

precise identity of the political elite or ruling class that is doing the scapegoating or (more generally) is using the foreign policy of the state to further its own political interests.

34. This raises the following question: Should the concept of scapegoating or diversion be used to refer to any aggressive foreign policy behavior designed primarily to advance the domestic political interests of internal groups, or should it be conceived more narrowly to refer to one particular causal mechanism through which this is accomplished—one involving a psychological response to external threats and the manipulation of political symbols? It would probably be best to retain the broader meaning of scapegoating or diversionary actions (1) because any purely interest-based response would presumably be reinforced by psychological and symbolic mechanisms—particularly to appeal to some mass groups whose interests were not served by aggressive external actions; (2) because precisely *how* hostile external actions work may be less important than decisionmakers' expectations that they will work, at least for questions concerning the causes rather than the internal consequences of foreign policy behavior; and (3) because the concept of scapegoating is probably too deeply ingrained to be redefined in a more narrow manner. The question of the specific causal mechanisms through which scapegoating is effected, however, should not be ignored.

35. The German tariffs against Russian grain and the exclusion of Russians from German financial markets precluded Russian diplomatic support that would be essential for the effective conduct of a *Weltpolitik* that was certain to alienate Britain (Kehr 1970; Gordon 1974; Kaiser 1983). In this way, hostile actions undertaken without any desire or expectation of war contributed to the polarization of alliances and the isolation of Germany, which played a major role in the processes leading to war.

36. Such a theory would not be equivalent to a dyadic or systemic-level theory of strategic interaction. The hostile impact of *some* diversionary actions may be dampened if the target accurately perceives that such actions were driven by domestic concerns.

37. The only exception is if the political authorities of one state prefer war to any set of concessions that might plausibly be offered by the adversary and consequently initiate or provoke a war for that reason. Although technically the target can choose to surrender rather than fight, this is not much of a choice. For all practical purposes, it is possible for one state to start a war, contrary to Blainey (1973).

## CHAPTER 12

# Lateral Pressure in International Relations: Concept and Theory

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### OVERVIEW

In the study of international relations, lateral pressure is defined as the extension of a country's behavior and interests outside of its territorial boundaries (and, in some circumstances, the extension of the boundaries themselves). The theory of lateral pressure is an explanation of the determinants and consequences of extended behavior, and it accounts for immediate as well as less proximate sources and outcomes. Despite the focus on state behavior, the core elements and processes of lateral pressure are not state centered, but derived from and applicable to all conglomerations of populations at all levels of analysis.<sup>1</sup> The theory draws primarily upon the established literature of international and global politics, but it borrows from other fields and disciplines as needed.

The theory is anchored in core concepts that include the interactive effects of demand and capability—both of which are required for effective behavior. These phenomena are conditioned, in turn, by three “master variables” (population, technology, and access to resources) whose interactions define the essential characteristics, or basic profile, of each state in the international system. The population variable includes all demographic features, technology encompasses both mechanical and organizational knowledge and skills, and resources refer to arable land, water supplies,

minerals, metals, fibers, fuels, and other raw materials. These variables combine to form the central processes that help to shape the behavior patterns of actors on all levels of organization.

Designed initially as a "partial" theory of conflict among nations, the lateral pressure approach has been expanded to identify links between individual, state, international, and global systems. Within this framework, the only thinking, feeling, deciding, and acting units are individual human beings. The state and the international systems consist of individuals acting within formalized relationships identified as coalitions, organizations, and institutions. Whereas individuals, states, and (to a lesser extent) alliances can be treated as actor systems, the international and global systems (encompassing the other systems) lack unifying patterns of expectations (or regimes of their own) and are treated as interactive environmental systems rather than actor systems.

Lateral pressure theory is a process-based specification; time is an essential element. All actor units are constrained by the interaction of internal and external phenomena, but all actions originate within and depend upon domestic capabilities and direction. The theory is derived from the premise that actors with superior capabilities and resolve tend to use more resources, exert more leverage, and expand their activities and interests farther (and with greater impact) than weaker actors. Conditions under which the lateral pressures of states generate propensities for competition, conflict, alignments, counteralignments, provocative acts, escalations, and war are elaborated by a set of theoretical linkages.

For conceptual articulation, empirical analysis, and modeling, we distinguish *sources* of lateral pressure (demands and capabilities), *disposition* or tendency, *manifestation* of actual behavior, and *impacts* of activities on external actors or environments (Choucri and North 1975; Choucri and Bousfield 1978). Of central importance in the lateral pressure process is the security dilemma. Activities undertaken by one country to enhance its economic, political, and military security may be seen by another nation as threatening to its own security. Additionally, once a conflict has begun to escalate, some other nation is likely to interpret a conciliatory move by the adversary as a subterfuge or as an opportunity to be exploited. This dilemma is an important requisite for war.

To date, the empirical and quantitative research agenda accompanying our theoretical work is composed of four phases. Phase 1 was the model and analysis of six major European countries before World War I (Choucri and North 1975). Phase 2 was the dynamic simulation of the respecification of this initial model using system dynamics and forecasting the U.S. case from 1930 to 2000 (which was reported in a series of articles). Phase 3 was a more detailed model, which was based on the original, of the respecified

structures and focused on the transformation and behavior of one country, Japan, over a 100-year period from the Meiji restoration to the present (Choucri and North, in preparation). And Phase 4, currently in its initial stage, adopts a global perspective by expanding our empirical coverage and analysis worldwide.

## DYNAMIC LINKAGES IN THE LATERAL PRESSURE PROCESS

### *Core Elements.*

The process of lateral pressure is rooted in the fact that every human being requires some minimal amount of basic resources (food, water, air, and living space), and these requirements increase multiplicatively with the size of a country's population. Human beings are constituent elements of the international system, and the global environment is the source of life in all its forms. To obtain resources, people develop technology (knowledge and skills), which enables them to obtain new resources and apply old (and more abundant) resources to new purposes (Choucri and North 1975, 15–17; Ashley 1980, 23). The development and the application of technology, however, also require resources (raw materials, tools, machines, energy, and structures), and over the millennia of technological advancements, the amounts and ranges of needed resources have increased commensurately. The more advanced the technology, moreover, the greater the demands for raw materials, goods, and services that people have *thought* they needed above the minimal levels required for survival. Although technological advances have provided spectacular improvements in the efficiencies of tools and machines, they have also vastly increased the possible technological applications; as a result, pressures on resources have tended to increase exponentially (Choucri and North 1975, 18–19).

Acting to satisfy their needs and requirements, people make demands on themselves and on their physical and social environments.<sup>2</sup> A demand, which may not be communicated successfully or effectively satisfied, is defined as an "expression of opinion" coming from a need or desire to close a gap between a perception of fact ("what is") and a perception of value ("what ought to be") (North and Choucri 1983, 445). Demands combine with capabilities to produce action. The simplest activity cannot be accomplished unless an appropriate capability exists for accomplishing it. Constraints of the physical and social environments—together with the level of

mechanical and organizational knowledge and skills relative to the numbers of people—establish “the upper bounds to human well-being, but do not themselves determine how successful human beings are within these bounds” (Boulding 1956, 11ff). (This notion of “demand” is broader than that of the economists, who define the concept strictly in terms of “willingness to purchase.”)

Capabilities can be increased in two major ways: by drawing upon available technology for the development of specialized capabilities (agricultural, financial, commercial, industrial, military, and so forth) (Ackerman 1966, 621–648); and by bargaining and applying leverages in order to persuade others to assist or cooperate with them.

The political assumptions embedded in lateral pressure theory are derived from bargaining and coalition formation: to strengthen the probability that their demands will be met, people (at the individual or at the state level) increase their capabilities by utilizing available capabilities and/or by bargaining in order to persuade others to assist or cooperate with them. This bargaining introduces volatility, voluntarism, and deviation from an otherwise deterministic view of state action (that is, action shaped uniquely by master variables).

#### *Bargaining and Leverages*

Lateral pressure theory assumes that political behavior is essentially interactive and anchored in bargaining, leverage, and coalition formation. Thomas Schelling referred to bargaining processes as verbal and nonverbal interchanges in situations where the ability of one actor to gain his or her ends is, to an important extent, dependent on the choices, decisions, and actions that the other actor undertakes (Schelling 1966, 5–6). Inherent in a bargaining move are three critical elements: a contingency (if . . . unless . . .), a demand (an indication of the response that is expected from another actor), and an inducement, incentive, or leverage (the advantage, reward penalty, coercion, or punishment that is awarded, promised, threatened, or inflicted in order to “persuade” the other actor to close the “bargain”).

All state activities, including applications of leverage, depend directly or indirectly upon the national economy for effective implementation. National economies and politics are interdependent in other ways. Just as economic leverages can be used to influence political actions, political leverages can be employed to intervene in economic activities (Hirschman 1969, 14).<sup>3</sup>

The strength of a given leverage can be assessed “objectively” in terms of the costs (time, money, other resources, human lives, and so forth) that

the initiator has been willing to incur or subjectively in terms of the way the leverage move is perceived and assessed by others (including the initiator, whose assessments of the costs and benefits may differ from those of a detached observer). Leverage can also be assessed according to its impact or outcomes. Whatever the feelings that actors harbor towards each other, the quality of their interactions—accommodative, cooperative, competitive, conflictual, violent—and the outcome will be shaped by the quality and form of the leverages employed.

In addition to exchanges of goods and services and other behaviors, bargaining and leverage can lead to the formation of coalitions and coalitions of coalitions (including states and other “molar” or higher level organizations) as well as to the establishment of adversarial relationships (see Snyder and Diesing 1977; Riker 1962). (Often, the establishment of one coalition or coalition of coalitions, possibly a state, contributes to the formation of a countercoalition or a coalition of countercoalitions.)

To the extent that cooperative efforts are mobilized for a common purpose and more or less stabilized, a coalition is established. Constrained by their relative capabilities, participants normally bargain with and apply leverage to each other, including their leaders. Linkage networks function within and between coalitions and coalitions of coalitions (including states) (Rosenau 1969, 44–45).<sup>4</sup> Group and organizational (including national) decisionmaking can be seen as a process of establishing a coalition around a particular action, policy, or course of activities. Viewed from “above,” a national or other collective actor system resembles “an interconnected and interrelated set of subsystems which ultimately lead to the individual” (Brody 1966, 324). [While horizontal and vertical networks of bargaining and leverage can help to hold a society together (see, for example, Belfrage 1977, 255–281), there are also conflict networks shaped by contending alignments, for example those linking the United States, the Soviet Union, and their respective allies.]

#### *Political Regimes: Capabilities and “Power”*

Some coalitions and coalitions of coalitions, both public and private, establish political regimes (including “legitimate” and “sovereign” governments), with varying degrees of authority, that consist of rules, regulations, laws, law-making institutions, and leaders and bureaucrats who think, plan, and act in the name of the organization.

In the realist tradition, state-level systems are usually viewed parsimoniously as acting to maximize or optimize power—much as “economic man,” commercial and industrial organizations, and whole economies are

assumed to pursue the maximization or optimization of wealth. While the word *power* has a number of different meanings, we are concerned with the implications for capability and influence. What might be referred to as "power<sub>1</sub>" which is power measured in terms of gross national product (GNP) (or GNP per capita, military expenditures, troop levels, armaments, or other indicators), is virtually synonymous with economic, political, military, or overall capability. "Power<sub>2</sub>," in contrast, refers to one actor's influence over another. This usage implies a retrospective assessment: during the Vietnam War, for example, the United States had more power on economic, political, and military dimensions than did North Vietnam or the Viet Cong. In the end, however, the United States did not have enough power<sub>2</sub> (influence, "persuasion") to achieve its goal in the struggle. The third use of the word, "power<sub>3</sub>," refers here to country actors: the great powers, the superpowers, and so forth.

States draw on power<sub>1</sub> in order to enhance power<sub>2</sub>, and they use both sets of capabilities to maintain domestic "law and order" and to strengthen national economic, political, and military security. These realities contribute to the double-sided security dilemma or paradox in which one country's move for economic, political, and military self-defense is interpreted by its adversary as a threat, and a conciliatory move by either side is perceived by the other as a deception or as evidence of a weakness to be exploited.

Leaders and their bureaucracies "aggregate," transform, and allocate needs, wants, desires, resources, technology, and the efforts and compliance of others in order to increase their own capabilities and bargaining and leverage potentials. Combining ballots (or merely compliance) with extractions (tax and other levies), national leaders and bureaucrats transform these aggregations into regulative, police, military, and other capabilities and bargaining and leverage potentials. Such transactions can be viewed as outcomes of more-or-less institutionalized bargaining and leverage relationships between the leaders and the led in which the dominant status of the "regime" is normally established and social order is maintained (Keohane and Nye 1977, 21).

#### *Manifestations of Lateral Pressure*

Any tendency for a people to extend their external activities (including positive and/or negative leverage in any form) and their interests can qualify as *lateral pressure*—a concept similar to that of outward expansion as used by Simon Kuznets (Kuznets 1955, 334–348). One manifestation of lateral pressure is the tendency of a society to reach for resources beyond its home borders. To meet demands that are rising as a result of a growing

population, an advancing technology, new expectations, or security requirements, a society can be assumed to draw on local resources first, if only because they are close at hand and likely to be less costly to obtain than those from farther away.

If resources in demand are not domestically available, however, or can be acquired cheaper from abroad (because of rising labor costs at home or depletions of more readily available domestic supplies), a society faces two main possibilities: it can develop a new technology in order to obtain old resources at lower costs (or to find new and cheaper substitutions for old resources) or it can reach out for (and, if feasible, protect its access to) resources from abroad through trade, territorial expansion, or both.<sup>5</sup>

The search for resources is only one manifestation of lateral pressure. Other factors contributing to the expansion of a country's external activities and interests include exploration; territorial acquisition; the establishment of overseas colonies; the search for markets, investments, and cheap labor; the extension of religious, educational, and scientific activities; economic and military assistance to other countries and the dispatch and maintenance of troops and bases overseas; the exploitation of the continental shelf; and the exploration of the ocean depths or space (Choucri and North 1975, 17–18).

An additional manifestation of lateral pressure is the large-scale movement of people across national borders. There are "push" and "pull" explanations of international migrations,<sup>6</sup> and recent history has shown what happens when the process comes to full cycle (that is, "push" out of the home community, to the "pull" of the recipient region, to a subsequent "push back" from the recipient community to the home country, as in Western Europe or the Gulf region of the Middle East). Distinctions also must be made between voluntary and coercive population movements, between state-sponsored or state-chartered migrations and those that are undertaken privately, between migrations of private persons who maintain political obligations to and remit a substantial part of their earnings to their countries of origin and those who sever (or ignore) such obligations and are absorbed by the country of destination (see, for example, Choucri 1987).

For generations, emigrants from all over Europe contributed to the growth and development of the United States and the expansion of its demands, activities, and interests. Since World War II, jobs and higher wages in northern Europe and in the United States and Canada have attracted migrant workers from the Mediterranean region, Latin America, Africa, and Asia. Some of these, providing industrialized countries with labor or brain power, have commonly remitted large proportions of their incomes—and have eventually returned—to families back home. Others, like millions of pre-World War II immigrants, have taken up residence,

sought citizenship, and accepted long-term responsibilities in their countries of adoption. The establishment of Israel, a small but remarkably powerful pressure society, is an indication of how a concerted movement of large numbers of relatively high-technology people can generate high lateral pressures in an environment of limited resources and transform the economic, political, and security dynamics of a whole region. Alternatively, the transference of laborers and small merchants from India into the narrow confines of Fiji in the late nineteenth and early twentieth centuries has pitted entrepreneurially oriented Asians against horticulturally inclined Melaneseans and ignited a social, economic, and political *implosion*.

In sum, the concept of lateral pressure encompasses the expansion of both private and governmental activities and interests beyond home borders. Unlike Marxist concepts of imperialism, it is not contingent upon "bourgeois capitalism" or class conflict, but on generic growth, rising demands, and increasing capabilities. Elsewhere such manifestations have been called the "modes" of lateral pressure (for an example of a case study of international trade, see Pollins 1985).

#### *Intersections or Collisions*

The expanding activities and interests of a powerful state may be expected to intersect or "collide" with the activities and interests of other states of different sizes, capabilities, and bargaining and leverage potentials. When the lateral pressures of a powerful state encounter those of a substantially weaker state, the effects are likely to be penetrative; that is, the impact—whether diplomatic, economic, or military—tends to be registered in many different sectors of the society that is penetrated. The result may (but need not) include the domination, exploitation (intended or otherwise), conquest, occupation, or annexation of the weaker state by the stronger power.

When the expanding activities and interests of a major power or superpower intersect or collide with those of another major power or superpower, the leverages employed by either or both sides may be predominantly positive, negative, or a combination of both. As indicated in *Nations in Conflict*, lateral pressure itself seldom triggers a war. Sometimes it does no more than bring two or more countries into closer relations with each other (Choucri and North 1975, 18–20). In general, intersections are most likely to turn violent when relations between the states involved are already hostile or at least one of them (rightly or wrongly) perceives the in situ bargaining and leveraging activities of the other as dangerously competitive, threatening, coercive, menacing, or overtly violent. The subsequent study, focusing on Japan over the past 100 years, shows the sources

and manifestations of lateral pressure in a state characterized by low resource endowments, rapidly growing technological capabilities, and a large and increasing population (Choucri and North 1988; Minami 1986).

#### *Competition and Conflict*

In economic theory, the role of competition is to discipline the various participants in economic life to provide goods and survive skillfully and cheaply. In political competition, contenders vie for resource and other advantages, power, influence, authority, status, privilege, or comparative advantage. All of these different manifestations of competition overlap and interact; they are, to a considerable extent, interdependent. In competitive situations the efficient tend to be rewarded, and the inefficient risk penalty or elimination in the currency of whatever game is being played.

Uneven growth and development within and between states contribute to power distributions and differential lateral pressures, and they often create conditions for—but seldom trigger—war. The proximate stimuli for crisis and war often emerge from subjectively generated perceptions, affects (fears, distrust, hostility, and so on), and human decisions (conditioned by and in response to situations shaped by processes of growth and competition).

Although the boundary between them is often difficult to define or recognize, competition tends to be transformed into conflict as leverages become negative, coercive, threatening, and violent. A conflict may emerge whenever two or more actors seek to possess the same object, occupy the same space or the same exclusive position, play incompatible roles, maintain incompatible goals, or undertake mutually threatening security measures. Whether or not such a trend is transformed into violence may depend upon whether or not the parties see themselves as basically compatible, whether or not the adversaries consider the stakes important, and whether or not they take concrete measures to resolve (or at least to reduce) their differences by switching from threatening, coercive, or violent leverages to more accommodative leverages (Smoke 1977, 278). Clearly, there can be conflicts over means as well as ends. It is not unusual for a "means" conflict to become so acute that it achieves more saliency than the initial disagreement over goals.

States, through their leaders and bureaucrats, bargain over and apply leverage in the implementation of policies (means) in pursuit of national ends. This observation may be as critical as it is obvious: In contrast to monocausal explanations of war and other conflictual (as well as cooperative and peaceful) outcomes, this perspective suggests multilevel

(molecular–molar) hierarchies of explanation (hierarchies of what Popper viewed as “plastic” (that is, indeterminate) “causes” and “effects” (Popper 1979, 206–255). Predictions are thus severely limited by the consideration that—at whatever means/end level—*B*’s response to *A*’s leverage cannot be predicted or explained except in probabilistic terms. This dilemma draws attention to the conflict spiral, that part of the lateral pressure process most conducive to overt violence. Following a brief discussion of the lateral pressure phenomenon in comparative contexts, the conflict spiral and its dynamic components are traced in the next section.

### THE CONFLICT SPIRAL

The phenomena of uneven growth, differential capability, demand, bargaining, and leverage can be visualized as fluctuating, interactive, converging variables—a dynamic “pyramid,” so to speak, of interconnected empirical variables (with strong psychological components). When heads of state and other decisionmakers at the “peaks” of two such pyramids confront each other in an adversarial relationship, an action–reaction (or escalatory) process is likely to be set in motion, a process that can trigger large-scale violence. All of these variables originate with individual human beings responding to (and acting on) physical and social environments in recursive ways.

#### *Action and Reaction Processes*

Action–reaction phenomena, such as arms races, crises, outbreaks of war, and the transformation of limited wars into “all-out” wars, can be conceptualized as escalations of negative leverages applied by two (or more) adversaries in a conflict situation in which each side’s field of expectation changes with the leverages applied at each step of escalation, each side’s expectations and intents are not fully known to the other, and cognitive and psychological processes “filter” actions and intents. The arms race is a special type of escalation process in which an increase in *A*’s military capabilities—whether undertaken as a form of deterrence or as a routine defense measure—is viewed by the leadership of rival state *B* as a threat to its security. When the military capabilities of *B* are increased in order to reduce or close the gap, *A*’s leaders, perceiving the increase as a threat to their country’s security, act to increase *A*’s capabilities, and so the competition spirals. As the tendencies of *A* and *B* to respond in this way now

become “intense and reciprocated,” the bilateral competition processes tend to “interlock,” thus yielding the action–reaction or escalation process (Huntington 1971, 499–531; Richardson 1960a, 15), in which suspicion and fear may be expected to multiply with the armaments (Wallace 1979, 242).

Studies of the arms race phenomenon can generally be classified into two groups: those emphasizing competitive action–reaction processes and those emphasizing domestic factors such as technology and bureaucratic or interest group pressures. Which perspective is closer to reality has become a source of debate. Empirical evidence suggests that both types of processes are significant (Choucri and North 1975, especially chap. 13). In terms of the security paradox, uneven development, lateral pressures, and the interactivity of states, however, it appears self-evident that the domestic factor and the action–reaction process are not necessarily antithetical. “Indeed, the explanation having the closest match with empirical observations may incorporate components from each” (Hollist 1977, 504). It is also possible that the action–reaction process may be the dominant explanation of a particular race at one stage, whereas domestic factors may dominate at some other stage. It would not be surprising to find such variability taking place within the same escalation through time and across countries.

#### *From Escalation to Crisis and War*

However the phenomenon of international crisis is defined, it almost always meets the criteria for an escalatory or action–reaction process. Thus, in an international crisis situation, escalatory interactions come about in part because the leaders of one country, *A*, perceive an action of country *B* as aggressive or threatening and undertake counterleverage in one form or another, which is then perceived as a threat by the leaders of *B*. If the leaders of *A* perceive *B*’s response as threatening, then they are likely to undertake further coercive action in hopes of deterring *B* and, thus, bringing relief. Or they may expect early changes in the crisis situation to be punishing but necessary enabling steps toward a more rewarding situation in the future. The expectation of such a reward may involve the avoidance or elimination of a punishing situation rather than an outcome that might be viewed as intrinsically rewarding (Moll and Luebbert 1980, 157; Hollist 1977, 504). Under the pressure of intense interchange, each response is likely to be “automatic and mindless,” and each move is so swift that it can scarcely be distinguished from a reflex. It is under such circumstances that statesmen start saying, “We have no alternative” (von Bülow 1931, 165).

For every crisis that escalates into war, however, there are many others that “cool down” or deescalate. An action–reaction process may be

expected to continue as long as at least one side perceives that the costs of deescalation exceed the costs of continued escalation; conversely, for a reversal of action–reaction process to occur, the costs of continued escalation must be assessed as exceeding the costs of deescalation by at least one side. Similarly, once a war is initiated, it can be expected to continue until at least one side decides that the risks and costs of additional hostilities outweigh the benefits.

## LATERAL PRESSURE IN HISTORICAL AND CONTEMPORARY FRAMES

### *Origins of State Systems*

Uneven growth and development, lateral pressure, bargaining and leverage, and the security dilemma may have contributed to the emergence of the state and thus helped to shape the war-prone characteristics of the modern state system. The origin of pristine states has been explained in various ways—some voluntaristic, some coercive. Within a growth-and-development framework, anthropologist Robert Carneiro's essentially coercive theory of the emergence of the state helps to clarify its "nature" and identify the sources of its power, the underpinnings of the security dilemma, and the adaptive development of the international and modern global systems (Carneiro 1970, 733–738). Carneiro postulated that, during pre-historic times, certain loosely organized, essentially voluntaristic kinship societies with growing populations (combined with advancing technologies) in several widely separated parts of the world circumscribed by mountains, deserts, seas, and/or high-density neighboring populations—in other words, societies experiencing severe pressure on resources—may have rallied behind war chiefs in order to plunder crops, seize land, and reduce their neighbors to slavery or serfdom.

As a result of such victories, a successful war chief could allocate conquered lands (and defeated villages) among leading members of his retinue and assign them the privileges of demanding tribute and levying taxes. Insofar as he commanded sufficient resources to retain a permanent retinue and a standing army (which was available for the maintenance of domestic "law," "order," and economic, political, and military "security")—a war chief could be well on his way to becoming a king or emperor.

By creating security dilemmas for adjoining societies, the presence of

one such kingdom in a given locality sometimes inspired the establishment of rival kingdoms or of federated communities, some of which may have evolved into republican city-states.

Ancient state systems were plagued by a fundamental contradiction: Agrarian-based empires, although militarily strong, were able to retain the active loyalty of only a small proportion of their inhabitants, whereas city-states, while attracting the loyalty of their citizens, lacked the ability to extend their power and influence very far beyond their urban limits (Gilpin 1981, 116–118).

Beginning in the tenth and eleventh centuries, population increases combined with new technologies (many of them borrowed from Asia and the Middle East) contributed to a new commercialism (the foundations of capitalism) and new concentrations of power in the hands of European rulers. Fragments of the old Roman Empire began acquiring and putting together new surpluses—usually under the shrewd administration of an ambitious warlord—and economic activities increased. Western European populations expanded, and significant new technologies (many of them, such as the Indian concept of zero, accounting and credit practices from the Middle East, the mariner's compass, and others borrowed from other cultures) were put into practice. A new "spirit of enterprise" prepared the way for early capitalism and an aggressive mode of statecraft (McNeill 1982, 12–21, 150–151, 541–542). Perceiving a need for larger tax revenues as an instrument of power, monarchs of the time were persuaded to encourage and extend trade, which created a disposition toward enforcing property rights over greater areas (and, thus, expanding state control over quasi-independent feudal lords) and finding ways of internalizing some of the costs of long-distance commerce" (North and Thomas 1974, 35).

The joining of intense loyalty with administrative and legal control over large expanses of territory during the emergence of the nation-state made the international system as we know it today possible (Gilpin 1981, 116–118). Successive advances in technological change—such as shipbuilding and improvements in navigation—contributed to unprecedented lateral pressures. Distant regions of the globe were "discovered" and "explored" by Westerners. Areas were "opened" for colonization and exploitation, and the acquisitions included silks and spices from the East and gold and silver from the West. At about the same time, new military technologies, new organizational techniques, and modes of discipline—plus the availability of funds to hire mercenaries—provided a succession of European kings with an ability to concentrate their domestic capabilities, encourage trade according to the emerging tenets of mercantilism, and expand their territories, activities, interests, and power over much of the globe. Thereafter, with the close of the Thirty Years' War (1618–1648) and the Congress of Westphalia

(1648), the nation-state, the Western states system, and a continuing trend towards "globalization" were firmly established (Russett and Starr 1981, 47; Gilpin 1981, 29; McNeill 1982, 150).

#### *Historical and Contemporary Expansionism*

The expansion of the world's great empires from the remote to the more recent past provides examples of lateral pressure by territorial acquisition, as does the westward expansion of the United States and the eastward expansion of tsarist Russia. Since World War II most of the great overseas empires have disappeared, territorial expansion has been limited, and most lateral pressure has been manifested through economic activities (trade, aid, investment), routine diplomacy, the support of (or opposition to) revolutionary movements abroad, troops overseas, bases on foreign soil, espionage, and a wide range of covert operations.

Bargaining and leverage processes tend to be near the center of most lateral pressure phenomena—both private and governmental. In general, the expansion of private activities and interests tends to involve economic (agricultural, commercial, banking, investment), professional, and associated activities of individuals, family groups, professional associations, or corporations. The lateral pressures of government include bargaining and leverage activities pertaining to routine diplomatic interchanges, the implementation of national foreign policies, the protection of private and public activities and interests abroad, and, insofar as feasible, the extension of the national power *outreach*.

#### *Configurations of Power*

Balance of power is an ancient, venerable, but illusive concept that is still relied upon almost universally (Friedrich 1938, 119). As is well known, however, Ernst Haas identified several different meanings of the term (Haas 1971, 258–259), and according to Inis Claude, a balance-of-power statement conveys only the idea that states will always be in a power relationship with each other, either balanced or unbalanced (Claude 1962, 54). Not uncommonly, the term is used in a number of different ways (sometimes even by the same author in the same publication). A part of the difficulty comes from attempting to apply relatively static concepts to real-world relationships and structures that are "emergent," intensely dynamic, and derived from outcomes of a "totality of processes and vice versa" (Jantsch 1980, 41).

Determined to avoid reductionism, Kenneth Waltz and other neo-realists have excluded all second image factors that contribute to war except power (Waltz 1979, 73, 97–99) (in effect invoking a reductionism of their own) and have insisted upon an "outside-in" approach (Keohane 1986, 190–191) that places a heavy burden upon power distribution as a "cause" of war and other third image outcomes. Because sources of power and changes in power distribution are not specified or accounted for, this approach is not dynamic. In contrast, with the assumption of multicausality traceable through the interplay of a number of variables on both second- and third-image levels, an uneven-growth-and-development, bargaining-and-leverage lateral pressure approach avoids reductionism and allows for both "horizontal" (cross-national) and "vertical" change through time.

At any particular moment the prevailing configuration of "power" in the international system is an outcome of (1) uneven growth and development, (2) the relative and constantly shifting capabilities of countries (and coalitions) in the system, and (3) their bargaining and leverage activities (both positive and negative and continually subject to adjustments and possible transformation). In these terms, international structures may be viewed as asymmetrical and fluctuating relationships between nations of different capabilities with different bargaining and leverage potentials and activities. State structures, in turn, amount to asymmetrical relationships among individuals and coalitions of differing interests, capabilities, and bargaining and leverage potentials and activities. From this perspective, the existence and characteristics of an international structure—including any particular configuration (balance of power, bipolar, multipolar, or whatever)—must be viewed as an empirical consideration that can be investigated and demonstrated rather than "prespecified" (Haas 1982, 242).

Does a balance of power favor war or peace? Leading scholars in the field (as well as policymakers) can be found on both sides of this question. Because it is widely presumed that human relationships are seldom monocausal, one might expect the implications of a balance-of-power or other configuration to vary according to its interplay with other relevant variables in a particular conflict situation. This observation draws attention to the variables that, in combination with power configurations, seem most likely to affect war-prone tendencies.



## NATIONAL PROFILES AND THEIR IMPLICATIONS FOR LATERAL PRESSURE

### *Domestic Capabilities and Constraints*

Uneven growth and development within and between states contribute to differences in their "size," which economists and political scientists identify as a major factor in determining their relative capabilities and potentials for influencing each other. Used in this context, size is assessed in a number of different ways. Sometimes it means territorial extent, sometimes economic capability, and sometimes political or military power and influence. One way of assessing the relative size and capabilities of states is to compare their profiles, that is, the relationships between their respective levels and rates of change of population, technology, and resource availabilities (the extent and richness of its territory, for example, and/or the extent and strength of its trade network).

The following profiles are used as "ideals" or archetypes; they should not be taken too seriously. In using population density and per capita indicators (GNP per capita, imports and exports per capita, and so forth) we recognize that averages "hide" distributions and thus can be dangerously misleading. Profiles, moreover, are "horizontal" representations, high-speed snapshots, so to speak, of relationships at one cross-section of time, whereas each of the major dimensions—population, technology, territorial size, and so on—is subject to almost continual change (each at its own rate). The metaphor that comes to mind is that of a horse race in which the riders are the decisionmakers and the horses correspond to the national economies, politics, and capabilities of grossly varying sizes and potentials. For convenience we have designated the front-runners as Alphas, at least two of which are competing for the number one position. Behind them come the Betas, Gammas, and Deltas, each with its own problems, ambitions, and goals. Spread over the field behind are the also-rans, the Epsilons, Zetas, and Etas. Some of these are competing for positions among themselves; a few are pushing to industrialize and, thus, to achieve power, influence, and a higher standard of living (Betas, Gammas, or Deltas); the rest are struggling to stay in the race—staving off starvation, raising more food, improving public health and education, modernizing and gaining security and status in the world.

Crude and limited as it obviously is, this metaphor is useful for underscoring the advantages of power-transition theories as contrasted with balance-of-power and other static configuration approaches. If a rigorous definition of the concept is formulated and used consistently, a balance-of-

power theory would seem to require provisions within it for dynamic and specifically interactive change. Short of such a formulation, available power-transition theories seem to provide a more promising basis for explaining and predicting the contribution of power differentials to issues of war and peace.

### *Profiles of Industrialized States*

Overall, the "field" can be divided into two sets of profiles that are most conspicuously relevant: those that are characteristic of high-capability, strong lateral pressure, industrialized states at or near the "core" of the international system (the Alphas, Betas, Gammas, and Deltas) and those that are characteristic of the relatively low-capability societies (the Third World or developing Epsilon, Zeta, and Eta states of today) that have been targets, historically, for deep penetration, domination, exploitation, and often reduction to colonial or at least client status by more powerful states.<sup>7</sup>

#### ALPHA PROFILE: UNEVEN LEVELS AND COMMENSURATE RATES OF GROWTH AND DEVELOPMENT IN POPULATION, TECHNOLOGY, AND RESOURCE ACCESS

Countries with populations, technologies, and resource accesses that are "large" and advancing commensurately—that is, technological advancement maintains a substantial lead over population growth—are typically high lateral pressure states, the most powerful and influential in the international system. Pursuing economic, political, and strategic hegemony, Alpha countries may be expected to extend their trade, diplomatic activities, and strategic "defenses" further and further beyond their original boundaries. During their colonial periods, the British, French, and other Western European empires expanded their activities and interests over much of the globe. By the early twentieth century, however, Britain and France reached their apogees and were increasingly challenged by a newly united Germany and, in terms of population growth, technological advancements, and demonstrated capacities for expansion, by the United States and Japan.

#### BETA PROFILE: GROWING POPULATION, ADVANCING TECHNOLOGY, AND INADEQUATE RESOURCES

The growing population of a Beta society is large (relative to its territory), and its technology is advancing commensurately, but access to resources is perceived as significantly impeded because (1) the domestic resource base appears to be too limited or inadequately endowed, (2) trade capacities do not seem to provide adequate resources from abroad, and (3) efforts to

expand trade and/or its resource base (by exploration, conquest, purchase, or other means) have not been taken or have been assessed as inadequate. Because of its rising demands for both consumer goods and raw materials for its manufactures, a society with this profile may be expected to feel economically insecure and under continuous pressure to expand its trade or, if that recourse is impeded or otherwise insufficient, to expand its territory by one means or another. Britain, France, Germany, Japan, and other empires of the past approximated the Beta profile prior to and during the early stages of their imperial expansion. Israel's profile is Beta-like.

**GAMMA PROFILE: DENSE POPULATION, ADVANCING TECHNOLOGY, AND EXTERNAL RESOURCE ACCESS**

A Gamma society differs from a Beta society to the extent that, although its domestic resource base remains severely limited, an extensive, high-volume, reasonably balanced trade network has been established and remains effectively secured. Britain, France, and Germany, all former Alpha countries, can be classified as Gamma countries today. Since World War II, Japan has achieved a Gamma profile by moderating its population growth, additionally developing its industrial technology, and expanding its imports, exports, and investments worldwide.

**DELTA PROFILE: LOW DENSITY, ADVANCING TECHNOLOGY, SECURE RESOURCE ACCESS**

A state in which population has remained low relative to advancing technology and access to resources can be seen as having achieved a "moving" equilibrium (or dynamic steady state). Its Delta profile may be presumed to have come about because, in addition to its limited population growth, (1) the territorial base is rich in resources and/or (2) an effective trade network has been maintained and/or (3) technology has been used considerably for production (as opposed to consumption) and available resources have been managed in ways that have created new resources. Delta countries rank at or near the top in quality of life indicators and tend to avoid war unless invaded. Norway and Sweden approximate Delta profiles.

*Profiles of Industrializing States*

The low-capability societies of the world tend to fall into three major categories. Two of these—Epsilon and Zeta societies—are characteristically poor, developing, and vulnerable. Eta countries, by contrast, are rich but still "developing."

**EPSILON PROFILE: DENSE AND GROWING POPULATION, LAGGING TECHNOLOGY, LIMITED ACCESS TO RESOURCES**

A country with a large and growing population approximates the Epsilon profile to the extent that its technology is lagging and its access to resources is limited either because its territorial base is limited or poorly endowed or because existing resources cannot be extracted (or even located, perhaps) with available knowledge and skills. During the nineteenth and early twentieth centuries the colonial possessions of the European empires (and later Japan) tended toward Epsilon profiles. Bangladesh, and El Salvador are examples of modern Epsilon states.

**ZETA PROFILE: LOW DENSITY, "PRIMITIVE" TECHNOLOGY, LIMITED RESOURCE ACCESS**

In addition to the underdevelopment of their knowledge and skills and their poor access to resources, a sparsely populated Zeta-profile society possesses an extremely limited labor pool and lacks the critical mass of professional specialists needed to facilitate effective development. Possibilities for the expansion of activities and interests are severely constrained relative to those of societies with more favorable profiles, and starvation and disease are often endemic. Zeta states today include Chad and Mauritania.

**ETA PROFILE: SPARSE POPULATION, RECENTLY IMPORTED TECHNOLOGY, RICH RESOURCE BASE**

An Eta country differs from a Zeta country in two critical respects: under one arrangement or another, it has acquired an advanced technology and the specialists required to operate it have been admitted from abroad. As a consequence, oil or some other valuable and hitherto unavailable resource has been obtained in large quantities, and the GNP has reached an extremely high level. Kuwait, Saudi Arabia, and the United Arab Emirates are current examples of Eta countries.

*Profiles and Behavior*

Identifying a country as belonging to one or another of these profile categories will reveal some of the major constraints shaping its behavior. Time-series analyses of the changing profiles and the behaviors of states of different profiles should provide a useful map of global system dynamics that can be used as a basis for estimating future growth, development, and conflict trends within the global system.

## COMPETITION FOR POWER, INFLUENCE, AND GLOBAL DOMINANCE

### *Who Gets What, When, and How*

To a large extent all countries compete for resources and for power and influence within the international system. There are vast differences, however, between the majority of countries, which are struggling to "catch up" in terms of social, economic, and political development, and the industrialized (and rapidly industrializing) states, which rely upon Third World nations for raw materials, cheap labor, and mass markets but compete, to a large extent, among themselves. Beyond this, characteristically, the two or three most powerful states engage in a specialized competition—a "king of the mountain" struggle—for dominance in the international and global systems. This "game" is illustrative of the power-transition phenomenon, the lateral pressure process, and the conflict spiral (Most and Siverson 1987; Doran 1983, 420; Rasler and Thompson 1983, 489–516).

Commonly, the second most powerful state challenges the "hegemon" (and its "security regime") while lesser states achieve and maintain a position on the slopes of the "global mountain" that reflects their relative capabilities. Insofar as a state's establishment of hegemony imposes its own characteristic bargaining, leverage, and disciplinary structures upon other states, a challenger's threat may be expected to initiate a period of instability, intense competition, and potentially disruptive conflict within the system. A number of theorists have been looking in particular for connections between economic cycles in the global (or "world") system, periods of war (and peace), and hegemonic successions.<sup>8</sup>

Virtually by definition, hegemons are high-capability, high lateral pressure states (or empires) characterized by large and growing populations, high and advancing technology, and substantial access to resources acquired either domestically, through an extensive trade network, or both—in short, Alpha states. True hegemons possess superior production, commercial, financial, and military capabilities. Challengers may also be Alpha states or Beta or Gamma states that are rapidly growing and developing and expanding their activities, interests, and power outreach.

The probabilities of hegemonic war may be expected to escalate insofar as (1) the leaders and influential sectors of the hegemon's population perceive their country's economic, political, and strategic dominance and security mortally threatened by the increasing capabilities and negative leverages of the challenger nation and (2) the leaders and influential sectors

of the challenger's population who, aware of the hegemon's vulnerabilities, perceive an unprecedented opportunity for achieving economic, political, and strategic security for their own country by destroying the dominance of the hegemon.

A full-blown power transition (Organski and Kugler 1980, 19, 22, 25–27, 54, 244, fn. 8) occurs when the incumbent lacks the economic and/or political and/or military will and/or capability to defend and maintain its dominance against the thrust of its challenger(s). Notably, however, the initial challenger (Germany in 1914 and 1939, for example) may fail in its struggle for dominance, which may be achieved, in fact, by a power that did not overtly pursue hegemony (as the United States did in 1945, if not before).

The extent to which hegemonic wars and hegemonic successions are closely correlated with global economic cycles is an empirical question that remains to be settled satisfactorily. The "objective" circumstances conducive to the convergence of these two sets of perceptions may be expected to occur as the incumbent hegemon, having passed well beyond its apogee, suffers a decline relative to the expanding capabilities, activities, and interests of its challenger.

Power-transition concepts seem to go a long way toward accounting for the rise and fall of hegemons (Organski and Kugler 1980). If competition between a dominant state and its challenger is accepted as the primary determining factor, however, it is difficult to explain why neither World War I nor World War II was initiated by the United States, the country with the greatest potential for challenger status. Why was World War I "not waged between the United States and Great Britain, and World War II from the beginning between Germany and the United States?" (Värynen 1987, 334–337).

From a lateral pressure perspective, the answer would be that the main thrust of expanding U.S. activities, interests, and power outreach was westward and southwestward across the continent and eventually into the Pacific Basin. Not surprisingly, then, it was not until U.S. merchant shipping collided with German U-boats in the Atlantic that the country was drawn into World War I. Nor is it inconsistent that collisions of U.S. activities and interests with those of an expanding Japan should provide a rationale for the latter's attack on Pearl Harbor (Choucri and North 1988, especially chap. 14). The global patterns of extended U.S. and Soviet activities, interests, and respective power outreaches at war's end went a long way toward defining the hegemonic and challenger roles of the two countries, the shape of their alliance and client-state relationships, and the sectors of the globe where Cold War collisions were most likely to occur.

Individual states do not last forever. In the past, every great power has,

sooner or later, suffered decline and extinction (the Roman Empire), transformation (the Chinese empires), or severe losses of territory, capability, and influence (the Spanish, Portuguese, French, British, and other major powers of recent times). Sources of decline include population growth without adequate technological advancement, overexpansion, a radical shift from capital to consumer industries, excessive military investment (as compared to investment in basic research and production, education, health, and the like), and the spread of organizational as well as production inefficiencies. Severe endemic inflation has often provided a reliable indicator of decline.

#### *War Propensity and the Peace Paradox*

High-capability, high lateral pressure countries (Alphas, Betas, and Gammas) fight more wars *per country* than developing nations (Epsilons, Zetas, and Etas), but more wars are fought in developing or Third World regions than in the more industrialized parts of the globe. High-technology, low-population (Delta) countries seem to fight the fewest, and when they *are* involved, they tend to have been invaded (as Norway was in World War II). There is a long history behind these tendencies. Although the nineteenth century is commonly referred to as a period of relative peace, from a global perspective it was far from peaceful. Quincy Wright listed 95 wars occurring in the course of the nineteenth century; 60 of these were fought in what are now referred to as the Third World regions of the globe, and many were civil wars, revolutions, border conflicts, and surrogate wars in which major powers were directly or indirectly involved (Wright 1968, 699, 956; Coser 1968, 231).

Because investigators often differ with respect to the criteria (casualty levels, for example) used to distinguish between crises, incidents, border conflicts, wars, major wars, all-out wars, and so forth, it is not as easy as one might expect to count and compare wars. Currently, a comparison of sources indicates that something over 130 wars of 1000 or more casualties were fought during the four decades following the termination of World War II. Except for the Soviet intervention in Hungary, all of these wars were fought in developing countries (see Sivard 1986). There is always the risk that a localized conflict, perhaps no more than a terrorist act, may escalate into a global war as major powers become involved—recall that World War I was triggered by the assassination of the Archduke Francis Ferdinand in Sarajevo.

From the lateral pressure perspective, the elusive characteristics of peace can be explained in part as corollaries of the security dilemma. To the

extent that action taken by one country, *A*, to ensure its economic, political, or military security tends to be interpreted and responded to by another country, *B*, as a threat to *its own* economic, political, or military security, any move by one party to accommodate, compromise with, or “appease” the other runs the risk, to a comparable extent, of being interpreted either as a deception (to be wary of) or as a weakness (to be taken advantage of).

Is there any way to avoid or break out of this dilemma? For the purpose of reducing the probabilities (or the levels) of violence there appear to be two critical intervention points—one long range, the other more proximate.

In a global system of nations with grossly unequal capabilities, leverage potentials, and access to resources, one would expect conflict and predispositions toward violence to be endemic. To expect the achievement of profile changes sufficient to eradicate such inequities would be a chimera. Population management programs, however, combined with more even diffusions of technology and more equitable access to resources might alleviate the longer-term pressures substantially and, in the future, create more accommodative interstate relations and a more favorable global environment.

The more proximate intervention points will be located in the course of interactions between adversaries wherever one or the other is contemplating or deciding upon a move directed toward the other. In recent years a number of theoretical protocols have been advanced for application at such choice points. Within an extended lateral pressure context the problem is how to avoid or reverse an escalation of negative leverages.

In the early 1960s George Homans proposed “the secret of successful human interchange” as follows. *A* offers *B* behavior that he thinks will be more valuable for *B* than it is for himself in return for behavior that he thinks will be less valuable to *B* than it is to himself. To the extent that *B* responds reciprocally, the two have put in motion a process that, if pursued, may be expected to uncover compatible interests and induce further reciprocations (see Homans 1961, 62).

Overlapping and supplementing this formulation in specialized ways are social psychologist Charles Osgood’s graduated reduction in international tension (GRIT) strategy (Osgood 1962; see also Mitchell 1966, 73–86) and Robert Axelrod’s (1984) computerized tit-for-tat strategy. GRIT provides protocols for bargaining with an adversary without a loss of advantage prior to the achievement of a verifiable reciprocation. These and other bargaining, leverage, and negotiating strategies offer possibilities for testing in both laboratory and “real-world” conflict situations, for codifying, and, conceivably, for integrating appropriate protocols into a prescriptive theory useful for institution building and conflict containment and management.

## LATERAL PRESSURE: LIMITATIONS AND POTENTIALS

*Comparisons of Theoretical Orientations*

One way of assessing the contributions and limitations of lateral pressure theory is to compare it briefly with major paradigms in the development of the field, namely, mercantilism, liberalism, Marxism–Leninism, and realism. The first three of these are political economy paradigms.

Mercantilism placed major emphasis upon the close relationship between wealth and power, the interdependence and ever-changing relationships between a state and its economy, and the central importance of expanded manufactures, foreign markets, and access to external resources. Political aspects of mercantilism were broadly generalized, however, and the interplay with economic considerations, which is, by implication, essentially zero sum, was not rigorously identified. As a theory, lateral pressure specifies such interconnections of economic and political factors and is not zero sum.

Classical liberal theory, emerging from comparative advantage (rather than zero-sum) assumptions, proceeded from a view that the nature of international economic relations is essentially harmonious and adaptive. Liberal theorists have tended to treat economics and politics as relatively separable and autonomous. Like mercantilists, liberal theorists have not paid much systematic attention to growth and capability changes within and across countries or the implications of competition for conflict and violence among states. Lateral pressure theory rejects the presumed autonomy of politics and economics and recognizes the conflict potentials of state interactions.

Marxism–Leninism is a dynamic theory, but the dialectic—the source of its dynamism—is difficult to specify rigorously. In a real-world situation, for example, it cannot be determined “scientifically” (but only dogmatically) which is the “thesis” and which is the “antithesis” in a conflict situation (as in the Sino-Soviet conflict when each side cited Marx and Lenin in support of its own position and charged the other as dominated by capitalist remnants). Further, the “economic determinism” of Marxism–Leninism allows no room for political leverage, bargaining, or coalition formation, which may reduce the constraints of economic factors (or, alternatively, increase them). Lateral pressure theory recognizes and makes explicit the interplay among these phenomena and the plasticity of actions, but makes no assumptions about the intentions of actors or the determination of specific outcomes (except probabilistically).

Realism, the dominant paradigm in the study of international relations,

is rich in elements and theories of part (balance of power, bipolar, multipolar, imperialism, hegemony, and so forth). Because much of the conceptualization is not generic, however, there is widespread disagreement about meanings, the parts are seldom linked systematically, and the paradigm as a whole is notably splintered. Although power is located at the center of realist (and neorealist) theory, neither its sources nor its dynamics have been made sufficiently specific to allow the systematic comparison or persuasive testing of central hypotheses or component subtheories.<sup>9</sup>

Lateral pressure theory addresses the problem of the sources and consequences of power head on. Because it provides a framework of generic elements and processes, lateral pressure in its extended version is capable of encompassing key concepts of classical mercantilism and liberalism, as well as their modern variants, along with those of contemporary realism and neorealism. The “partial theory” is intensely dynamic. The framework accommodates (and allows the connection of) such processes of change as growth, decline, decision (conditioned by cognitions and affects), bargaining, leveraging, coalition formation, competition, adversarial identification, and conflict (violent and nonviolent). The dependence of all social undertakings on the intense interaction between economic and political processes can be made explicit. Similarly, warmaking and peacemaking can be accommodated within the framework, and their processes can be systematically linked.

*Empirical Analysis*

The challenge in submitting lateral pressure theory to the empirical test lies in the fact that the theory stresses the dynamic relationship between national attributes (profiles) and international activities. Because the theory seeks to articulate the strong interdependence, the feedback relationships, and the time-dependent processes, the analytical and methodological techniques appropriate for such contingencies must be utilized. Furthermore, in its verbal statement the theory stresses the nonlinearities in interstate interactions and the complexities of equifinal and multifinal realities, that is, many paths to the same outcomes and multiple outcomes due to similar sources. These complexities of the “real world” are difficult to capture.

The methodology we have adopted at the core of our research agenda is composed of three steps: first, the formulation of the theory in testable terms, by estimating a system of *simultaneous* equations; second, the simulation of the system of equations to “replicate” empirical reality; and third, to “exercise” the system or experiment with a variety of counterfactuals (that is, what would have happened if . . . ?). In terms of specific

technique we principally have used econometric estimation, but we have also experimented with methods of simulating continuous complex systems (that is, system dynamics).

The choice of estimating and simulating a system of *simultaneous* equations represented an effort to apply economic methods to international relations. The estimation is driven by the belief that an appropriate representation of the relationships posited by the theory of lateral pressure was an essential and necessary first step in validation. The simultaneous estimation procedure allows—and forces—the analyst to specify the *components* of the system (that is, the particular modules or “pieces” of the model) that are supported by the attendant dependent and independent variables and then pulls the components together into an identifiable *system*. In this system the same variable can serve as an independent variable in one component and as a dependent variable in another. (Military expenditures, for example, can explain alliance formation as an independent variable and, *at the same time*, are influenced by alliances and other variables as well.) This interdependence (and, in many instances, the feedback relations) constitutes a more appropriate and realistic way of representing aspects of lateral pressure theory than does emphasizing of correlations alone or using single equation formulations with one dependent variable and several independent variables and no references to, or connections with, other components of the reality at hand.

Estimation is only the first step. The second is simulation, which seeks to recapture and recreate the characteristics of the system of estimated simultaneous equations. Because errors usually accumulate easily, simulating a system of *simultaneous* equations is not an easy task; it entails simulation without reference or resort to empirical or historical data. The *only* empirical observation is the first data point of each variable in the system of equations. *All* of the other observations are estimated simultaneously and *all* are simulated accordingly.

Once estimation and simulation are successfully completed (that is, with very small errors), the third step is to “exercise” the simulated system and to experiment with “what if” questions. (For example, what would be the effects on a country’s military expenditures if it were not confronted by hostile alliances, or if the alliances were becoming increasingly strong or increasingly hostile?)

In terms of substance, our research agenda has proceeded in three phases, each phase reflecting our improved specification of the “theory” and an enhanced application of “methodology.” The first phase ended with *Nations in Conflict* and tried to represent the elements of lateral pressure in econometric terms, estimating and simulating the parameters of a simultaneous equation. Studies of the European states prior to World War I and

of the Scandinavian countries over the span of a century (1870–1970) provided clues to the differences between propensities for war and “peace systems.”<sup>10</sup> Our concern has been less with specific events, such as the outbreak and conduct of war, than with general trends and processes. The analysis in *Nations in Conflict* focused explicitly on the sources of lateral pressure and on the impacts of expansion on military competition, alignments, and arms races. The procedure was to specify (1) the components of the model, (2) the description and rationale, (3) the measures used, and (4) the system of simultaneous equations. Then we estimated the coefficients for the simultaneous system and simulated the entire structure as a prerequisite for policy analysis and exploring counterfactuals in terms of “what if” questions.

The procedure for moving from verbally articulated theory (through the written word) to formal representation and empirical analysis (through equation specification, estimation, and simulation) are sketched out briefly in Table 12.1 and in Figure 12.1. Table 12.1 presents the steps to be taken *prior to quantitative* analysis for the research reported in *Nations in Conflict*. These involve specifying the *components* of the model (because the theory addresses complex relationships, both internal and external), the description or rationale for *decomposing* the system as we have done (that is, providing the theoretical justification for the specification of the system of *simultaneous* equations), and the *measure* or indicator used to depict the dependent variable in this particular component, that is, with the full expectation that this variable may be (and, in fact, often is) specified also as an independent variable in another equation. Figure 12.1 depicts the relationships in the model in diagram form. Clearly, the diagram is a highly parsimonious rendition of complex processes; nonetheless, this mode of inquiry generated several important findings and insights.

Table 12.2 represents the econometric equations whose parameters are then estimated empirically; after the parameters are estimated, the system is simulated and a variety of theoretically driven questions are explored. These equations correspond to the diagram in Figure 12.1 and can be thought of as a fourth column in Table 12.1. We emphasize that the equations in Table 12.2 are derived step by step through the procedures outlined here. Therefore, inferring the theory from only a reading of the equation could be tantamount to misplaced empiricism. The equations and the coefficients estimated represent and depict a theory about reality. The equations themselves are signals of reality; they are not the reality itself.

The second phase in our research agenda focused explicitly on simulation and forecasting. The purpose was to model the highly interactive features of the lateral pressure process by first stressing the major feedback loops, then forecasting over the data base, and then forecasting beyond the

TABLE 12.1  
Description of the Quantitative Analysis Reported in Nations in Conflict

Components of the model	Description—rationale	Measure <sup>a</sup>
Expansion	Demands resulting from the interactive effects of population and technological growth give rise to activities beyond national borders	Colonial area
Conflict of interest	Expanding nations are likely to collide in their activities outside national boundaries; such collisions have some potential for violence	Metricized measure of violence in <i>intersections</i> (conflicts specifically over colonial issues) between major powers
Military capability	States, by definition, have military establishments; these grow as a result of domestic growth and competition with military establishments of other nations	Military budgets
Alliance	Nations assess their power, resources, and capabilities in comparison with other nations and attempt to enhance themselves through international alliances	Total alliances
Violence—behavior	Nations engage in international violence as a consequence of expansion, military capability, and alliances	Metricized measure of violence in actions directed toward all other nations <sup>b</sup>

SOURCE: Choucri and North (1975, 25).

<sup>a</sup> Data are established for *each* nation and aggregated *annually* for the years 1870–1914. See Appendix A for details on measurement and sources of data.

<sup>b</sup> Target nations include not only the six major powers in the study, but all states.

existing record. The emphasis was on future developments of the system (see Choucri and Robinson 1978). Studies of the U.S. case (1930–1970) illustrated the essential interactions between the demand and capability components of lateral pressure, “pushing” the system outward. In the course of this work we learned the essential differences and contributions of each mode of modeling, simulation, and forecasting by experimenting with system dynamics as a methodology in contrast to econometrics estimation and simulation (Choucri and Bousfield 1978).

The challenge of modeling system dynamics lies in representing appropriately the characteristics of a system and the positive and negative feedback relations that shape its behavior. This is rather difficult to do; the analyst first specifies the major and minor loops, primarily on theoretical grounds

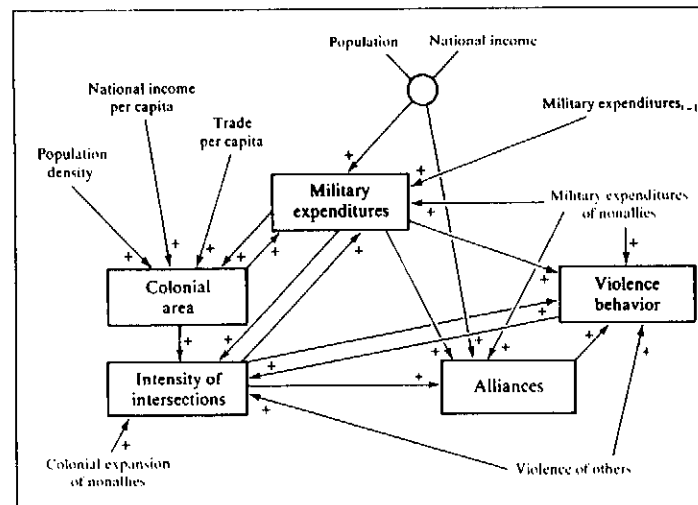


FIGURE 12.1. Dynamics of international violence: the model. From Choucri and North (1975, 245).

and the nature of the signs, and then the impacts in terms of the behavior of the system over time. The ingenuity, in this case, is to determine how realistic the model behavior is and how viable these relationships remain over periods of time. The essence of this phase of our research is analyzing the *dynamic* relationships—the interconnections of the complex realities regarding national profiles and external activities that are represented in a simplified way by the theory of lateral pressure.

The third phase in our research agenda focused on the transformations of national profiles over time and the implications for patterns of international activities. National attributes change over time—some nations grow and expand, others may decay and deteriorate—and their activities are, according to the theory of lateral pressure, intimately related to and dependent upon their population/resource/technology profiles. The case we have chosen to explore in great depth is Japan over a 100-year period (Choucri and North 1986). Still in prepublication form, the Japan study developed a system of simultaneous equations to represent the process of lateral pressure during three phases over the span of the century: (1) from the Meiji restoration to World War I, when Japan gradually transformed itself from an Epsilon profile into a Betalike profile, (2) from World War I to World War II, when Japan exhibited all the characteristics of a Beta profile, and (3) from the end of World War II to the contemporary global economic

TABLE 12.2  
The Japan Model: 1876–1941

Component of the model	Description and rationale	Measure	Equation
Growth	National productivity resulting from economic performance, population activity, and domestic resource exploitation	Exports of finished goods	$\alpha_1 + \beta_{11}$ (imports of raw materials) + $\beta_{12}$ (percentage of industrial laborers in total labor force) + $\beta_{13}$ (production of coal) + $\beta_{14}$ (previous year's balance of trade) + $\beta_{15}$ (proportion of colonial imports to total imports) + $\mu_1$
Resource demand	Demands for raw materials resulting from interactive effects of population growth, technological development, economic productivity, and domestic resource exploitation	Imports of raw materials	$\alpha_2 + \beta_{21}$ (exports of finished goods) + $\beta_{22}$ (proportion of colonial imports to total imports) + $\beta_{23}$ (population of Japan proper) + $\beta_{24}$ (previous balance of trade) + $\mu_2$
Military capability	States, by definition, have military establishments; these grow as a result of internal and external pressures and as a consequence of the pursuit of national objectives and scarce and valued resources	Army expenditures	$\alpha_3 + \beta_{31}$ (Russian military expenditure, a dummy variable of Russia as a potential enemy) + $\beta_{32}$ (colonial area) + $\beta_{33}$ (proportion of colonial imports to total imports) + $\beta_{34}$ (previous year's army expenditures) + $\beta_{35}$ (government revenue) + $\mu_3$
		Navy expenditures	$\alpha_4 + \beta_{41}$ (U.S. navy expenditures, a dummy variable of the United States as a potential enemy) + $\beta_{42}$ (British navy expenditure, a dummy variable of Britain as a potential enemy) + $\beta_{43}$ (imports of raw materials) + $\beta_{44}$ (colonial area) + $\beta_{45}$ (proportion of colonial imports to total imports) + $\beta_{46}$ (previous year's navy expenditures) + $\beta_{47}$ (government revenue) + $\mu_4$
Expansion in trade mode	Resource demands result in expansion of behavior outside national boundaries in search for external control and resource acquisition	Proportion of colonial imports to total imports	$\alpha_6 + \beta_6$ (tonnage of merchant marines) + $\beta_{62}$ (national income) + $\beta_{63}$ (military expenditures) + $\beta_{64}$ (colonial area) + $\beta_{65}$ (food imports per capita) + $\mu_6$
Expansion in territorial mode	Extension of behavior outside territorial boundaries results in control over alien territories; such control occurs to the extent that there are demands to be satisfied and capabilities to pursue these demands	Colonial area	$\alpha_5 + \beta_{51}$ (military expenditures) + $\beta_{52}$ (imports of raw materials) + $\beta_{53}$ (imports of food per capita) + $\beta_{54}$ (population of Japan proper) + $\mu_5$
		Government expenditures for administration of controlled territories	$\alpha_7 + \beta_{71}$ (government revenue) + $\beta_{72}$ (proportion of colonial imports to total imports) + $\beta_{73}$ (colonial area) + $\mu_7$

dominance, when Japan became transformed into a Gamma society (Choucri and North 1988).<sup>11</sup> Japan is particularly instructive in that it illustrates *changes* in a national profile and their implications for forms and modes of lateral pressure.

The methodology we have pursued is analogous to, but much more theoretically sophisticated and with greater empirical specification than, *Nations in Conflict* because it combines historical analysis and quantitative methods (estimation, simulation, and counterfactual analysis). From this study we have enriched our theoretical understanding of shifts in modes of lateral pressure and explored what would (or could) happen if Japan had adopted different policies or had been confronted by different adversaries. However, we have yet to model rigorously the connections between short-term events, such as a provocative act, and their underlying long-term causal structure relating national profiles to international activities.

Some comparative—and illustrative—findings from the World War I (1870–1914) and Japanese (1878–1914, 1914–1941) cases have contributed to our understanding of the different sources and modes of lateral pressure, including the ways in which different explanatory variables in varying combinations have contributed to similar outcomes across countries and through time.

In general, the findings of *Nations in Conflict* and the Japan study were comparable with respect to the exogenous variables leading to lateral pressure, that is, (1) those variables reflecting growth, domestic demands, and capabilities and their impact on external expansion which is indicated by territorial expansion, and (2) results relating to military and naval competitions (as indicated by Japan's military and naval expenditures and those of its adversaries) and arms and naval races.

Our study of the origins of World War I focused on one particular mode of lateral pressure: colonial acquisitions. From 1870 to 1914, British colonial expansion was best explained by population density, technology (national income per capita, but only in the earlier years), and (subsequently) by military expenditures and (for the whole period) a coefficient representing colonial size in 1870. The fact that technology was significant only during the earlier years and military expenditures were significant especially during the later years suggests a transition from domestically driven lateral pressure to a "mix" of arms competition.

For Germany, Britain's major competitor during pre-1914 decades, colonial expansion was best explained by population density and national income per capita—although for most of the period, population density was more important. The fact that military expenditures were not significant seems to indicate that German colonial expansion was not driven predominantly by military competition.



Although Japan played a relatively minor role in World War I, the Japanese had been acquiring colonies for two decades, and the country's patterns were roughly similar to those of the other three countries. Home population and national income did not contribute directly to Japanese colonial expansion, but population growth had a major positive impact on imports of raw materials, which was the main predictor of colonial area for the 1878–1914 period.

Between 1915 and 1941, on the other hand, military expenditure was the only significant variable predicting Japanese colonial area. This shift in pattern suggests a transition from lateral pressure generated by resource demand to a pattern of military investment in the face of perceived Soviet and U.S. opposition to Japanese territorial expansion (*in pursuit of raw materials*). During this period, at least, Japanese military expenditures appear to have contributed more strongly to colonial expansion than in the European cases; such expenditures played only a minor role in explaining British colonial area and failed to be significant in determining German colonial expansion.

Treated as “causal” variables, military and naval expenditures function as major precursors of war, and in all cases the influence of domestic factors—growth and bureaucratic pressures—were determinants of expenditure levels. In the British case military expenditures were explained during the earlier years (1871–1890) by the interactive effects of population and technology (indicated by national income) and, to a lesser extent, by an indicator of the hostility level in the intersections of spheres of influence with other powers. During later years (1891–1914) the influential variables were the bureaucratic effect (the military expenditures of previous years) and the military expenditures of nonallies (countries not allied with Britain).

The intersections and the military spending of nonallied countries were not significant variables in the German case, but Germany's military expenditures for the whole 45-year period were shaped by population combined with technology (national income) and the bureaucratic effect (military expenditures at  $t - 1$ ). Also important was a coefficient representing an initial level of expansion that could or would have been reached if the explanatory variables had not been constrained in the “real” world.

Japan's military spending could be traced to lateral pressure together with competition for territory (and armed conflict off and on after 1905) with Russia/the USSR, arms race behavior, and intersections with the expanding activities and interests of other powers including Britain, Russia, and the United States.

The naval race patterns of Britain, Germany, and Japan were also comparable. Overall, the influence of internal factors was especially strong in the British and German cases. Britain's naval expenditures were shaped

primarily by domestically driven bureaucratic process (previous naval spending) and, to a much lesser degree, by population times national income and intersections, neither of which was statistically significant. Germany's naval expenditures were best explained by the interactive effects of population and technology (national income). The level of intersections was a significant negative predictor of military expenditures. The intercept term was positive and significant, reflecting an already strong influence of naval allocations during phases of the overall period.

Japanese naval expenditures for the whole period (1878–1941) were best explained by U.S. naval expenditures (when the United States was perceived as a potential threat), its government revenue, and its past naval expenditures. Raw material imports and colonial area surprisingly showed a strong *negative* influence on the country's naval expenditures. The negative sign may indicate an increasing reliance on land warfare as Japanese colonial holdings (and access to raw materials) expanded and dampened elements (a negative feedback loop that constitutes a small but conceivably important component in the overall model). When this link is integrated into the overall picture (Figure 12.2), the spiraling dynamics leading to conflict appear much stronger than the discrete, negative, dampening linkages.

With respect to simulation and exploring what could have happened under alternative conditions (that is, the counterfactuals), we found that removing Japanese perceptions of Russia/the USSR as a threat greatly altered Japan's army expenditures: no buildup occurred during the 1930s when the model was simulated with “Russia as a threat” set at zero. By contrast, removing the “United States as a threat” had little or no impact on Japan's navy expenditures. The latter experiment suggests that the conflict spiral and armament levels were influenced largely by factors other than perception of adversaries. Japan's own budgetary variables were more important than responses to the adversary. Noteworthy is the finding that, prior to 1941, Japan's response to Russia/the USSR was strong, but its sensitivity to the United States navy prior to 1941 was significantly less so.

There is only one period in which we can compare directly the results of simulation for Japan and Great Britain: prior to 1914. We found the impact of bureaucratic momentum to have been more influential in the case of Britain than in the case of Japan. While increasing the coefficient of previous years' military expenditures in the British model led to a massive increase in the simulated level of military spending, analogous increases in the level of the military expenditures ( $t - 1$ ) in the Japanese case had less impact overall and very little impact on the simulated levels of spending for later decades. Other variables influencing military (specifically army) spending in the Japan model—colonial area, imports from the colonies, and especially

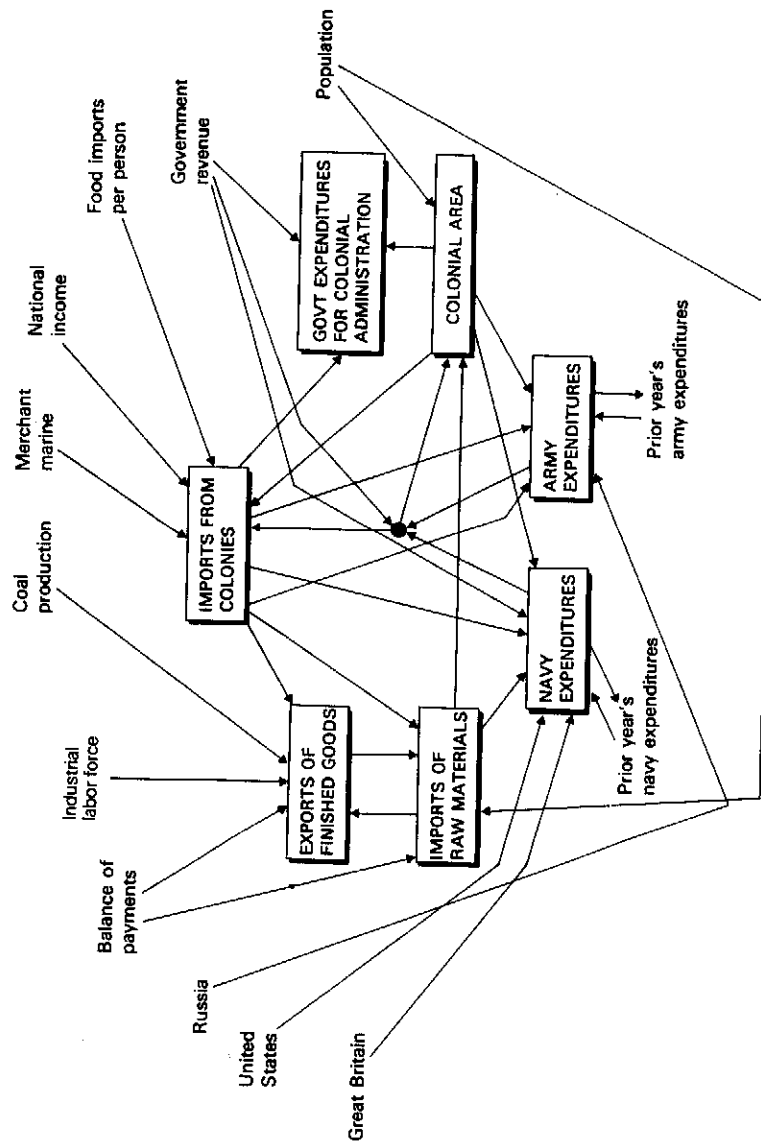


FIGURE 12.2. The Japan model from the Meiji Restoration to World War II: An overview of the entire system.

the “Russian threat”—seem to be stronger. Overall, we have found the simulation results to be fairly robust (that is, nonvarying) against changes in the level of previous military spending. This means that the path or trajectory of expenditures was very strong, resisting change in the type of policy experiments (or counterfactuals) we have explored.

The fourth phase of our research agenda is our current work on global analysis. By taking into account all entities in an international system as well as flows of an environmental nature, we expect to obtain a more comprehensive view of the processes of growth, expansion, and conflict.

### Review and Assessment

The first two phases of our research program have been reviewed by a number of scholars since publication of *Nations in Conflict*. In retrospect, we see these critiques as falling into two general categories. First are those criticisms that we consider essentially trivial and nonilluminating, such as disagreements over a particular coefficient or a variable or debates over functional form. There is always room for improvement, but the criteria for judgment and evaluation must be rendered explicit, and this is what we have tried to accomplish. By contrast, there are critiques that are derived from attempts to replicate our analysis but that, in fact, do not actually undertake what would be considered a replication. Specifically, because the theory of lateral pressure stresses the interconnections, the dynamic linkages, and the feedback relations and simultaneities of influences linking internal and external factors, any replication efforts or tests of the theory must involve the use of methodology appropriate to the theoretical directives. The use of bivariate linear equations to test our theory or to replicate our work is simply incorrect. The models we have developed are explicitly formulated in a *dynamic, simultaneous system of jointly dependent variables*. We view inferences drawn from bivariate correlation coefficients as logically and methodologically indefensible for testing or assessing the work we have done. In some cases, critiques of our work have even more seriously confused multicollinearity among variables (that is, a high degree of positive correlation in the model) with a system of simultaneous equations.<sup>12</sup>

Second are those criticisms that have focused on the theoretical underpinnings of lateral pressure and reflected on the conceptual problems.<sup>13</sup> These we recognize and greatly appreciate.<sup>14</sup> We are especially grateful for the observations given to improve theoretical specification and to help generate a more elegant theoretical structure. However, occasional allegations of “determinism,” we believe, are misplaced because they obscure the interaction at every stage of activity between factors that shape

and constrain a nation's profile (population, technology, access to resources, relative capabilities, and so forth—factors in which human decision is implicit), on the one hand, and the policy choices that can be undertaken at critical points, on the other.

Our more important self-criticisms, many of them presented in *Nations in Conflict*, are theoretical and analytical.<sup>15</sup> We have yet to examine the data more fully (reporting in greater detail on patterns displayed by discrepancies between the hypothesized and the actual results, for instance, the residuals) and improve on the specification of the relations between the national profile, the form of lateral pressure, and the conflict spiral. The system of simultaneous equations described here requires considerable improvement. Initially, we had a tendency to aggregate key relationships (such as combining imports and exports in a total trade variable). Some of our indicators could be improved upon, and the quality of available historical data often leaves much to be desired. So far we have investigated only bits and pieces of the overall dynamic system we hope to explore. But the more we probe, the deeper is our conviction that these relationships are not simple and can only be examined with appropriate techniques that recognize and accommodate these complexities.

Finally, we share with our colleagues in this field (and others) the limitations of human possibilities for ascertaining "objective knowledge." The investigator, like any other observer, must recognize the extent to which the only access any of us has to "reality" is through our central nervous systems and the extent to which observing and investigating an aspect of reality tend to alter reality. Karl Popper stated that all objective knowledge of human affairs was more "cloudlike" than "clocklike" and, hence, indeterminate, "plastic," equifinal, multifinal, and probabilistic. It seems to follow that *all* theories in the social sciences are, at best, approximations. This recognition need not (indeed should not) inhibit our investigations. With appropriate caveats, even simplified models can help us understand indeterminate realities, but conclusions must remain tentative. We are inclined, therefore, toward the Lakatosian view of "progressive problem shifts" in which the possibility always exists that two or more theories (or elements thereof) may cumulate, recombine, and undergo a transformation to yet another level of understanding.

We believe that with the analytical tools and modes of analysis currently at hand, the extended lateral pressure framework still remains too inclusive, extensive, and loosely joined to be fully tested as a general theory. Its major strength, in our view, lies in the fact that the processes disputed by most international and global theories can, in principle, be identified and located within this broader framework. The framework remains sensitive, moreover, to the testing—*within it*—of existing ("quasi," "partial") theories. A

comprehensive framework is, for us, extremely helpful in reminding us of the lay of the land and pushing for internal consistency among its components. When major theoretical inconsistencies or empirical contradictions or inconsistencies arise, the challenge becomes one of recognizing and explaining these discrepancies. For the time being, at least, we assume that this will be the most useful way to proceed; for example, testing two or more contradictory propositions or theories within the extended lateral pressure framework may force theoretical reformulation, enrich the generic framework itself, and lead step by step toward a more parsimonious synthesis. While recognizing that the indeterminacies of international and global politics cannot be eliminated, we *do* expect the lateral pressure approach to reduce their range substantially and to help us appreciate what we do and do not "understand."

Among the candidate theoretical orientations most relevant for "testing" and identifying contradictory or supportive results are theories of arms race and competition, theories of hegemonic stability, and theories of power transition. Each of these theoretical approaches addresses a *particular aspect* of the relations among nations that is articulated in the theory of lateral pressure. In so far as these theories intersect, to some extent they are only partially competitive with each other. It is a challenging research task to determine both theoretically and empirically, for example, when and under what conditions theories of hegemonic stability are more (or less) parsimonious explanations of the relations among nations than are theories of power transition. The modular approach to theory building and theory testing, which was labeled decades earlier as "islands of theory" (Guetzkow 1950) is particularly applicable because the theory of lateral pressure enables systematic incorporation, comparison, and testing of contending "pieces" of a broader puzzle of causes of war and conditions for peace.

## NOTES

1. This chapter reports on the lateral pressure theory only in reference to international relations, but the process specified by the lateral pressure theory is general and operative at every level and context of analysis. We are grateful to Sung Joon Roh for his insightful research assistance and to Elizabeth McLaughlin for assistance in manuscript preparation.

2. For an analysis of evidence on the relationship of population and conflict, see Choucri (1974) and (1984).

3. For example, Albert Hirschman, in distinguishing between the supply effect (foreign trade undertaken for commercial, industrial, and consumer purposes in general) and influence effect ("carrot" and "stick" trade manipulations), examined the application of economic leverages by the Nazis in their expansion activities in World War II.

4. The word *linkage* is defined as "a recurrent sequence of behavior that originates on one side of the boundary between two systems and becomes connected in some way with phenomena on the other side in the process of unfolding."

5. The international oil and energy markets and the conflicts in them are illustrative. For a simulation model of international exchanges in energy resources, see Choucri and Ross (1981).

6. These explanations have focused on domestic migration from the economic perspective and are largely based on wage differentials; the treatment of international migration, therefore, has been scanty (see, for example, Lucas 1981; Bohning 1983, 1984). For a new interpretation of international migration from the vantage points of international relations and political economy, see Choucri (1987).

7. This labeling procedure is used only to reduce the affect bias in characterizing states.

8. Long wave or cycle theories can be classified in terms of (1) long-term economic fluctuations such as capital investment (Kondratieff 1928; Forrester 1979), technical innovation (Schumpeter 1939; Freeman *et al.* 1982), capitalist crisis (Trotsky 1923; Mandel 1980), and war (Silberling 1943) or (2) their relationship to war (see Modelski 1978, 1981, and Thompson and Zuk 1982, with respect to "leadership cycle"; Hopkins and Wallerstein 1979, Bousquet 1980, and Vayrynen 1983, in terms of "world system"; and Organski and Kugler 1980, Doran and Parsons 1980, and Gilpin 1981, as to "power transition"). For a summary of the debate and some empirical tests, see Goldstein (1985).

9. For a recent reinterpretation of realism and neorealism, see Keohane (1986).

10. For a discussion of the "peace systems" exhibited by these states, see Choucri (1972).

11. The purpose of model is to formalize and then estimate the relationships between the domestic sources of lateral pressure, on the one hand, and the modes of lateral pressure, on the other, as well as sensitivity to other competing states.

12. For an example of the reviews that contain methodological criticism of this kind, see Zuk (1985).

13. Special recognition is accorded to Hayward R. Alker, Jr. for his continued critique and contribution to theory development.

14. In a seminar at Harvard University in 1986, Ernst Haas made perceptive reference to a critical feature of lateral pressure theory, namely, that it "confounds Rousseau" by addressing the problem of national "happiness" leading to "international unhappiness." The subtitle of *Nations in Conflict* alludes to the generic dilemma.

15. For early self-criticism and a progress report of methodological development and theorizing, see Choucri and North (1975, 278–282) and Choucri and North (1972, 115–122).

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