

deliberations, cf. *Report of the Inter-Governmental Group of Experts on an International Code of Conduct on Transfer of Technology to the United Nations Conference of an International Code of Conduct on Transfer of Technology* (Geneva, 13 July 1978).

28. This phrase is borrowed from Ward Morehouse, *Science, Technology and the Global Equity Crisis: New Directions for United States Policy*, Occasional Paper 16 (Muscatine, Iowa: Stanley Foundation, 1978), p. 19.

29. Cf. Business International, *Transfer of Technology, A Survey of Corporate Reaction to a Proposed Code* (Geneva, 1978), pp. 13-15, where the main reasons for transferring technologies by transnational corporations to developing countries are described. They are, not surprisingly, very mundane indeed.

30. E.g., the deputy to the under-secretary for security assistance, science and technology in the U.S. Department of State, Joseph S. Nye, Jr., "Science and Technology, Technology Transfer Policies," *Department of State Bulletin* 78:2012 (1978):40.

31. See Ward Morehouse and Jon Sigurdson, "Science and Technology and Poverty. Issues Underlying the 1979 UN Conference on Science and Technology for Development," *Bulletin of the Atomic Scientists* 30:10 (1978):26.

32. Cf. Dieter Ernst, "Strengthening the Technological Autonomy of Developing Countries—Some Controversial Hypotheses Concerning UNCSTD" (Manuscript, Hamburg, 1978), p. 7 ff.

33. Dieter Ernst, "Technological Dependence and Development Strategies" (Manuscript, Hamburg, 1978), p. 5.

34. Jean Touscoz, *La Coopération Scientifique Internationale* (Paris: Éditions Techniques et Économiques, 1973).

35. See *Report of the United Nations Conference on Technical Co-operation Among Developing Countries*, Buenos Aires, 30 August-12 September 1978 (New York: United Nations, 1978).

36. A good compilation and analysis of various proposals for enhancing Third World cooperation in science and technology is contained in David W. Chu and Ward Morehouse, "Third World Cooperation in Science and Technology for Development," Science and Technology Working Papers Series, no. 5 (New York: UNITAR, 1979).

37. This chapter was written while the author was codirecting, at UNITAR, a project on the preparations for the United Nations Conference on Science and Technology for Development (UNCSTD), Vienna, 20-31 August 1979. Related papers by the author include "The New International Order and United Nations Conference Politics: Science and Technology as an Issue Area," Science and Technology Working Papers Series, no. 1 (New York: UNITAR, 1978); and "Options for an Institutional Follow-up to the UNCSTD," Science and Technology Working Papers Series, no. 6 (New York: UNITAR, 1979).

5

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International Political Economy: A Theoretical Perspective

Introduction

The decline of the dollar, worldwide inflation, and the threat of an impending recession are indicative of fundamental changes in economic relations among nations. The increasing economic strength of certain raw material exporters, the inability of the industrial countries to develop coherent international economic policies, and the repeated calls for a new international economic order reflect major changes that are having severe effects on political relations among states.

The thesis of this chapter is that the causes and consequences of these changes cannot be explained solely by economic theory or by theories of international relations. It presents a perspective on system change derived from the insights of both disciplines. Toward this end, it draws upon selected aspects of international relations theory in conjunction with relevant insights and evidence from economic theory, and it outlines integrated theoretical directives for the analysis of system change. International trade and finance are a device—an issue area—for presenting a political economy approach to change and for indicating the linkages between economic theory and political analysis.

Economists and political scientists have fundamentally different explanations for international trade and finance, which give rise to different types of predictions and different policy recommendations. Each discipline tries to explain somewhat different aspects of the flows of goods and payments across national boundaries. Economists are more rigorous in both theory and method, but focus almost exclusively on static or comparatively static relations. Political scientists are, to a large extent, concerned with institutional and historical change, but their theories are generally vague and their methods often lack theoretical foundation.

A political economy perspective on international change entails inte-

grating the insights provided by the two disciplines. The formal deductions of economic theory can provide critical inputs in an interdisciplinary framework for analyzing changes in international relations. Political influences affect economic interactions, particularly in shaping the composition and magnitude of trade in goods and services and in influencing the composition of the balance of payments and its adjustments; conversely, patterns of trade and payments affect the nature of political relations among nations and changes in these relations.

The analysis in the chapter proceeds as follows: first it surveys the main elements of the theories and empirical analyses of international trade and balance of payments that bear directly on the analysis of change in the international system. Then the influence of political variables in determining economic interactions generally, and trade relations specifically, is identified. This is followed by a review of the role of economics in different international relations theories. These sections provide the background for the development of an integrated framework for a political economy approach to international relations. The chapter then focuses on theoretical aspects of change in the international system and concludes with some specific directives for guiding empirical analysis.

International Economics: Clues for Change

The economic theory of international trade is conventionally divided into two branches: the pure theory of international trade and the monetary theory of balance-of-payments adjustments. Each deals with different aspects of trade, focusing on different problems and policy measures. Although both branches of theory are explicitly apolitical in their analyses they refer to processes and policies that are, in many ways, deeply political. A review of the main assumptions and related deductions of the theory of international trade and payments highlights the potential implications for explaining and predicting change in international systems.

Theory of International Trade

The theory of international trade is fundamentally static in nature. Its traditional focus is the explanation of patterns of trade. The modern theory of international trade stems from Adam Smith's critique of the mercantilist view that national wealth can be viewed in terms of the stock of precious metals and trade as a means of increasing that stock. The theory begins with the recognition that patterns of domestic consumption differ from patterns of domestic production, and that, in the

absence of trade, domestic relative prices would differ from one country to another. In these circumstances, it is possible for one or both countries to gain by exchanging commodities. Neither country will be made worse off by trade and both will benefit if goods are exchanged at some intermediate price ratio.

The explanation of international price differences has its origin in the Ricardian model stipulating that prices reflect the ratio of labor costs to production, and trade patterns are determined by differences in labor productivity. In this labor theory of value, comparative costs provide the key to trade patterns. The Ricardian theory, based on one factor of production, constant returns to scale, two commodities, and two countries, generates the deduction that each country will export the commodity in which it has comparative advantage in labor productivity.

The modern theory of international trade has a more comprehensive theory of prices and costs, explaining differences in comparative costs as the result of differences in the ratio in which countries are endowed with factors of production. The Heckscher-Ohlin model deduces trade patterns resulting from such differences in factor endowments. It assumes that production functions are similar across nations and consumer tastes are identical everywhere, with two factors of production, two countries, two commodities, and different and nonreversible factor intensities among countries. The theory deduces that countries will export that commodity which makes most intensive use of the country's most abundant factor. Trade encourages resources to move into these productive sectors for which the country has a comparative advantage. As a result of engaging in trade with internal factor mobility, factor prices between two trading countries will, under certain assumptions, tend to equalize. Thus, free trade will tend to equalize factor prices across countries despite the assumption of international factor immobility. If there were complete equalization of factor prices, free trade would be a complete substitute for international mobility of factors. The Heckscher-Ohlin model has also been used to examine a range of comparative-static questions, such as tariff policy and technical change. This entails a comparison of two static conditions; it does not explain the change, but depicts the result of change.

The gains from trade are derived from two processes: gains due to the consumption domestically at prices different from the original home prices; and gains due to the reallocation of domestic resources that shift production and, through trade, raise income, thereby allowing consumption to expand. The benefits may be uneven across countries. It does not address itself to the costs of trade or the internal distribution of the effects of trade.

When a country undertakes trade, it expects international conditions

to affect the home market. Since trade influences domestic production, it must affect fundamental aspects of a country's economy. Thus, the internal effects of trade shape a country's international position, and the international effects of trade shape its domestic economic situation.

Free trade under competitive conditions would generate a world distribution of consumption that could not be further changed to improve the welfare of all the trading partners without harming at least one country. In this restricted and aggregate sense, free trade is Pareto (optimally) efficient. Free trade, of course, assumes certain political conditions, both nationally and internationally, as will be noted below.

The contemporary theory of international trade exploits the formal apparatus developed in Samuelson's rigorous extensions of the Heckscher-Ohlin model to analyze a number of specific issues, such as: (1) the conditions of competitive equilibrium with many traded goods and services; (2) the effects of various domestic distortions and imperfections, including monopoly power and fixed factor payments; (3) the effects of distortions such as tariffs and quantitative restrictions; (4) the implications of trade for prices and outputs of nontraded goods; and (5) the implications of customs unions.¹

There are other, less fully formulated theories of trade than those related to the Heckscher-Ohlin model and its specifications. First are theories that address the reasons for trade among countries with similar tastes.² There are the "product cycle" theories, which explain the changing composition of trade as the result of the spread of demand and production capabilities from technologically innovative countries to other countries.³ Speculative thinking about the effects of overseas corporate activities can be regarded as a type of trade theory that has been expanded into theories of multinational operations.⁴ Finally, the view of trade as a "vent for surplus"⁵ has its modern counterpart in the theory of export-led growth.

The observations on trade theory indicate the type of explanations that are provided by the pure theory, but they do not explicate the processes by which the change takes place. Although the focus is on static analysis and equilibrium conditions, the implications for *change* in economic relations can, however, be deduced from the explanations proposed for determining the initial trade patterns. The balance of trade is a good indication of changes in relations among nations, and changes in the relative payments positions of nations are, in turn, useful measures of changes in the overall system's structure.

The Theory of Balance of Payments Adjustments

The theory of balance of payments stems initially from concern with

the processes by which overall surpluses or deficits in a country's balance of payments are adjusted. This initial focus has broadened to include explanations of adjustments to capital movements and the theory of the determination of foreign exchange rates.

Classical economists resorted to the price specie-flow mechanism to explain internal adjustments to international trade imbalances. The Keynesian adjustment mechanisms emphasized induced import changes due to changes in national income levels. The monetarists expanded the adjustment theory, with the recognition that both domestic income levels and the balance of payments reflect international monetary influences. There are at least three approaches to the balance of payments adjustments in the contemporary literature that provide partial explanations for linkages among nations. The *elasticity approach* specifies the balance as a function of the differential price responsiveness of exports and imports; the *absorption approach* describes the balancing process as the result of changes in income induced by changes in imports and exports; and the *monetary approach* emphasizes the role of foreign reserves, other sources of money creation that influence interest rates and the general price level and, therefore, trade, capital movements, and the foreign exchange rate.

Each view of the balance of payments entails different policy foci. The elasticity approach emphasizes the effect of changes in relative price on imports and exports and, therefore, on the balance of payments. The absorption approach focuses on changes in income that result in changes in the balance of payments. Thus, the policy concerns of the absorption approach deal with the effects of exogenous changes in spending, such as government expenditures, exports, and, in some cases, investment, and their induced effects on income and foreign expenditures. The monetarist approach focuses on changes in the foreign reserves and other assets of the central banking authority, and the implications for domestic money creation and interest rates. These factors, in turn, influence domestic interest rates and the levels of expenditures and income. The balance of trade reacts to these domestic developments, as do the magnitude and composition of international capital movements.

The monetarist approach, which has recently been gaining in popularity, explains inflation by the rate of growth of the money supply.⁶ Both the "new" and traditional monetarists are concerned with the international transmission of inflation. Government deficits are regarded as a critical aspect of aggregate demand policy by Keynesians, but are considered by monetarists only as a monetary device. Models of aggregate expectation formation have been developed to describe endogenously the reaction of economic decisions to exogenously imposed and induced changes in monetary and aggregate spending variables. A recent compre-

hensive study of the sources of balance of payments adjustment processes stresses the complementarity of various theories of adjustment.⁷

The channels by which macroeconomic conditions in one country affect such conditions in other countries are illustrated by the international transmission of the effects of inflation. This transmission is generally viewed as taking place through the channels of the effects of price, demand, liquidity, and international demonstration.⁸ The first transmits inflation through the changes in values of traded goods; the second through transmission of demands for foreign goods and services; the third through capital movements and foreign exchange rate adjustments; and the fourth through anticipatory price and wage increases.⁹

There are many implicit references in the economic theories of balance of payments adjustments to the constraints imposed by both domestic and international institutional arrangements and, more fundamentally, by the domestic and international political contexts. But these constraints are seldom, if ever, made explicit, and remain peripheral to the economic theory of the balance of payments, capital flows, and foreign exchange rate adjustments. Unfortunately, the political changes created by economic changes are fully specified by neither economic nor political theories of international relations.

Empirical Models of International Trade and Payments

All economic models of international trade and payments view international economics as a system in which domestically induced changes in one country's income, prices, endowments, and/or productivity influence the economic activities in other nations.¹⁰ In turn, these changes are transmitted back to the country of origin. These influences have direct policy implications because they affect domestic policies and, inevitably, the coordination of economic policies among nations. The economic theories of trade and adjustments have been explored and applied empirically in a number of models, which continue to confine themselves almost exclusively to economic factors. Yet some investigators recognize the significance of political variables.

In the empirical models of international trade, exports and imports are modeled as functions of relative prices, foreign exchange variables, real disposable income, relative resource endowments, industrial production, real changes in investment, relative factor prices, and real GNP—to name the most commonly used explanatory variables.¹¹ The effects of transportation, distance, and costs are also included. The flow of trade is, with few exceptions, explained and predicted by these economic vari-

ables alone. Political indications of "influence," power, coercion, cooperation, and the like are singularly absent.

The basic representational technique is the trade matrix of imports and exports by country of origin and source of destination, with rows or columns summing up to total world exports and total world imports—by commodity and by total value of trade. The representation, commonly referred to as a transaction matrix, has been used to categorize information not only on commodity flows across national boundaries, but on payments for trade, services, and capital flows.¹² But it is not the basis on which to test hypotheses dynamically, or to examine processes underlying trade patterns or changes in these processes.¹³

Approaches similar to trade matrix accounting have been adopted by political scientists seeking to describe the worldwide network of trade.¹⁴ These approaches, too, are largely atheoretical and nonpredictive in nature, yielding information that is mainly descriptive, but in the analysis of international relations they have been tied to theories of integration and community formation.

The models of balance of payments adjustment and international transmission of changes in levels of domestic activity are more behavioral in nature and more process-oriented than transaction models. The objective of these models is to identify interconnections between national economic activity and international economic interactions. These models have a long history, beginning with interwar analyses of trade flows sponsored by the League of Nations to the present large scale International Linkages in Economic Systems (LINK) project, described below. Earlier works focus on the effects of changes in investment,¹⁵ income and capital flows,¹⁶ investments and changes in prices,¹⁷ and income, prices, and industrial capacity.¹⁸ The models differ mainly in the manner in which the determinants of imports and exports are specified.¹⁹

One of the conventional criticisms raised is that such models are too deterministic and do not allow for a wide enough range of factors that influence trade flows, in part due to their highly aggregate character. In addition, the models only embody trade flows; capital flows, which are critical to a country's overall economic transactions, are typically treated as residuals. The general theoretical formulation of international adjustments imbedded in these empirical models has recently been modified and expanded to take monetary factors and exchange rates into account, following the later development in adjustment theory. To a considerable extent, more recent empirical models are extensions of models of domestic activity with trade and payments sectors added. For example, the LINK models, so prominent among international economists, are a set of relationships designed to examine the international transmission mecha-

nisms, formulated with the explicit objectives of connecting the activity and trade levels in a number of countries, explaining the imports of each country, and estimating exports from trade shares.²⁰

There are still newer approaches in the construction of empirical models of international trade. For example, Roemer recognizes that although transportation costs were assumed at zero in most trade models, the empirical reality is such that transport costs are important and must be taken into account.²¹ He finds that the observed biases in trade patterns cannot be explained solely by distance, but are the outcome of influences that "are not distinctly economic in the narrow sense."²² In further explaining his results, Roemer concludes that "powerful countries market more of their competitively weak sectors in areas where they have influence, for historical and political reasons, than they would otherwise."²³ He then speculates on the nature of the "sphere of influence" relationship. Parenthetically, Kindleberger is one of the few international economists noted for giving specific attention to these factors.²⁴

The Roemer measures and those of similar studies are closely related to the "concentration" indices developed thirty years earlier by Hirschman to determine the power implications of trade.²⁵ Subsequently, such measures were expanded by both economists and political scientists,²⁶ but these developments in measurements have had minor effects on the basic economic theory of international trade and only marginal incorporation in any integrated political economy perspective on international relations.

It is fair to conclude that economic analyses of international trade are largely static in nature, focus on flows, specify at times the differential attributes of nations generating differences in trade patterns, stress composition of trade and not direction of flows, and isolate trade from the broader network of economic relations.

Political Factors in International Economic Theory

There is no explicit statement in the conventional economic theory of international trade and payments regarding the influence of political variables. In reviewing both the trade theory and theory of balance of payments adjustments, however, it is clear that there are a number of implicit political factors that should be considered explicitly in a more comprehensive approach.

Recall that the pure theory deduces gains from trade. The concepts of comparative advantage and gains from trade are as critical to the original views expressed by Ricardo and Smith as they are in the more recent the-

ories that focus on differences in factor endowments. The historical case of trade relationships between England and Portugal that centered around the famous Methuen Treaty of 1703 is often used as an illustration of the principle of comparative advantage, both in the earlier Smith and Ricardo works and in the context of the modern line of theory. Ricardo's statement that "under a system of perfectly free commerce, each country naturally devotes its capital and labor to such employments as are most beneficial to each,"²⁷ while using the example of the factors determining the manufacture of wine in Portugal and cloth in England, has been the classic example of the principle of comparative advantage. The economic theory of international trade has continued to refer to this as an example, and to present the theory of comparative advantage as the primary and only general explanation with predictive power of trade among nations. Yet even within the economic explanations there are implicit assumptions about political influences. Politics and the use of force that have, in many cases, contributed to changes in the fundamental factor endowments have modified the gains from trade and have heavily influenced trade patterns so often characterized by economists as determined simply by comparative advantage.

The classic historical example itself illustrates this broader perspective. A political analysis of the historical case and a parallel analysis by an economist have raised substantial doubts that Portuguese-English trade was mutually beneficial.²⁸ This historical evidence indicates that free trade between Portugal and England was the result of the extensive use of military coercion and the manipulation by the stronger state of the weaker state's political position. The outcome was a transformation of trade relationships toward the consolidation of what was later called the working out of comparative advantage by Smith and Ricardo.

Many specific assumptions in the economic theory of international trade hide the role of political factors; these assumptions must be relaxed or eliminated completely in order to achieve a more realistic understanding of trade conditions. For example, the conventional theory assumes perfect competition in trade, although important extensions of that theory investigate in detail the significance of monopoly power in setting tariffs and of monopsony power in setting export taxes. However, both the assumptions of perfect competition and full exploitation of monopoly, and of monopsony, power are seldom if ever warranted. There are also constraints determined by international politics on the exercise of monopoly power. The influences of fundamental factor endowments are expressed in economic theory only through markets, and correctly expressed only if those markets are perfectly competitive. However, relative factor payments are heavily influenced by political conditions. Thus,

factor endowments in themselves do not determine trade patterns as completely as is asserted by the economic theory of international trade.

The political factors embedded in international economic theory are also related to the determinants of market structure and interactions which reflect the capabilities of national governments, their domestic strength, and the extent to which they can and do make use of the policy instruments available to them. Recently, the interactions between national governments and international economic organizations revealed the stresses and pressures to which a government can be subjected, and the effects of its responses upon the international structure of power relations.²⁹ Cognizance of the trade-off between inflation and unemployment and of the attendant pressure groups that would be affected by policies designed to influence inflation or unemployment has given rise also to new lines of inquiry.³⁰ The emphasis, however, has been overwhelmingly on the analysis of domestic politics. The international aspects of the connections between political and economic variables remain for the most part unexamined, as are their implications for change in both the structure and the process of relations among nations.

Economics in Theories of International Relations

With few exceptions, the political analysis of international relations has traditionally focused on problems of governance and of power, examining transactions among nations largely as they bear on these two factors. Among the political philosophers, Hume stands out in his explanation of the criticality of the balance of payments to a country's international position.³¹ The classical mercantilist view makes a direct connection between power and wealth, and a more recent reassertion of the posture stresses fundamental interconnections between the "pursuit of power and the pursuit of wealth."³²

The evolution of modern international relations theory—through the idealist-institutional, realist, behavioral, and postbehavioral phases—reveals different degrees of reliance on economic theories and processes. At least three contemporary paradigms in international relations theory have direct relevance to the analysis of international trade: the realist-mercantilist view, the liberal-interdependence perspective, and the radical-Marxist view. Each is predicated on different assumptions about the nature of the state, of political behavior, and of relations among nations, and each draws upon different aspects of economic theory.

The "idealist" posture, which initiated the formal study of international relations as a distinct discipline in the United States, was influenced by

Wilson's Fourteen Points and developed into a focus on institutional arrangements that could contribute to the preservation of international peace.³³ The emphasis was overwhelmingly on legalistic and distributional arrangements. The League of Nations occupied a central position in the analysis of relations among nations. The problem of reparations gained attention after World War I, and economists debated the political as well as economic constraints on Germany meeting the Allies' reparations claim. By contrast, however, political scientists paid relatively less attention to the politics of reparations.

The outbreak of World War II contributed to a realist critique of idealism. The orientation of Morgenthau's *Politics Among Nations* became the dominant view. The relationship between economics and politics was only briefly noted: "It is necessary to distinguish, say, economic policies that are undertaken for their own sake, and economic policies that are instruments of a political policy."³⁴ The "behavioral" revolution during the 1950s and early 1960s emerged in part as a reaction against the *realpolitik* premise that power, especially military power, is the essential concept in the understanding and analysis of relations among nations.

Major research projects during the 1960s—including the Inter-Nation Simulation, the Stanford Studies in International Conflict and Integration, the Dimensionality of Nations Project, and the Correlates of War Project—took only marginal cognizance of trade and other economic variables as bearing upon relations among nations.³⁵

The postbehavioral "revolution" in international relations placed greater emphasis on the unmeasurable factors and on the role of context in interpreting political outcomes. It contributed to a greater appreciation of the complexity of national goals and political objectives by attempting a more explicit conceptualization of the fundamental political processes.³⁶

The three contemporary paradigms in international politics that bear directly on a political economy of relations among countries—the realist-mercantilist paradigm, the interdependence school, and the radical-Marxist paradigm—are predicated on different views of the role of the state, the goals of nations, and the interconnections among nations, and each draws upon different aspects of economic theory. The debt to economic theory is not always explicit, but there is, in each case, an observable connection.

The first theoretical paradigm focuses on the power of nations, is explicitly nationalist in orientation, and draws upon the realist school, the mercantilist tradition in economics, and the emphasis on power relations. The orientation is derived from Morgenthau's precept that politics has primacy over economics, is state-centric, focuses on national wealth,

and examines the interconnections between the political and economic goals of nations.³⁷

The interdependence paradigm draws partly upon neo-classical economics and the earlier integrationist school in political science.³⁸ The interdependence school emerges as an attempt to understand the context within which nations operate internationally and seeks to understand the extent of mutual leverage that can be exerted.³⁹ The focus is less on power as such than on the constraints on national behavior, the outcomes that create regimes that regulate interaction in certain issue areas, and the policies that could generate outcomes that can be beneficial, albeit asymmetrically, to all parties in an international exchange.⁴⁰ The major concepts are asymmetry, vulnerability, and sensitivity, as three indications of political relations and influence among nations. The logical implications of these maxims have not been fully explored, nor do there exist comprehensive, empirically based models which reveal the predictive strength of the theory or the interconnections between economic and political variables in explaining change.

Trade patterns, analyzed as part of the earlier integrationist school,⁴¹ were used as indicators of community formation and centered around the concept of "relative acceptance" and the development of associated measures. More recently, the use of trade as an indication of asymmetrical relations in an interdependence framework has been undertaken for examining political problems relating to petroleum trade.⁴² The focus in both cases is on the inferences to be derived from changes in the direction and magnitude of trade flows. The Deutsch tradition relates flows of trade to broader patterns of communication. The work on petroleum trade seeks to delineate the structure of mutual political leverage created by different patterns of imports and exports of oil and the connection to commodity trade and financial flows.⁴³

The third contemporary paradigm in international relations theory has origins in Marxian economics and has recently been extended into the *dependencia* literature and related center-periphery relations.⁴⁴ It focuses on the potentially exploitative nature of political and economic relations, and on the domination and control dimensions of international politics.⁴⁵

Theoretical, as opposed to descriptive, analyses of "unequal exchange"⁴⁶ have recently been extended to dependency relations. Duvall and colleagues have developed the most rigorous and conceptually rich set of indicators of different aspects of dependency relations.⁴⁷ This pre-theoretical exercise is important for the development of a more rigorous examination of the *dependencia* arguments. There is a debt to the earlier work of Hirschman and his efforts to measure the concentration of trade

and infer the political relationship between trading partners.⁴⁸ Hirschman viewed trade as an instrument of control, and the measurement efforts of the Duvall group as a contribution to more rigorous, extensive, and conceptually based measurement of control, penetration, and domination.

In summary, the contributions of contemporary international relations theory to an integrated framework for a political economy approach to system change can be characterized as follows:

- From the realist-mercantilist school there are emphases on the importance of "wealth" in influencing "power," the primacy of political objectives, the use of economic instruments for the pursuit of political goals, and the importance of "power" in influencing "wealth."
- From the interdependence school, the concepts of asymmetrical relations, mutual leverage, shared interests and vulnerability are important additions to the realist-mercantilist orientation, as is consideration of nonstate actors.
- From the radical-Marxist-*dependencia* school, the concepts of domination, relational control, spheres of influence, and unequal exchange are major contributions.

Political Factors in the International Economy

Neither international trade and balance of payments theory, on the one hand, nor international political theory, on the other hand, provides a sufficiently robust framework for describing or explaining relations among nations, although each provides insights into which variables should contribute to a more comprehensive understanding of international relationships. The distribution of power in the international political system, and the nature of that system, provide the institutional framework within which regimes governing economic relations are generated. Over time, shifts in economic activities change the relative productivity of nations and contribute to the transformation of the existing power arrangement and political structure of the international system. These transformations, in turn, create changes in the international economic positions of countries.⁴⁹ There is an inevitable interdependence between economic policies and political behavior, and this interdependence serves to shape the range, scope, and type of interactions among nations and the changes that are feasible. There are both potential conflicts and common purposes among the goals of nations, as well as the

possible trade-offs between economic and political objectives. For theory-building purposes it is important to appreciate the influence of political variables on international economic behavior, as well as the impacts of economic variables on a nation's political activities.

International payments position affects both a country's own situation and the overall global configuration. It is thus useful to differentiate types of payments position. One distinction pertains to countries that have a chronic trade deficit but where deficits are matched by long-term financial inflows, versus countries that are faced with more short-term difficulties for which immediate intervention is sought. The positions of both types of countries raise political issues pertaining to international power relationships. By the same token, the international political position of surplus countries is affected by the character and magnitude of the surpluses. Justifying surpluses to allies in deficit is one of the major contemporary problems, as evidenced by recent Japanese-U.S. relations. Countries may also be "in balance" when export earnings are equal to import expenditures. The ability to "manage" imbalances is a corollary of power; the inability is a corollary of weakness. The political as well as economic policies and interventions adopted by each of these three types of country will result in different measures to deal with the economic and political constraints, with different consequences for the configuration of global relations.

The fact that a country is in surplus at one time does not, of course, guarantee that it will continue in that position. External commitments in excess of inflows result in a reduction of the surplus and, if continued, in a change of basic economic position. Every action a country takes to change and/or maintain its international economic position will have an effect on itself as well as other countries. For example, if a country devalues its currency in order to make its exports cheaper and more competitive on the world market so as to reduce a trade imbalance, its smaller trading partners may be forced to follow suit so that they do not find themselves in a severely disadvantaged position. The type and nature of these effects will differ according to the polity and to the centrality of the country to the international economy as a whole, as well as to the economies of its trading partners.

In addition to the overall balance of payments and reserve positions, countries differ in the market share of their particular exports and the ease with which their exports can be substituted for by the exports of other countries. The latter condition determines the degree of monopoly power which the exporting country can exercise, but even in the absence of monopoly power a country with a relatively large share of particular export markets has a different impact on international economic condi-

tions than a country with only a small share. There are analogous distinctions with respect to imports. The grant of access to a large import market creates different opportunities than access to small markets. These economic differences, in turn, influence political relations and, in fact, can be used as political instruments.

A country's pattern of international financial transactions, though related to its current balance of payments and trade, will not be completely determined by them. Rather, the history of its previous trade and its current and previous political associations may be as, if not more, important. Participation in each of the major monetary blocs—the sterling, dollar, and franc—reflects the previous, as well as current, trade and balance of payments conditions. Financial relations among advanced and developing countries often follow the relations established during periods of colonialism or more exclusive trading arrangements. While there are economic reasons for this persistence in the concentration of information about trading partners in certain centers, these economic reasons may be reinforced or attenuated by political relationships, and the latter, in turn, are influenced by the financial interactions.

Countries can be characterized in terms of their international political position.⁵⁰ The conventional classification of countries is in terms of major powers and a range of lesser powers. The international policies and behavior of countries will be shaped by their capabilities and constraints. For purposes of conceptual and empirical clarity, therefore, one must delineate the economic policies adopted by a nation and how they influence a country's political position.

What a country will do to manage any economic imbalance and how it will do it depend on a number of economic and political factors and the types of domestic and external pressures it faces. Among the main economic variables are the following: the size of the economy; the magnitude of its international economic transactions with other countries; the sensitivity of its imports and exports to price changes; the state of the economies of its trading partners; and its own financial "power," namely its effective influence in international monetary relations.⁵¹

The choice among economic policy alternatives can have important political implications. "External balance" with respect to trade and capital movements, and "internal balance" in achieving high levels of employment without inflation may not be feasible at the same time. Thus, national leaderships will be confronted with difficult trade-offs. The economic choices will be determined in large part by government preferences and policies. A result of such choices may be the creation of new linkages between domestic and international economic variables. Even in a period of flexible exchange rates, a country's balance of payments and the inter-

national distribution of "surplus," "deficit," and "balanced" countries is one of the most revealing indicators of economic and political relations.

The major political variables that determine the choice of economic policies and instruments for economic adjustments are its domestic political orientations, its military capability, and its international political position.⁵² The dominant political orientation of the country reflects itself in terms of type of governance, the nature of economic preferences, and the nature of economic institutions.

Economic policies are shaped not only by economic factors, but also, sometimes strongly, by the nature of the polity and government's preferences. Politics often defines the economic problems that are perceived as important, or it can change the nature of the problem as defined initially. Political decisions and values can constrain the choice of instruments, and even provide a preference for some alternative economic policies over other types of measures.⁵³ Different economic policy options have different implications for political relations among nations, for a nation's capacity to influence other nations, and for the probabilities that it will come into conflict with other nations or, alternatively, increase their cooperation. In a world of increasing interdependence, Clausewitz's famous maxim—that war is a continuation of diplomacy by other means—can be extended to the maxim that under certain conditions, trade can be the manifestation of political influence by other means. The statement that "war is the ultimate protective tariff" points to the interconnections of trade and politics in the extreme case.⁵⁴ This insight has not been systematically pursued by anyone examining changes in international relations.

An essential aspect of the relations among nations entails the bargaining power each can exert, given the contextual and structural constraints on their behavior. A critical indicator of a nation's international behavior is its mode of interaction with other nations.⁵⁵ The extension of a nation's activities outside national boundaries can be thought of as "lateral" pressure. The mode, or combination of modes, of this pressure is often influenced by the broader international context. Different forms of lateral pressure will change the structure, and even processes, of international relations. For instance, trade, and the terms on which nations engage in it, is one important expression of lateral pressure and the extent of pressure. As nations interact more extensively along this dimension, there are propensities for change in their relations and, by extension, in the system as a whole. This means that any dramatic change in trade patterns—whether among the Scandinavian countries or, as a contrast, between China and the Soviet Union—will result in system change.

The balance of payments registers both the annual and the cumulative effects of a country's overall interactions and commitments. These commitments are an expression of lateral pressure. Trends in current and capital accounts may reveal the *mode* of such pressure.

The payments profiles of nations reveal changes in international economic regimes and indicate changes in economic and political relations. The debates over the new international economic order are, in this context, a global reflection of changing economic and power positions of nations. In sum, trends in payments position reflect macrosystemic adjustments, and they are unmistakable records of system change.

Toward an Integrated Framework of International Political Economy and System Change

This section provides the basis of a general set of relationships to guide theory building and empirical analysis. We draw explicitly upon the insights of economic theory and international relations theory, and stress their interconnections by recognizing the dual imperatives of national behavior: the pursuit of power and the pursuit of income and wealth.

Economic theory allows rigorous deductions regarding the effect of national endowments on trade patterns and financial relations among nations. Over time, patterns of trade and finance contribute to shaping a country's international economic position, measured in terms of market shares, reserves, and similar variables. That position also influences, and is influenced by, a country's diplomatic alliances, military capacity, and power in international relations. In this context, the balance of payments can be viewed as a critical (accounting) measure of international economic transactions, and thus provides an indicator which can be related to other measures of political behavior, influence or strategic factors.

The general framework we propose as the basis for an integrated approach to international political economy is represented in the following propositions:

- Trade patterns (imports and exports of commodity goods) are determined domestically by factor endowments and other variables, and constrained by political factors. International influences on trade patterns include alliance commitments, international political capability and relations, and spheres of influence.
- The international payments position of countries (in terms of the balance of payments and its components) is influenced by internal political and economic policies and by such international political

and economic variables as size of spheres of influence (which may guarantee markets), trade patterns, and military presence overseas.

- Political capability (international capacity for control) is affected by trade patterns and international payments position, as well as by military allocations and activities, size of spheres of influence, and alliance commitments.
- Political behavior (in terms of cooperation and/or conflict) is determined by the political capability of nations and their alliance commitments, and constrained by their international payments position and transactions, as well as by internal political influences and military activities.

Each of the above statements is derived from the theoretical reviews and substantive illustrations of the previous sections. These statements are for purposes of initial theoretical development and, eventually, the derivation of testable hypotheses. They represent jointly dependent variables in which change is implicit. The mechanisms by which the four endogenous variables feed back on and change the domestic and international context within which these interactions take place can be examined empirically. Throughout the system at large, international rearrangements indicate macroadjustments. The political implications of these adjustments create reverberating effects throughout the system as a whole.

Balance of payments profiles are overt records of behavior, but they result from a complicated set of underlying processes. Determining the theoretical directives for delineating these processes and changes in them is, in itself, a major challenge. Specifying the factors that lead to the pattern of a country's current account over time, the trends in the capital account, and the overall effects on payments position entails more than an economic analysis. Each account reflects political purposes and commitments. For instance, allocation to the military overseas, which is a debit in the current account, reflects a drain on resources motivated by political concerns. But the "trace" of these concerns is economic in nature.

Far from being an esoteric issue, the question of theoretical representation is critical to the analysis of system change; characterizing international system change entails a focus on the structure of the system, on the one hand, and a determination of the appropriate analytical representation for delineating change in structure, on the other.

The structure of the international system, determined by differential attributes and capabilities, generates a hierarchy of power relations. That hierarchy is one of domination and control, or, at a minimum, of mutual constraints on national behavior. International relations are, at their

core, relations among unequals. How inequalities are ordered in international relations is shaped by the differentials in attributes and capabilities of nations and the effects of these differentials upon decisionmaking.

Changes in capabilities may result in changes in structure.⁵⁶ The dynamic elements in a system of relations are represented by the processes that relate different parts and levels of a system. The nature of the processes—in terms of transformation, adaptation, breaks, or variants thereof—will in large part be shaped by the interactions among the relevant entities, by the prevailing regimes, and by the connectives across levels of interaction. Therefore, the process of international change must be kept distinct from the structure that itself might be undergoing change.

Process unfolds over time, of course. Different time perspectives, and intervals, are appropriate for analysis of different situations. There is as yet, however, no theoretical determination of time, or the attendant intervals that are appropriate for the analysis of different aspects of system change. What might appear as a series of rapid permutations might be viewed as a smooth change if the time perspective were extended.⁵⁷

These observations point to the importance of characterizing international systems and changes in terms of multilevel interactions. A multilevel conception includes the conventional connections and constraints of nations as they relate to each other—the domestic influences on international behavior, the inter-state influences (such as alignments or other factors), the transnational influences (such as nonstate actors), and the supranational influences (such as international organizations)—but goes beyond these to incorporate other aspects of interaction.⁵⁸

The extensions involve specifying the interconnections between and within levels of interactions as conventionally defined—and the relative strength of the connections—and recognizing the asymmetries in the strength of various influences on the behavior of nations. For the present purposes this implies acknowledging the interdependencies yet differences between economic and political variables and the mutual constraints and capabilities that each presents to the other.

The rationale of a multilevel view of the international system is to begin with, but go beyond, the conventional unit and level of analysis characterization proposed nineteen years ago,⁵⁹ and stress the mutually directed, but possibly asymmetrical, influences exerted by different levels and systems of interaction. It is necessary also to specify theoretically and model explicitly the interdependence between politics and economics. Each can be viewed analytically as a "system" exerting an influence on the overall exchanges and relations among nations.

The concept of "level" must be extended to incorporate and include

political and economic interactions that have conventionally been relegated to a separate domain of theoretical discourse and empirical analysis. This conception must be integrated with the conventional view of international systems that still regards the appropriate "levels" to be state-centric or bearing directly and only on the international structure within which nations interact. These propositions incorporate economic and political influences upon national behavior within one framework, use the nation-state as the focus on inquiry, but specifically recognize the impact of domestic and external factors on national behavior. Further, they represent, albeit approximately, interdependence among systems of activity, political and economic, with the nation-state as the arena within which these systems interact.

Conclusion

This chapter has argued that an adequate analysis of system change requires two necessary conditions: first, the development of an integrated theoretical perspective on international systems; and second, a view of the system and of change that entails complex multilevel characteristics. The first condition is critical in international relations because neither economic nor political theories alone can explain system change. The second recognizes the interdependence and asymmetries in political and economic interactions and in their interrelationships. Politics provides the value orientation and institutional context within which economic behavior is undertaken. Economics provides the exchange principles that are expressed within the bounds of politically permissible behavior. The complexity pertaining both to structure and to process of interaction in the international system can best be represented in terms of a multilevel system incorporating these dual influences.

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ongoing collaborative research has contributed to many of the ideas contained in this chapter. The editors of this volume made numerous, and sometimes forceful, suggestions. I would like to thank them for their comments.

Notes

1. A review of selected works is in Richard E. Baldwin and J. David Richardson, eds., *International Trade and Finance* (Boston: Little, Brown and Co., 1974).
2. See Staffan Burenstam-Linder, *Trade and Trade Policy for Development* (New York: Praeger Publishers, 1967).
3. See, for example, Raymond Vernon, "International Investment and International Trade in the Product Cycle," *Quarterly Journal of Economics* 80 (May 1966):190-207; Raymond Vernon, ed., *The Technology Factor in International Trade* (New York: National Bureau of Economic Research and Columbia University Press, 1970); and Louis T. Wells, Jr., "International Trade: The Product Life Cycle Approach," in Louis T. Wells, Jr., ed., *The Product Life Cycle and International Trade* (Boston: Harvard University, 1972), pp. 3-33.
4. See, for example, Charles P. Kindleberger, ed., *The International Corporation* (Cambridge, Mass.: M.I.T. Press, 1970), and an extension of his work by Stephen H. Hymer, *The International Operation of National Firms: A Study of Foreign Investment* (Cambridge, Mass.: M.I.T. Press, 1976).
5. This approach is developed in Richard E. Caves, "Export-led Growth and the New Economic History," in Jagdish N. Baghwati, ed., *Trade, Balance of Payments and Growth: Papers in International Economics in Honor of Charles P. Kindleberger* (Amsterdam: North-Holland Publishing Co., 1971), pp. 403-442.
6. Examples of this approach include Milton Friedman, "The Role of Monetary Policy," *American Economic Review* 58 (March 1968):1-17; Allan H. Meltzer, "Monetary and Other Explanations of the Start of the Great Depression," *Journal of Monetary Economics* 2 (1976):455-471; and Harry G. Johnson, "Toward a General Theory of the Balance of Payments," in H. G. Johnson, ed., *International Trade and Economic Growth* (London: Allen & Unwin, 1958).
7. Rudiger Dornbusch, "Real and Monetary Aspects of the Effects of Exchange Rate Changes," in R. Z. Aliber, ed., *National Monetary Policies and the International Financial System* (Chicago: University of Chicago Press, 1974), combines both monetary and real sources of payment imbalances and extends the earlier debates regarding the appropriateness of the elasticity, absorption, or monetary views of payment difficulties. The model employed by Dornbusch is a synthesis and an extension of the work of W. Corden, "The Geometric Representation of Policies to Attain Internal and External Balance," *Review of Economic Studies* 28 (1960):1-22; James E. Meade, "The Case of Variable Exchange Rates," in Warren L. Smith and Ronald L. Teigen, eds., *Readings in Money, National Income and Stabilization Policy* (Homewood, Ill.: Richard D. Irwin,

1975), pp. 505-517; Robert A. Mundell, *Monetary Theory* (Pacific Palisades, Calif.: Goodyear, 1971); T. W. Swan, "Economic Control in a Dependent Economy," *Economic Record* 36 (March 1960):51-66; and T. W. Swan, "Longer-Run Problems of the Balance of Payments," in H. W. Arndt and W. M. Corden, eds., *The Australian Economy: A Volume of Readings* (Melbourne: Cheshire Press, 1963), pp. 384-389, specifying the features of "dependent economy" including the distinction between traded and nontraded goods. Dornbusch focuses exclusively on the effects of devaluation. The burden of his observations pertain to the interdependence of influences on a country's international payments position and, by extension, the expected effects of alternative policies.

8. Organization for Economic Cooperation and Development, "The International Transmission of Inflation," *OECD Economic Outlook*, special section (July 1973):81-96.

9. Helmut Frisch, "Inflation Theory 1963-1975: A 'Second Generation' Survey," *Journal of Economic Literature* 15 (December 1977):1289-1317.

10. Grant B. Taplin, "Models of World Trade," *IMF Staff Papers* 14 (November 1967):433-455.

11. Edward E. Leamer and Robert M. Stern, *Quantitative International Economics* (Boston: Allyn & Bacon, 1970).

12. Herbert B. Woolley, *Measuring Transactions Between World Areas* (New York: National Bureau of Economic Research, Studies in International Economic Relations, 1965) constructed such tables for 1950-1954, which required the verification of data from both importer and exporter for each transaction. W. Beckerman, "The World Trade Multiplier and the Stability of World Trade, 1938 to 1953," *Econometrica* 24 (1956):239-252, computed ratios of j 's imports from i to j 's total exports, with the purpose of identifying shifts in world trade form 1938 to 1953. This type of trade matrix makes it possible to examine comprehensively the nature and consequences of changes in market shares.

13. Uses of the trade matrix approach with greater emphasis on prediction have subsequently been presented by Jan Tinbergen, *Shaping the World Economy: Suggestions for an International Economic Policy* (New York: The Twentieth Century Fund, 1962); and Pentti Poyhonen, "A Tentative Model for the Volume of Trade Between Countries," *Weltwirtschaftliches Archiv*, band 15 (1963):93-99. This type of model specifies the value of trade as a function of national income and of geographical distance. Income is an indicator of supply potential (for the exporter) and of market size and demand (for the importer). Tinbergen also includes continuity and trade-preference membership variables. Further extension of this model incorporates population of both importer and exporter as an added indication of market size [Hans Linneman, *An Econometric Study of International Trade Flows* (Amsterdam: North-Holland Publishing Co., 1966)]. Variations on this type of model have introduced prices as a means of examining the balance of payments implications of trade [J. Waelbroeck, "la demande extérieure et l'évolution des exportations belges," *Cahiers Économiques de Bruxelles* 15 (1962):397-412]. A successful synthesis is in Simon Kuznets, "Quantitative Aspects of the Economic Growth of Nations: Level and Structure of Foreign Trade: Comparison for Recent Years," *Economic Development and*

Cultural Change 13, part 2 (October 1964):1-106.

14. I. Richard Savage and Karl W. Deutsch, "A Statistical Model of the Gross Analysis of Transaction Flows," *Econometrica* 28 (1960):551-572.

15. L. A. Metzler, "A Multiple-Region Theory of Income and Trade," *Econometrica* 18 (1950):329-354.

16. Hans Neisser and Franco Modigliani, *National Incomes and International Trade: A Quantitative Analysis* (Urbana: University of Illinois Press, 1953).

17. J. J. Polak, *An International Economic System* (London: G. Allen & Unwin, 1954).

18. Rudolf R. Rhomberg, "A Short-term World Trade Model," (Paper presented at the First World Congress of the Econometric Society, Rome, 9-14, September 1945), summarized in *Econometrica* 34 (1966):90-91.

19. For example, Metzler, "A Multiple-Region Theory," specifies imports as a function of incomes. The patterns of trade, therefore, are dependent on the levels and change in levels of national income. The earlier Neisser and Modigliani model specifies imports and exports separately, each determined by the influence of income, prices, and capital flows. Polak, *International Economic System*, also views imports as a function of income. The implications of relations of this type were explored intensively for their insights and policy implications.

20. Much of this work is reported in Lawrence R. Klein and Vincent Su, "Protectionism: An Analysis from Project LINK," *Journal of Policy Modeling* 1 (1979):5-35. National models for thirteen advanced industrial countries have been developed, with similar analytical structures. This research effort tied country-specific econometric models into one overall system. There are also the models developed at the World Bank that are still regarded as experimental in nature but further develop the lines of world trade reviewed in Taplin, "Models of World Trade."

21. John E. Roemer, "The Effect of Sphere of Influence and Economic Distance on the Commodity Composition of Trade in Manufactures," *Review of Economics and Statistics* 59 (August 1977):318-327.

22. *Ibid.*, p. 318.

23. *Ibid.*, p. 327.

24. Charles P. Kindleberger, *Foreign Trade and the National Economy* (New Haven, Conn.: Yale University Press, 1964).

25. Albert O. Hirschman, *National Power and the Structure of Foreign Trade* (Berkeley: University of California Press, 1945).

26. Examples of such work include Michael Michaely, *Concentration in International Trade* (Amsterdam: North-Holland Publishing Co., 1962); James Caporaso, "Methodological Issues in the Measurement of Inequality, Dependence, and Exploitation," in Steven J. Rosen and James R. Kurth, eds., *Testing Theories of Economic Imperialism* (Lexington, Mass.: D. C. Heath & Co., 1974), pp. 87-115; and Raymond Duvall, Bruce Russett, Steven Jackson, Duncan Sniidal, and David Sylvan, "A Formal Model of 'Dependencia' Theory: Structure, Measurement, and Some Preliminary Data" (Prepared for delivery at the Edinburgh IPSA Congress, August 1976).

27. David Ricardo, "The Principles of Political Economy and Taxation," vol.

1 in P. Sraffa, ed., *The Works and Correspondence of David Ricardo* (Cambridge: Cambridge University Press, 1962).

28. The political analysis was done by T. Baumgartner and T. R. Burns, "The Structuring of International Economic Relations," *International Studies Quarterly* 19 (June 1975):126-159. The economic analysis was done by S. Sideri, *Trade and Power: Informal Colonialism in Anglo-Portuguese Relations* (Rotterdam, Netherlands: Rotterdam University Press, 1970).

29. Richard S. Eckaus, "Is the IMF Guilty of Malpractice?" *Institutional Investor* 11 (September 1977):13-14.

30. See, for example, Douglas A. Hibbs, *Mass Political Violence: A Cross-National Causal Analysis* (New York: John Wiley & Sons, 1973); and Douglas A. Hibbs, *Economic Interest and the Politics of Macroeconomic Policy* (Cambridge, Mass.: Center for International Studies, M.I.T., January 1976).

31. David Hume, "Of the Balance of Trade," vol. 1 in *Essays Moral, Political and Literary* (London: Longmans Green, 1898), pp. 330-345.

32. Robert Gilpin, *U.S. Power and the Multinational Corporation: The Political Economy of Foreign Direct Investment* (New York: Basic Books, 1975).

33. Examples include Quincy Wright, *A Study of War*, 2nd ed. (Chicago: University of Chicago Press, 1965); and E. H. Carr, *The Twenty Years' Crisis, 1919-1939* (London: MacMillan, 1946).

34. Hans J. Morgenthau, *Politics Among Nations: The Struggle for Power and Peace*, 4th ed. (New York: Alfred A. Knopf, 1966), pp. 28-29.

35. Francis W. Hoole and Dina A. Zinnes, eds., *Quantitative International Politics: An Appraisal* (New York: Praeger Publishers, 1976).

36. Examples of the postbehavioral work include Robert C. North, *The World That Could Be* (Stanford, Calif.: The Portable Stanford, 1976); and Hayward R. Alker and Cheryl Christensen, "From Causal Modelling to Artificial Intelligence: The Evolution of a UN Peace-Making Simulation," in J. A. LaPonce and P. Smoker, eds., *Experimentation and Simulation in Political Science* (Toronto: University of Toronto Press, 1972), pp. 177-224.

37. The neo-mercantilist approach includes the following works: Gilpin, *U.S. Power and the Multinational Corporation*; Susan Strange, *Sterling and British Policy* (London: Oxford University Press, 1971); and Stephen D. Krasner, *Defending the National Interest: Raw Materials Investments and U.S. Foreign Policy* (Princeton, N.J.: Princeton University Press, 1978).

38. Integrationist works include: Ernst B. Haas, *Beyond the Nation-State: Functionalism and International Organization* (Stanford, Calif.: Stanford University Press, 1964); David Mitrany, *The Functional Theory of Politics* (New York: St. Martin's Press, 1975); and Karl W. Deutsch et al., *Political Community and the North Atlantic Area* (Princeton, N.J.: Princeton University Press, 1957).

39. Works in the interdependence field include: Hayward R. Alker, "A Methodology for Design Research on Interdependence Alternatives," *International Organization* 31 (Winter 1977):29-63; Hayward R. Alker and Nazli Choucri, *Analyzing Global Interdependence: Methodological Perspectives and Research Implications*, vol. 3 (Cambridge, Mass.: Center for International Studies,

M.I.T., 1974); Richard N. Cooper, *The Economics of Interdependence: Economy Policy in the Atlantic Community* (New York: McGraw-Hill Book Co., 1968); and Robert O. Keohane and Joseph S. Nye, Jr., *Power and Interdependence* (Boston: Little, Brown and Co., 1977).

40. Nazli Choucri (with Vincent Ferraro), *International Politics of Energy Interdependence* (Lexington, Mass.: Lexington Books, 1976). As pointed out by Alexander L. George in a personal communication, the term "constraint" includes variables that prevent a nation from behaving as it wishes, as well as factors that motivate a nation to behave in a certain way. Both usages are intended here.

41. Savage and Deutsch, "Analysis of Transaction Flows."

42. Choucri, *Energy Interdependence*.

43. The interdependence orientation is also responsible for the recent concern in political science for "eco-politics" and efforts to incorporate environmental constraints on the analysis of relations among nations [Dennis Clark Pirages, ed., *The Sustainable Society* (New York: Praeger Publishers, 1977); and Walt Anderson, ed., *Politics and Environment: A Reader in Ecological Crisis*, 2nd ed. (Pacific Palisades, Calif.: Goodyear, 1975)]. A schematic outline for such an orientation places emphasis on population, resources, and technology as three characteristics of state capability that determine the range of possible behaviors; see Nazli Choucri (with the assistance of James P. Bennet), "Population, Resources, Technology: Political Implications of the Environmental Crisis," in David A. Kay and Eugene B. Skolnikoff, eds., *World Eco-Crisis: International Organizations in Response* (Madison: University of Wisconsin Press, 1972), pp. 9-46. The debt of the "eco-politics" version of interdependence theory is to the earlier work of Sprout; see Harold Sprout and Margaret Sprout, *Foundations of International Politics* (Princeton, N.J.: Van Nostrand, 1962) and their recent restatement, i.e., Harold Sprout and Margaret Sprout, *Toward a Politics of the Planet Earth* (New York: Van Nostrand Reinhold Co., 1971). Another theoretical offshoot of the interdependence theories is more clearly related to aspects of economic theory, namely, that which focuses on multinational corporations and seeks to deduce their international political implications. See, for instance, Theodore H. Moran, *Multinational Corporations and the Politics of Interdependence: Copper in Chile (Distortion or Development? Contending Perspectives on the Multinational Corporation)* (Cambridge, Mass.: M.I.T. Press, 1979); and Vincent A. Ferraro, "The Political Dynamics of International Resource Cartels: Case Studies of Petroleum and Copper" (Ph.D. diss. M.I.T., 1976). Primarily, the focus is on corporate influence, or degree of control, over political processes and political outcomes in their "host" countries, but not on the elements inducing changes in relations. The literature is descriptive rather than theoretical or predictive.

44. See, for example, Fernando Henrique Cardoso and Enzo Faletto, *Dependency and Development in Latin America* (Berkeley: University of California Press, 1979); Susanne Bodenheimer, "Dependency and Imperialism: The Roots of Latin American Underdevelopment," *Politics and Society* 1 (1971):327-359; Samir Amin, *Accumulation on a World Scale* (New York: Monthly Review,

1974); and Arghiri Emmanuel, *Unequal Exchange* (New York: Monthly Review, 1972).

45. Recent, more rigorous extensions include the works of Johan Galtung, "A Structural Theory of Imperialism," *Journal of Peace Research* 2 (1971):81-118; and James A. Caporaso, "Dependence, Dependency, and Power in the Global System: A Structural and Behavioral Analysis," *International Organization* 32 (Winter 1978):13-44.

46. Emmanuel, *Unequal Exchange*.

47. Duvall et al., "A Formal Model."

48. Hirschman, *National Power*.

49. Gilpin, *U.S. Power and the Multinational Corporation*.

50. International political position is meant to include capability as well as "power." See Hayward R. Alker, "On Political Capabilities in a Schedule Sense: Measuring Power, Integration, and Development," in Hayward R. Alker, Karl W. Deutsch, and Antoine H. Stoetzel, eds., *Mathematical Approaches to Politics* (Amsterdam: Elsevier, 1973), pp. 307-373.

51. C. Fred Bergsten, *The Dilemmas of the Dollar: The Economics and Politics of United States International Monetary Policy* (New York: New York University Press, 1975).

52. *Ibid.*; see also Eckaus, "Is the IMF Guilty of Malpractice?"

53. Analysts of international relations rarely, if ever, refer to a country's international trade, payments, or financial manifestations of overall national power in world politics. The few exceptions in the literature treat military and economic factors as two distinct dimensions of national power. For an exception, see Klaus Knorr, *Power of Nations: The Political Economy of International Relations* (New York: Basic Books, 1975).

54. Charles P. Kindleberger, "U.S. Foreign Economic Policy, 1776-1976," *Foreign Affairs* 55 (January 1977):395-417.

55. Nazli Choucri and Robert C. North, *Nations in Conflict: National Growth in International Violence* (San Francisco: W. H. Freeman and Co., 1975).

56. This is only partly consistent with Robert O. Keohane, "The Theory of Hegemonic Stability and Changes in International Economic Regimes, 1967-1977" in this volume.

57. The convention of using annual intervals in international analysis research conflicts with the economists' convention of employing quarterly data, clearly because of the differences in the data base employed and in the problems addressed. But in each case the characteristics of the data, not of the underlying theory, determine the choice of time frame and intervals. See Nazli Choucri "Forecasting in International Relations: Problems and Prospects," *International Interactions* 1 (1974):63-86.

58. The term "multilevel" should not be confused with "multivariate." A multivariate model is very simply one that includes more than one variable. However, a multilevel model implies not only a multivariate model, but one in which certain variables (or sets of variables) in the model are asymmetrically related. See Thomas Baumgartner, Thomas Burns, L. David Meeker, and Bradford Wild,

"Open Systems and Multi-Level Processes: Implications for Social Research," *International Journal of General Systems* 3 (1976):25-42.

59. J. David Singer, "The Level-of-Analysis Problem in International Relations," in Klaus Knorr and Sidney Verba, eds., *The International System: Theoretical Essays* (Princeton, N.J.: Princeton University Press, 1961), pp. 77-92.