Chapter Seven

SYSTEMS THEORY IN INTERNATIONAL RELATIONS

7.1. INTRODUCTION

The aim of this chapter is to highlight the potential of systems science in theory building and qualitative explanation in International Relations (IR), a discipline that has "traditionally" assumed structure in advance of identifying processes.

This chapter offers a systemic interpretation of "traditional" IR before describing an alternative contemporary behavioral approach. This is particularly useful in displaying the Development Cycle 2 of Figure 1.1, showing how systems thinking has strongly influenced IR, one area of social theory, and vice versa. The following is based on an article by Ellison and Flood (1986). As this chapter is primarily a review, the terminology adopted in the reviewed articles has necessarily been used.

7.2. SYSTEMS AND INTERNATIONAL RELATIONS

7.2.1. The Current Position

As with systems science, IR may be regarded as a new field of inquiry with a history not longer than 40 to 50 years. Further similarities exist between

R. L. Flood et al., *Dealing with Complexity*

systems science and IR in that both the substantive content and the methodological approaches of each discipline have changed significantly over recent years. Indeed, this process of change is continuous, and in neither case has research yet led to the crystallizing of a universally accepted view of what constitutes the substantive area of study or which particular methodologies should be adopted. In fact there are some researchers who believe that it would be inappropriate for such a process of crystallization yet to have occurred. Given this state of affairs, our aim for this section is to discuss and assess the input, and the value of the input, that systems science has made to IR. A review of this kind is hardly unique in its goal (many papers exist that provide a body of criticism of research efforts, and an evaluation of these is offered below); however, the review is novel in its approach and findings.

7.2.2. The International System

One of the first writers to use systems concepts in IR was Morton Kaplan. Kaplan's international system consisted of states interacting in six possible patterns or structures (Kaplan, 1957). These six are described below.

1. Multipolar: a balance of power type of arrangement; a literal billiard ball model
2. Loose bipolar: two main opposing spheres with satellites of varying degrees of adherence to either side
3. Tight bipolar: like 2, but with no wavering in the middle
4. Universal: a confederation; everybody under one government
5. Hierarchical: significant groupings that are functional rather than territorial; a federation
6. Unit veto: each can destroy all others, everyone has to give consent and there is mutually assured destruction (MAD)

Kaplan's concerns were with the intrinsic or relative stability of each of the different types of system (historical examples exist for only two structures, the balance of power of the eighteenth and nineteenth centuries, and the post–World War II loose bipolar system), and how, and under what conditions, systems transformation would occur. Kaplan used the systems concept of homeostasis and *homeorhesis* (transition from one state to another) to examine the change brought about by the number of elements within the international system. He postulated that some structures are more stable than others. For instance, the balance of power system has stability owing to its relatively large number of elements. His reasoning suggests that in structures with fewer elements, there is a tendency for such elements to be continually "firing" at each other, thus causing instability.

Kaplan's work is difficult to follow, in part because of some apparent contradictions and in part because of the jargon used. However, it has been recognized by Mitchell (1978) as "by far the most intellectually rigorous of the earlier works on international systems analysis."

Weltman (1973) criticized Kaplan's work for its lack of operationality by stating that

> few of Kaplan's "essential rules" for his six international systems have turned out on examination to flow in a logically necessary fashion from his regulatory hypotheses. Those that do tend to be tautological or incapable of operational verification and falsification, or both. . . . Given the nonoperational or tautological nature of the bulk of the "essential rules" of his systems, it follows that Kaplan's conclusions concerning systemic stability and transformation are not compelling.

In a similar vein, and calling on the cybernetics terms that Kaplan uses, Rosencrance (1963) presented nine periods of international politics, historically from 1740 to the present day. He discussed regulation and disturbance, and "major determinants which promote or inhibit stability/instability internationally." Rosencrance's approach is essentially a historical study where systems concepts (stability and feedback) are used as organizing tools and as means of expressing generalizations that are arrived at through historical analysis. It is for this sort of reason that some have argued that no new insight has been gained by the use of systems concepts and approaches.

Both Kaplan and Rosencrance considered an international system to consist of interacting nation states. In a similar vein, other studies have applied systems ideas to specific geographic regions. Examples of these are Bowman (1968): The Subordinate State System of Southern Africa; Zartman (1967): Africa as a Subordinate State System; a general work by Banks (1969): Systems Analysis and the Study of Regions; Modelski (1961): IR and Area Studies: The Case of South-East Asia; Brecher (1963): IR and Asian Studies: The Subordinate State System of Southern Asia; and Binder (1958): The Middle East as a Subordinate International System.

In Modelski's study, he too addresses stability and the conditions necessary for the continued survival of a subsystem, but he also examines the foreign policies of the states as elements of the system and superpower influence as an input into the subsystem. Michael Brecher divides up the "international system" into the dominant system consisting of superpower relationships and subordinate systems (those parts of the system that do not constitute the dominant system). Again, the superpower input to the system is dealt with under the "linkage between the subordinate and dominant systems."

Brecher also discussed factors including interaction and communication between the system's elements, the level of material development, and the "common and conflicting ideologies and values (and) diversity of political systems" (meaning governmental expression of ideologies and values). He also considered stability and conditions necessary for a system to survive. However, the system's source of stability or instability does not follow from the effects stemming from the number of elements in the system (as with Kaplan's reasoning) and changes to this structure, but from an individual country's internal stability and its spillover into relations among the states. The works of Kaplan, Rosencrance, Modelski, and Brecher are all dealt with in some depth by Weltman (1973), who does a thorough job in reviewing the way each author uses systems ideas, and whether the use of such ideas has facilitated new insight into IR or enables analysis of a kind that would not

otherwise have been afforded. Weltman's conclusions were somewhat negative and do not reflect the conclusions of the current chapter for reasons argued below.

Another work, known as WEIS (World-Event/Interaction Survey; see McClelland, 1966), again took nation-states as the elements in the international system and looked at the interactions between them. This was based on the "empirical" evidence of significant interactions presented in a number of reputable newspapers and reports. McClelland uses the system concepts of cybernetics and black box models to view the decision-making process of the state. He depicts a two-level state control system where "transactions," or routine movements, between states are dealt with by the state administration (bureaucracy) and the nonroutine event-orientated interactions are dealt with by the higher level of the decision-making process (upper officialdom). Explained under the guise of the "hierarchy of information action over a ten-year period," he found that 10% of the nations account for 60% to 85% of the activities. This implies that some countries are insignificant on the international scene (if the data source is assumed to be accurate). Results show a core group of states forming the dominant system (to use Brecher's language). The major powers fall into this category, as do the states of regions in which conflict appears to be the norm.

The results of the WEIS project provide further fuel to the fire of the debate in Weltman's book on the effect of the number of elements on overall stability. For instance, does the amount of attention an actor is able to devote to each response produce distortion, or produce uncertainty, and therefore reduce or exacerbate stability (implying a contribution to reasoned response)? As Weltman points out, no definitive position can be concluded from so much contradictory evidence/theory. He appears to find this a depressing situation; not only does the systems approach fail on this account for Weltman, but he also feels that it should have provided us with a means of choosing the "correct" or "best" theory, which, he says, it does not.

It would be a brave person indeed who would argue that attempts to use systems ideas in IR have resulted in unqualified success, and indeed many reviews (in the same vein as Weltman's) have come to similar conclusions (see, for instance, Stephens, 1972, and Banks, 1969). However, there are some problems with regards to Weltman's analysis and his major assumptions. The impression that he has made up his mind about the nonvalue of systems ideas arises when he uses references such as "coreligionists" when meaning fellow functional sociologists in political science. Furthermore, systems approaches *ipso facto* make fewer *a priori* assumptions than most other investigative endeavors, which is one of their strengths, and is the very point on which Weltman is hoist by his own petard. Weltman's selection of studies all reflect one particular assumption, namely, that IR consists of states as elements in the "international system" and is primarily concerned with relations and interactions between the state elements. Naturally, a review of this kind must reflect the mainstream of work carried out, and it is true that much of the application of systems ideas to IR at the time of Weltman's writing was in this mold. However, the "failure" of this and other studies is due to the

limitation of the conceptualization of IR as consisting of interacting states as discrete units. A system is a "system of interest," with the observer deciding what is, and what is not, of interest, but there are no intrinsic systemic reasons why in IR the system of interest should be restricted to states as interacting elements. So why did Handleman *et al.* (1973), in their paper "Color It Morganthau" discover that the Morganthau paradigm (the traditional power-state-centric approach; Morganthau, 1967) is represented almost exclusively in the supposedly new approach outlined above?

Is the problem perhaps one of the level of analysis? The answer in systems terms is an unequivocal no. Merely looking at individuals, groups, and so on would lead only to the denial of their importance in shaping events because of the nature of the state-centric approach (the state-centric theory or paradigm is structured to discount these factors). The problem can be viewed in the light of a point presented in Chapter 3, where system identification was discussed as being either structurally based (the state structure is the basis of the assumptions of Weltman and others) or based on behavior, or process, through which a structure is identified (which ignores state boundaries, often identifying transnational systems). This point will be discussed later in the chapter.

Kaplan and Rosencrance represent one type (the traditional school) of international system studies. The works of the Stanford School (1914 Project; Holsti, 1965), the Simulation-Northwestern School (Inter Nation Simulation [INS]; Coplin, 1966), and the work of Singer and Small (Correlance of War, [COW], 1966) represent a move from the traditional school toward a more quantitative approach. These latter three claim, at least in part, to use systems approaches in their studies.

The 1914 Project (a short name for the Stanford Studies in International Conflict and Integration) uses the systems concepts of cybernetics to study the decision-making process in a crisis situation (one where war is a likely outcome) and uses the concept of nested systems and subsystems to examine conflict (the long-term structural antecedent of war) within and between states. The authors, adopting an overtly systemic approach, certainly seem to embody in their work all the "hard system" assumptions in vogue at the time, adhering to epistemological positivism, being methodologically nomothetic, and taking a deterministic view of human nature (see Chapter 10 for a full insight into these philosophical issues).

INS, another serious attempt at quantifying IR, is built around interacting states as units within a region that is taken to be a closed global system. INS is a simulation model of the international relations, and while its substantive paradigm can be questioned (and it is in "Color It Morganthau"; INS here is referred to as a caricature of the Morganthau paradigm), later generations of this model (Internation Process Simulation, IPS and others) have, however, addressed the state-centric bias.

The exercise of simulation and modeling in general can be regarded as one of the successes of the use of systems approaches in IR. Simulation research, while felt not to have provided a theory of IR, has an excellent track record as a learning device for students, and as an explicit way of dealing with theory thus enabling operationalization of theory. Simulation has also

contributed to identifying weaknesses in theory where operationalization has proved to be impossible.

As with the studies discussed earlier in the chapter, if these quantitative studies are to be criticized it is just as valid to do so on their embodiment of a substantive paradigm as it is on their use of systems concepts. The main point is that the paucity of results from many of the studies does not denote a failure of systems ideas in IR, and although the systems paradigm is a powerful tool it cannot make an inappropriate or outdated theory or substantive paradigm relevant. This is true for methodologically traditional or scientific studies alike.

Another point that Weltman has made is that in the 16 years from 1957 (when Kaplan wrote) to 1973 when he published his critique, adequate time had passed for more fruit to have been borne from the application of systems ideas in IR. At the 1973 juncture he felt that the future of systems approaches in IR held little hope and that researchers should not pursue such a line of study. Fortunately, this advice was not heeded.

Two points are of interest here. Sixteen years can be regarded as a very short span of time. More important though is the development of system theory itself and the general shift of emphasis that has taken place in the systems movement since the early 1970s (notably Checkland's methodological and philosophical statements discussed in Chapters 6 and 10, respectively). Weltman made a very curious remark about the philosophical base of systems science, which is interesting in this respect. He noted three possible philosophical standpoints:

1. That "bodies are minds"—which we interpret to mean ontologically a nominalist position and, in systems terms, to mean that hard situations are a special case of soft situations
2. That "minds are bodies"—which we interpret as ontologically realist, and in systems terms to mean that soft situations are a special case of hard situations
3. That minds and bodies are distinct—which we interpret as meaning, in scientific terms, that social and natural phenomena are governed by separate rules such that social matter cannot be studied scientifically, and within systems terms to mean that separate methodologies apply to the study of hard and soft situations

Of the three positions, he criticized IR theorists for basing their approach on standpoint 2 and for failing to comprehend standpoint 3. Although there certainly has been a move toward 3 (from 2) by part of the systems movement, this more recent systems thinking is also favorably disposed toward 1. This is expounded by Checkland in his soft system methodology, which is a corollary to the doubt in part of the systems movement that social subject matter could be dealt with using the same methodological approaches developed in the natural sciences. Weltman suggested that natural and social sciences should be seen as distinct, which was a reaction against position 1, but particularly position 2, outlined above. Weltman's remark was farsighted since, as noted

above, the shift in systems thinking (by the soft systems protagonists) moved systems methodologically closer to his preferred approach.

Weltman might have presented a more balanced view of both IR and systems science if he had made mention of the work of Karl Deutsch, whose book *The Nerves of Government* (1963) is an example of the direct application of cybernetic concepts to political behavior. Deutsch's works stand out both for their genuinely original attempt to discuss IR from a non-state-centric power perspective, and for the insight they bring to IR from the application of systems concepts in this way. In Deutsch's work, the long-time (accepted as fact) divide between politics within states and international relations between states is discarded in favor of a truly systemic approach where actual intensities and discontinuities of interactions and exchanges between social groupings are examined.

If one discards the state as the basic unit of analysis, politics and IR cannot be seen as being separate. With this approach, the same processes are observable within and across state boundaries, which suggests the viewpoint of a global society. In this context, Burton's work constitutes the most uncompromising rejection of the billiard ball model (Burton, 1965, 1968). Burton's international system assumes no system of interest at the state level. He even goes so far as to say that complexity of ties between social and interest groupings bears no relation to, and cuts across, state boundaries. This would render state-level analysis at best an irrelevance, and at worst an obscuring, of the real substance of IR (or world society as Burton calls it).

Burton's expressing of a world society in systems terms is illuminating. What we see in Burton's work is an innovative paradigm in IR taking its lead from, and expressed in, systems terms. It is at this level of analysis that Burton expounds the theory that conventional politics can be explained, and that any denial of interaction at this level leads to conflicting or nonsystemic behavior. Burton's work further develops in the direction of human needs, their existence, of the drive to fulfill them, and their shaping of world society. This latest development has proved to be more controversal than his other ideas and is strongly contested.

Following Burton are writers with a less functionalist (sociological sense) emphasis, ignoring needs theory altogether. While accepting the essence of politics (politics and international relations) to be systemic interaction in the Burtonian way, they also introduce new dimensions.

While not overtly systemic in their approach writers such as Keohane and Nye (1977) in their book *Power and Interdependence* present a continuation of the wholehearted rejection of the Morganthau paradigm.

The work of Keohane and Nye is particularly interesting in that it represents power politics and global politics as two extremes on a continuum of types of global political situations. They recognize that in some political issues, power relations between states may be crucial, but that in others economic and ideological power may become potent and have a significant effect on outcomes. In the latter case, a situation of complex interdependence exists such that traditional power (a superior physical force) is moribund or impotent. Keohane and Nye suggested that even if power politics adequately described

international relations in the past, since the World War II complex interdependence most accurately describes the international dimension of politics.

Keohane and Nye's work has been criticized by Willetts (1982), for instance, for not completely rejecting the concept of power politics in the way that Burton did. Both sets of writers, however, have moved away from the functionalist (sociological sense) strain of Burton's work and expand on the concept of issue areas and issue salience to replace a fixed hierarchy of high versus low politics (traditional power versus economic and social matters). They have expanded the definition of power to include economic and social resources as well as physical force.

Systems concepts, as discussed in the earlier parts of this book, distinguish between structure and process, elements and their attributes, and interactions and exchanges. The dominant wisdom in the discipline has been that of hard systems thinking, and of structured approaches to perceived structurable situations. Within politics this has resulted in a search for the structure of politics, or the actors, and then an observation of the processes, or exchanges between actors. Witness Kaplan and others assuming the state structure and looking at interactions between states. The behavioral approach discussed in Chapter 3 suggests that we take as our starting point the process, or processes, and from them find the structure. Working this way a variety of relevant

we can be more certain that these are representative.

It is very important that a structure is not taken as given, and with respect to IR that counts for a global politics paradigmatic structure as well as for a power politics one. This distinction is discussed by Reynolds (1980), who delineates microinternational relations (which focuses upon actors on the international stage) from macrointernational relations (which is concerned

However, new theories based on process have developed. These range from total rejection of the state-centric approach, to the acceptance of that concept integrated into other types of cross-national interactions. Current systems thinking appears to favor the latter as it is difficult to deny that governments do participate in significant interaction. New IR theories, and consequently alternative explanations, have been achieved with the use of evolving system theories.

Interestingly, the methodological change in systems (from hard systems thinking to incorporate a softer approach) is reflected in IR. This has stimulated researchers to consider behavior rather than structure, and consequently has led to the acceptance by some of transnational politics and global systems. The paradigm shift discussed by Kuhn (1975), which in his view is typical of scientific revolutions, does appear to be present in systems science. This point has also been raised by Jackson (1987). The implications of this for IR are difficult to assess however. Certainly at a microsocial level Checkland's action research has proven to be most effective. Quite how the basic tenets of the interpretive paradigm can methodologically be incorporated at a macrosocial level is a question which, on the one hand suggests that a potentially explosive area has yet to be investigated, while on the other hand warns of a difficult, as yet unpenetrated, front which demands our attention.

Our conclusion, therefore, is strongly in support of the idea that systems science has contributed significantly to IR for good or bad. Stepping out of the functionalist paradigm (philosophical sense), however, may well be the necessary revolution that will shape and integrate systems science, IR and social theory building in general.

PROBLEMS

7.1. Discuss the main concerns of the theorists whose conceptualization of the international situation is restricted to states as interacting elements.

7.2. "The exercise of simulation and modeling in general can be regarded as one of the successes of the use of systems approaches in international relations." Discuss this statement, taken from text, in relation to the problems associated with modeling large-scale social situations.

7.3. What differences might occur when conceptualizing aspects of the international situations with behavior, rather than structure, being the main determinant in system identification?

7.4. Is it possible to use an interpretive approach, such as that developed by Checkland, to help to conceptualize a large-scale international social situation?