needs” (quoted in Hirschman 1977, 80). Whereas Montesquieu's claim centers on bilateral relations, the argument that heightened economic dependence inhibits belligerence has also been cast at the systemic level of analysis. As Barry Buzan (1984, 598) mentions, a core element of the liberal position is that “a liberal economic order makes a substantial and positive contribution to the maintenance of international security.”

However, the liberal view has been criticized by mercantilists and many realists who insist that unfettered economic exchange can undermine national security. Albert O. Hirschman ([1945] 1980), for example, has pointed out that the gains from trade often do not accrue to states proportionately and that the distribution of these gains can affect interstate power relations.² Shifting power relations, in turn, are widely regarded as a potent source of military conflict (Gilpin 1981; Levy 1989; Mearsheimer 1990). In the same vein, the extent to which trade partners depend on their commercial relationship often varies substantially among the constituent states. If one partner depends on a trading relationship much more heavily than another partner, the costs associated with attenuating or severing the relationship are far lower for the latter than the former state. Under these circumstances, trade may do little to inhibit the less dependent state from initiating hostilities.

Another challenge to the liberal thesis emphasizes that states have political reasons to minimize their dependence on foreign commerce and that military expansion offers one way to achieve this end. Hence, as trade flows and the extent of interdependence increase, so do the incentives for states to take military actions to reduce their economic vulnerability (Gilpin 1981, 140–41; Liberman 1996). Consistent with such arguments, Alexander Hamilton asserted in 1796 that protecting the industrial sector from foreign competition would enhance the United States’ “security from external danger” and give rise to “less frequent interruption of their peace with foreign nations” than open trade policies (quoted in Earle 1986, 235). Furthermore, as commerce rises, so does the range of economic issues over which disputes can emerge. In this vein, Kenneth Waltz (1970, 205, 222) maintains that since “close interdependence means closeness of contact and raises the prospect of at least occasional conflict . . . the [liberal] myth of interdependence . . . asserts a false belief about the conditions that may promote peace.” As such, heightened interdependence may actually stimulate belligerence.

Finally, a wide variety of studies conclude that international economic relations have no systematic bearing on political conflict (Buzan 1984; Gilpin 1987; Ripsman and Blanchard 1996–97). Many of them hold that hostilities stem largely from variations in the distribution of political-military capabilities and that power relations underlie any apparent effect of economic exchange on military antagonism. That economic ties among the major powers were significant prior to World War I but far less extensive prior to World War II is frequently presented as evidence that such ties have little systematic impact on armed conflict when core national interests are at stake.

Despite enduring and heated debates about the relationship between interdependence and conflict, rigorous empirical analyses of this issue have only emerged recently.³ These studies have improved our understanding of the links between economic interactions and political discord, but they have not generated any consensus. Although many of them find that heightened interdependence inhibits conflict, others find that rising interdependence either has no deterrent effect on war or stimulates antagonism. The reasons for these divergent conclusions, we believe, can be traced to conceptual and methodological differences within this literature that have remained largely unexplored. Particularly important in this regard are central theoretical issues that this research community has yet to address and differences among researchers over how to define and measure both interdependence and conflict. In the remainder of the introduction, we develop these points and discuss how the contributors to this volume address them.

Theoretical Issues for Further Exploration

Most of the burgeoning literature on interdependence and conflict consists of empirical efforts to determine whether these factors are related. Though this line of inquiry has yielded a set of important findings, inadequate attention has been paid to determining the causal mechanisms underlying key results. A closer examination of the microfoundations undergirding the links between interdependence and hostilities is sorely needed.

Microfoundations

Even a casual review of the myriad arguments regarding interdependence and conflict indicates that a wide variety of causal mechanisms have been stressed. From this welter of plausible hypotheses, we draw one simple conclusion: as long as scholars focus primarily on establishing *whether* these factors are systematically related, there will be various theories to fit the results of almost any empirical study. Greater attention, therefore, needs to be focused on specifying and testing the observable implications of particular causal mechanisms advanced in theories of interdependence and conflict. Doing so is likely to facilitate a better understanding of *why* and *how* economic exchange influences the outbreak of armed conflict.

Three areas deserve particular attention in further theoretical development: the identification of relevant actors (subnational, national, and supranational), strategic interactions between these actors as they pursue their goals, and the role played by international economic ties in the processes of conflict generation and conflict escalation. We consider these areas in turn.

Taking this literature as a whole, the list of relevant actors would seem quite large. Armed conflict between states has been linked in various theories to the interests of consumers, firms, industries, interest groups, national leaders, supranational institutions, and markets. Some arguments are cast at the subnational level of analysis, for example, the widespread claim that firms and consumers have vested interests in commerce that lead them to restrain the state when conflict is on the horizon lest hostilities rupture important economic ties. Other arguments are cast at the state level, as when it is argued that economic dependence motivates leaders to satisfy material needs via conquest rather than trade. Still another set of claims focuses on the dyadic level of analysis, for example, positing that the extent and asymmetry of interdependence between states influence the likelihood that they will resort to force. Finally, a number of different causal explanations are pitched at the

supranational or systemic level of analysis. Among these explanations are that trade organizations reduce the likelihood of armed conflict among members, that heightened global trade reduces the prospects of war throughout the system, and that the anticipated negative response of capital markets to war gives national leaders pause before they resort to the sword. As purportedly relevant actors can be found at all levels of analysis, we also see that the choices made by different theories correlate with different schools of thought. Realist explanations tend to view the state as the only relevant actor while liberal explanations tend to focus on subnational and supranational actors. What we lack are more fully articulated models that clearly define the relevant actors and describe how their interests and actions link interdependence to conflict.

Especially important in this regard is the need to explain how the subnational actors—like consumers, firms, or industries—influence security policy. Surely the ability of these actors to do so depends on the domestic political institutions through which their interests are filtered, a factor given short shrift in most liberal explanations (Mansfield and Pollins 2001, 841–43). In this volume, Beth Simmons argues that liberal claims regarding the pacifying effects of trade—*pax mercatoria*, as she calls it—will remain incomplete pending the development of a theory of the state that links private commercial interests to public choices about the resort to arms.⁴ In conjunction with Simmons's analysis, the subsequent chapters by Christopher Gelpi and Joseph M. Grieco and by Etel Solingen make considerable headway in this regard. Gelpi and Grieco argue that democratic institutions and their associated constraints on national leaders may be a necessary condition for economic interdependence to inhibit conflict. Solingen offers a more complex picture in which the integration of a state into the global economy shapes the interests of varying domestic coalitions. These groups then pursue foreign policies, either pacific or aggressive, to attain their goals.

Besides the need to specify the interaction between state actors and societal interests more fully, there is also a need to specify how interdependence influences the process through which wars break out (Barbieri and Schneider 1999, 394). It is widely recognized that wars occur in at least two stages: the outbreak of a dispute between states and the escalation of this dispute to the point where force is applied (Snyder and Diesing 1977). Existing studies have provided considerable insight into how economic exchange influences the outbreak of conflict. However, they have furnished little insight into how economic interdependence influences the escalation of disputes (Mansfield,

Pevehouse, and Bearce 1999–2000; Morrow 1999). One possibility is to build on the argument that armed conflict is a consequence of failed interstate bargaining and to link economic ties between nations to the bargaining process. In this vein, interdependence could be viewed as a signal sent in the course of bargaining, the costliness of which is related to the extent of economic exchange between states or the difficulty either state would face in foregoing their economic connections. It might then be feasible to specify the point where a state's noncommercial interests (for military advantage, say, or defense of the homeland) overcome any effect of trade on hostilities. James D. Morrow's contribution to this volume revisits these points and offers further directions for theoretical development.

Erik Gartzke's chapter presents an interesting variation on this theme of interdependence, conflict, and "signaling" in strategic interactions. According to Gartzke, highly interdependent states rarely engage in full-blown war because the costs of doing so are prohibitive. If, however, these states realize that war is unlikely, each one may be tempted to engage in acts of brinkmanship against the other(s) to meet its foreign policy goals, since it can rest assured that these acts will not provoke a military reprisal. This scenario implies that interdependence might foster a great deal of low-intensity conflict but that such conflict is unlikely to escalate, thereby helping to reconcile the claims of realists and neomercantilists, on the one hand, and liberals, on the other.

Of course, these points are only suggestive. But addressing such issues—all of which involve improving the specification of causal processes—would enrich and deepen our understanding of the interdependence-conflict relationship.

Boundedness and Contingency

To date, neither liberals nor realists have paid much attention to identifying the conditions under which their claims hold. Instead, arguments about the relationship between interdependence and conflict typically have an air of universality, applying to all actors in all times and places. Yet the contradictory empirical results generated by recent studies suggest that this relationship is more complex than such arguments imply. Moreover, a growing body of empirical literature indicates that the effects of economic exchange on the outbreak of hostilities depend on various domestic and international factors. Devoting more attention to these interaction effects is another important step in promoting a fuller understanding of the interdependence-conflict connection.

In their contributions to this volume, Arthur A. Stein, Jack S. Levy, Gregory D. Hess, and Mansfield analyze some of the contingencies in the relationship between economic exchange and hostilities. Stein draws attention to the contradictions embedded within any trading relationship (i.e., that it contains both cooperative and coercive dimensions) and uses this as a starting point to argue that trade may lead to either conflict or peace under conditions that still await specification. Levy argues, *inter alia*, that the “trade breeds peace” proposition must be contingent on conditions not identified by the liberals since we live in a world where security interests may trump economic gains. Hess, using a standard, liberal economic framework, shows that interdependence may result in varying equilibrium levels of conflict from a “Kantian peace” to “good wars,” depending on conditions that are once again absent from standard treatments in the literature. Finally, Mansfield argues that the effects of trade flows on conflict are conditioned by the international institutional setting in which foreign commerce is conducted.

As noted earlier, theoretical arguments about the interdependence-conflict connection usually are silent on whether their claims are bounded with respect to space or time. Yet the influence of economic exchange on the use of force seems to have changed over time. Many studies have found that heightened trade has inhibited conflict during the period since World War II, and some observers have arrived at similar conclusions based on analyses of the nineteenth and twentieth centuries (Gasiorowski and Polachek 1982; Mansfield 1994; Oneal et al. 1996; Oneal and Russett 1997, 1999a, 1999b; Polacheck 1980; Russett and Oneal 2001; Russett, Oneal, and Davis 1998). John R. Oneal’s chapter provides some additional evidence of this sort. However, other studies focusing on the seventeenth and eighteenth centuries point out how the expansion of major power trade networks within a discriminatory, mercantilist framework aggravated commercial rivalries and sometimes stimulated armed conflict (Holsti 1991; Levy 1999; Levy and Ali 1998; Milton 1999). Commerce therefore has expanded during the past four centuries within two different policy contexts: initially embedded in a more state-directed and imperialist environment during the mercantilist era and later within a more liberal economic regime. Few studies have addressed whether this shift generated a change in either the nature or the strength of the relationship between interdependence and conflict.

Instead, large-*N* studies have focused almost exclusively on the past half-century and have largely ignored whether and how the effects of interdependence have changed over time.⁵ Taken as a whole, case studies of this relationship have addressed a much longer period. But even these analyses tend to

center on the twentieth century (e.g., Copeland 1996, 1999–2000; Papayoanou 1996; Ripsman and Blanchard 1996–97; Solingen 1998), primarily because much of the historical work on the links between interdependence and hostilities addresses World Wars I and II. Important as those wars were, however, it is not clear that they are the best testing ground for theories of these links. One reason is that the primary participants in the world wars were major powers, states that generally had large and relatively well-diversified economies and, as such, were less dependent on economic exchange than their smaller counterparts. Interdependence therefore may have a less pronounced influence on conflict between major powers than on disputes between weaker states.

Recent research indicates that the effects of interdependence are conditional on more than just the political power of economic partners. As Mansfield's chapter discusses, one set of studies found strong evidence that heightened trade flows inhibit the outbreak of military disputes between members of preferential trade arrangements (PTAs)—institutions designed to liberalize commerce among participants (Mansfield and Pevehouse 2000, 2003). In contrast, these same studies found no evidence that trade influences the resort to force among countries that do not belong to such arrangements. Further, Levy (1999; Levy and Ali 1998) concludes that the interaction among commercial rivalry, power relations, domestic politics, and other factors contributed to the friction between England and the Netherlands that bubbled over into war in 1652. In the same vein, Peter Liberman (1999–2000) reports that the effects of interdependence on belligerence during the first half of the twentieth century hinged on the offense-defense balance. And Paul A. Papayoanou (1996, 45) emphasizes that the influence of interdependence on foreign policy is contingent upon the nature of economic ties between status quo and revisionist powers and whether political institutions within the status quo power allow median economic interests a prominent voice. Finally, Håvard Hegre (2000) has shown that domestic economic conditions mediate the impact of interdependence on the likelihood of bilateral hostilities. Specifically, he finds that the liberal claim holds for nation-pairs comprised of advanced industrial societies, but not for developing countries.

In short, these studies indicate that whether interdependence promotes or inhibits conflict may depend on the interactions among various domestic and international factors. To date, however, the ways these factors mediate the relationship have not been addressed in much depth. Additional research on this issue is sorely needed and should help identify the boundaries and limits of liberal and realist claims.⁶

More generally, too little attention has been devoted to specifying and justi-

ifying the appropriate temporal domain for studies of interdependence and hostilities, as well as the set of countries that should be included in empirical analyses. Case-study analyses, for example, have focused primarily on the major powers, although existing theories address a much broader range of countries. Meanwhile, large-*N* researchers have generated samples made up of a far broader range of countries, but important differences exist among many such samples that deserve closer scrutiny.⁷ For instance, there is some quantitative evidence that the effects of trade flows on conflict depend on whether all country-pairs or only “politically relevant” dyads (i.e., those that include either geographically contiguous states or a major power) compose the sample being analyzed (e.g., Barbieri 1996a, 1996b; but see Mansfield and Pevehouse 2003; Oneal and Russett 1999a).

Taken together, all these issues point to a number of key questions. Should the liberal claim be restricted to market economies because only they develop the private commercial interests with a vested interest in peace? Should it apply primarily to politically relevant dyads? Should the basic argument apply only since the beginning of the nineteenth century—when the virtues of exploiting comparative advantage in trade relations started gaining increased attention—or should it apply to the earlier mercantile era as well?⁸ Research addressing such questions will help to establish the boundaries of claims about interdependence and conflict.

These questions take on still greater importance when we consider that assertions about the relationship between interdependence and conflict are regularly applied in the policy arena. The policy implications of this relationship are examined thoughtfully in two contributions to this volume. Bruce Russett analyzes Sino-American relations and argues that fostering trade ties is an important way to suppress the conflict-generating dimensions of that bilateral relationship. Michael Mastanduno more broadly considers the use of economic exchange as part of engagement strategies whose outcome is uncertain and outlines directions for research that would help us identify the conditions under which such strategies will succeed.

The Conceptualization and Measurement of Interdependence and Conflict

Closely intertwined with the theoretical issues raised in the preceding section is a set of important questions concerning how to define and measure both interdependence and conflict. Various conceptualizations have been used, but the differences among them and the empirical implications of these differences

have generated relatively little discussion. In this section, we therefore address the operationalization of interdependence and conflict.

Conceptualizing Interdependence

In the field of international relations, “economic interdependence” has two meanings. First, a group of countries is considered interdependent if economic conditions in one are contingent on those found in the others, for example, if inflation in France quickly places upward pressure on German prices. Second, countries are considered interdependent if it would be costly for them to rupture or forego their relationship, as would be the case if relations between the Organization of Petroleum Exporting Countries and the advanced industrial countries (which rely heavily on petroleum imports) were severed. The first of these is generally referred to as *sensitivity* interdependence; the second is typically referred to as *vulnerability* interdependence (Baldwin 1980). The key difference between sensitivity and vulnerability interdependence hinges on the costs that countries would bear should relations between them be disrupted.

Although these forms of interdependence—and the differences between them—are fairly straightforward, developing adequate indicators of them is not. First, distinct measures are needed for each of them because they often do not move in lockstep. While there may be extensive and complex economic connections between states (yielding a high level of sensitivity interdependence), they might not find it especially costly to replace these connections, either by expanding economic interactions with third parties or by making domestic economic adjustments (yielding a low level of vulnerability interdependence). Second, the best measures of sensitivity and vulnerability interdependence involve information about a counterfactual situation, namely, what the costs *would* be to country A if economic conditions changed in or relations were interrupted with country B. Difficulties obtaining reliable estimates of that situation complicate efforts to measure interdependence, but it is nonetheless important for studies of its effect on conflict to demonstrate an awareness of these costs.

Observing Interdependence

Economic interdependence has been measured in various ways, with most indicators being closely linked to the flow of international trade. In part, this reflects the paucity of data available on other forms of economic exchange. Though varied, measures of interdependence usually emphasize one of three

themes: *openness*, *vulnerability*, or *gain*. *Openness* indicators are based in one way or another on the ratio of trade to total economic output. They rely on the idea that the higher the fraction of total output crossing state boundaries, the more costly would be the interruption of such flows. Researchers who emphasize the *vulnerability* theme do not share the same level of consensus regarding measurement. However, they frequently rely on indicators of trade asymmetry. Typically, such indicators are constructed using the portion of trade (imports and/or exports) between a given pair of states, A and B, represented in the total trade of A and the total trade of B. The more these two figures differ, the greater the asymmetry between A and B.

The *gain* theme is somewhat different. As Solomon W. Polachek (1980) points out, the microtheory underpinning the central liberal claim hinges not on trade flows, per se, but on the gains from trade. At best, these gains can only be measured indirectly since, strictly speaking, they presume the observation of a counterfactual condition (viz., what total product would be if there was no cross-border trade). Economists argue that the gains from trade are correlated with import (or export) price elasticities, and Polachek has used this indicator in various studies (Polachek 1992; Polachek and McDonald 1992; Polachek, Robst, and Chang 1999). Unfortunately, the limited availability of price data has severely restricted the range of countries and years over which such elasticities can be used. Polachek (forthcoming), however, recently reported that considerable progress is being made in the collection of such data, a promising development for researchers interested in the gain-from-trade dimension of interdependence.

Of these three main conceptualizations, openness has been the most widely employed by far in the literature on interdependence and conflict. Mansfield (1994) uses such an indicator and finds that heightened global trade (as a percentage of global output) was inversely related to the frequency of war throughout the international system during the nineteenth and twentieth centuries. Oneal and Russett (1997, 1999a, 1999b; Oneal et al. 1996; Russett and Oneal 2001; Russett, Oneal, and Davis 1998) employ a related measure in a series of studies cast at the dyadic level of analysis and also report results consistent with liberal claims. Similarly, at the unit level, William Domke (1988, 131) concludes that nations more closely connected to the global economy are less likely to go to war. Thus, studies based on the openness dimension of interdependence offer considerable support for the liberal view.⁹

Need we look any further? It is frequently argued that the ratio of trade to output—the leading indicator of commercial openness—is a valid measure of both sensitivity and vulnerability interdependence (e.g., Oneal and Russett

1997). This ratio does provide a useful measure of sensitivity interdependence, since it captures the extent to which trade partners' economies are intertwined. Its validity as an indicator of vulnerability interdependence, however, rests on the claim that as commerce between countries makes up a larger portion of each country's total economic output, it is increasingly costly for either partner to replace the trade conducted with the other. The basis of this claim can be questioned on three grounds.

First, the size of the flow of trade between states (taken either by itself or as a percentage of national income) may not accurately reflect the costs to them if their economic relations were disrupted. Yet, as noted earlier, the magnitude of these costs is central to assessing the extent of vulnerability interdependence (Baldwin 1980; Gasiorowski 1986; Hirschman [1945] 1980; Keohane and Nye 1977). States trading heavily that can easily locate close substitutes for the goods being exchanged clearly are not very dependent on each other. At the same time, states conducting little trade that would have great difficulty locating substitutes for the goods being exchanged may be highly vulnerable. In this light, it is interesting to note that Norrin M. Ripsman and Jean-Marc F. Blanchard (1996–97), who focus on vulnerability by tracking trade in “strategic” goods, present results at odds with the liberal position. Similarly, the indicator of interdependence offered by Katherine Barbieri (1998) combines measures of the level of trade and trade “salience” (similar to trade concentration, which could be expected to correlate with a difficulty to find substitutes). She reports a positive association between interdependence and conflict.¹⁰

A second problem with measuring interdependence based on the ratio of trade flows between states to the national income of each trade partner is that this value tends to be highly correlated with each partner's economic size (Hegre 2000; Mansfield and Pevehouse 2000). Moreover, it is well known that economically large states tend to be politically powerful and that powerful states are disproportionately likely to become involved in military conflicts. As such, it is important to control for the independent effects of national income in studies of conflict that include the ratio of bilateral trade to national income; otherwise an inverse relationship between this ratio and hostilities might simply reflect the influence of national income alone.

Finally, the “cost” conception of vulnerability may be too restrictive since some claims regarding interdependence and conflict center not on the economic consequences of disrupting commerce but rather on the security implications of dependency or highly asymmetric trade relations. Some realists, for example, argue that highly asymmetric interdependence may restrain the

weaker partner in a dyad but is unlikely to deter the stronger partner from resorting to force should their strategic interests collide (Hirschman [1945] 1980). Thus, economic ties between states may restrain only one party from resorting to armed force should a dispute arise, while having no effect on (or possibly even inflaming the aggressiveness of) the stronger party. Meanwhile, some Marxist and world-systems scholars view asymmetric trade relations as innately exploitive and argue that this situation may heighten the prospect of conflict (Chase-Dunn 1989; Wallerstein 1984). Empirical exploration of these possibilities within the interdependence-conflict research community is rare.

Equally rare are empirical studies employing the gain conceptualization of interdependence, despite the centrality of the efficiency gains from trade to most liberal arguments, as well as to some criticisms of these arguments (e.g., Gowa 1994). While the aforementioned “counterfactual measurement” problem is one reason for the infrequent use of this theme, economists argue that the gains from trade correlate with import (or export) price elasticities and often use this measure as a surrogate. Still, few scholars have incorporated such a measure in trade-conflict studies (Gasiorowski 1986; Polachek 1992; Polachek and McDonald 1992; Polachek, Robst, and Chang 1999). The nature of the key questions on which such studies focus rightly impels most researchers to include a large number of countries in their analysis or to examine cases reaching back a century or more, but as noted earlier, the limited availability of price data makes this sort of wide-ranging inquiry virtually impossible. Nonetheless, future research needs to confront the implications of the gain dimension of interdependence, given its theoretical importance to debates in this field.

Regardless of whether empirical studies stress openness, vulnerability, or gain, they almost always rely on trade data to measure interdependence. In many cases, this strategy seems to stem from an implicit assumption that other forms of economic exchange are highly correlated with trade flows. The appropriateness of this assumption, however, is open to question, especially in an era when merchandise trade composes a dwindling fraction of all economic exchange. Further, it is not clear that all aspects of economic interdependence (commercial, capital, monetary, etc.) should have the same effect on hostilities (Barbieri and Schneider 1999; Russett and Oneal 2001, 141). A recent study by Gartzke, Quan Li, and Charles Boehmer (2001) breaks new ground on this question by comparing the effects of international trade flows, monetary relations, and the cross-border movement of capital. More studies of this sort should follow.

Similarly, recent work suggests that considering both the international institutions that guide commerce as well as the flow of trade may enrich conven-

tional measures of economic interdependence and add explanatory power to models of conflict (Mansfield and Pevehouse 2000, 2003; Mansfield, Pevehouse, and Bearce 1999–2000). Particularly important among such institutions are PTAs, arrangements that can foster interdependence through a variety of channels. The chapter by Mansfield in this volume argues that PTAs inhibit conflict among members and that these arrangements influence the relationship between trade flows and military disputes.

A related set of problems bearing on the use of trade flows to measure interdependence is data driven. In this volume, both Barbieri and Russett discuss data issues that have affected the operational indicators of interdependence chosen by different researchers; the cases that are (or are not) included in their studies; and, by extension, the conclusions they come to. These problems do not have simple solutions. As one example, the overwhelming number of studies analyzing the period since World War II rely on the International Monetary Fund's (IMF's) *Direction of Trade* (DoT) statistics on commercial flows. The long period of time during which various Communist and less developed countries did not belong to the IMF generates a considerable amount of missing data for Eastern Europe, the Soviet Union, China, and many other states that need to be included in any comprehensive analysis of interstate conflict. Furthermore, trade data are quite spotty prior to the IMF's formation in the late 1940s, which has limited the temporal scope of much of the literature on the relationship between trade and conflict.

There are also concerns about the IMF's treatment of missing data. Specifically, the DoT statistics do not distinguish between situations in which two states conduct no trade (or a trivially small amount of trade) in a given year and situations in which trade data is missing (either because the two states do not engage in trade or because no reportable information on the trade they do conduct is available). Unfortunately, a number of key cases for conflict research involve dyads made up of states that engaged in trade, but whose commercial activities are not recorded by the IMF. East Germany and West Germany, Israel and its Arab neighbors, and apartheid South Africa and the "front-line states" are just some examples. This data limitation presents scholars addressing the relationship between trade and conflict with the dilemma of whether to treat all such observations as ones in which no trade was conducted or as missing.¹¹ Either choice ensures that some observations will be coded incorrectly.

Calls for better measures of interdependence are hardly new. Indeed, a considerable amount of ink was spilled over this issue a few decades ago (Baldwin 1980; Gasiorowski 1986; Rosecrance and Stein 1973; Rosecrance et al. 1977; Tetreault 1980). But relatively little has been done to heed such calls, and the

need for better measures of interdependence is pressing if we are to resolve debates over the relationship between interdependence and conflict. It is also noteworthy that scholars' choice of theme—openness, vulnerability, or gain—seems to be strongly correlated with their position on the strength and nature of this relationship. Supporters of liberal claims tend to employ indicators emphasizing the themes of openness and absolute gain, whereas supporters of realist and neomercantilist arguments tend to highlight the theme of vulnerability and relative gain. We are not implying that the larger debate reduces to this single dichotomy, but more attention needs to be devoted to assessing why certain indicators of interdependence seem to provide greater support for one set of theories than another set.

Conceptualizing Conflict

The influence of interdependence hinges not only on the form and facet of economic intercourse being analyzed but also on the type of international conflict being explained. Taken as a whole, research in this area has addressed an extremely broad spectrum of interstate conflict behavior, from hostile statements to full-scale war, while leaving unclear—both theoretically and empirically—whether economic interdependence *should* affect low-intensity conflict, high-intensity conflict, or both. Similarly, the question of how economic relations influence the escalation of political conflict remains open, as we discussed earlier. The problem is not that studies fail to define the type of conflict being analyzed: indeed, most empirical research is quite clear on that score. Rather, the problem is that the theoretical literature tends to be quite murky about what type of conflict should be analyzed, and, partly as a result, empirical studies tend to define conflict based on the data at hand. The upshot is that existing research focuses on a wide range of different types of conflict, and at least some of the disagreement in the empirical literature can be traced to these differences.

What forms of interstate conflict should this research community address? The most ardent advocates of the liberal position would expect interdependence to inhibit political conflict at *all* levels of intensity, though much of the oft-cited work by Immanuel Kant, the Manchester liberals, and others centers on war (Doyle 1997, chaps. 7–8). Realists, meanwhile, might readily concede that trade could suppress less salient interstate conflicts, while denying any systematic effect as conflicts become more serious, placing core national interests at stake (e.g., Viner 1951; Waltz 1970). Still other advocates of the liberal proposition might argue just the opposite. States may continue to voice their differences—and perhaps even threaten sanctions or the use of armed force—but domestic trade interests will restrain them from acting on such threats (thus

preventing escalation to the highest levels of conflict) lest commerce be disrupted. Once again, the theoretical literature is composed of so many different claims that almost any empirical result can be fit to some extant theory. Improving the microfoundations of theories linking interdependence to conflict and further specifying the contingencies and boundary conditions of these theories will certainly help matters. But more attention to the different types of interstate conflict is also required to resolve existing debates in this research community. Future work should explicitly consider the likely effects of interdependence on lower-intensity conflict (trade disputes, sanctions, and threats of force), higher-intensity conflict (mobilization, the use of armed force, and full-blown wars), and the escalatory and de-escalatory processes that move conflicts from one level to another.

Observing Conflict

Among empirical studies, methodological orientation seems to play a large role in determining the facet of conflict that is addressed. The vast bulk of the historically oriented case studies focus on international war—especially major power war. In contrast, most statistical analyses center on a much broader range of interstate disputes, although this body of research is marked by considerable disagreement about which type of conflict should be addressed. Some of the earliest statistical research on interdependence and hostilities (Polacheck 1980; Pollins 1989a, 1989b) relied exclusively on event data sets, such as the Conflict and Peace Data Bank (COPDAB) and the World Event Interaction Survey (WEIS) (Azar 1980; McClelland and Haggard 1969). The overwhelming number of such studies conducted during the past ten years has focused on militarized interstate disputes (MIDs), which are episodes in which one state threatens, displays, or uses force against another state (Gochman and Maoz 1984). But there has been remarkably little discussion of either why this focus is theoretically appropriate or the implications of shifting among these different data sets.¹²

The COPDAB, WEIS, and MID data sets capture markedly different types of foreign policy behavior. COPDAB and WEIS record events over the broadest spectrum of international interactions—cooperative as well as conflictual—from low-intensity hostility (such as a verbal protest) to wars. In contrast, the MID data set only records instances involving the threat, display, or use of armed force. Subsequent interactions surrounding this triggering incident are aggregated into a single data point or observation, an “event” that might persist for years. The differences between these two types of data may be substantial in terms of both the conceptualization and the observation of conflict. In

the COPDAB tradition, conflict is conceived as a continuous flow marked at regular time intervals. The MID tradition, meanwhile, views conflict as a discrete episode whose time span may be very brief or sometimes quite prolonged.

Consider a well-known result from earlier research on interstate conflict: the correlation between “flows” of conflict and cooperation for a given pair of states tends to be high (Dixon 1983). In other words, states that interact often will engage in both cooperative and conflictual ways—finding disagreement though they may be essentially friendly or working to resolve emerging conflicts through more cooperative behavior. This widespread pattern led many researchers using COPDAB or WEIS to construct a “net conflict” or “net cooperation” indicator that captured the overall diplomatic climate between pairs of states (Polachek 1980; Pollins 1989a). But such measures of diplomatic relations are based on a very different way of conceptualizing friendliness and hostility than MIDs, which are by definition episodic, sometimes brief, sometimes prolonged, and at least fairly conflictual.¹³ How would COPDAB-based and MID-based pictures of interstate conflict patterns compare? Do MIDs simply map onto the highest end of the COPDAB conflict scale? Do countries engaging in MIDs (especially at the lower levels, which include episodes like fishing disputes) also exhibit high flows of cooperative behavior to settle such controversies? Jon C. Pevehouse’s contribution to this volume provides an important initial look at these questions, while Rafael Reuveny’s chapter calls for an end to exclusive reliance on MID data in this research community and the reintroduction of event-based measures of conflict and cooperation.

In sum, more attention needs to be paid to the aspect and type of political conflict that should be the focus of work on interdependence and hostilities. It is clear that the prevailing diplomatic climate, the occurrence or absence of a militarized dispute, and war are only weakly linked. Consequently, they should not be used interchangeably in empirical studies as all-encompassing indicators of “conflict.” The tendency to do just that (albeit implicitly) is one reason why an understanding of the relationship between interdependence and conflict remains elusive. Indeed, research probing more deeply the meaning and measurement of both interdependence and conflict would itself make an important contribution to our understanding of the links between the two.

Methodological Issues and Advances Relevant to the Study of Interdependence and Conflict

Despite the lack of attention devoted to the implications of analyzing different types of interstate conflict, quantitative research on the relationship between

interdependence and various aspects of conflict has led to the development of important methodological advances that, in turn, seem likely to improve our understanding of these links. Several recent advances are discussed and used in the following chapters.

For example, liberal theories typically posit a simultaneous relationship between interdependence and conflict. As Pollins (1989b) points out, underlying many such theories is the presumption that trade-reliant groups in society recognize the welfare-damaging effects of conflict and restrain their governments from resorting to force *because* conflict reduces trade. Limitations of data and estimation techniques, however, have greatly inhibited attempts to estimate models of interdependence and hostilities in simultaneous form. These limitations grew more severe as the field moved toward use of MID data to measure conflict, since techniques for simultaneous estimation of models including a dichotomous endogenous variable have only begun to emerge. Nonetheless, simultaneous-equations models of trade and certain aspects of conflict have been estimated by Polachek (1980) and Mansfield (1994, 186–90), both of whom found that heightened commerce dampens hostilities. In addition, efforts to test for simultaneity using Granger methods were made by Mark Gasiorowski and Polachek (1982) and by Reuveny and Heejoon Kang (1998), although these efforts yielded conflicting results. Finally, Soo Yeon Kim (1998) and Pollins and Reuveny (2000) have applied some newer maximum likelihood techniques to analyze the relationship between trade and military disputes in simultaneous form. Future efforts to specify and estimate the reciprocal nature of the interdependence-conflict relationship will likely be aided by Richard J. Timpone's contribution to this volume, which provides a thorough exploration of the issue of endogeneity and the current state of simultaneous-equation estimation techniques.

In addition, various methodological advances have improved single-equation models of interdependence and conflict, which remain the workhorse of statistical research on this topic. We noted earlier that most statistical analyses of the liberal claim during the past decade have focused on explaining MIDs, events that are almost always coded as a dichotomous variable. Also, such analyses almost always include observations for many dyads in the same year, as well as observations for each dyad over time. This raises two potentially thorny issues for model estimation: temporal dependence across observations and the possibility of heterogeneity (i.e., the possibility that qualitative differences may exist between dyads or even within a given dyad over time) (Beck, Katz, and Tucker 1998; Beck and Katz 2001; Green, Kim, and Yoon 2001; King 2001; Oneal and Russett 2001). Equally, Gary King and Langche Zeng (2001)

have argued that the rarity with which MIDs occur can lead to biased coefficient estimates when standard statistical techniques (i.e., logit and probit models) are used to analyze militarized interstate disputes. They have developed a statistical technique for analyzing models where the dependent variable is a rare event that may prove useful in estimating the effects of commerce on conflict. The most recent methodological advances pertaining to this set of topics are discussed by Janet M. Box-Steffensmeier, Dan Reiter, and Christopher J. Zorn. Their chapter shows how the family of duration models (and, more specifically, proportional hazard, “cure,” and “frailty” models) can be used to address these estimation issues.

While recent advances in statistical methods hold great promise for this research community, it is important to underscore our belief that the study of interdependence and conflict will be impoverished if we limit our attention to large-*N*, data-analytic studies. Resolving issues of historical boundedness, causal mechanisms, and contingency that are central to the relationship between interdependence and conflict—as well as issues surrounding the definition and measurement of both factors—will surely be aided by carefully constructed case studies. Readers will find thoughtful guidance on this approach in the chapter by Norrin M. Ripsman and Jean-Marc F. Blanchard.

Finally, the complexity, endogeneity, and possible nonlinear nature of the interdependence-conflict relationship suggests that simulation, or “computational modeling,” could be a powerful tool for this research community. Early efforts to employ this method were made by Pollins (1985) and Pollins and Peter K. Brecke (1987), but relatively few subsequent studies exploring the influence of interdependence on hostilities have used it. In this volume, David H. Bearce and Eric O’N. Fisher demonstrate how computer simulation can provide unique insights into the connection between international economic relations and war.

Conclusion

Just over a decade ago, a well-known review of the causes of war lamented the dearth of research on the relationship between economic interdependence and hostilities (Levy 1989, 261). Since then, scholars of international relations have addressed this issue with considerable enthusiasm, stimulating a still modest but rapidly growing literature. These recent studies have made considerable headway in assessing some key aspects of the influence of interdependence on political tensions.

Nonetheless, this body of literature has yet to resolve many core issues. First,

a stronger theoretical foundation is needed for many of the competing claims on the relationship between interdependence and conflict. Second, too little stress has been placed on whether this relationship is stable over time—especially over periods before World War II—and across countries. More generally, there is a growing indication that the strength and nature of the effects of interdependence depend on various domestic and international factors. A better understanding of these factors and how they affect the links between economic exchange and political antagonism is badly needed. Third, existing studies often rely on different definitions and measures of both interdependence and conflict. While that poses no inherent problem, these differences seem to contribute to variations in the results of empirical studies, and existing theories offer no clear guidance as to which definitions and measures are most appropriate. Moreover, the most widely used measures of interdependence are excessively narrow, focusing on trade flows. There is a glaring need to resolve questions about the merits of relying on particular indices of interdependence and conflict, as well as to assess the sensitivity of empirical results to the use of different measures.

The following chapters provide fresh insights into these crucial issues. The diversity of theoretical approaches and methodological perspectives represented among the contributors prevents premature closure on these central questions while offering a broad range of avenues for future research. Taken as a whole, this volume makes considerable headway in addressing how and to what extent interdependence influences hostilities, the causal mechanisms driving this relationship, and the most appropriate ways to model and test it. These advances are sure to improve our understanding of the political economy of national security, the causes of war, and the politics of global economic relations.

The following chapters also bear on key foreign policy issues. Various Western governments—most recently the Clinton and Bush administrations—have argued that fostering international economic openness will promote both peace and prosperity. Existing studies offer general support for this position, though central questions remain about how to move from declarative statements and claims of empirical regularity about the relationship between interdependence and conflict to the normative realm of policy prescriptions. Equally, using findings grounded at the dyadic or systemic level of analysis as a basis for policy recommendations for individual nations requires that we gain a clearer understanding of exactly how economic statecraft bears on states' security policy. More generally, additional research is sorely needed to determine more precisely how, when, and to what extent economic interdepend-

dence affects the tenor of international politics. The contributions to this volume chart a course for that work.

NOTES

Parts of this essay appeared in an earlier form in “The Study of Interdependence and Conflict: Recent Advances, Open Questions, and Directions for Future Research,” *Journal of Conflict Resolution* 45 (2001): 834–59.

1. For an overview of the various strands of this argument, see Doyle 1997; Keohane 1990; and Stein 1993.

2. On this point, see also Baldwin 1980; Grieco 1990; and Keohane and Nye 1977.

3. The burgeoning empirical literature that has emerged on this issue over the past decade or so includes Barbieri 1996a, 1996b, 1998; Beck, Katz, and Tucker 1998; Beck and Tucker 1996; Blanchard, Mansfield, and Ripsman 2000; Copeland 1996, 1999–2000; Domke 1988; Gartzke 1998; Gartzke, Li, and Boehmer 2001; Gasiorowski 1986; Gelpi and Grieco 2000; Kim 1998; Levy 1999; Levy and Ali 1998; Liberman 1999–2000; Mansfield 1994; Mansfield and Pevehouse 2000, 2003; Mansfield, Pevehouse, and Bearce 1999–2000; Oneal et al. 1996; Oneal and Russett 1997, 1999a, 1999b; Papayoanou 1996; Polachek 1992; Polachek and McDonald 1992; Polachek, Robst, and Chang 1999; Pollins 1989a, 1989b; Pollins and Reuveny 2000; Reuveny and Kang 1998; Ripsman and Blanchard 1996–97; Russett and Oneal 2001; Russett, Oneal, and Davis 1998; and Solingen 1998. For overviews of this literature, see Barbieri and Schneider 1999; Mansfield and Pollins 2001; and McMillan 1997.

4. Polachek (1980) offers the most explicit microtheory for the connection between economic interdependence and interstate conflict. Pollins (1989b) presents a parallel specification to connect international conflict and cooperation on changing levels of trade. But in both works, the linkages between specific actors and state policy are only implicit within the larger argument. Their estimation models, we might say, are simply reduced forms of the theoretical stories they tell. We argue here that this research community should now move beyond such reduced-form specifications.

5. Some studies of the impact of interdependence on conflict have analyzed the period prior to World War II (Barbieri 1996a, 1996b; Oneal and Russett 1999b; Russett and Oneal 2001), as have some analyses of the influence of conflict on interdependence (Gowa 1994; Gowa and Mansfield 1993; Morrow, Siverson, and Tabares 1998). However, a number of these studies focus only on the great powers, and none of them reach back further than the last quarter of the nineteenth century—still long after the mercantilist era—due largely to the lack of reliable economic data for many states.

6. On this issue, see also Keohane 1990; Mastanduno 1999–2000; and Stein 1993.

7. Another complicating aspect of any commercial network is that all bilateral relationships exist within an interconnected web. A change in any bilateral relationship will ripple through many other dyads. Pollins and Kirkpatrick (1987) tried to estimate para-

meters for the trade-conflict relationship in a system of equations, realizing only limited success. Recently, Penubarti and Ward (2000) have employed modern methods in spatial autocorrelation to address the same question and find that our understanding of the main relationship may be sensitive to such network effects.

8. On the development of both mercantilism and liberal economic thought, see Irwin 1996.

9. However, such support is by no means universal. See, for example, Beck and Tucker 1996; and Beck, Katz, and Tucker 1998.

10. Oneal and Russett (1999a) and Oneal (this volume) adjust Barbieri's measure and find that an inverse relationship exists between interdependence and conflict. Our point is not to settle this controversy but rather to stress that studies employing explicit measures of interdependence that go beyond the popular "openness" theme are warranted.

11. On this issue, see Barbieri 1996a, 1996b; and Oneal and Russett 1999a.

12. To be clear, our point is not that scholars should necessarily focus on a single type of conflict but rather that it is important to link the hypothesized effects of interdependence more explicitly to different conflict stages and processes.

13. Penubarti and Ward (2000, 10) argue that these very characteristics could make MIDTs particularly unsuitable to testing the relationship between trade and conflict. Whether one accepts this point or not, we submit that researchers would be better served by considering various meanings of "interstate conflict" rather than relying exclusively on the given concept and measurement of MIDTs.

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