50. For attempts to carry out this procedure see Falk, *The Role of Domestic Courts in the International Legal Order* (1964); *Id.*, "The Shimoda Case: A Legal Appraisal of the Atomic Attacks upon Hiroshima and Nagaski," 59 *Amer. Jl. Int'l. Law* 759–793 (1963). I am in the process of making such an analysis of *The South West Africa Cases.*

51. For the character of phenomeniogy see Q. Lauer, *Phenomenology: Its Genesis and Prospect* (1958); A. -T. Tymieniecka, *Phenomenology and Science in Contemporary European Thought* (1962). For background see E. Husserl, *Ideen au einer reinen Phänomenologie und phänomenologischen Philosphie* (1913); English trans. pub. under title *Ideas: General Introduction to Pure Phenomenology.* Collier ed. (1962).

52. In 1966 The Carnegie Corporation awarded the American Society of International Law a grant to enable the study of a series of specific civil wars as "cases" to create empirical support for generalizing about the international law of civil war in the contemporary world.

53. This type of analysis is used in the fourth lecture of the series cited in Note 33. The cases used are the Security Council debates concerning Goa (1961), the U.N.'s Stanleyville Operation (1964), and Indonesia's guerrilla activity in Malaysia (1964).

Ofuatey-Kodjoe #20

The Systems Approach to International Politics

MORTON A. KAPLAN

It is not uncommon for new approaches to a subject to be misunderstood. Sometimes the misinterpretations develop into creative contributions to the literature. At other times there is much effort to re-analyze problems that should have been transcended earlier. Other students have noted some of the more common misinterpretations of my use of game theory. In his article on the use of mathematical reasoning in the study of politics, Richard Fagen, for instance, correctly noted that my "use of the game theoretical model is analogical and suggestive rather than rigorous and deductive. Since both his critics and his defenders seem to forget this at times, it is profitable to quote Kaplan himself on this point."[1]

Misinterpretations similar to those clarified by Fagen concern more central problems in international systems research. Thus it is often asserted that *System and Process*[2] is an example of a precise deductive system, of a "scienticism" that ignores the "if . . . then" character of scientific statements, of general theory, or even of the teleological use of models. I should regret it were I responsible for these misconceptions, and no doubt I failed to communicate clearly enough. Short clarifications of these misinterpretations may be useful.

The discussion of the character of deductive theories begins on the first page of the preface of *System and Process*, which describes the ideal type of a strictly deductive theory. The last sentence of the paragraph that contains this description reads, "If 'theory' is interpreted in this strict

sense, this book does not constitute a theory." The next paragraph but one develops this thought:

> If some of the requirements for a theory are loosened: if systematic completeness is not required; if unambiguous interpretation of terms and laboratory methods of confirmation are not required; then this book is, or at least contains, a theory. This theory may be viewed as an initial or introductory theory of international politics.

The preface then relates why the systems framework was chosen: for explicitness of categories so that the framework of reference will not shift as new "facts" are brought in; for the integration of variables that do not fall within a single discipline; for a degree of explicitness that helps to reveal incompleteness; and for the generation of hypotheses by indicating structural similarities to other subject matters.

System and Process also attempted to be explicit on the "if . . . then" character of scientific statements: "Scientific laws state only what will happen if something else happens. . . . if one body strikes another, x will happen. Whether one body will strike another is a separate problem" (p. 6). The subject was discussed in greater detail in the preface:

> For instance, can a theory of international politics be used to predict a specific event or action like the Hungarian Revolution of October 1956? The answer probably must be negative. Yet why make such a demand of theory?
>
> There are two basic limitations upon prediction in the physical sciences which are relevant to this problem. In the first place, the mathematics of complicated interaction problems has not been worked out. . . . the scientist cannot predict the path of a single molecule of gas in a tank of gas.
>
> In the second place, the predictions of the physical scientist are predictions concerning an isolated system. The scientist does not predict that so much gas will be in a tank, that the temperature or pressure of the tank will not be changed by someone, or even that the tank will remain in that experimental room. He predicts what the characteristic behavior of the mass of gas molecules will be if stated conditions of temperature, pressure, etc., hold.
>
> The engineer deals with nonisolate systems in which many free parameters play a role . . . but many aspects of exact design stem from experiments in wind tunnels or practical applications of past experiences rather than directly from the laws of physical science.

> The theory of international politics normally cannot be expected to predict individual actions because the interaction problem is too complex, and because there are too many free parameters. It can be expected, however, to predict characteristic or modal behavior within a *particular* [italics added] kind of international system.

The real question concerns the degree of articulation, precision, and theory that the subject matter permits. *System and Process* hypothesizes that macrostructural theory is possible in international politics as it is in comparative politics or in comparative society. Thus international systems with different alignment patterns etc. should manifest different behaviors. The same generalizations should not apply indifferently to them. And it should be possible both to give reasons for the differences (theory) and to relate the theories of different systems to different actual historical systems (articulated confirmation).

Thus the use of comparative models in *System and Process* reflects an effort to move away from general theory to comparative theories of different systems. This point was succinctly stated by Kindleberger, according to whom *System and Process* "tries to treat international politics piecemeal by partial-equilibrium methods. Contrast is furnished by such a contemporaneous book as——which tries, brilliantly but ineffectively in my judgment, to construct a single general-equilibrium system in which collective security and balance of power are interwoven."[3] Although one may question whether the models are equilibrium models, unless in accordance with Ashby's concept of ultrastability or of multistability, Kindleberger's characterization is accurate.

The belief that systems theory uses teleology may result from a failure to distinguish between the search for parameter values that sustain equilibrium and within which the actors will be motivated to behave consonantly with equilibrium, and the assertion that the parameters will in fact take those values. In *System and Process*, the bounded models are explored in Chapter 2. Chapter 3 attempts to explore how differences in actor political and social structure will modify the assertions of Chapter 2. Subsequent chapters carry on this process of articulated adjustment. This method is quite useful for examining actual systems embedded in history. We might consider the theoretical formulation of this problem in *System and Process*:

> Systems and subsystems in the international system have roles, and these roles have different functions depending upon whether they couple activity within the subsystems of a larger system or between system levels. Deviancy, accommodation, assimilation, conflict and other forms of change occur as the functions of the roles change in the various systemic topological economies. . . . The possible inconsistencies of these role

> functions under changing parameter values lead to restructuring of some of the role functions in order to maintain others. If the dominant system can be found and its essential rules and transformation rules formulated, a long stride will be taken toward predicting the changes that the [actor] will attempt to make in the systems to which it is coupled and also within its own internal structure in order to maintain itself under changing boundary conditions.[4]

Roles come into conflict when actors existentially participate in different systems and when they must choose between the sometimes conflicting demands that their different roles place upon them. Thus John Jones who is a teller at a bank may require money for his wife's operation that can be obtained only by defalcation. The role of teller may conflict with the role of husband and, depending upon the topological economy of his personality, the actor may find himself confronted by conflicting tasks. Maintaining equilibrium in one system may lead to disturbing the other and may even produce feedback into the first through the personality of the actor. In either case, tasks are those things that the actor needs to perform. They are set for him by what (who) he is, by the situations in which he is embedded, and by his perceptions of these. They involve a multiplicity of interlinking roles within and between a diversity of social systems. Roles and functions on the other hand specify the behavior required to maintain the equilibrium of a particular (analytical) social system. They are performed to the extent that individuals within the system can be properly motivated or replaced; system change occurs when this is no longer possible.

Existential analysis that adapts analytical models to actual parameters is called engineering of theory. Engineering the theory, as explained later in this paper, accounts for the variations produced in the flux of history by those parameter values not assumed in the systems models. This technique provides greater explanatory power than does a merely eclectic analysis in cases when the variables posited by the systems model are sufficiently dominant in the real world situation to serve as the theoretical core from which extrapolations can be made.

Perhaps one other important observation should be made. Several writers have asserted, either in agreement or in opposition, that I hold multipolar systems to be more stable than bipolar systems. Inasmuch as I have never used the term "multipolar," I find it difficult to recognize the source of this confusion. It is true that my "balance of power" system is multipolar as others use that term, and that I do refer to it as more stable than the loose bipolar system. However, the unit veto system would also be multipolar in this sense, and I regard it as less stable than the loose bipolar system. Differentiation of international systems merely by number of actors—although number does play a role in system behavior—ignores too many

other elements of system structure to be useful either theoretically or descriptively. Attempts to verify assertions merely about numbers thus do not seem to me to be useful. Too many other parameters that influence both behavior and stability are likely to vary for that research schema to be meaningful or productive.

II

International systems models are macromodels of international politics. They are not models of the foreign policy process or, although the Italian city-state and Chinese warlord studies show that the macromodels of international systems theory can be applied to some regional and intranational systems, models of regional or intranational systems or of relationships between regional and international systems. The type of model that will prove useful depends on one's research aim, that is, on one's subject matter and on the questions that one is asking. To expect that the loose bipolar model would explain behavior within the African subsystem when it is designed to explain the overarching system of international politics would be equivalent to expecting a model of monopolistic competition to explain the economics of the garment trade on the East coast of the United States. Yet the monopolistic model might (or might not, depending upon the facts of the case) be a relevant model for exploring the economy of the United States. If we confuse different aims, different structural levels of analysis, different levels of complexity, different levels of abstration, different degrees of concreteness or descriptivity, and the differences between the theoretical and the descriptive, we will hopelessly muddle our efforts to advance the state of the discipline.

Systems models are merely tools for investigating reality. In the words of *System and Process*, "these systems are hypothetical only."[5] Indeed one might emphasize that the models developed in *System and Process* were quite crude; they were based at best on plausible reasoning. For instance, the injunction in the essential rules of some systems to increase capabilities did not specify by how much or under what risk conditions. Similar ambiguities necessarily occur elsewhere in the general statements of the models. For instance, using words it is virtually impossible to discriminate between the behavior of a system of nine nations and a system of seven.

Only when we were able to play out realizations of the "balance of power" model on a computer were we able specifically to link outcomes to the parameters that produce them. The theory itself is not mathematicized, and it is not clear that this is possible. A realization of a model or theory, as Reinken explains in his paper, involves building the features of some theory into the computer program as parameters of that program. These

parameters can then be varied to explore the sensitivity of the computer program to changes in the parameters. Thus it is possible to explore changes in the number of players, the battle exchange ratios, the motivations of the players, and so forth. If the outcome is unstable, we can ask how to reintroduce stability, and by what changes in the parameters. We also must ask ourselves what relation each change has to the initial verbal model and why it helps shed light on that model; for the objective of this work is not merely to produce a stable computer realization. Computer analysis is used not to prove any specific propositions but to explore the interrelationships of propositions concerning the strategic structure of the model of the international system. For instance, consider the proposition: Would a "balance of power" system operate differently were the actors security-oriented or hegemony-oriented? To explore this, we constructed a pilot computer model instructing the national actors of the international system to optimize over each war cycle according to the appropriate utility schedule designed for them. We discovered that if there was a hegemony-inclined actor in the system, the system became unstable. Initially, a "balance-oriented" actor was the victim of this instability. Pursued to the end, however, it became clear that according to the logic of the model the hegemony-inclined actor would never succeed in becoming the greatest actor in the system and would eventually be eliminated by the remaining "balance-oriented" player. Thus there was an inconsistency between short-run optimization and long-run optimization for the hegemony-inclined actor. Consequently, for the pilot model, if hegemony-inclined actors could optimize over the long run, they would behave the same way that more conservative security-oriented players do. This, however, is not a conclusion about the real world but about the logic of the model. Therefore the next step was to explore the conditions under which the hegemony-inclined actor could succeed in obtaining hegemony. Introducing imperfect information, uncertainty, and nonsimultaneous commitment to war is believed to permit success for the hegemony-inclined actor. On the other hand, there is no reason to assume that this result is a truth about the real international system; for we can explore those further counter-deviancy measures that would be sufficient to prevent the hegemony-inclined actor from exploiting his deviant tendencies.

The general literature asserts that in a system of five states wars will tend to be three against two and that wars of four against one will tend to destabilize the system. In our initial pilot runs the wars were almost invariably four against one; yet some of our systems remained stable for hundreds of war cycles with no indication that continuation of the runs would produce instability. We then had the problem of modifying our model to produce the three-to-two wars that are more characteristic of history.

There are probably at least two ways to accomplish this: by reducing the cost of wars or by permitting side payments within coalitions. We intend to try still other modifications to see how they affect this factor of alignment size.

The two examples given should illustrate how systems theory utilizes computers. The computer is used to explore the relationships between assumptions. It is thus capable of assigning outcomes to causes, at least with respect to the structure of thought we have established to account for the real world of international politics. Thus, if we attempt to make inferences concerning the real world of international politics, we at least know how and why our hypotheses are related to our premises. We also have a ground for asserting that the real world outcome may be related to the assigned cause if in exploring the external world we find those conditions that produced the same outcome in the computer model and no other conditions (at least that we can think of) that would counteract this outcome were we to place these conditions in the computer model.

A second problem that we faced, which we are now systematically but slowly trying to overcome, was the paucity of historical information about international systems and their behavior. To overcome this deficiency, *System and Process* recommended among other methods a series of case studies based on the hypotheses flowing from the models.[6] Although historical scholarship may have successfully answered many questions of interest to historians, the questions a political scientist should pose to these data were largely unexplored in literature. We did not know the characteristic behavior of the Greek city-state system, for instance, nor how it differed from behavior in the Italian city-state system. Nor did we have any good ideas as to why the differences occurred. We did not understand how the patterns of alignment differed or why they differed. We did not know how or under what conditions wars were waged or peace made. It was indeed difficult even to ask questions such as these, for they flow more naturally from the kinds of models employed in international systems theory than from the case-specific questions historians ask or even those political scientists ordinarily ask. A series of relevant cases is being studied in accordance with the original recommendations.

Nature of the Models

The models employed in *System and Process* utilize five sets of variables: the essential rules, the transformation rules, the actor classificatory variables, the capability variables, and the information variables.

The essential rules of the systems state the behavior necessary to maintain equilibrium in the system—thus they are essential. The transforma-

tion rules state the changes that occur in the system as inputs across the boundary of the system that differ from those required for equilibrium move the system toward either instability or the stability of a new system. This is necessarily one of the least developed aspects of the model; fully developed, however, it would provide models of dynamic change.

The actor classificatory variables specify the structural characteristics of actors. These characteristics modify behavior. For instance, "nation state," "alliance," and "international organization" name actors whose behavior differs as a consequence of structural characteristics. The capability and information variables require no comment here.

There are three kinds of equilibrium in such systems. There is an equilibrium within the set of essential rules. If behavior occurs that is habitually inconsistent with one of the essential rules, one or more of the other essential rules also will be changed. If the set of essential rules is changed, changes will occur in at least one of the other variables of the system. Or, conversely, if changes occur in one of the other variables of the system, then changes will occur in the essential rules also. If changes occur at the parameter of the system, changes will also occur within the system, and vice versa.

The models are not equilibrium models in the Parsonian sense, however, they are ultrastable or even multistable, in Ashby's sense. Thus they are not static but responsive to change, when it is within specified limits, by maintaining or restoring system equilibrium. Equilibrium does not have an explanatory function within such systems. Rather it is the equilibrium that is to be explained, and the model itself constitutes the explanation by indicating the mechanisms that restore or maintain equilibrium. The actors do not behave consistently with the essential rules merely to maintain equilibrium but because they are motivated under the specified system conditions to do so.

Such models necessarily abstract from a far richer historical context. The theories therefore can be used for the derivation of consequences *only* under explicitly stated boundary or parameter conditions. For instance, the statements concerning alignment patterns of the "balance of power" model in *System and Process* apply only at the level of type of alignment, and do not specify the actual actors who participate in specific alignments. And they specify even this broad consequence only for stated values of the exogenous and endogenous variables. The first attempt to bring the models closer to the richness of history occurs in Chapter 3. In this chapter the models are varied for specified differences in the internal political and regulatory structure of nation states; (these latter could theoretically be derived from comparative macro-models of national systems). The motivations of nation states, as developed in this chapter, may differ from the initial first-order

approximations, as stated in Chapter 2. Thus, as we come closer to reality —and this is still at a high level of abstraction—we lose generality. We begin to employ procedures closer to the step-by-step engineering applications of physical theory than to the generalized theoretical statements of physical theory.

Even these gross characteristics of national actors are far removed from their historical complexity.

> Any attempt to describe the actual actor systems would founder under the weight of the parameters which individualize these systems—even when their structural characteristics are similar. Such things as capability factors, logistic factors, and information, including history of the past, are specific to the system. . . .[7]

When we include the important factors that, from the standpoint of theory, are contingent, such as personality factors,[8] economic and political conditions, technological developments and inventions, and other intranational and transnational factors, the complexity becomes so great that serious efforts systematically to discuss them all and relate them all to models would become lost in the detail. If we want to apply the macromodels to concrete cases, i.e., to historical microevents, we must choose just those factors and just those values that we have some reason to believe operate in the particular instance we wish to understand and to explain. The chapters in *System and Process* on integration and disintegration, on values, and on strategy also attempt to bring to bear on the analysis in a highly generalized way some additional factors required to engineer the models closer to specific reality, i.e., closer to the microevent level.

Brief descriptions of the "balance of power" and loose bipolar models will be presented below both to illustrate more completely the nature of the models and to provide an introduction for the empirical systems presented in this volume: the Italian city-state system by Franke and the Chinese warlord system by Chi.

"Balance of Power" Model

The "balance of power" model has the following characteristics:

1. The only actors in it are nation states and thus there is no role differentiation in the model. This is a somewhat counterfactual assumption, for during portions of the historical "balance of power" period there were other organizational forms, such as the Danube Authority and the League of Nations.
2. The goals of the major nations of the system are oriented toward the optimization of security. By this we mean that major nations will

prefer a high probability for survival as major nations, even though this excludes the possibility of hegemony, to a moderate probability for hegemony combined with a moderate probability for elimination as a major actor. Most analysts would argue that Napoleon and Hitler did not operate according to this assumption. It is possible, although far from obvious, that the model would function differently were the assumption relaxed. There is sufficient factual validity to the assumption for large and interesting periods of history, however, to more than justify its use as a first approximation.

3. The weaponry in the system is not nuclear.
4. There are stochastic and unpredictable increases in productivity that, unless compensated for, in time might destabilize the system. Therefore each actor seeks a margin of security above its proportionate share of the capabilities of the system.
5. There must be at least five major nations in the system. A two-nation system would be unstable. If either of the two nations gained a clear margin of superiority, it would be tempted to eliminate the other in order to guarantee that the other would not eliminate it, if through some combination of circumstances the ratio of capabilities were reversed. In a three-nation system, were there a war of two nations against one, the victorious coalition would have some incentive to limit its demands upon the defeated nation. To eliminate the defeated nation would throw the victors into an unstable two-nation system. Under the assumptions, this result would be undesirable, unless one nation could gain such advantage from the elimination of the third that it could eliminate the second nation. But this result would also give the second nation an incentive to combine with the third against the first unless it misunderstood its own interests. On the other hand, if the first nation refrains from sacrificing the third nation, the latter may some day combine against it with the second nation in a subsequent war. And if one of the victorious nations in this subsequent war sees some advantage in eliminating the first nation, it is dependent upon the ability of the only remaining nation to recognize that its own interests require it to oppose this. The reasoning here is inconclusive; therefore three is not a highly plausible lower bound for stability. If there are at least five nations, however, it seems plausible that the argument for limitation in war would hold.
6. Each state, even though of great-nation status, is likely to require allies to obtain its objectives. Thus it desires to maintain the existence of potential future alliance partners.

The characteristics specified give rise to the following essential rules of conduct:

1. Act to increase capabilities but negotiate rather than fight.
2. Fight rather than pass up an opportunity to increase capabilities.
3. Stop fighting rather than eliminate an essential national actor.
4. Act to oppose any coalition or single actor that tends to assume a position of predominance with respect to the rest of the system.
5. Act to constrain actors who subscribe to supranational organizing principles.
6. Permit defeated or constrained essential national actors to re-enter the system as acceptable role partners or act to bring some previously inessential actor within the essential actor classification. Treat all essential actors as acceptable role partners.

The first two rules follow from the need for a margin of security in a world in which capabilities change stochastically. The third rule is essential to maintain the availability of future coalition partners. The fourth and fifth rules recognize that deviant actors may destabilize the system by their actions or by the actions of their followers or cohorts within other nations. The sixth rule is also related to the need for potential alliance partners and warns against restricting one's own choices unnecessarily.

These rules are not descriptive rules. They are prescriptive rules. That is, under the governing assumptions, states would follow these rules in order to optimize their own security. Thus there is motivation to observe the rules, abstracting from other considerations, but no requirement to do so. Under the appropriate boundary conditions, however, states would follow the rules and the model would be both predictive and descriptive.

If the major nations follow the specified rules under the specified system conditions, some of the consequences are obvious and others are not so obvious. Alliances will tend to be specific, of short duration, and to shift according to advantage rather than according to ideologies (even within war). In wars nations will tend to have limited objectives and to observe the rules of war and the doctrine of nonintervention.

Alliances will tend to be of short duration because permanent alliances would undermine the "balancing" characteristics necessary for the security of the member states. Thus alliances will have specific objectives as determined by short-term interests. And to use a phrase current in the eighteenth and nineteenth centuries, nations will be disposed to act in terms of interest rather than in terms of sentiment. In short, there is in this sytem a general, although not necessarily implacable, identity between short-term and long-term interests.

The limitation of war in the "balance of power" system requires no further discussion.

We shall mention only a few of the expected norms of international law. One would expect belligerents to behave in ways that maintain the essential

rules of the system, since the rules are required for the security of all essential nations, including belligerents. Behavior during war or territorial occupation that infuriated the enemy population might preclude the possibility of that state as a future ally. Although this might not be the only constraint operating to enforce the rules of war, nonetheless it is an important factor tending in that direction.

The rule against intervention in the domestic affairs of another state, a rule violated on many occasions, also tends to be sustained under conditions of the model. If the intervention—for instance, in favor of rebels—were to succeed, there might be a permanent alliance between them or a tutelage of one over the other. This arrangement would injure all the other states in the system and tend to draw their active opposition. For this reason the intervention would likely be unwise or unsuccessful. And if for any reason the intervention were unsuccessful, the state in which the intervention took place might have a serious revulsion for the intervening state that would make it a permanent enemy of that state. Although these reasons are not absolutely compelling, they are strong enough to make likely general observance of the rule of nonintervention in the "balance of power" system.

By and large in real world revolutions states did not tend to intervene on the side of the government either. Rather they maintained normal state relations and trade with the established government. If the rebels grew strong enough, then the rules of belligerency would apply; other states would behave neutrally toward the belligerents, at least with respect to shipping articles of war or trade goods. The reasons are similar to those given above; intervention would have had potentially destabilizing consequences for the system and would have elicited opposition from the other members.

For like reasons recognition of new governments or new states tended to follow universal norms in the "balance of power" system. Was there a definite territory? Did the government control the territory? Was there reasonable support from the population or at least the absence of large overt opposition? If the answers were yes, then the government or state would tend to be recognized, regardless of the form of government or its friendship for or antipathy toward particular states. Although the act of recognition itself was political, so that the fulfillment of the above criteria did not absolutely require the act of recognition, there was, with notable exceptions, fair concordance between rule and practice. Moreover, since nonrecognition was a political act, its consequences for international law were less than massive, the nonrecognized state merely being denied access to the privileges stemming from comity. Failure to recognize a state or government did not turn it into an outlaw, remove its obligations under international law, or free other states to behave toward it without regard for international law. Even before the facts establishing the legitimacy of a government were clear, other states were in effect bound by the rules of international law in their conduct toward the nonrecognized government or state. Intervention in its affairs would have been contrary to the rules of the system. Recognition may have been a political act and a negotiating tool in getting the new government or state to recognize its obligations under the rules of the international community, but it was not a weapon in a cold war designed to undercut its existence.

The Loose Bipolar Model

A second model, which has some relevance to present-day international politics, is the loose bipolar system. This model contains two blocs, each led by a leading bloc actor. There is role differentiation in this model; in addition to blocs and bloc members are nations not joined to blocs and universal organizations such as the United Nations. The weaponry in this model is nuclear—at least for the contemporary time period. In an age of efficient logistics and great organizational capacity, this latter feature is an essential element of the system. For unless factors of scale precluded it, we would expect one of the blocs to overwhelm the other unless deterred by a weapons system such as the nuclear type.

This system operates according to the following simplified set of essential rules:

1. Blocs strive to increase their relative capabilities.
2. Blocs tend to be willing to run at least some risks to eliminate rival blocs.
3. Blocs tend to engage in major war rather than to permit rival blocs to attain predominance.
4. Blocs tend to subordinate objectives of the universal actor to objectives of the bloc but subordinate objectives of rival blocs to the universal actor.
5. Nonbloc actors tend to support the universal actor generally and specifically against contrary objectives of blocs.
6. Nonbloc actors tend to act to reduce the danger of war between blocs.
7. Nonbloc actors tend to be neutral between blocs except where important objectives of the universal actor are involved.
8. Blocs attempt to extend membership but tend to tolerate the status of nonbloc actors.

The first three rules reflect the uncertainties of a bipolar system and the need for at least a margin of security. Rule 4 is related to the need within

the system for mediatory functions. Particularly in the nuclear age mediatory activities help coordinate conflicting blocs and achieve agreement short of nuclear war. This is similar to many other types of bargaining situations in which optimal solutions are facilitated by the mediatory process. On the other hand, although the blocs should support these processes, each bloc should also take advantage of opportunities to obtain a somewhat favorable outcome. That is, maneuvering will take place and it will be related to situational advantages. Moreover, it is desirable, even apart from the concept of mediatory functions, to subordinate the goals of one's opponents to those of the universal organization and to subordinate the goals of the organization to those of the bloc, provided it can be done with minimal inconsistency.

Universal organizations are major supports for the interests of actors not belonging to blocs: the greatest protection for them insofar as they can be protected by universally applicable rules of conduct. Therefore nonbloc members have an interest in subordinating both blocs to the universal actor. This would become difficult, perhaps impossible, in the event of a major war. And minor wars might escalate into major wars. Hence Rule 6, that nonbloc actors act to reduce the danger of war between the blocs. The nonbloc actors cannot properly fulfill this function unless they remain neutral between the blocs. Lack of neutrality would impede their mediatory functions and their support for the universal actor. On the other hand, a neutrality that threatened to undercut the universal actor would injure their interests. Thus Rule 7. Rule 8 emphasizes the fact that although extending bloc membership is important to the bloc, the mediatory role is sufficiently important for the bloc to tolerate nonbloc membership—and under appropiate conditions even to support it.

The consequences of the rules are straightforward and for the most part have already been stated. Consequences: Alliances are long-term, based on permanent and not shifting interests, and have ideological components. Wars, except for the fear of nuclears, tend to be unlimited. The fear of nuclear war, however, has a strong dampening effect on war. The universal organization tends to support mediatory and war-dampening activities. With respect to international law, there are few restrictions on intervention and these arise mainly out of the fear of escalation.

Some of the reasons for these consequences may now be stated. Alliances tend to be long-term and based on permanent interests. There is a tendency in the system for a bloc to support its leading member even on issues where there is a temporary divergence of short-term interests. Moreover, there is a tendency for ideological congruity within the blocs, for the kind of close association involved requires either organizational uniformity, as in the Communist bloc, or the kind of public support and cultural similarity that helped at one time to support NATO. If one bloc were organized according to long-term interests, and other nations were not, the bloc might well gain its way on most important issues by splitting the opposition issue by issue.

There would be a tendency in this system for wars to be unlimited; neither bloc would regard the other as a potential coalition partner. The greatest inhibitor of a central confrontation lies in the nuclear component and also perhaps in certain factors of scale that would make administration of the world an extremely difficult, if not impossible, task.

As for the rule of intervention in international law, at least some of the constraints present in the "balance of power" system would not be operative in the loose bipolar system. The opposition to intervention would come from the other bloc and would not have the same massive quality as in the "balance of power" system, where most major actors could be expected to oppose it. Fear of confrontation and escalation would nevertheless, inhibit intervention to some extent. In areas where one bloc had easy access and the other did not, intervention would not be unlikely. Where both blocs had relatively similar access, they might agree to insulate the area from bloc competition or alternatively they might decide to compete for it. The decision would depend on the specifics of the situation; the model could not be expected to give rise to a specific prediction on this point. One factor inhibiting intervention would be the fear that the erosion of this particular rule of law might tend to erode the general system of law. Although this fear might be a factor in decisions concerning intervention, the consequence feared is not so direct or massive in its weight that it would prove overriding. Moreover, most interventions would be indirect and covert.

One would expect the use of force to be permissible in this system. The same factors that permit intervention also operate to permit the use of force, the Charter of the United Nations to the contrary notwithstanding. Historically Palestine, the Congo, Cyprus, Greece, Korea, Vietnam, Suez, Hungary, and various other episodes firmly illustrate the erosion of the so-called rule of law enunciated in the Charter. The bipolarity of the system tends to focus competition between the blocs and to produce a resort to force in those circumstances where one of the blocs has a clear preponderance of capabilities. The rule can to some extent be enforced against nonleading nations, as in the Suez case, or even as in the Pakistan-India case; but it runs into greater difficulties in the India-China case.

To some extent this conclusion stems from the fact that the bloc leaders have no desire for the continuance of a war that neither side supports, especially since any armed conflict might lead to a central confrontation, even if only with low probability. The bloc leaders see no reason to risk

even the lowest probabilities of nuclear war if there is some convenient way of avoiding it and if the bloc leaders get no clear gain from the use of force. Where the universal organization tends to dampen the armed confrontations and to mediate quarrels among nonleading states, it therefore tends to reinforce the interests of the bloc leaders.

Recognition of states or of governments is based not on the criteria of control within a region with reasonable support from the people but, in large part at least, on the consequences of the act of recognition for bloc policy. Thus not recognizing East Germany, North Korea, or Communist China was, during the height of bipolarity, part of a program of political warfare designed to erode the positions of these governments. This did not mean that nonrecognized states or governments were entirely without rights within the system or that unprovoked major acts of military warfare against them were permitted, even during the height of bipolarity. Yet whereas in the "balance of power" system the objective of nonrecognition is to secure the compliance of nonrecognized state or government with the norms of the system, in the loose bipolar system the objective of nonrecognition is to weaken the international position of the nonrecognized state or government and, under favorable circumstances, contribute to its demise.

Engineering the Model

As we already have pointed out, the models constitute closed systems, while the real world in which they are to be applied is an open system. An example of the way in which this is done may be helpful. We would expect that in a "balance of power" system alliances would be short-lived, based on immediate interests, and neglectful of existing or previous alliance status. The rigid alliance systems of the European great nations between 1871 and 1914 and the relatively unlimited nature of World War I would seem, superficially at least, inconsistent with the prescriptions of the "balance of power" theory. We could, of course, resolve the problem by analyzing the period from 1871 to 1914 in terms of a rigid "balance of power" system. This solution, however, would require us to analyze every characteristically different state of the world in terms of a different systems model, thus depriving the concept of system of much of its theoretical meaning and turning it into a primarily descriptive device. The alternative procedure is to decide whether the underlying theory of the "balance of power" system can be used to explain the observed discrepancies.

We do not, of course, assert that if the theory of the "balance of power" system can account for the behavioral differences from 1871 to 1914, it therefore is *the* true explanation of the observed behavior. Undoubtedly other factors played important roles in producing both the specific sequence of events and the general form that the sequence took. We will merely have established that the asserted irregular behavior does not invalidate the theory, and that the theory may be useful for relating a wider range of phenomena than is possible without such a theory. This may increase the confidence we place in the theory and the satisfaction obtained from its explanatory power.

The reconciliation of theory and behavior follows. If we recognize, as there is reason to believe that Bismarck foresaw, that the seizure of Alsace-Lorraine by Prussia led to a public opinion in France that was ineluctably revanchist, this parameter change permits engineering the theory in a way consistent with the developments that followed. As long as Germany was unwilling to return Alsace-Lorraine to France, France would be Germany's enemy. Thus France and Germany became the poles of rigid opposed alliances, as neither would enter—or at least remain in—the same coalition regardless of specific common interests. The chief motivation for limitation of war in the theoretical system is the need to maintain the existence of other essential actors as potential future allies. For the foreseeable future, however, neither France nor Germany was the potential ally of the other. Consequently neither had an incentive—as would normally be the case in a "balance of power" system—to limit its war aims against the other. What had been an incentive for limitation became instead a disincentive. A somewhat analogous problem occurred with respect to the alignment pattern of the Italian city-state system. In this system, Florence, for a considerable period of time, functioned as the hub of opposed alignments. In the case of this system, the explanation involved a geographic factor.

This discussion of the problem of engineering the theory may also help to indicate the circumstances under which a theory will be extended or a different theory be called for. Where the theory can be adapted to the changed parameters economically within the explanatory framework the theory provides, it is not necessary to develop a new theory merely because the behavior looks different. Where such adaptation cannot be made, a different theory will be needed. Since many of the adaptations depend upon ingenuity and insight, it is possible that one theory will later be recognized to do the job that two theories were once required for. On the other hand, additional evidence may later cast doubt on a reconciliation between theory and behavior that once seemed intellectually satisfying. In some cases alternative theories may seem equally adaptable. And in still other cases, noninternational factors—for instance, domestic politics—may so dominate an international event that a theory of international politics may have only marginal explanatory power or perhaps none at all.

Designations of systems in terms of theoretical models are, then, not descriptive. The years between 1870 and 1914, for instance, are referred to as a "balance of power" period because the theory of the "balance of power" explains the observed behavior, which differs from that postulated by the model, by adjusting the theory for the change that French public opinion caused at the parameter. There are analogues to this elsewhere in political science. The British system during World War II is generally considered a democratic system (or whatever comparable terminology one prefers) under conditions of wartime stress; presumably democratic behavior would be restored with the return of peace. This emphasis on theoretical equilibrium models does not mean that statements of variations of the models would not be useful for at least some analytic purposes, or that these variations must not be descriptive.[8] But such models should be distinguished from the more important theoretical models that serve as the core of explanation.

The six theoretical models, or systems, of *System and Process* are equilibrium models. The more complex real world goes through phases for which these models are useful explanatory tools. *System and Process* (p. 21) leaves open whether the phases of the real world to which the different models are applied should be considered real system changes or merely different equilibrium states of one ultrastable international system. Thus in *System and Process* the transformation rules for the theoretical models suggest possible conditions for each of the models under which a world analyzable in its terms could be transformed into worlds analyzable by each of the other models.

Whether the real world system is presumed to have undergone system change or equilibrium change[9] depends on the reversibility of the process. The transitions between the types represented by the six models would seem to be not easily reversible—i.e., to involve more system ramifications than intramodel variations and consequently to require more than restoring the original value of the variable, the change of which precipitated the transformation, to restore the previous system behavior. Variations of the model, i.e., variations that can be explained by the same theory, would seem to be more easily reversible. This question is not completely settled yet, however.

In any event, the two levels of analysis must be kept distinct. In a question of the relationship between a model or theory and observed events, we consider systems the same (of the same type), if the same theory or model explains behavior. In a "concrete" situation (when we ask if an external real world system has changed), the question of reversibility becomes dominant. The external world is said to have undergone a system change if the change from one model type to another is judged irreversible; otherwise there is merely equilibrium change.

The Greek city-states during their "balance of power" phase and nineteenth-century Europe are both examples of "balance of power" systems although there is no historical continuity; whereas 1945 or thereabouts introduces the bipolar system, which is considered distinct from the "balance of power" system for purposes of theoretical explanation although there is historical continuity. In the latter case, both analytical and "concrete" system change have occurred, for we believe that nuclear weapons have introduced irreversible changes into the world.

The changes of systems types in real cases may be abrupt, in which case there is no doubt when they occur, or gradual, in which case there may be transitional periods when resemblances to one or another model is a matter of more or less rather than of yes or no. The analogy is to the transition between a "normal" personality system and a "psychotic" personality system, usually one of shadings in which the designation of the boundary line between the conditions, although important for a number of purposes, depends upon the application of criteria that may be subject to legitimate disagreement. Conceivably, although we have not yet discovered such cases, one theory might be applicable to certain selected aspects of the international system and a second to different aspects, just as certain aspects of the economic market are best explained by models of perfect competition and other aspects by models of imperfect competition. In any of these cases, however, the problem is empirical and the models are essential for both analysis and explanation.

Each historical system occurs in its specific set of environmental circumstances. In some cases the differences in circumstances do not produce behavioral irregularities nor require explanations linked to variations at the parameters. In other cases the variations at the parameter may make for either less or more stability in the system than would otherwise have been expected. Take for example the mercenary system in the Italian city-state system; here we need to examine the ways in which the two systems are linked. The mercenaries have an incentive to behave consistently with the essential rules of the system, for instability would undercut their own role. If there were a roll-up, mercenaries would not be needed in the system. And occasionally mercenaries did transform themselves into rulers in an Italian city-state—another incentive to maintain the system. Thus the operation of a mercenary system adds nothing to our model at the level of generalization that the model employs. On the other hand, it adds quite specifically and importantly to an understanding of the historical Italian city-state system. If, however, our investigations were to show that historical "balance of power" systems were stable only when some additional kind of actor were operating (not the mercenary system itself, for it is not universal to "balance of power" systems) then it would be useful to modify the systems model so that it would not be stable without this factor.

We would also attempt to incorporate such changes into our machine realization of the "balance of power" system. If the new factor increased the stability of the realization in the absence of still other changes, it would increase our confidence in the explanation of the historical system. If it decreased stability, it would then raise questions about the historical explanation. We would also ask ourselves which parameters of the realization to change in order to restore stability when this added factor impaired stability, and which to change so that the new factor is required for stability when it improves the stability of the system. This might, depending on the circumstances, lead us to change either the historical explanation or the model of the "balance of power" system. This is by no means as easy as it may sound; it is more a programmatic intention than an accomplished fact. Still it serves to illustrate the ways that feedback and learning may occur between the historical analysis, the verbal models, and the operations of the computer realizations.

Our perspective concerning the nature of international systems theory has been clarified in several ways since the earliest formulations. Although our present views are consistent with those expressed earlier, we have refined their expression somewhat. We are more cautious than we were originally about assuming the dominance of the international factors in events of international importance, although interestingly the models seem to apply where we earlier expressed skepticism–for instance, the classical Greek period. Also, where behavior fits the models, we search more thoroughly for the parameters that help reinforce the result. We are now more aware than before that different combinations of parameters may be consistent with equilibrium.

III.

We hope in our Chicago workshops to use our historical studies to provide comparative materials. Systematic comparisons may provide a refinement of inference and theoretical structure. The papers in this volume by Chi and Franke on the Chinese warlord system and the Italian city-state system respectively provide illustrations of the potentialities for this kind of comparative research. We here recapitulate briefly some of the comparisons that seem to be emerging and their importance for an understanding of the theories of the systems.

The first factor is that in the process of forming regional groupings—before the regional actors could enter into strong interactions with each other—the Italian system produced at least five and the Chinese system only three strong actors at any one time. The Chinese case also contrasts in this respect with the system resulting from the breakdown of Alexander's Macedonian Empire. The Italian and the Macedonian systems were stable and the Chinese unstable. We hypothesize that the factor of number played a role in the contrasting stabilities.

A second factor to note is that the logistics of the Italian system were bad in terms of striking at the heart of an opponent, while after the initial phase of the system the logistics of the Chinese system were good. The existence of rail lines permitted rapid penetration of enemy territory. Since the enemy force had no real support in the countryside the attacker could disperse it easily. The Macedonian case accords more with the Italian than the Chinese. Although armies could be and were transported long distances, these campaigns required long preparation and time for completion. The defenders had ample time to recoup.

The Italian cities had the support of their citizens, who did not view their governments as alien or external impositions. The Chinese warlords, however, conquered their territories and treated them accordingly. Although they exercised the functions of government, they exploited their domains. In this sense, the warlord system was not based on fixed territories and populations. Except for Ptolemaic Egypt, however, the Macedonian system was even less territorial than the Chinese, with more rapid interchanges of territory and fewer connections with the indigenous populations. Yet it was stable and the Chinese was not.

No capital city had legitimacy as the seat of government nor any public official as national ruler in the Italian system. The Chinese system devolved from a unified state, however, and all warlords paid lip service to the myth of unity and to Peking as the seat of Chinese government. Moreover, the belief in eventual unity was a source of weakness for the warlords. Control of Peking therefore conferred some values in internal politics and also in relations with foreign governments. Successive warlords captured Peking; with its effective organization and ideology, the KMT gained support as the potential unifier of China after the capture of Shanghai (until then the warlords had been unaware of KMT potential for reasons that cannot be recounted here). The Macedonian system also had a central symbol of legitimacy and unity; and there were putative successors to Alexander. When for other reasons none could succeed in unifying the Empire, legitimacy devolved to the generals who gained recognition as kings. All three systems contrast with the French. Paris had legitimacy as the seat of France and the ruler of Paris as king. Usually the king was stronger than any other noble. Even when he was not, however, the other strong nobles could not permit any one of their number to displace the king, for this would be too threatening to their own ambitions. Thus the French king, whose central logistical position was inherently superior and who potentially had access to superior assets, could afford to bide his time—

whether or not he consciously did so—until conditions were ripe for unification.

In all the international systems studied so far, the success of hegemonial attempts depended as much on the individual abilities of a particular ruler as on the resources of the city or nation he headed. Attempts at hegemony might be cut off either by the aging of a city ruler or by his replacement by an ineffective successor. Thus the international system was given respite in many cases. In the Chinese case, on the other hand, with its good logistics, failures of leadership might, and did, permit an effective actor to take over. Time worked against stability. The Macedonian case was closer to the Italian and was, of all the international systems, the most dependent on the qualities of leadership. In none of the Macedonian actor systems, with the exception of Ptolemaic Egypt, was there anything approaching an independent bureaucracy that could keep the wheels of government running effectively despite deficiencies of top leadership. The Roman system of choosing consuls provides strong contrast to these systems. Although not all consuls were great generals, all were experienced; and they were rotated rapidly under the guidance of a continuing Senate. In all systems studied so far, the actors who threatened the stability of the system were subsystem dominant and directive.

The Italian system was stable until members of the system invited the intrusion of France. The Macedonian (Greek) system was quasi-stable until members of the system got involved in the affairs of Rome. The Chinese system persisted only for a very short time and was rolled up by a peripheral actor with a superior form of organization and ideology. In three of our historical cases—the Kuomintang roll-up of China, the Macedonian roll-up of Greece, and the later Roman roll-up of Greece—a peripheral actor rolled up what might be regarded from some perspectives as a central system. Toynbee hypothesizes that such roll-ups are examples of classical civilizations conquered by ruder and more warlike systems. The Macedonians clearly were ruder and more warlike than the Greeks and also possessed a superior military organization. It is difficult to say whether the Romans, whose genius lay in law, were less civilized than the Greeks, whose genius lay in philosophy. Clearly the Kuomintang leaders were culturally more advanced than the more traditional Chinese warlords. Moreover, the Roman roll-up of Italy constituted a roll-up by a central rather than by a peripheral actor. We are more impressed by the fact that in each of the three cases where a "peripheral" actor conquered a "balance of power" system, it did not participate in the wars of that system until the system had run itself down. Although the actors within the "balance of power" system maintained reasonable relative positions, the series of wars ran down the absolute resources of the system while the

"peripheral" actor either husbanded its resources or actually gained resources as a consequence of military gains in outside systems. Then, when for one reason or another the "peripheral" actor became involved in the affairs of the "central" system, it was able to roll it up.

The Italian, Chinese, and Macedonian systems were all highly dependent on personal or group interrelationships that theoretically should have been inconsistent with stability. Both the Chinese and Macedonian systems rested on ties that stemmed from common military service or schooling. The Italian system was cross-cut by Guelph-Ghibelline rivalries. Yet only the Chinese collapsed, and it is unlikely that personal relationships that interfered with external rationality played any significant role in the collapse.

There was no nationalism in the Italian example. Loyalties extended to the city. There was a latent Chinese loyalty to the nation, however, that worked to the advantage of the KMT and later of the CCP. The Macedonian satraps thought of themselves as Macedonians, even after the devolution of loyalties. Rome's extension of her system of law and, under some circumstances, of citizenship was undoubtedly of some aid in the Roman conquest of the Italian boot –particularly so in view of the dangers stemming from barbarian inroads.

The Italian system was stable enough so that none of the states had any incentive to acquire potentially destabilizing weapons at considerable cost. This was not true of the Chinese system where comparative advantages were magnified. Thus there was an acceleration of the scale and scope of war in the Chinese system. Demetrius did go to great expense in the Macedonian system to build his fleet in an effort to roll the system up. He failed, however. The mercenaries helped to stabilize the Italian system. A roll-up would have undercut their interests by reducing the need for mercenaries. Moreover, after long sieges of war, the defenders often found themselves in a position to buy the mercenaries off. Mercenary leaders also did not like to expend their soldiers, for they were their capital.

Note that the systems we are discussing were regional or local international systems imbedded in the general international system but apparently sufficiently insulated for long periods to permit independent treatment. A series of comparative studies of both regional and general international systems would help us fit the parameters of international systems much better than we presently can, and better understand the interactions between parameters and system. Possibly such studies could provide clues to future possibilities by giving us a clearer understanding of the range of possibilities and of the factors that sustain one possibility rather than another. Such studies might also help us understand better the process of political unification. If we were to focus these studies on the normative

aspects of the systems, we would probably learn more about them also. History is still a huge blank from the perspective of the information relevant to informed (international) political analysis. Much remains to be done before we are able even to attempt an intelligent evaluation of what we might learn.

FOOTNOTES

1. Richard R. Fagen, "Some Contributions of Mathematical Reasoning to the Study of Politics," *American Political Science Review*, LV,4 (December 1961), 896.
2. *System and Process in International Politics*, Wiley, 1957.
3. Charles P. Kindleberger, "Scientific International Politics," *World Politics*, X, 1 (October 1958), 83-84.
4. *System and Process*, p. 19.
5. *Ibid.*, p. 2.
6. *Ibid.*, p. xvi.
7. *Ibid.*, p. 54.
8. See Kaplan, "Some Problems of International Systems Research," in *International Political Communities*, Doubleday, 1966, pp. 486-494, for nonequilibrium models that are variants of the loose bipolar and the unit veto systems. The very loose bipolar system, although not altogether descriptive, is nearly so.
9. See *System and Process*, pp. 6-8, for a set of definitions distinguishing equilibrium change, system change, and system dissolution.

The Chinese Warlord System as an International System

HSI-SHENG CHI

The political development in China between 1916 and 1928 presents serious conceptual problems to the student who approaches the subject from the viewpoint of internal political process within a nation-state. Hitherto, both historians and political scientists have been inclined to treat China on the premise that it had a stable political system. Although they did not totally ignore the existence of the powerful warlords, they played down their significance and regarded them as no more than political nuisances, who were engaged in intense power struggles not uncommon in other political systems. Notwithstanding the many manifestations of the warlords' political might, many scholars clung to the traditional way of treating the formal national government as the locus of an actual national political system. From this perspective China was seen as undergoing a series of political crises as the result of internal struggle. Fundamentally, however, they regarded the central government as existing in name only, but nonetheless as representing the sole political authority of China. They wrote as if the warlords were no more than an assortment of jealous, self-seeking military adventurers who were operating within the institutional framework of a stable political structure. The implication seems to follow that the best way to clean up the mess was for the central government to strengthen itself and to apply stringent measures to bring the unruly militarists into line.

But to pursue such an argument is to miss the most critical point in Chinese politics. There never was an independent central government dur-