REFLECTION, EVALUATION, INTEGRATION

Structural Realism and the Causes of War*

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Structural realism is the most prominent contemporary version of real-politik, the traditional paradigm in the study of world politics. However, given recent evidence that favors dyadic over systemic explanations for the outbreak of war, it is appropriate to reassess the achievements of structural realism in this, its most important area of application. A review of studies that use capability-based variables, aggregated at the level of the system, to account for war leads to the conclusion that structural realism remains viable but requires elaboration to compete effectively with alternative theories. In particular, the highest priority for structural realism is the development of a rational choice-based theory of state behavior in response to system structure.

Realpolitik or political realism has been the traditional paradigm in the field of international relations throughout the post–World War II era (Haas, 1953; Gulick, 1955; Morgenthau and Thompson, 1985). It represents a combination of models, assumptions, parameter estimates, and other elements "held together by their common focus on concepts including and related to national material capabilities, power, perceived power, major power status, revisionist and status quo powers, coalition formation via the balance of power, resolve, and commitment" (Wayman and Diehl, 1994:26). Yet, despite the prominence of realpolitik, it would not be unfair to characterize realism as more of a worldview than a scientific theory. Indeed, focusing primarily on the practice of statecraft as it does, realpolitik is, at least implicitly, basically normative in character. (Conflicting views on realpolitik can be found in Mansbach and Vasquez, 1981; Holsti, 1985; Vasquez, 1993; Kegley, 1994; and Riggs, 1994.)

By contrast, structural realism, also known as neorealism, strives for status as a scientific theory even though it maintains some of the terminology of realpolitik. In essence, neorealism seeks to provide a parsimonious and coherent theoretical framework that can explain behavior within the international system primarily in

terms of characteristics or parameters of the system itself (Waltz, 1986:121). Indeed, the systemic nature of structural realism is what seems most at odds with recent trends in international relations, even among scholars who accept many of the underlying assumptions of realpolitik. Recent research has clearly favored dyadic over systemic explanations for understanding such key phenomena as the outbreak of war (Bueno de Mesquita and Lalman, 1988, 1992).

But does structural realism have nothing to contribute to our attempt to understand the causes of war? Should it, and its assumptions regarding the conditioning role of the international system, be discarded? This review attempts to answer these questions by looking at representative theoretical and empirical studies that fit within the domain of structural realism and by assessing their contribution to enhancing our understanding of war and war propensity. The review does not try to do the impossible: appraise all research implicitly linked to structural realism. Such a review would include all studies that do not reject the assumptions of structural realism and that use *capability-based* variables, aggregated at the level of the system, to explain war. Instead, this article narrows its focus to a few highly sustained efforts to test propositions about the impact of system properties on the incidence and severity of war.

Although much of the evidence reviewed here will be familiar to students of international conflict, the conclusions derived from this assessment are quite different from those reached by primarily theoretical treatments of structural realism. Specifically, the evidence suggests that neorealism suffers more from inadequate specification than from outright error. In particular, auxiliary assumptions about the motives, risk propensity (Bueno de Mesquita, 1980), priority setting, satisfaction with the status quo (Stoll and Champion, 1985), objectives (Schroeder, 1986), intentions, status, and preferences of states are required to explain the findings that have been generated. In short, structural realism requires a supporting theory of state behavior. The concluding section of the article outlines practical steps that we can take to make structural realism a coherent, integrated, and successful framework and the prospects for developing a more effective version of this theory.

Structural Elements and the Explanation of War

Kenneth Waltz (1979), in one of the most influential presentations on structural realism, argued that an effective theory of international politics must be systemic rather than reductionist in nature. According to Waltz (1986:121), the operation of any system transcends the characteristics of its units (that is, a system is more than the sum of its parts). Therefore explanations of characteristics of the international system—such as the propensity for war—cannot be based on an analysis of foreign policy per se. We must look to the impact of system properties themselves (system-level variables), because the enduring properties of the system play a vital role in explaining its processes. (Gilpin, 1981, also makes this argument.)

To clarify this idea, Waltz introduced the metaphor of the oligopolistic market from economics. Within an oligopolistic market, the ability of firms to arrive at some convergence regarding prices or other terms of competition cannot be adequately understood either by examining negotiations among the firms or by studying their internal decision-making processes. Rather, it is the structure of the market itself, in which a few key actors collectively hold the dominant market share, that explains the tendency for price competition to be dampened through mutual adjustments over time. The structure of the system, in short, conditions the behavior of actors in a predictable manner. In similar ways, the structure of the interna-

tional system conditions the behavior of states and is required to explain general-
ized or aggregate patterns of state behavior.

The system-level theory that Waltz proposes to explain the operation of the
international system has come to be known as structural realism. Four key assump-
tions underlie this theory:

1. The most important actors in world politics are territorially organized entities
   (city-states and modern states).
2. State behavior is rational, or, more specifically, the preferences of states are
   assumed to be transitive (that is, if X is preferred to Y, and Y is preferred to
   Z, then X is preferred to Z) and to compete vis-à-vis alternatives with dimin-
   ishing marginal utility (that is, additional increments provide progressively
   smaller amounts of satisfaction).
3. States seek security and calculate their interests in terms of their power
   relative to others in the international system.
4. The international system is characterized by anarchy, that is, the absence of
   any effective authority over states that can ensure their compliance to agree-
   ments or norms.

These four assumptions consistently appear in a wide range of sources that can be
characterized as falling within the domain of structural realism (James, 1993).

Although these four assumptions provide a parsimonious theoretical framework,
only a few general propositions regarding the impact of system properties on war
can be traced directly to them. The most prominent of these is the expectation
that war will occur periodically as self-interested states engage in a competitive
process of balancing their power, a process required of rational actors by the
condition of anarchy. In addition, there is the expectation that "the distribution of
military might among the great powers plays an influential role in determining the
length of time between the wars for domination that great powers are expected to
wage" (Kegley and Raymond, 1994:47–48). These propositions have focused sub-
sequent debates among structural realists primarily on what sort of power-based
characteristics of the system (structural elements) are most likely to lead to lower
levels of interstate warfare.

Unfortunately, structural realism's limited axiomatic base means that more spe-
cific conclusions about the relationship between structural elements of the inter-
national system (for example, the distribution of power capabilities or the
pervasiveness of alliances) and war or other events require elaboration. The gen-
eral expectation that wars will recur in an interstate system composed of self-inter-
ested and competitive units, for example, says nothing about how the distribution
or concentration of capabilities might affect the timing, frequency, or severity of
wars.

This review will look at theory and research linking the four structural elements
that structural realists have focused on in exploring the impact of system-level
variables on war proneness. These four elements are: (1) the number of great
powers in the system, or system polarity; (2) the concentration of capabilities in
the system; (3) the pervasiveness of alliances; and (4) the degree of polarization
between competing blocs. Each of these structural elements has been the subject
of sustained research consistent with structural realism. All have produced insights
into the theory. Perhaps most important, the research on each poses additional
assumptions that would be required to generate a clearly interconnected theoreti-
cal framework that is consistent with the core assumptions of structural realism but
capable of successfully explaining the linkage between key elements of the inter-
national system and war proneness.

Great Powers or "Poles"

A classic debate over what kind of international system has a greater propensity toward war took shape over thirty years ago (Deutsch and Singer, 1964; Waltz, 1964) and persists to this day. The debate has generally been cast as a confrontation between bipolarity (systems with two great powers) and multipolarity (systems with more than two great powers). The issue has gained currency today because even by the most demanding criteria for what constitutes a great power, or "pole," the number of poles in the present system appears to be in transition (Dunne, 1995). Moreover, polarity can be considered a basic structural element of the system. As such, one might expect that few additional assumptions would be required to establish its linkage to such phenomena as war proneness. However, the reverse is actually the case. Excluding arguments that pertain only to certain historical periods or do not rely on capability-based factors (for example, Gaddis, 1986, 1987; Powell, 1989), advocates of *all* types of systems—whether bipolar, multipolar, or a hybrid bimultipolar—have been forced to rely on assumptions beyond those of classic structural realism in order to make their case.

The Case for Bipolarity. According to its advocates, bipolarity offers four theoretical advantages in terms of lowering the incidence of war.

First, with only two leading powers, the system should be simpler to manage (Waltz, 1964; Morgenthau and Thompson, 1985; Gaddis, 1986, 1987). Coalitional dynamics are irrelevant, if not absent, because of the preponderance of power at the two poles—by definition other states are too weak militarily to tip the balance. As a result, conflicts over spheres of influence should be easier to control, because it is less difficult to obtain and uphold agreement between two parties than among a larger number (Olson, 1965; Sandler, 1992). Moreover, in the competition for influence around the globe, each great power possesses a relatively clear set of beliefs about its limitations and the origins of its problems.

Second, all events and actions that threaten to change the distribution of power between the two major competitors will be deemed relevant by them, and thus the power equilibrium within the system is more likely to be maintained (Waltz, 1964). Concern for relative standing ensures that, if possible, neither protagonist will allow its rival to achieve an overwhelming position (Grieco, 1990). Should the adversary increase military expenditures, recruit allies, or deploy forces in a manner that is perceived to be aggressive, it can anticipate a response in kind. (Of course, this situation does not rule out short-term, reversible decreases in resources allocated toward the military competition. Internal political pressures, on occasion, may require relief.) Even conflict in the peripheries is likely to attract the attention of each leading state. Given the emphasis on matching their rival's efforts, the leading states are likely to remain well informed and ready to act (Gilpin, 1981:235–237). However, while the two leaders will compete for allies, which is a potential source of instability, only efforts by the principal actors have the potential to preserve the equilibrium (Gaddis, 1987:222). Therefore, the payoff of this competition is not a direct or vital increment in military security, which would threaten the power balance. Instead, symbolic value and regional military burden-sharing largely motivate the search for coalition members.

Third, the preponderant resources of the two leading states should encourage them to act as system managers, intent on limiting violent conflict (Waltz, 1964; George, 1988:644). The evenly matched powers would be expected to weigh marginal gains against potentially much greater losses resulting from conflict that escalates beyond control. Adventurism by clients is likely to be restrained, because it ultimately could endanger the status of the leaders themselves.

Finally, recurrent crises will provide a substitute for war, with disagreements being handled in an incremental fashion (Waltz, 1964). Given the capabilities and attentiveness of the leaders, crises are anticipated to be more cathartic than life threatening. Rather than accumulating grievances, which could explode into world war, third-party conflicts are contained so as to relieve tension, at least for the main rivals.

In short, although some of the apparent strengths of a bipolar system stem directly from the core assumptions of structural realism (for example, competition for power, emphasis on marginal gains from conflict, interest in preserving the status quo), others do not. Critical among the latter are the emphasis on smaller coordination problems in managing the system, the heightened awareness of the leading states, and the expectation that recurrent crises will provide a safety valve.

The Case for Multipolarity. Whereas advocates of bipolarity see a system with more than two poles as one in which "dangers are diffused, responsibilities unclear, and definitions of vital interests easily obscured" (Waltz, 1988:46), other scholars see a multipolar system as far more likely to remain stable and relatively free of destructive wars than a system with only two poles.

In a prominent counterpoint to Waltz, Karl Deutsch and J. David Singer (1964) note that a larger set of major powers allows for a greater number of interaction opportunities. This property makes confrontation less likely, because each notable state directs a smaller share of its attention to any other. Therefore, sporadic conflicts involving different subsets of states—all other things being equal—are less likely to produce a buildup of hostility in the system as a whole.

A further effect of the proliferation of central actors is the dampening of arms races, given the lower level of dyadic confrontation (Deutsch and Singer, 1964; Copper 1975:415). In a system with two competing superpowers, "each action by one will be viewed as a strategic gambit by the other" (Rosecrance, 1966:315). Thus any change in the status quo will be seen as threatening, increasing the likelihood of an arms race. This outcome represents the more negative side of the increased attentiveness by the two leading powers to each other in a bipolar world.

In a world of multiple great powers there are also opportunities for one or more powers to play a "balancing" role. According to a balance-of-power model constructed by Emerson Niou, Peter Ordeshook, and Gregory Rose (1989:78), any advantage in relative capabilities between great powers should ultimately lead to a war of conquest. Thus, stability is more likely in a world with at least three major powers, each of which controls less than 50 percent of the total capabilities. In a tripolar world, for example, inequalities in relative capabilities can be offset if the two weaker powers align against the third. Such alignments should not lead to elimination of the solitary great power, however, because it can always attempt to divide the partnership by offering one of the members a better deal. By contrast, in a world with just two leading states, such balancing is impossible, and only strict equality can ensure stability. In short, at least in theory, coalitions can assist in the prevention of war.

Finally, multipolarity "lessens the total nature of war" (Deutsch and Singer, 1964; Copper, 1975:415). Cross-cutting cleavages help to prevent division of major powers and client states into two exclusive coalitions. If and when warfare occurs, it is less likely to be all inclusive and perceived as zero-sum. By contrast, in a bipolar system, states seeking security will tend to see affiliation with one of the two leading military powers as the most obvious path to pursue. This process contributes to the system's level of competitiveness.

Here again, arguments regarding the benefits of multipolar systems must rely on assumptions that go well beyond the axioms of structural realism. The balancing

hypothesis of Niou, Ordeshook, and Rose, for example, assumes that attention can be restricted to the leading powers and that alliances will involve temporary cooperation, not permanent institutions. Moreover, they implicitly assume that the likelihood of strict equality emerging or being maintained in a bipolar world is not great. (By contrast, Manus Midlarsky [1988] argues that an even distribution of capabilities is *exactly* what one would expect under bipolarity, assuming, in this case, that resources accumulate without bias.)

The Mixed Results of Empirical Studies. The inability of structural realism, as it exists, to provide a clear theoretical understanding of which system is likely to be more war prone is reflected in the many empirical studies that have addressed this question. The pattern of results generally supports the case for bipolarity, at least as it has appeared in the twentieth century. No study has resulted in uniform support for multipolarity. The findings, however, are sensitive to the alternative measures of the dependent variable that were used. Moreover, variations in conceptualization, measurement, and method make comparisons challenging. These problems raise additional questions about the adequacy of the theoretical base.

Among the studies providing support for bipolar systems, those by Michael Haas (1970) and Ted Hopf (1991) are particularly revealing. Haas examines the capability distribution and the relative incidence of warfare in twenty-one geographic subsystems from the eighteenth century onward. His results are typical of many subsequent studies: "If a state or group of states is willing to accept long wars that are won by aggressor states, bipolarity provides an escape from the more war-prone character of historical multipolar subsystems. Multipolarity entails more violence, more countries at war, and more casualties; bipolarity brings fewer but longer wars" (Haas, 1970:99–100, 121).

Hopf (1991:478–479, 486) assesses bipolarity and multipolarity in a very different setting. He uses data on European states in the sixteenth century (assembled from various sources) to compare the number of poles and the balance between offensive and defensive forces (in both strategic and tactical terms) as alternative explanations for war. Hopf identifies both multipolar (1495–1521) and bipolar (1521–1559) periods, based on the two leading states' share of total system capabilities and other indicators. He finds that bipolar systems are marginally less warlike, but he also argues that the frequency, magnitude, and severity of war in the two periods can be better explained by the essentially stable balance between offensive and defensive forces.

Studies that lend support to the case for multipolarity are even less clear-cut. Frank Wayman (1985, 1984), for example, focuses on the warlikeness of the system and the share of major power capabilities held by its two greatest members. He defines bipolarity as a system in which the two leading powers together hold over 50 percent of major power capabilities. Although Wayman (1985:126, 131) finds the multipolar years to be "slightly less war prone," 75 percent of the wars in those years were of high magnitude with the percentage being practically reversed for wars during bipolarity. Thus, even though Wayman's findings generally support the argument that the multipolar system is less war prone, his data agree with those of Haas that multipolar systems produce more intense conflicts.

Similarly, Michael Brecher (1993:76) has compared crises (that is, opportunities for war) that occur in four distinct twentieth-century systems. His results provide marginal support for the multipolar argument. Twenty percent of the conflicts that occurred were in the multipolar period (1918–1939) compared with 24 percent for the bipolar period (1945–1962).

Especially interesting are the results of Charles Ostrom and John Aldrich (1978). Using data from the Correlates of War (COW) Project (Small and Singer, 1982),

Ostrom and Aldrich find the probability of war to be "moderately large" with two poles, minimal with three, greater with four and five, and drastically lower with six. They have duplicated these results with a more sophisticated, regression-type analysis. Unfortunately, these patterns are not compatible with any set of assumptions. The relative stability of the tripolar system, for example, can be explained by the "balancer hypothesis." Three centers of power permit one state to act as a balancer by allying with the state on the defensive. But a five-power system also should fit this hypothesis if approximate (that is, functional) equality is assumed. With five major powers, a third power can join an existing coalition that favors the status quo, thereby standing in the way of the two revisionist powers. Yet, the results of Ostrom and Aldrich point toward a more warlike nature for a system with five leading powers. Likewise, the relative peacefulness of a system with six or more centers can be explained by the Deutsch-Singer hypothesis: six powers are sufficient to disperse attention and lessen the impact of confrontation. But again, if six is sufficient, then why is five not enough? To account for these results, it is necessary to combine the number of poles with some other set of factors or assumptions. Otherwise, only a series of ad hoc explanations can cope with the twists and turns encountered in the statistical analysis.

While these studies show mixed results with respect to the impact of polarity on the war proneness of different systems, other studies have found no support at all for asserting that this basic structural element is important. For example, Jack Levy (1984:349) assembled a list of wars involving the great powers that occurred between 1495 and 1975 using data from COW and from a compilation by Sorokin (1937). Levy analyzed three indicators: (1) *frequency* or number of wars in a given period; (2) *magnitude* or total number of nation-years of war among participating powers; and (3) *severity* or number of battle fatalities. He found no connection between these statistical measures and the number of poles in a system, which ranged from four to eight during this time period. "It is precisely *because* the size of the Great Power system has varied so little," Levy (1984:350–352) concludes, "that it cannot account for significant variations in stability." Arguments about the number of poles must rely on *discontinuities,* such as the difference between two versus three or more great powers.

The ambiguous empirical results of studies like those just reviewed led Bruce Bueno de Mesquita and David Lalman to compare system-level models with dyadic explanations for escalation to war. In their study, the most comprehensive systemic model reduces the probability of error in predicting war by only 10.7 percent. Bueno de Mesquita and Lalman (1988:13) conclude that "structural dimensions, contrary to arguments in the literature and to conventional wisdom, show no sign of significantly altering the likelihood of international warfare." Expected value calculations at the dyadic level were superior in predicting the outbreak of war.

Importantly, while Bueno de Mesquita and Lalman's study serves as further evidence that any explanation of war should include ideas about how states respond to the international setting, it also indirectly reveals the limitations of a strictly dyadic focus. These scholars acknowledge that the probability of war between adversaries, an indicator used quite successfully to forecast outcomes of individual cases, cannot issue predictions at the level of the system (that is, for data aggregated by years). In other words, although a theory of state behavior is a critical complement to understanding how system structure may influence such systemic properties as war proneness, such a theory may not adequately explain phenomena within the natural preserve of structural realism, that is, in the international system as a whole.

Methodological Problems and Challenges. Many of the problems these studies encounter in providing a definitive analysis of the impact of polarity on war proneness

can be attributed to ambiguities in method and measurement. One of the key problems is related to the adequacy of the data. Hopf (1991), for example, who looks at the sixteenth-century European state system, confronts the inherently problematic nature of data on international conflicts that took place centuries ago. Although Hopf found only minimal support for the proposition that system polarity affects war proneness, it is reasonable to argue that any substantial difference in war experiences resulting from changes in the number of poles could be hidden by measurement error, even when following the best procedures.

A more general concern is with interaction effects; for example, polarity and range of available interaction opportunities or changing technology might combine to create differences in war proneness that would not occur with each by itself. Midlarsky (1993), for example, has argued that the polarity of the system could be much more important when mutual gains become difficult to achieve. Under such conditions, the ability of bipolar powers (or "duopolists") to manage the international system may make bipolarity far more successful. Alternatively, Hopf (1991, 1993) suggests that the dominance of strategic defense, not bipolarity, accounts for the stability of the Cold War and that multipolarity under current conditions should be nothing to fear. Unfortunately, the limits of structural realism's theoretical framework become apparent here. The axioms of structural realism provide no means for specifying what other factors might be important or how the interaction of these factors will influence war proneness.

A similar problem involves variation in measurement of both independent and dependent variables. Clearly, the studies cited here use a variety of indicators of war proneness and system polarity. In effect, these studies treat diverse aspects of warfare as being interchangeable. Even if bipolarity or multipolarity exhibit significant differences regarding one facet of war, why should every other potentially revealing indicator be expected to exhibit the same pattern? Consider, as an illustration, the findings that result when we compare the frequency and intensity of great power wars. Frequency correlates negatively with four different measures of intensity, including the number of battle deaths and escalation to general war (Levy and Morgan, 1984:743–744). How can *any* element of system structure be expected to have the same effect on the different dimensions of warfare if some are known to be related inversely to others? It is entirely possible, as the empirical studies suggest, that the alternative systems may pose different dangers. Bipolarity may be better in terms of the sheer *number* of interstate wars experienced, because the menace of a single, catastrophic event enables leaders to control their clients. In seeking to weaken its rival, however, each superpower might harass the other through a wide range of limited ventures, making bipolarity prone to proxy wars, insurrections, and covert operations. Thus, although a bipolar system might lower the likelihood of World War III, all other things being equal, it might generate "many and nasty Third World wars" (Roskin and Berry, 1990:504, 505).

Finally, in order to generalize from these studies, we must confront the inherent limitations of their systemic or geographical foci. The overwhelming majority of the studies discussed here report highly aggregated findings in either global or "Eurocentric" terms. Although it is useful to know which systems are more warlike in both an overall sense and for great powers alone, aggregate patterns can hide important variations at the regional or unit levels of analysis. Hypothetically, the frequency (or intensity) of wars, for example, could be higher in multipolar systems when considering the experiences of states collectively, but lower when considering the experiences of the great powers on an individual basis. In other words, in a multipolar system, a few states could be involved in the vast majority of wars, making totals for the system as a whole appear high but hiding the fact that most of the great powers actually experience few wars.

The Need for a Theory of State Behavior. Although attention to methodological issues such as those described above is necessary, sorting out the impact of such system properties as polarity on war proneness requires something more. Theoretically plausible arguments can and have emerged in favor of both multipolarity and bipolarity. All sets of arguments, however, depend on assumptions about the international system, collective behavior, or state behavior that go beyond structural realism's core assumptions. The axiomatic framework of structural realism itself cannot determine which set has greater theoretical validity. Either system configuration can be regarded as superior without contradicting structural realism as it exists, and empirical studies alone cannot clarify the issue.

What is required to articulate a more satisfactory theory of structural realism? Arguments among scholars about the stability or instability of tripolar systems, the three-actor variant of multipolarity, provide one clue. Niou, Ordeshook, and Rose (1989:95) predict that in a system with three principal actors, each of which possesses no more than 50 percent of the system's resources, "no nation will be eliminated." In other words, in a tripolar system war involving the great powers will either not occur or be severely constrained because of the relatively straightforward opportunities that exist to balance power through shifting alliances. In contrast, Robert Gilpin (1981:91) considers tripolarity to be the most unstable system of all: "the emergence of a powerful China, Japan or united Europe would undoubtedly prove to be a destabilizing factor in contemporary world politics." Gilpin's prediction makes the seemingly counterintuitive assumption that tripolarity would encourage either (1) a war between a firm coalition of two actors and the third power, or (2) a series of intense conflicts that would occur despite shifting alliances. Saperstein's (1991) mathematical model, which supports Gilpin's expectation, reveals unpleasant war-related implications for any shift to a system with three principal actors.

This disagreement about the stability of tripolar systems can be traced to key assumptions beyond those that define structural realism. According to Niou, Ordeshook, and Rose, potential countercoalitions *preserve* peace. According to Gilpin and Saperstein, these same elements *contribute* to the likelihood of war. Both lines of reasoning are consistent with structural realism's core assumptions, as currently elaborated, because both can claim to embody the self-interested, power-balancing behavior of rational states in an anarchic system. Could different types of states be responding to the tripolarity of the system with contrasting views of their self-interests?

Like the impasse over tripolar systems, Richard Rosecrance's suggestion that "bimultipolarity" (a condition he saw emerging in the late 1960s) constituted a system that would be more stable than either bipolarity or multipolarity implicitly points the way toward needed elaborations of structural realism. Rosecrance's (1966:322) mixed option retained bipolarity at the global level but included at least some areas in which important regional powers would "act as mediators and buffers for conflicts between the bipolar powers." Thus, a bimultipolar system represented the best of both worlds. It combined the relative simplicity, and thus stability, of bipolarity with the conflict-dissipating potential of the more complex multipolar system.

Rosecrance's hybrid system can actually be criticized on the basis of structural realism's core assumptions. Given the self-interest of actors, for example, why would regional powers want to risk becoming embroiled in bipolar conflicts by seeking compromises between the two leading states? By allowing the global powers to confront and eventually weaken each other, regional powers could hope to raise their own relative status. Likewise, important, albeit regional, centers of power would complicate the world, diminishing both the inclination and ability of the

two leaders to manage the system. In short, given anarchy and self-interest among states, there is no reason to conclude that bimultipolarity would necessarily be any more stable than the basic alternatives. Brecher's (1993) study suggests the validity of these criticisms. His polycentric period (1963–1988), which is equivalent to Rosecrance's bimultipolar system, was twice as "conflictual" (48 percent) than either the bipolar (24 percent) or the multipolar (20 percent) period.

This critique, however, only highlights the fact that Rosecrance's formulation, like the arguments for bipolarity and multipolarity, depends on assumptions that go beyond the core of structural realism. Indeed Rosecrance demonstrates what is implicit above: *hypotheses about the impact of different system structures ultimately depend on assumptions about the motives behind state behavior, including the behavior of both major and minor powers, that are by no means obvious.*

In his attempt to sort out the debate between bipolarity and multipolarity, Bueno de Mesquita (1980) pointed even more clearly to structural realism's theoretical need for a unit-system linkage—in other words, a supporting theory of state behavior. He focused on the role of risk propensity and argued that multipolarity is better if actors are assumed to be risk averse. If actors want to avoid risk, the more complex environment of the multipolar system will discourage high-stakes efforts to change the status quo, such as the initiation of war. By contrast, according to Bueno de Mesquita, the case for bipolarity implies that leaders are not averse to risk. Efforts to manage the system and to counter the actions of one's adversary in order to maintain balance require a willingness to take actions that might result in devastating wars. He concluded that, if preferences for risk taking are distributed normally among the population of states, neither bipolarity nor multipolarity should be inherently superior. (Liska [1962:276] arrives at an alternative conclusion, similarly basing his arguments on assumptions about the risk propensities of the great powers.)

Assertions like those of Bueno de Mesquita and Liska about the war proneness of different kinds of international systems invariably depend on empirical generalizations or assumptions about state behavior. Why, for example, would two presumably self-interested great powers be more likely to accept the burden of managing a system than a larger number of such states? Multipolarity would at least allow states to spread the cost of maintaining order more broadly. Similarly, why assume that arms races would be less common in a multipolar than a bipolar system? The opportunity for both bilateral and multilateral arms races might increase with the complexity of the system. And if arms races did emerge in a multipolar system, why would multiple rivalries be more desirable—that is, less likely to produce a conflict spiral—than the competition between two central powers in a bipolar world?

In sum, from the arguments and evidence linking the number of poles in a system to the frequency and intensity of war there arise two inescapable conclusions: (1) the core theoretical framework of structural realism is often consistent with conflicting hypotheses about the impact of isolated, capability-based variables on aspects of war, and (2) empirical tests designed to determine which of these conflicting hypotheses can be sustained often produce tentative, mixed results. As Kalevi Holsti (1991:5) observes, in a "significant proportion of systemic studies of war, there is no verdict." A more compelling answer to the general question of the impact of system polarity on war proneness requires both an appreciation of the multifaceted nature of the concepts involved and additional premises from which specific, falsifiable hypotheses can be drawn.

In particular, a clear linkage between the unit and the system is needed. At present, a reasonable case, fully consistent with the axioms of structural realism, can be made in favor of bipolarity, multipolarity, or a hybrid system. But without

further empirical generalizations about how actors respond to the system, none of these arguments is compelling. Differentiating among them requires a more elaborate understanding of how systemic constraints actually affect states as they set priorities among foreign policy ventures.

The Concentration of Capabilities

Disappointment with the inconclusive results of studies designed to test the impact of system polarity on war proneness led researchers as early as the 1970s to look for alternative ways of conceptualizing and measuring system polarity. In particular, strategies were sought that could overcome the dilemma later articulated by Levy (1984): historical variation in polarity is actually quite limited; thus, hypotheses linking polarity to war proneness depend on assumed discontinuities, such as that between bipolar and multipolar systems, rather than continuous measures.

A key alternative to polarity emerged in the early 1970s in the form of "concentration of capabilities," the most widely used measure of which has been the CON Index (Ray and Singer, 1973; Taagepera and Ray, 1977). "Concentration" refers to the degree to which power capabilities within the system are brought together in one place. The empirical link between concentration and polarity is straightforward. The smaller the number of poles, other things being equal, the more concentrated will be the system's capabilities. Concentration and polarity, however, are not exactly equivalent, because systems with the same number of great powers can exhibit more or less concentration.

Importantly, whereas observations of polarity have a reasonably high degree of face validity within the logic of realpolitik, concentration is more problematic. Concentration cannot be directly observed either by foreign policymakers or by analysts. The effort to measure concentration requires construction of an index, which in itself introduces an array of assumptions about the components of national power and the ways in which these components fit together, both within states and between them. For example, the CON Index ranges from zero to one and is a standardized measure, that is, the range is the same regardless of system size. The CON Index is based on the standard deviation of the percentage shares of capabilities divided by the highest possible standard deviation for a system of size N (Ray and Singer, 1973).

Unfortunately, the shift from polarity to concentration of capabilities did not in itself resolve the problems with the underlying theoretical limits of structural realism in studying war proneness. Theoretically, the likely impact of system concentration on war proneness leads to equally ambiguous propositions. The two standard approaches to linking concentration to war proneness ("balance theory" and "preponderance theory") look remarkably similar to the arguments for multipolarity and bipolarity respectively. Advocates of balance theory argue that a highly concentrated system will be more prone to aggressive behavior because self-interested states in favored positions will use their relative advantage to improve or to ensure their status. Thus, a greater balance or parity in capabilities across states in the system should promote stability. Advocates of preponderance theory, on the other hand, argue that a higher concentration of capabilities among a small number of self-interested states will enable these powerful states to coordinate their actions and provide the leadership and responsible conflict management required to ensure the status quo. Thus, a preponderance of capabilities promotes stability (Singer, Bremer, and Stuckey, 1972). In short, it is possible to propose contradictory hypotheses building from the four central assumptions of structural realism. Either a high or a low level of concentration in capabilities can be associated with war proneness.

Empirical studies of concentration have not entirely clarified the relationship either. Collectively speaking, research on concentration suggests that a diffuse and relatively even distribution of capabilities is linked to a higher occurrence of war (Siverson and Sullivan, 1983:491), whether one focuses on the systemic or dyadic level of analysis. This result is consistent with earlier conclusions about the war proneness of multipolarity with its dispersal of resources across a number of powerful states. As Siverson and Sullivan (1983) point out in their review of this research, however, the investigations of concentration draw their data from "extremely restricted samples" or transform it in a way that "restricts variance in the indicators of power." Thus caution must be used in interpreting the results. At the same time, several of the studies that have looked at concentration of capabilities do help to determine the types of assumptions that may be required to clarify the linkage between this structural element and systemic war proneness.

J. David Singer, Stuart Bremer, and John Stuckey (1972) were among the first to look at the impact of concentration, change in concentration, and movement (that is, redistribution) of capabilities among great powers within a multivariate regression model. Their analysis showed a clear difference between the nineteenth and twentieth centuries. In the statistical model with the best fit to the data from the nineteenth century, parity and fluidity explained 65 percent of the variance in the annual amount of war. In other words, results for the nineteenth century supported the preponderance model. War was more likely when the system was more equal or was moving toward greater equality in the distribution of capabilities. The opposite was the case for the twentieth century, although the results were not as strong. In the twentieth century, preponderance and stability explained 31 percent of the variance. In other words, greater concentration in capabilities tended to be related to war.

Cynthia Cannizzo (1978:951–953, 957) attempted to clarify these findings by using a different treatment of the dependent variable. Whereas Singer, Bremer, and Stuckey had looked at average annual nation-years of interstate war, Cannizzo examined the "average annual nation-months of interstate war in which a given major power was involved." Rather than clarify the situation, however, Cannizzo's results added to the complexity. For the nineteenth century, she found that the extent of preponderance predicted war involvement for individual states much less accurately than it had for the collectivity of major powers. The summary statistics for each state did not approach the level attained for the system. But for the twentieth century, each major power's involvement in war tended to follow "periods of parity and rapid change toward parity."

Research by Edward Mansfield (1994; 1992:9) raises the possibility that a more complex understanding of the linkage between concentration and war will explain the intercentury break that these studies found. Mansfield argues that, rather than a monotonic relationship, concentration and war are related in an "inverted U-shaped" function. Specifically, the frequency of war should be lowest at both high and low levels of concentration and highest within some middle range. Mansfield's analysis focuses on wars that involve at least one great power. He uses data from both the COW Project and Levy (1983) and relies on Singer, Bremer, and Stuckey's (1972) measures of concentration and movement of capabilities. As hypothesized, the likelihood of war reaches a maximum at .27 on the CON Index, a moderate score within the range observed.

Mansfield's inverted U-shaped function provides a way to unite the competing explanations put forward by the predominance and balance theorists. Both sides of the debate could, in effect, be correct because high *and* low levels of concentration would be more stable than a moderate degree of concentration. Mansfield, however, is not entirely successful in establishing how such a pattern would follow

deductively from a consistent set of assumptions. If preponderance facilitates system management and parity discourages conquest, then why should a compromise between the two necessarily constitute the *worst* of both possible worlds? In short, although Mansfield's work provides an interesting possibility that there is a non-linear relationship between concentration and war, it only underscores the need to elaborate assumptions, within the context of structural realist theory, that are capable of providing the necessary unifying principle.

Thus, research and theory on the impact of concentration on war proneness began as an attempt to develop a more sophisticated measure of polarity that could lead to a more adequate understanding of how this capability-based structural element was related to war proneness. Research and theory on concentration, however, have further suggested that deficiencies in structural realism are anchored in the theory's limited axiomatic base. Here, as with the research and theory on polarity, conflicting hypotheses can be sustained on the basis of the assumptions, and empirical research does not lead to definitive answers. Although Mansfield's inverted U-shaped function provides a possible way out of this impasse, it only highlights the underlying need. Mansfield's demonstration still lacks a compelling theoretical rationale.

What might such a rationale entail? A point of departure is posed by the research of Richard Stoll and Michael Champion (1985) and Daniel Geller (1992). Stoll and Champion (1985) tested the connection between the amount of war in the system and capabilities held by *satisfied* versus *revisionist* powers at a given level of concentration. They used expert-generated data to measure relative satisfaction among states with regard to foreign policy issues. As hypothesized, they found that when resources are highly concentrated, war becomes more likely as the proportion of capabilities held by revisionist states increases. In short, their findings suggest that the foreign policy orientation of states—in this case satisfaction with the status quo—influences their reaction both to existing structural elements and to changes in structural elements. Importantly, Stoll and Champion did not find the frequently encountered intercentury difference.

Geller's research (1992:272, 277, 278) also supports the contention that interactions between the dyadic and systemic levels (that is, between state behavior and system properties) must be taken into account in a structural realist theory of war. Geller focuses on the interaction between concentration and the power dynamics within important high-status dyads. He examines eighty-five contender dyads (composed of great powers) and finds that major war is linked to a shift in the bilateral balance between members of these dyads when deconcentration is taking place. The connection does not hold for changes in concentration alone.

In short, the elaboration of additional assumptions, particularly assumptions buttressed by a supporting theory of state behavior that provides the basis for unit-system linkages, is essential for a more useful theory of structural realism. Clearly interaction effects, such as whether states in the system are satisfied and, therefore, do not react aggressively to deconcentration or are revisionist and do react aggressively to deconcentration, seem to be both highly relevant and relatively unexplored. Such a set of assumptions could provide the basis for multivariate understanding of the links between structural elements like concentration and war proneness that would encompass the apparent contradictions revealed in the empirical studies.

The Pervasiveness of Alliances

Although hypotheses linking polarity and concentration of capabilities to war rely on assumptions that go beyond the axiomatic base of structural realism, both of

these elements nonetheless fit within the structural realist framework with relative ease. Each reflects capability-based characteristics of the system and clearly describes elements of system structure.

The third major characteristic of the international system that has received consistent attention by structural realists—the pervasiveness of alliances—does not fit as neatly within the structural realist paradigm. Although alliances (that is, formal agreements by states to cooperate in military-security coalitions that pool their individual capabilities) have been a traditional part of realpolitik practice, they also are considered ephemeral products of foreign policy and not stable elements of the system's structure (Dessler, 1989). Yet, all international systems exhibit some alliances, and the extent of their formation (the pervasiveness of alliances measured in terms of the number of alliances and how many states belong to them) can be considered a characteristic of a system and, thus, a capability-based structural element within the context of structural realist theory. But in introducing alliances, one can no longer ignore assumptions about cooperation as well as conflict among states—as the basic axioms of structural realism do. (Such is the case even though associations of states with mandates other than military security—for example, the European Union or the Group of 77—are not considered relevant because they are not directly linked to states' power capabilities.)

Do Alliances Promote or Deter War? The question of the degree to which the number of alliances within an international system affects war proneness has been as hotly contested as the questions surrounding the impact of polarity and concentration of capabilities. And as in these previous debates, contrasting views on alliance formation are possible, based on the assumptions of structural realism.

One side of the debate is illustrated by Singer and Small's (1968) highly influential study that hypothesized that alliance commitments result in more warfare. Pursuing a line of argument that parallels Adam Smith's "invisible hand" within a market, they asserted that "anything which restrains or inhibits free or vigorous pursuit of the separate national interests will limit the efficacy of the stabilizing mechanism. And among those arrangements seen as most likely to so inhibit that pursuit are formal alliances." When flexibility is reduced, they argued, states are more likely to dwell on areas of disagreement and engage in warfare.

In contrast to Singer and Small, Phillip Burgess and David Moore (1972:375) suggested that alliances are a potential means of stabilizing the system. According to Burgess and Moore, alliances reduce ambiguity and promote the effectiveness of extended deterrence. A greater number of alliances and states belonging to them merely provide evidence of clearly specified security interests (Osgood and Tucker, 1967:86). Thus, aggressive behavior by one state can be restrained by the combination of others.

Paul Schroeder's (1986) analysis of European diplomacy in the nineteenth century is consistent with the Burgess and Moore interpretation. Schroeder argues that the treaty system of 1815 and the network of small powers on the continent combined to enhance relative stability in Europe. The Concert of Europe operated flexibly, and its members shared an interest in preserving the autonomy of small states, at least from power moves by one another. Rather than removing interaction opportunities, the Concert seemed to nurture cooperation among the powers.

As in the debate over polarity, however, assertions about the stabilizing role of alliances seem to hinge on assumptions about the motives behind state behavior. A network of defensive alliances would entrench the status quo in the system. But a coalition of rational, self-interested states can only be expected to undertake efforts to preserve the status quo, instead of attempting to gain status, if one assumes that they are risk averse. By contrast, the logic of Singer and Small (1968)

requires no such assumption about risk propensity. It is not crucial whether alliances are intended for defensive or offensive purposes. Flexibility in the balancing of power is reduced in either case, with the security dilemma remaining a major problem.

Empirical Studies of Alliances and War. Research using aggregate data to test the impact of alliance commitments on war proneness during the nineteenth and twentieth centuries presents an even more complex picture. According to John Vasquez (1987:119), we have learned that: "First, alliances do not prevent war or promote peace: instead, they are associated with war, although they are probably not a cause of war. Second, the major consequence of alliances is to expand the war once it has started; in this way, alliances are important in accounting for the magnitude and severity of war." As with the studies of polarity and concentration, research on alliances and war reveals the need for additional assumptions to complement the axioms of structural realism. In particular, these studies reveal a need to understand the temporal relationship between structural elements and war.

Singer and Small's (1968) initial data analysis used six measures of the pervasiveness of alliances, including the percentage of overall dyads exhausted by such commitments. They charted the magnitude and severity of wars (nation-months and battle deaths, respectively) that began one, three, and five years following a particular alliance configuration. The analysis included all independent states (subject to constraints on data) in the central European subsystem. Singer and Small (1968:283) summarized the resulting tables of statistics as follows:

> Regardless of the war-onset measure we use, the pattern is similar. Whether it is nation-months of war or battle-connected deaths, whether the data are for the total system or the central one only, and whether they reflect all members of the system or major powers only, when alliance aggregation or bipolarity [that is, pervasiveness of major power defensive pacts] in the nineteenth century increases, the amount of war experienced by the system goes down, and vice versa. And in the twentieth century, the greater the alliance aggregation . . . in the system, the more war it experiences.

Thus, the results for the twentieth century are consistent with the argument linking alliance formation to warfare, whereas results for the nineteenth century reflect the vision of alliances as mechanisms that preserve stability.

Subsequent scholars have confirmed the mixed findings of Singer and Small, although not without some important variations and ambiguities. For example, when Ostrom and Hoole (1978) compared the percentage of states involved in alliances with five measures of the magnitude of war, their results parallelled those of Singer and Small. However, when they calculated the annual ratios of (1) dyads involved in defensive alliances and (2) dyads involved in interstate wars, respectively, to the size of the system, they found no connection between the ratios—the focus on dyads appeared sufficient to eliminate the relationship between alliances and war.

Similarly, William Thompson, Karen Rasler, and R. P. Y. Li (1980:63, 77) measured interaction opportunities in the international system with a Network Density Index, which was constructed by "computing the actual number of internodal connections (alliance commitments) as a proportion of all possible internodal connections." They assessed the amount of war in the system in two ways: (1) the number of wars ongoing, and (2) nation-months of wars in progress. A statistical analysis with a three-year time lag partially confirmed the results from Singer and Small. Reduced interaction opportunities (that is, alliance formation) predicted

war for the early twentieth century (1919–1939); the reverse (albeit weakly) held for the nineteenth century (1816–1914). The expected linkage, however, did not hold for 1946–1965.

In contrast to the previous studies, Siverson and Sullivan (1984:5–6) examined the implications of these system-level analyses at the dyadic level. They focused on the dyad in order to observe initial participation in war and to develop a "baseline population" to permit more meaningful comparison. For the fifty wars they studied between 1815 and 1965, fifty-nine of the one hundred initial participants did not belong to an alliance. This result is inconsistent with the logic regarding interaction opportunities and war, namely, that a reduction in flexibility is responsible for higher levels of conflict. Similarly, after World War II, Siverson and Starr (1989) find that war is associated more strongly with the geographic proximity of states than with alliance membership.

Siverson and Sullivan (1984:10–12), however, did discover a synergistic interaction between alliances and power status: "major powers with alliances are more likely to be an initial war participant than major powers without allies" and "minor powers with an alliance were less likely to be an initial war participant than minor powers without an alliance." In other words, alliance participation may *commit* major powers to wars on behalf of their smaller partners, and alliance participation may *restrain* minor powers from participating in wars. This finding suggests that alliances reduce flexibility for major powers, perhaps by committing them to fight on behalf of allies in situations in which they might otherwise choose not to fight. By contrast, alliances provide security for minor powers, which tend to be less autonomous in the first place.

Other scholars have sought to clarify these findings by looking at additional features of alliances or the states involved in them. For example, in studying great power alliances between 1495 and 1975, Levy (1981:596–597) explicitly looked at the intent of the alliances. He used a wide range of measures, including frequency, duration, and the number of great powers involved in war along with both the number and membership of alliances. Simple rank-order correlations suggested that alliance formation was associated with relatively low levels of war across a variety of measures. Comparing "the proportion of alliances followed by war within five years and the proportion of wars preceded by alliances within five years," Levy (1981:612) found that "With the exception of the nineteenth century, defensive and neutrality alliances, when they have occurred, have been excellent predictors of wars involving (or between) the Great Powers, appearing thus to have nearly constituted sufficient conditions for war in some periods." The nature of the alliance has an impact on war proneness with time.

Finally, Ido Oren's (1990) analysis of the size of alliances and war proneness appears to constitute a direct test of the contrasting hypotheses of Singer-Small and Burgess-Moore. Oren argued that if alliances are expected to restrain a revisionist state (Burgess-Moore)—either as external obstacles to conquest or through the calming efforts of allies—increasing membership should be helpful. The Singer-Small argument based on flexibility, however, would interpret larger alliances as the strongest evidence of established and mounting hostility in the system. Oren's regression analysis revealed that, even when controlling for length of existence, larger alliances seem to predict involvement in war, in keeping with the flexibility argument (Singer-Small). This result also helps to explain the apparent intercentury difference with respect to the impact of alliances. Given that war—especially on a large scale—was much less common in the nineteenth century, the opportunity for war expansion, to which alliance size is linked most directly, was reduced.

Elaborations on Structural Realism's Core Assumptions. Research on the pervasiveness of alliances also suggests the need to elaborate the assumptions of structural realism. For example, time lags have been prominent features of virtually all studies linking alliances to war. Singer and Small's (1968) use of three different time lags recognized that it was reasonable to assume that the transmission of effects from alliance networks to the interactions of states would not be immediate. But this and subsequent studies have left unanswered the question of why one time lag might be preferred over another. Similarly problematic is the reappearance of an intercentury difference. To account for the apparent change across time periods, structural realism may be required to incorporate a wider range of variables.

Two types of elaboration are important: (1) a more comprehensive vision of structure, and (2) a better understanding of state behavior in relation to structural elements. Levy (1981) proposed that intercentury and other patterns related to alliances probably reveal the impact of other underlying factors. Thus, to explain the frequency and intensity of war, other elements need to be specified that complement alliances. One possibility is that after the turn of the century the objectives of alliances changed. In the last century, alliance formation may have reflected the stereotypical game of "musical chairs" that is associated with a highly flexible system. During the twentieth century, however, alliances may have come to represent explicit commitments toward the defense of endangered client states. Some of the especially unsuccessful alliances of the twentieth century—such as those involving France and small powers in Eastern Europe during the 1930s—suggest this hypothesized difference.

In short, the impact of an alliance could vary dramatically depending on the *objectives* and relative *status* of its participants. If so, objectives imputed to alliance members must be clarified. To be credible, this expectation requires a linkage between the unit and the system, that is, a theory of state behavior that can explain how states react to different structural elements of the system. The gaps in our understanding serve as a reminder that system-oriented, capability-based research does not yet present a coordinated assessment of the nexus of structure and war.

Polarization

One of the properties of alliances that has received extensive attention in its own right has been polarization: the closeness of attachments within a system's alliances, and the degree to which a system's coalitions stand apart from one another (Goldmann, 1974:107; Jackson, 1977:92). In terms of the core assumptions of structural realism, polarization, like the pervasiveness of alliances, immediately introduces a range of additional assumptions about the nature of cooperative and conflictual relationships among states. In addition, like concentration of capabilities, polarization requires assumptions related to the measurement of complex variables that are hard to measure directly. Bueno de Mesquita (1979:126) has developed rigorous measures of the degree of discreteness and tightness of polarization by examining the distances separating clusters of states and the extent of cohesion around respective centers. Recent descriptions of polarization and related concepts reveal that there is general agreement concerning the nature of these two dimensions (Rapkin and Thompson, 1980:378; Snyder, 1984:477; Brecher and Ben Yehuda, 1985:24; Brown, 1988:27).

At a theoretical level, widespread consensus exists that polarization, or the rigidity of the system, is associated with war proneness. With an overriding axis of conflict and a high proportion of states placed solidly in the respective camps, prospects for compromise are minimal in conflict situations. Given greater rigidity

in the system, the gulf between coalitions cannot be bridged easily. Thus, even though issues become more interconnected, trade-offs among them based on varying intensity of preferences become more difficult. The issues themselves tend to become all encompassing, and disputes accumulate more quickly than they can be resolved (Midlarsky, 1988:30–32). Aggregation of resources by rival alliances also increases mutual perception of threat, especially when each alliance acts increasingly as a unit (Vasquez, 1987:128). The theoretical process has commonly been illustrated by the sequence of events that culminated in war in August 1914 (Holsti, 1972).

The Consistency of Empirical Findings. Empirical studies on the impact of polarization provide relatively clear support for the theoretical linkage between polarization and war.

In his pathbreaking study, Bueno de Mesquita (1979:126, 131, 136), as already noted, introduced a strategy for measuring tightness and discreteness of clusters of states (along with the change in each) on the basis of alliance commitments. States with highly similar dyadic affiliations were clustered together, at various distances from those in other groups. The proximity among the states in a cluster represented tightness, and discreteness corresponded to the relative distance of a cluster from other groupings. Bueno de Mesquita found that, as expected, increasing tightness in alliance structure over a five-year period was associated with the subsequent outbreak of war. He also found that the duration of war in the current century was best predicted by changes in tightness.

Bueno de Mesquita's discovery that increasing tightness in alliances was associated with the subsequent amount of war has been generally confirmed in other studies. Probing changes in cluster polarization, Wayman (1984:72–73) found a correlation (r) of .56 between the level of change in polarization and the magnitude of war. Focusing on the beginning and ending of interstate disputes, Midlarsky (1988:32, 39) discovered that, under conditions of relatively high polarization, there is a tendency toward a buildup in the number of conflicts in progress. For example, the accumulation of disputes in the period prior to World War I is considered to have contributed to the likelihood of that cataclysmic event.

Other studies have introduced complexities into the exploration of this issue even though they also point toward the general conclusion that high levels of polarization are associated with war. Thus Wayman (1985:122, 133) hypothesized that high levels of tightness and discreteness in alliances within a system with two factions ("cluster bipolarity") would be associated with subsequent warfare. He reasoned that "two important conflict-reducing agents—namely, intermediary relationships and cross-cutting cleavages (that is, issues that create different divisions)—exist in a cluster multipolar setting but are eliminated in a cluster bipolar one." As a result, in a bipolar setting with high polarization, tension builds up along one dimension rather than being relieved by periodic, self-contained conflicts among varying subsets of actors. Wayman found support for this hypothesis in the twentieth century. However, an intercentury difference again appeared as the reverse obtained for the nineteenth century. Although Wayman's findings are consistent with prior intercentury differences, once again it is difficult to articulate a compelling explanation for the outcome.

Challenging the general findings regarding polarization, Wallace (1979:105) assessed the impact of polarization on the magnitude (nation-months) and severity (battle deaths) of war and reported that a simple linear model produced no significant connection with either dependent variable. A curvilinear model, however, fits the data extremely well. War was more likely at both very low and very high levels of polarization. This connection mirrors the one discovered by Mans-

field (1992) regarding concentration and war, although in this case moderate levels of polarization are associated with less, rather than more, war. That systems with a middle range of polarization may be the least war prone is consistent with the findings of Kegley and Raymond (1990), who examined the major power system in the post-Napoleonic era. War is reduced when "there is a moderate degree of flexibility in alliances, and when those alliances that are formed are considered binding by their parties" (Kegley and Raymond, 1990:23).

Indeed, a reasonably high degree of consistency emerges among the studies linking polarization to war. Bueno de Mesquita's findings about increasing systemic tightness, Wallace's results regarding very high levels of polarization, Wayman's observations concerning cluster bipolarity in the twentieth century, and Midlarsky's assertions about the accumulation of disputes all point in one direction: when the configuration of alliances tightens or is already highly visible, the danger of war increases. Wallace's finding that very low polarization also increases the risk of war, and Wayman's similar results for the previous century, may be related to the broader effects of alliance pervasiveness. Given the flexible system of bargaining within nineteenth-century Europe, more alliances may have meant that additional stabilizing factors were in operation. In this context, low levels of polarization—in other words, extremely "loose" alliances—might have been less helpful in preventing war because there were not obvious connections among actors.

Polarization and Structural Realism. On the surface, research on polarization would seem to pose few new challenges to the existing theory of structural realism. Although polarization depends on the additional assumption that alliances are a meaningful part of the structure of international systems, the empirical studies and theoretical efforts show a relatively clear convergence. Of interest are the contradictions between the arguments put forward to explain how polarization and war are linked and those advanced to explain the impact of polarity, concentration of capabilities, and even alliances themselves. For example, tightness and discreteness of alliances—hallmarks of polarization that are associated with war proneness— would appear to simplify the system, as recommended by advocates of bipolarity. Resolving these conflicts points to the need for additional, and in all likelihood challenging, elaborations in the theoretical framework of structural realism.

An Agenda for Structural Realism

The studies discussed above suggest that an important goal in elaborating the theory of structural realism is to develop a unified structural theory that incorporates assumptions about how states respond to the structure of the international system and that is capable of generating falsifiable propositions related to a wide range of war-related phenomena. Based on the assessment of the literature on polarity, concentration, alliances, and polarization, how close are we to this kind of theory? What steps might structural realists take to move toward a more successfully elaborated theory?

Clearly some patterns did emerge within and across the literatures surveyed. The impact of polarity (the number of poles) on war varied by century. In the nineteenth century, war proneness was greater in bipolar systems; in the twentieth century, it has been greater in multipolar systems. Concentration of capabilities was similarly linked to war. In the nineteenth century, preponderance in concentration was associated with war; in the twentieth century, systems with parity in capabilities seemed more war prone, although state-level analyses vary somewhat from these generalizations. It has been suggested, however, that the underlying association is curvilinear, not linear—with the likelihood of war peaking at a

moderate level of concentration. The intercentury difference appears again when looking at the relationship between alliance formation and war. Alliance formation is positively associated with war in the twentieth century, and negatively associated with war in the nineteenth. Finally, research on polarization, or the rigidity of alliances, has produced the most strongly confirmed results of all. War appears to be associated with increasing systemic tightness, although one study again suggests a curvilinear function—with the likelihood of war being minimized at a moderate level of polarization.

Importantly, however, the auxiliary assumptions that have been introduced to explain both hypotheses and observed patterns linking structural elements and war go well beyond the axiomatic framework of structural realism and have varied considerably across investigations. These auxiliary assumptions, and especially the inconsistencies among them, provide the most fruitful opportunities for beginning to elaborate a more adequate theory of structural realism.

Ambiguities in Search of Theory

As is clear from the review of the literature, auxiliary assumptions play a critical role in constructing and testing hypotheses linking structural elements of the international system to various aspects of war. Moreover, these auxiliary assumptions vary considerably across studies and often contain contradictory expectations. The key assumptions and ambiguities that emerge from the review involve: time lags, risk propensity, collective action, the combination of opposing effects, and the intercentury difference.

Time Lags: The Transmission of Cause to Effect. How long should it take for an element of structure to have an impact? Walter Carlsnaes (1992:260) appears to provide a general answer to this question, namely, that every action affects structure, which in turn conditions subsequent action, implying that impact is rapid in each direction. This treatment, however, is far removed from structural realism, which implicitly adopts the conventional social science interpretation of structure: "social structure consists of all of those relatively stable features of a social system which an acting unit would be prudent to take into account if it wishes to make rational decisions in interacting with others" (Johnson, 1985:787). Investigations that link elements of structure to properties of war feature time lags of varying length, with multiple options sometimes appearing in a single study. Although exploratory analysis reasonably can include more than one approach toward measurement, some connection to an underlying model is desirable. Why, in other words, would the effects of some structural elements be anticipated to appear over the course of years as opposed to months or decades?

Risk Propensity. Expectations about the management of the international system by varying numbers of leading powers, along with the presumed effects of preponderance versus parity of capabilities, are affected dramatically by assumptions regarding the willingness of states to take risks. There is no consensus, however, on the conditions under which states will be neutral toward risk, accept the need to take risks, or be averse to taking risks. Leaving aside the roles played by individual leaders, is it reasonable to suppose that one outlook or the other will predominate on a cross-national basis? What kinds of states are likely to be more risk prone? How might other aspects of the international system affect the risk propensity of such states?

Collective Action. Assumptions with respect to the importance and difficulty of engaging in collective action also vary across studies. Advocates of bipolarity assume that the empirical stability of a bipolar system results from the fact that a simpler and more coherent structure makes it easier to formulate and implement collective action, in this case a management scheme for power politics. In short, regulation of the system through collective action is presumably *facilitated* by a straightforward pattern of alliances. Gilpin (1988) and other critics of bipolarity, however, point out that it leads more easily to bipolarization, which empirically has been linked to increased conflict and war. Thus, although both bipolarity and bipolarization represent simpler and more coherent systems of alignment that ought to enhance the prospects for collective action, their impacts on war proneness are just the reverse of one another. At issue are the intended purpose of the collective action, and the states among which it is taking place—whether between the two leading powers, as is the case in bipolarity, or within the camps of the two leading powers, as is the case in bipolarization.

The Combination of Opposing Effects. Discontinuities in the impact of certain structural elements such as polarization and concentration of capabilities pose the possibility of curvilinear linkages with war. In one instance (polarization), the combined impact of opposing tendencies is ideal—less war; in the other (concentration), nothing could be worse—more war. A U-shaped function provides a potential explanation for the data encountered in both cases, but it is not clear how the contradictory tendencies can be explained or why the respective trade-offs should be opposite. The argument in favor of bimultipolarity suggests that there may also be a curvilinear linkage between polarity and war—with maximum and minimum levels of polarity being regarded as most dangerous. But even if curvilinear relationships exist between war and these structural elements, why should moderate levels of different elements (for example, concentration and polarization) produce contrasting results?

More important, the potential effects of combining the structural elements described here have rarely been considered. As Singer and Bouxsein (1975) have observed, interaction effects are not well explored. Moreover, intervening variables may have a profound impact on presumably straightforward linkages. Note the fact that the degree of satisfaction with the system among those holding extensive capabilities appears to mediate the linkage between concentration and war (Stoll and Champion, 1985). Similarly, existing results suggest that the role played by the pervasiveness of alliances may depend on the *intentions* behind their formation. Other such interactive effects may be critical in resolving some of the discontinuities in the findings among empirical studies.

The Intercentury Difference. One of the most important discontinuities that has emerged from the research reported above has been the changing influence of structural elements across the nineteenth and the twentieth centuries. It may well be, from an inductive point of view, that the distribution of data is affected by the fact that the most devastating wars occurred in the twentieth century (World Wars I and II, the Korean War, and the Vietnam War). Data from these cases may well determine how one or more structural elements is related to various dimensions of war, most notably, magnitude and severity as measured by the COW Project. Even if it is valid, however, this possibility represents only a starting point for developing an adequate explanation for the observed relationships. It does not answer the underlying question: How can we theoretically account for these cases?

Hence, it only underscores the continuing need for theoretical articulation. Collectively speaking, these intercentury differences remain unexplained.

<div align="center">*Elaborating the Needed Theory*</div>

Previous attempts to revise structural realism have not focused on increasing the coherence of the theory. Indeed, some prominent ventures actually move us outside the boundaries of the structural realist paradigm (James, 1993). For example, Keohane's (1989:62) "modified structural research program" stresses that "power resources are differentially effective across issue-areas, and the utility of a given set of power resources depends on the 'policy contingency frameworks' within which it must be employed." He advocates that greater attention be paid to the impact of "institutions and rules" and urges that international organizations and transnational and nonstate actors receive more emphasis. Taken together, these changes would create something fundamentally different from structural realism. A more productive approach to reform for exponents of neorealism is to pursue a theoretical elaboration that is better integrated with structural realism's basic principles, especially the one focused on rational choice.

Going Beyond War. A first step may be to expand the enterprise of structural realism by paying greater attention to issues that surround the causes of war. Such theoretical development may contribute, indirectly but effectively, to understanding the underlying dynamics of war itself. As an illustration, instead of exploring only the direct connection of alliances to war, it would be useful to consider why such agreements are formed in the first place (Snyder, 1984; Morrow, 1993). Walt (1990) argues that states form alliances to balance *threat* rather than power, whereas Sorokin's (1994) game-theoretic exposition and evidence related to Israel and the United States point away from the automatic pursuit of such formal connections. Vasquez (1987:127, 128) reveals a relatively nuanced and unintended effect from individual efforts to reduce insecurity: "alliance making that leads to polarization produces wars of the highest magnitude."

A Theory of State Behavior. Singer (1982:37) argues convincingly that models focusing on national attributes "do little in accounting for the distribution of war across cases, regions, and time." Siverson and Sullivan (1983:475) respond that models premised on the distribution of capabilities within the system are unlikely to provide a sufficient explanation for war by themselves. Structural realists would be well advised to heed both points. A general theory of war will have to incorporate factors from multiple levels of analysis.

In pursuit of such a theory, structural realism grants pride of place to the international system as an explanation for war. With proper specification, including an integrated treatment of structure and the linkage between the state and the system, structural realism may yet achieve extraordinary success. Systemic, or macrolevel, theory naturally entails microlevel foundations (Elster, 1983:23; Nicholson, 1989:218). The effects of capability-based indicators should be derived in the context of a unit-system linkage (Singer, 1989:14). Thus, creation of a model of state behavior should be a high priority.

Various scholars have called for a more authoritative explanation of the role of the state in world politics. Recent examples include proposals by Yale Ferguson and Richard Mansbach (1989), Michael Mastanduno, David Lake, and G. John Ikenberry (1989:471), and Tom Keating (1990:34). Research implicitly linked to structural realism, however, continues to depict the state in a very limited way: as an agent in pursuit of security based on relative standing. This conception is more

of a cybernetic than rational one because security is regarded as a direct function of relative standing, and isolated, capability-based variables are used to explain its actions. According to the cybernetic theory of decision making, leaders attempt to control uncertainty through "highly focused attention and highly programmed response" (Steinbruner, 1974:86). In a complex environment, such as the international system, states would respond to an extremely simplified representation of reality, which is analogous to the interpretations of structure and agency embedded within existing neorealism.

By contrast, the axioms of rational choice would suggest some role for the state in managing complexity, most notably with regard to trade-offs between and among different international and domestic needs. In the case of post-1945 Japan, for example, Davis Bobrow (1989) demonstrates that the concept of national security contains important elements of domestic stability and limitation of military activity. Based on survey data from 1945 to 1984, Bobrow (1989:584) argues that it "seems unlikely that there is substantial public opinion 'push' operating on the Japanese government to behave like a standard great power." At a more general level, Benjamin Miller (1994) stresses the importance of domestic factors in the emergence of great power concerts. Elaboration of structural realism to include state behavior might go far in rectifying problems such as the inconsistency among propositions (Burgess and Moore, 1972:361) and the inability to account for change (Buzan and Jones, 1981:2; Katzenstein, 1989:292; Keohane, 1989:36).

Multivariate Models and a Periodic Table of System Structure. It is essential that research within the structural realist paradigm increasingly emphasize multivariate analyses. Multivariate models would encourage attention to the interconnectedness among propositions. This recognition is essential to prevent contradictory assumptions from emerging within an elaborated framework. Indeed, it has been argued that the present lack of consensus within structural realism may reflect a "failure to formulate a theory of realism sufficiently precise to clarify the implications of various assumptions" (Cusack and Stoll, 1990:54). (See also Hoffmann, 1959.)

Given the many ways in which structure could be linked to one or more aspects of war and the complexity of multivariate analysis—Wayman and Morgan (1990), for example, identify no less than twelve indicators of polarity or polarization—creation of a "periodic table" of system elements may be a propitious foundation for this enterprise. Such a periodic table could be organized by making explicit the implicit categorization suggested above. Elements could be arranged within four categories defined in terms of the kinds of additional assumptions and calculations that they require. *Primary structural elements,* such as the number of great powers or poles, entail neither complex calculations nor assumptions about interstate coalitions. *Secondary elements,* such as the concentration of capabilities, are a step removed because they require complex calculations but no assumptions about interstate coalitions. *Tertiary elements,* such as the pervasiveness of alliances, are expressed in terms of interstate coalitions but can be discerned without complex calculations. Finally, *higher-order structural elements,* such as the polarization of the system, entail additional assumptions about coalitions and involve complex calculations.

Although this taxonomy resembles that of David Garnham (1985:7), the difference is more than terminological. The intent here is to present a taxonomy that identifies an ordering among the various structural elements and that highlights the ways in which each set of elements requires an elaboration of structural realism's core assumptions in order to explain its linkage to war. By combining the structural elements within such a periodic table, scholars could begin to ascertain

which combinations are necessary to explain the various dimensions that comprise war, that is, its frequency, magnitude, and severity.

A Vital Enterprise. Although a more satisfactory version of structural realism is a worthwhile objective, it is important to remember the inherent limitations of any approach. Due to its relative scarcity, interstate war is especially difficult to explain. (As Small and Singer, 1982, point out, the average annual number of interstate wars in the period from 1919 to 1980 is .50, or about one case every two years.) It also is not unreasonable to claim that the system is the most challenging unit of analysis. So it is understandable that the systemic theory of structural realism might perform less impressively than dyadic or national-level theories when applied to escalation or war proneness of individual states. Yet, recent research on the medieval era suggests that structural realism may be relevant to systems that have not been considered part of the modern era (that is, post-Westphalia). Analysis of the feudal age suggests that the practices of European actors from 800 to 1300 resembled those of modern states, including "a struggle for exclusive resource control, functional autarky, power-political advantage, and forceful conflict resolution" (Fischer, 1992:433, 461, 462). If these assertions are valid, the quest for a more compelling version of structural realism would seem more valuable than ever.

Even though it is daunting, the task of producing an elaborated version of structural realism is essential. Only a systemic theory can explain the warlikeness of the international system. Thus, if war is worth explaining in the aggregate, then the quest for a more effective version of structural realism remains vital. For now, perhaps the greatest ongoing contribution of structural realism is to balance the tendency to see the causes of every war as unique, most certainly a temptation in a time of rapid and dramatic change.

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