THE THEORY AND PRACTICE OF POLITICAL ADAPTATION

by

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INTRODUCTION

Use of the term "head man" to designate the leader of a society is as old as time and as wide as the world. Implicit in the metaphor is an assumption of analogical qualities, a functional equivalence between organism and society such as Plato spelled out in his Republic:

head : man = (philosopher-)king : society.

Our work constitutes an effort to pursue the same metaphor in a twentieth-century manner. The discipline of biology is concerned with how essentially-competitive individuals (cells) become integral, cooperating parts of a larger whole. It is concerned with relating structure to function and internal change to environmental events. To account for these phenomena, among others, biology gave birth to general systems theory. The concerns of political scientists appear analogous and, in the trust that it can guide political research, we adopt biological systems theory as our paradigm.

We assume, with David Easton, that each society is a system and that the political system is a subsystem of society, made up of role-actors and their relationships and open and responsive to both an intrasocietal and an extra-societal environment. We exploit the parallel between the political system thus conceived and the nervous system to suggest that the political system is, analogously to the

nervous system, the decider for its society, functioning to formulate coordinated societal outputs with respect to extrasocietal threats. We postulate, further, that the political system's outputs into the extrasocietal environment constitute adaptive responses, on behalf of the society, to extrasocietal events.

The first half of the work is given over to the development and exposition of a theory of the political system as decider and chief adaptive agent for a society. The second half is devoted to an empirical study, designed to test, in a minor but scientific way, some implications of the theory.

CHAPTER I

THE BIOLOGICAL METAPHOR

For the past twenty years, the discipline of Political Science has been in the throes of a revolution. The classical theoretical expositions which had been its essence have been relegated to peripheral status, their place taken by empirical generalizations and "theories of the middle range." Questions of epistemology and methodology have arisen, to claim attention and shake the foundations of assumption. At what point in this revolution do we now stand, and what does it all portend? It is my conviction that we have been undergoing those changes which have made it possible for us to "do science" and, further, that we now stand at that point in "scientific procedure" where the question of theory achieves immediacy. This is related to, but not identical with, David Easton's contention that political science has been undergoing simultaneously two separate revolutions, one a commitment to scientific method, and the other a preoccupation with theoretical concerns particularly as they guide a search for units of analysis.[1]

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[1]David Easton, A Framework for Political Analysis (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1965), pp. 17-19.

That there has been a revolution is generally recognized. If "alienation of the intellectuals" is a necessary precondition for revolution, Easton spelled out in 1953 his dissatisfaction with "the failure of political science to address itself directly to the search for . . . valid and useful generalizations about political life."[1] As Karl Deutsch phrased it, "The social sciences today perhaps are approaching another 'philosophic crisis'--an age of re-examination of concepts, methods, and interests, of search for new symbolic models and/or new strategies in selecting their major targets for attack."[2] Ithiel de Sola Pool wrote in the Foreword to the compilation of addresses to the main Plenary Session of the 1966 American Political Science Association convention, "If it is in any sense true that some sort of revolution has occurred in American political science (call it behaviorism or anything else) which has put modern political science in a new relation to its heritage of past theory, then indeed this is an appropriate moment for self-examination and review."[3]

Where did this all begin? Perhaps as logical a starting place as any for a revolution is that point at which

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[1]David Easton, The Political System (New York: Alfred A. Knopf, 1959), p. 37.

[2]Karl W. Deutsch, The Nerves of Government (New York: The Free Press, 1966), p. 4.

[3]Ithiel de Sola Pool, ed., Contemporary Political Science: Toward Empirical Theory (New York: McGraw Hill Book Company, 1967), p. vii.

the old gods, or kings, or dominant metaphors, begin to slip, to lose their power. For political science that point was the post-Enlightenment disenchantment with reason and with the physical model of government.

Isaac Newton had achieved the capacity to express, in a few general laws, the fundamental regularities governing the motion of matter in space; he linked the falling apple, the rising tides, and the motion of the planets in one magnificently simple statement. The consequences for social science of this breakthrough in physical science have been explored by Landau:

> . . . society came to be thought of in terms of mechanics. Social processes were seen as determined processes, directed into given paths by the action of impersonal external forces. The motion (behavior) of bodies (human beings) was preset and controlled according to the laws of nature. Natural man, whose properties included natural rights, was directed by natural forces to form societies. A society was no more than the sum of its constituents, a state no more than the sum of its discrete parts, its elemental bodies.[1]

Hobbes' political man is atomistic, a discrete particle encountering other, essentially similar, discrete particles. The transfer from physics was made to the individual as well as to society; Locke, taking the analogy of space for the mind and of particles for discrete ideas, demonstrated that the mind owed nothing to inheritance, that the whole was nothing more than the sum of the parts. His intellectual heirs, the <u>philosophes</u>, perceiving the physical world, the

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[1]Martin Landau, "On the Use of Metaphor in Political Analysis," <u>Social Research</u>, 28 (Autumn, 1961), 338.

social world, and the inner world of man's mind and body as but parts of the (mechanical) system of nature, regarded man as but an object in nature, subject to (mechanical) laws of cause and effect. To apply bon sens, right reason, to discover these laws and cause behavior to conform to them was to find the key to human perfectibility and inevitable progress.

But what eighteenth century social thinkers had borrowed from Newton was, as Landau demonstrates,[1] not the method of inquiry which had yielded up his conclusions, but simply an implicit mechanical model to which it was assumed, a priori, the world of social experience conformed. Their method was still that of geometry; from axiomatic assumptions one deduced conclusions, in Cartesian fashion. Perhaps the scientific method of procedure was too new; the relationship between the twin criteria of logical consistency and conformity with empirical observation was not generally perceived.

With the passage of time, it became evident that the mechanical theories, even with considerable stretching, simply did not fit; it became clear that progress was not inevitable, that technological advance did not automatically provide greater happiness, and that irrational as well as rational elements of motivation required explanation. The rise of Romanticism in philosophy heralded the "flight from

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[1] Ibid., p. 347.

reason" upon which Easton has remarked.[1] Bach gave way to Beethoven and Bentham to Schiller, Carlyle, and de Maistre.

The next major breakthrough in science came when, after observation and comparison of animal forms and behavior around the world on the new-famous voyage of the ship, "Beagle," Charles Darwin postulated his Theory of Evolution. He reasoned that, given a varied set of environmental conditions, and given spontaneous, random variations in genetic characteristics, there has been a tendency, over time, for the natural selection of those biological forms best suited for survival in their particular environments, thus accounting for adaptedness.

The profound influence of evolutionism upon social thought may be traced along several lines and at several levels. Two aspects in particular have led directly to the revolution we are discussing: one has to do with epistemological questions, the other with organismic models. Before dealing specifically with these, however, it may be well to sketch out some of the other lines, whose consequences for political analysis, although of no minor importance, have not been quite so direct for the area of particular concern in this work.

Firstly, one line of development used the analogy between the biological world and the political world overtly

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[1]Easton, Political System, pp. 15-24.

and consciously--although, like those inspired by Newton, its proponents failed to borrow the methods of science. Herbert Spencer was the most famous "social Darwinist," and his organic bias unequivocal:

> Legislative misdeeds . . . have their root in the error that society is a manufacture; whereas it is a growth. Neither the culture of past times nor the culture of the present time, has given to any considerable number of people a scientific conception of a society--a conception of it as having a natural structure in which all its institutions, governmental, religious, industrial, commercial, &c. &c., are interdependently bound-- a structure which is in a sense organic.[1]

He set forth some remarkably modern insights. For example, in the same essay, first published in 1884: "That which is really needed is a systematic study of natural causation as displayed among human beings socially aggregated."[2] Further,

> It ought to be sufficiently manifest that before meddling with the details of social organization, inquiry should be made whether social organization has a natural history; and that to answer this inquiry, it would be well, setting out with the simplest societies, to see in what respects social structures agree. Such comparative sociology, pursued to a very small extent, shows a substantial uniformity . . .[3]

But Spencer was, in a sense, too good a Darwinist. (It was Spencer who coined the phrase, "survival of the fittest," which Darwin borrowed.)[4] There are those who have pointed out that, had Darwin not lived during the grimly competitive

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[1]Herbert Spencer, The Man Versus the State (London: Williams & Norgate, 1910), p. 74.

[2]Ibid., p. 60.

[3]Ibid., p. 76.

[4]William Ebenstein, ed., Great Political Thinkers (2d ed.; New York: Rinehart & Company, Inc., 1951), p. 602.

industrial revolution, he might have been perceptive of not only the competitive, but also the cooperative aspects of nature--an illustration that not only does scientific thought color social Weltanschauung, but social thought colors scientific orientations. In any case, Spencer saw man's social life as subject to the same laws as governed the evolution of biological forms; life was essentially competitive and selective. Therefore, he reasoned, to enact welfare legislation--to interfere, by governmental action, with the natural process of weeding out the weak and ill-adapted was to defy nature and court disaster. "A society of men . . . may be considered as a species . . . and it must be true of it as of other species or varieties, that it will be unable to hold its own in the struggle with other societies, if that disadvantages its superior units that it may advantage its inferior units."[1]

Progress in biology and anthropology since Darwin has enabled us to point easily to the basic flaw in Spencer's argument: given that life is a struggle, it is precisely co-operative, and not competitive, behavior in that system we call society which enhances the average individual's survival chances versus the physical and the biological environments. Society is an adaptive attribute,[2] in the perspective suggested by Samuel Butler's immortal phrase, "a hen is only an egg's way of making another egg." In the language of game

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[1]Spencer, Man Versus State, p. 66.

[2]See, e.g., Anne Roe and Gaylord G. Simpson, eds., Behavior and Evolution (New Haven: Yale University Press, 1958).

theory, competition within society is restricted to the nature of a non-zero-sum game, while competition between societies is closer to a winner-take-all affair.

Walter Bagehot, also writing under the immediate influence of Darwin's work, made, like Spencer, overt and conscious use of the evolutionary principle: ". . . as every great scientific conception tends to advance its boundaries and to be of use in solving problems not thought of when it was started, so here, what was put forward for mere animal history may, with a change of form, but an identical essence, be applied to human history."[1] But Bagehot saw more clearly than Spencer the relationship between intragroup co-operation and intergroup conflict:

> When once polities were begun, there is no difficulty in explaining why they lasted. Whatever may be said against the principle of "natural selection" in other departments there is no doubt of its predominance in early human history. The strongest killed out the weakest, as they could. And I need not pause to prove that any form of polity is more efficient than none; that an aggregate of families owning even a slippery allegiance to a single head would be sure to have the better of a set of families acknowledging no obedience to anyone, but scattering loose about the world and fighting where they stood. Homer's Cyclops would be powerless against the feeblest band . . .[2]

Bagehot suggested that, from the variety of behaviors in any group at a given time, certain ways of acting prove advantageous and are copied and handed down. Patterns useful in one set of circumstances are superseded by others, more useful in

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[1]Walter Bagehot, Physics and Politics (Boston: Beacon Press, 1956), p. 33.

[2]Ibid., p. 18.

changed circumstances. Thus, the first need of mankind was law, any kind of rule being preferable to none; slavery served to provide at least an elite few with the leisure for creativity; warfare spurred innovation and nation-building. Internal development of the established nation was the task of Bagehot's time, and for this neither oppressive rule, nor slavery, nor warfare served: freedom to express new ideas which might prove useful had become the need of the day, and his book becomes an appeal for government by discussion. Bagehot's particular, often fallacious, deductions and almost comical Victorian ethnocentrisms aside, however, it remains that his theoretical statement of the way in which human societies may profitably be regarded as governed by evolutionary principles makes "Physics and Politics," if any book were to be so designated, the one heuristic to which this present effort is most indebted.

Spencer had tried to make evolutionism the peg on which to hang a massive philosophical-scientific scheme[1] as well as a keystone for opposition to social reform, and the discrediting of his scientific theories along with repudiation of his political position sent peg and keystone crashing and served to damn the evolutionary approach. It has since been in disrepute in social science, including cultural anthro-

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[1]George H. Sabine, A History of Political Theory (rev. ed.; New York: Henry Holt and Company, 1956), pp. 722-24.

pology,[1] even though it was to be seen "running underground" in an implicit model, detectible through the metaphorical language of the century. Its early misapplication is an object lesson in the inadequacy of deductive logic as a basis for prescription, and an argument in favor of adopting for social science those rules of epistemology and procedure which pertain in the natural sciences.

It is perhaps no exaggeration to state that no peculiarly political theory on the grand scale has emerged from that time to this decade. The theories of Karl Marx, of course, embraced political phenomena and, in the hands of Friedrich Engels, who was well-versed in the sciences of his day and had corresponded with Marx about Darwin's "The Origin of Species" immediately upon its appearance,[2] Marxian doctrine received buttressing from evolutionary theory, in particular from the concepts of conflict and struggle and directive change over time. But for Marx and Engels political phenomena were of interest only insofar as they were indicative of more basic, material factors. The focus was upon the economic system, the political being always the dependent variable. In analogous fashion, interactions between the political and the social spheres has received

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[1]See Leslie A. White, Foreword to Marshall D. Sahlins and Elman R. Service, eds., Evolution and Culture (Ann Arbor, Mich.: The University of Michigan Press, 1960) for a discussion of the Boas, anti-evolutionist, school which dominated the field for decades.

[2]Vernon Venable, Human Nature: The Marxian View (New York: Alfred A. Knopf, 1946), p. 14.

considerable attention, traceable through explorations by Aristotle, Montesquieu, and de Tocqueville into the effects of social variables, such as class and status, upon political structure. Max Weber and his heirs, notably Talcott Parsons and Gabriel Almond, have developed the concept of functionalism, inspired by the impact upon anthropology[1] of a Darwinian metaphor (but not a consciously biological model). For our present purpose it is sufficient to note that all these sociological conceptualizations of political phenomena tend, understandably, to treat of those aspects of political life which reflect social considerations. It is worth recalling that, in the writings of St. Augustine and St. Thomas, the accommodation of political to religious factors had been the focus of attention, with political conclusions being deduced from religious principles. To anticipate our introduction of a biological and therefore systemic model, the point to be made here is that, either the political system is expressible as a function of the religious, the economic, the social, and/or any other subsystem of society (in which case there is very little point in according it the status of an analytic entity)[2] or else there is something more subsumed in the word, "political," <u>something which has not been reached or accounted for in the theories growing out</u>

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[1]Bronislaw Malinowski, <u>Magic, Science and Religion and Other Essays</u> (Garden City, N.Y.: Doubleday & Company, Inc., 1955).

[2]See, e.g., Pool, <u>Contemporary Political Science</u>, p. viii.

of the cognate social sciences. It will be one of the arguments in favor of adopting a biological model that the logic of the model suggests that we look for, and indeed points the way to, just such a "something more."

In the absence of an explicit theory, political scientists directed their attention, as Easton has described,[1] towards the accumulation of facts and towards realistic descriptions of behavior. This "hyperfactualism," according to Easton, was a consequence of the desire to be scientific, coupled with a misunderstanding of just what that meant: "For the most part . . . political science has sought to identify itself with the general tendency to apply scientific method to social matters. It has conceived of science, however, in very narrow terms. It has construed it as an imperative first, to accumulate facts with great zeal, and second, in the name of theory to discuss problems concerning the application of knowledge."[2] But Landau has called this hyperfactualism a "myth"[3] and has demonstrated that this search for facts was united and guided by the implicit Darwinian metaphor which colored all the intellectual endeavor of the day. This insight directs us to those two aspects of the influence of Darwin which have had direct consequences

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[1]Easton, Political System, ch. 3.

[2]Ibid., p. 65.

[3]Martin Landau, "The Myth of Hyperfactualism in the Study of American Politics," Political Science Quarterly, 83 (September, 1968) 378-99.

for the new political "science" which is emerging from the current revolution.

Firstly, whenever it comes to pass that it is necessary to develop an explicit theoretical statement of the relationship of those elements and behaviors we call political, it has already been noted that an organic theory traceable to Darwin has been in the air for a long time, if implicitly, and will therefore be a natural candidate for the role of unifying grand theory. I have contended earlier that political science stands on the threshold of "doing science." The reason for this contention can be seen in the light of Kuhn's "The Structure of Scientific Revolutions,"[1] the burden of which is that what he calls "normal science," the efficient "puzzle-solving" kind of experimentation and refinement which fills in an area of inquiry, is possible only because the scientists in a particular field share one paradigm, one "picture" of the nature of problems and how to solve them. We would urge the view that political science has achieved methodological awareness regarding both problems of observation and the need for empirical theory, but is not yet fully united behind one paradigm. However, assumptions as to a systemic nature for political life underlie, and hence potentially unite, the functionalist, communications, systems analysis, etc. approaches to understanding political behavior. This congruence, coupled with a reawakening interest in

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[1]Thomas S. Kuhn, The Structure of Scientific Revolutions (Chicago: The University of Chicago Press, 1962).

theory, gives strength to the expectation that unification of the discipline may be upon us. Perhaps we are in the pre-paradigm state, on the verge of developing a unifying theory with, if Almond[1] is right, the systems approach as the leading contender. The balance of this work will be devoted to the attempt to formulate and exploit just such an organic conceptualization of political elements and activities.

The second aspect of Darwin's influence, logically prior to the construction of any particular unifying theory, has to do with epistemological and methodological matters. To Darwin are owed, directly or indirectly, both the statistical mode of explanation (a medium particularly suited to the open systems of biology and, hypothetically at least, of societies) and the empirical mode of thought, concerning itself with rules of observation. Before Darwin, explanation of cause and effect had been that appropriate to the closed systems of Newtonian mechanics: given the position and velocity of a mass at a given time, one could deduce from the laws governing motion just exactly where that mass would inevitably be found at a given subsequent time. But Darwinian explanation was probabilistic in nature.[2] Not every ill-adapted individual died young; strength and appropriateness to environment did not always guarantee longevity. All that

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[1]Gabriel A. Almond, "Political Theory and Political Science" American Political Science Review, 60 (December, 1966), p. 876.

[2]Philip Wiener, Evolution and the Founders of Pragmatism (Cambridge, Mass.: Harvard University Press, 1949).

could be demonstrated was that, statistically, there was a tendency for the ill-adapted to die off and the well-adapted to live to reproduce and pass on their characteristics. It was in the field of physics that the statistical mode of explanation received its development; from physics it was introduced, de novo, to the field of biology in the 1930's, inspiring revolutionary theoretical and methodological perspectives.

To arrive at conclusions in a statistical way, one must, obviously, observe many samples and come to generalizations inductively. To paraphrase Landau, it is necessary that knowledge must, from having been deemed a function of reason, become a function of experience.[1] This is the transformation that he sees as having indeed taken place with the emergence of the philosophy of Pragmatism as a direct consequence of scholarly concern with the epistemological implications of the theory of evolution. "The philosophy itself constituted a new 'rule of method' to make ideas clear and to test claims to truth. To reach this goal, emphasis was shifted from antecedents to consequences, from the origin of ideas to their verification. First causes were set aside as the how of life was stressed rather than the why."[2] Too, the first impact of the problem of operationalization, of all that was involved in the process of identifying and

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[1]Landau, "Myth," p. 385.

[2]Ibid., p. 384.

observing, was felt in the field of physics, particularly in the thought of Bridgman, and was borrowed later by biology.

To summarize: to political scientists' traditional art of making theoretical generalizations evolutionism added, in ways we have traced, both the inclination and capacity to observe facts and behavior realistically and a validated mode of statistical explanation, thus bringing into their hands all the basic tools and skills necessary for a truly scientific investigation of their subject matter. Their desire and intention to do so has been axiomatic, clear in the writings of the major political scientists of this century, and hardly needs documenting. The revolution in physics (wrought by the theory of evolution) "spilled over," making possible a science of biology, and is "spilling over" into political science now. A glimpse into the discipline of biology, circa 1930, presents an interesting comparison with political science today. Woodger quoted Cassirer and added his own comment: "'A glance at the history of physics shows that precisely its most weighty and fundamental achievements stand in closest connexion with considerations of a general epistemological nature.' Those biologists who admire the methods of the physical sciences would do well to consider carefully the implications of the above passage for biology."[1] And then, in 1932, von Bertalanffy wrote:

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[1]Joseph H. Woodger, Biological Principles (New York: Harcourt, Brace & Co., 1930), p. 6.

> In the natural science of the present day we are witnessing a strange and disturbing spectacle. It is as though the grand sweep of its historical development, stretching from its beginnings in early Greek times up to the twentieth century, had to-day received a check. The foundations of our thought and investigation, hitherto regarded as assured, have collapsed. In their place new ways of thought, often paradoxical and apparently contradictory to the plain man, have appeared in bewildering variety, and among these still hotly contested ideas it is not yet possible to discover those which are destined to win an enduring place in our view of the world. . . . Because there is no generally adopted theory . . . a thousand different opinions, personally coloured in varying degrees, confront one another, among which a given worker will choose according to his personal taste and the requirements of his special sphere. . . .
>
> If biology is to emerge from the crisis of its foundations and the accumulation of unrelated facts, as a critically purified exact science, the attainment of an assured theoretical biology will be necessary. But the term "theoretical biology" has two meanings . . . Theoretical biology in the <u>first sense</u> is the logic and methodology of the science of organisms. It establishes the foundations of biological knowledge and thus forms a branch of general logic and epistemology. . . . But theoretical biology in the <u>second sense</u> signifies a branch of natural science which is related to descriptive and experimental biology in just the same way in which theoretical physics is related to experimental physics. . . . If we are to overcome the state of crisis in biology . . . we require theoretical biology in both the "first" and in the "second" senses.[1]

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[1]Ludwig von Bertalanffy, <u>Modern Theories of Development</u> (London: Oxford University Press, 1933), pp. 1-3, <u>passim</u>.

CHAPTER II

THE POLITICAL SYSTEM

Von Bertalanffy's contribution to theory in his field was the introduction of a systemic conceptualization of life. He suggested that "there is no living substance, but only living organisms. . . . The vital properties are system-properties arising out of the arrangement of the materials and processes, and must therefore disappear when this arrangement is destroyed."[1] "The problem of life is that of organization."[2]

The systemic perspective on life requires its own frame of reference, one not easy to embrace for, regarded within it, a living system, an organism--even a person--is not a concrete "thing" but rather a set of coexisting, interrelated processes:

> von Bertalanffy: Living forms are not in being, they are happening.[3]
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> Bridgman: An object with identity is an abstraction corresponding to nothing in nature.[4]

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[1] Ibid., pp. 47-8.

[2] Ludwig von Bertalanffy, Problems of Life (New York: John Wiley & Sons, Inc., 1952), p. 12.

[3] Ibid., p. 3.

[4] Percy W. Bridgman, Logic of Modern Physics (New York: The Macmillan Company, 1927), p. 35.

> Woodger: Objects are purely intellectual entities belonging to the realm of knowledge. They are what certain histories are known as.[1]

To view anything (or anyone) as ultimately nothing more than "process" is to do violence to the commonsense assumptions around which our experience is organized. It is not customary to regard the neighboring dog (or his owner) as anything but a unitary, concrete "individual." When, however, we are concerned with explaining how or why such wholes are formed as they are and behave as they do, it is useful to differentiate functional subsystems and sub-subsystems down to elementary units.[2] This is the tack taken by physiologists who address themselves to the functioning of the circulatory and other subsystems, of the heart and other sub-subsystems, and so on down to cell metabolism. When, having analyzed the component parts, we want to reverse the process, to resynthesize the whole and to understand its properties, it is necessary to consider not only the qualities of each part, but the way in which these parts interact, for the behavior of each element stands limited or defined in some way by the systemic context, and differs by that much from what it might have been in isolation, unconstrained by membership in the whole.[3] One cannot arrive at the properties of the

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[1] Woodger, Biological Principles, p. 301.

[2] Such units (e.g., cells) are of course further analyzable into molecules, atoms, electrons, etc., until all matter comes to be regardable as but non-random energy distribution.

[3] von Bertalanffy, Problems of Life, pp. 11-12.

whole, then, simply by summing up the properties of its parts; it is in this sense that one speaks of an organic whole as being something more than the sum of its parts.[1]

Biological organic wholes have their genesis in the exposure of undifferentiated elements to some environmental conditions with which those elements must deal if they are to survive. (It is an important point that, in the evolution of systems in general[2] and of the nervous system in particular[3] the "trigger" is always environmental.) To offer a simplified example, let us take the case of a biological unit, such as a one-celled org in a medium. Let us assume, for the sake of argument, that it has only two needs: to metabolize (i.e., to obtain energy from the environment) and to avoid danger (e.g., too much light or too much salinity in the medium). Whenever such units are massed, some of them may be more favorably positioned, in a purely spatial sense, with respect to performing one function rather than the other.[4] Thus, those units on the outside of a mass will be

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[1]Ernest Nagel, The Structure of Science (New York: Harcourt, Brace & World, Inc., 1961), pp. 391-97.

[2]F. Joachim Weyl, "Opening Talk," in Marshall C. Yovits and Scott Cameron, eds., Self-Organizing Systems (New York: Pergamon Press, 1960), p. 4.

[3]Ralph W. Gerard, "Higher Levels of Integration," in Robert Redfield, ed., Levels of Integration, Biological Symposia, Vol. 8 (Lancaster, Penna.: Jacques Cattell Press, 1942), p. 71.

[4]Libbie M. Hyman, "The Transition from the Unicellular to the Multicellular Individual" in Redfield, Levels of Integration, p. 39.

better located with respect to sensing variations in the environment while those on the inside, relieved by the outside layer from attentiveness to external danger, can be more efficient feeders. Given these conditions, it takes only a great deal of time and a natural selection process operating upon random, mutant variations (or "tries") to create and fix upon (through the survival edge gained by those individuals bearing the appropriate genes) a situation in which, e.g., the outer cells monitor the environment and transmit information to the inner cells (perhaps by "chemical conversation")[1] while the inner cells feed and transmit material nourishment (perhaps by osmotic pressure) to the outer cells. To cope with two sets of activity with respect to the environment our mass of undifferentiated units has become an organic system, characterized by two subsystems--a digestive system and a nervous system--formed out of the patterned, interactive behavior of the elemental units. It is, as we shall see, a generalization of systems theory[2] as well as a biological empirical generalization[3] that complex systems tend to become differentiated into as many functional

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[1]Robert Auerbach, "The Organization and Reorganization of Embryonic Cells" in Yovits and Cameron, Self-Organizing Systems, p. 102.

[2]W. Ross Ashby, Design for a Brain (New York: John Wiley & Sons, Inc., 1952), p. 185. (quoted in our Appendix F)

[3]Woodger, Biological Principles, p. 437. (quoted in our Chapter 3)

subsystems as there are significant aspects of the environment.

While the most fundamental aspects of human societal behavior are the product of a long and gradual evolutionary process, the idea of cooperation, once established, is continually being applied to new situations. It is not difficult, for illustrative purposes, to exemplify the genesis of an ad hoc societal system along lines parallel, for instance, to our biological illustration. Given a group of boys in a berry patch, hungry for berries but having to watch out for the farmer and for a rival party of boys with their eyes on the same, limited patch, if most of the boys pick full-time while one watches for the farmer or for the other boys and instructs his friends when to fight or run, then we have a societal system, marked by an economic and a political subsystem of sorts. And just as all brains have developed in relation to the perception-specialists[1] so the deciding is done for the group by the monitor-evaluator-signaller.

These illustrations have been exceedingly simple, but they evoke Robert Redfield's conclusion about the articles in Volume 8 of Biological Symposia:

> What these papers seem to be saying, in most general terms, is this: The organism and the society are not merely analogues; they are varieties of something more

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[1]George H. Bishop, "Feedback Through the Environment as an Analog of Brain Functioning" in Yovits and Scott, Self-Organizing Systems, p. 125.

> general: the disposition, in many places in the history of life, for entities to undergo such modification of function and such adjustment to other similar entities as result in the development and persistence of larger entities inclusive of the smaller.[1]

persistence of larger entities inclusive of the smaller.[1]

We make no judgment on this question, but treat organism and society as mere analogues, using one as a model for the other (see Appendix D, Paradigm, Theory, and Model).

Generally, we have suggested, it is useful to focus upon the individual as a systemic whole; we sign contracts or play ball with an individual. There are times when it is more useful to focus "inward" upon subsystems of the human organic system; opthamologists, cardiologists, neurologists, etc., treat expertly of those human subassemblies in which they specialize. We are of the conviction that it may be very useful to focus "outward," to pursue the assumption that human individuals may be the elemental units of larger systems, such as a political system or an economic system, which are formed of their patterned, interrelated behaviors.[2]

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[1]Robert Redfield, "Introduction," in Redfield, Levels of Integration, p. 5.

[2]Any attempt to characterize human behaviors as patterned immediately encounters, in one form or another, the problem of free will. How can we reconcile the integrity and spontaneity of the individual with claims that his behavior is predictable? Any answer must be a probabilistic one.

Interindividual differences in attitudes and behaviors may be laid to the set of experiences which have come to anyone and the synthesis he alone makes of them; they reflect his uniqueness as an individual. But even while we regard each individual as unique and free (however widely we wish to interpret the word, "free"), we recognize that much of what makes up that individual is already socially determined and patterned by the time he reaches adulthood: he speaks a certain language,

Biological systems theory accounts for how individual units at a given level can become meshed into larger, cooperative functional systems at a "higher" level, while still remaining individuals. It accounts for how such higher-level functional systems are coordinated with one another. It accounts for how the net outputs, the "behavior" of each of these functional systems, is geared and responsive to that aspect of the total systemic environment for which it is significant. The systemic model, as it has been developed in biology, accounts for how behavior and change are related aspects of adaptation and how both are related to extrasystemic events.

We, in political science, are concerned, too, with how individuals relate to a larger entity, "the state," or "the political system." Much of political philosophy centers upon the rights of the individual, the limits of legitimate

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has learned the use of certain tools, and is aware of certain taboos and their sanctions. In a sense, therefore, he shares many aspects of his "life-space" or "field" with others who are products of the same "system." We tend to stress, for example, the differences between Democrat and Republican or hard-hat and revolutionary, while taking for granted the massive set of shared orientations to the same "reality" which makes their struggle even possible.

The overriding significance of interindividual similarity accounts for the empirical generalization that almost everyone stops his car for a red light; the "average person" will hoard a silver quarter and spend a debased one, lending predictability to Gresham's law that bad money drives good money out of circulation. Despite major nonconformity by a few (the insane, the assassin, the criminal, etc.) and minor nonconformity by many, if the probability remains that most people decide--as "rational individuals"--upon behavior conformable to law (stopping for a red light) or upon the same "best course" within a given field where there is no overt rule (coin-spending), then we are entitled to make generalizations and to base prediction upon these regularities.

power, the problems of loyalty and freedom, etc. We are interested also in the question of how functional systems (subsystemic to society but suprasystemic to the individual) are coordinated and interrelated: the question of the impact of the economic, religious, and social systems upon the form and function of the political system has been given considerable attention, currently in the field of comparative politics. We are interested also in how the political system relates to an extrasocietal political environment: the traditional political science field of international relations deals with this arena. We are interested in understanding political behavior and the conditions and laws of political change. The similarities of our concern with those of the biologist certainly suggest the appropriateness of addressing ourselves to an organic systems model.

Let us assume the simplest case, which involves a system (e.g., society) with a set of functional subsystems (e.g., political, economic, etc.) made up of elemental units (individuals). (We are disregarding, for the moment, intermediary levels such as cultural or interest groups, unions, political parties, etc.) Even in this simple example we find that a political system would be functioning with respect to three "environments":

1) the extrasocietal political environment to deal with which, theoretically, it has come into being;

2) the peer-group environment, the other societal subsystems with which it interacts;

3) the universe of individuals whose patterned behaviors make it up.

The Easton application of systems analysis to political life has focussed, we will attempt to show, upon the relationship between a political system and its intrasocietal environments, 2) and 3) above. We will be directing our attention, however, to the relationship between the political system and the extrasocietal environment, 1) above. We want to explore the relationship between environmental events and the outputs of the political system with respect to them. We are interested in this aspect because, while we assume that political systems arise in response to and are shaped by extrasocietal events as well as by occurrences within the society, the former factor has been relatively neglected.

Now, the study of political relationships <u>within</u> a society evokes attentiveness to political roles, to interests, to channels and gateways, etc.--in other words, to elements and subsystems within and subordinate to the political system itself. The appropriate unit of analysis might be the individual or a collectivity such as an interest group or the U.S. Congress. The study of the relationship between the political system and the <u>extrasocietal</u> environment, however, focuses chiefly upon the <u>outputs</u> of the political system into that environment. We are interested in the net <u>behaviors</u> which issue forth as a result of the activity within the political system. Our attention is, therefore, upon the

collectivity as a unit.

> We introduce collective terms when we find it useful to deal with dispositional properties of whole sets of individuals. A group is organized, for example, when its members act jointly to some end (they co-operate), and when shared expectations of one another and mutual identifications give them solidarity as a group. If we are interested in the formation and dissolution of groups, we might well concern ourselves with the individual members. But we might also wish to study group behavior, and make the organization itself the locus of inquiry.[1]

The chief difficulty in employing a collectivity as an entity is the temptation to reification. We must, therefore, make clear that we are ascribing no "thing-hood," no metaphysical essence, causal agency, or other special quality to the political system *qua* system, over and above the net output of its characteristic processes. What we do assume, however, is that the political system *is* systemic, in the sense that its characteristic processes are integrated and its elemental, constituent units are constrained by its logic. And, if our model holds, its logic *is* that its outputs are appropriate to dealing with (trans.: enabling the society to persist within) the extrasocietal, political, "international" environment. Just as any organic whole is something more than the sum of its parts, so, too, is the political system presumably something more than the sum of the actors that make it up: it is the actors *in their relatednesses*, limited in their

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[1]Abraham Kaplan, *The Conduct of Inquiry* (San Francisco: Chandler Publishing Co., 1964), p. 82.

options by the constraints of the system. All political behaviors are, ultimately, the behaviors of individuals: all "noticing," "evaluating," "remembering," "doing," and "learning" is done ultimately by human individuals. When we say that a society decides, what we are ultimately saying is that human individual occupants of certain political roles decide.

> . . . observations on individuals must ultimately be made; the actual conduct of inquiry, however, concerns itself, not with ultimates, but with the next steps to be taken.[1]

Our concern at this point, our "next step," does not have to do with the unique individual--although each person brings his own style to any office, and differences in style can make important differences in history. Our concern is with regularized systemic relationships, and therefore we focus upon the role-actor, the individual as constrained by the particular set of responsibilities and privileges locked into his "position." We are all too familiar with the phenomenon that the individual, upon assuming a role, commonly undergoes a "change in perspective": typical daughters-in-law become typical mothers-in-law, a local-thinking Congressman becomes a nation-oriented President, etc. Our concern is with these regularities, and not with the eccentricities of role behavior. We are trying to see probabilistic patterns, <u>tendencies</u> in the flow of activity within a role-structure, regardless of who the role-occupants happen to be.

> A nation, a tribe . . . can continue in existence as an arrangement of persons though the personnel, the units of

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[1]Kaplan, <u>Conduct of Inquiry</u>, p. 82.

> which each is composed, changes from time to time. There is continuity of the structure, just as a human body . . . preserves a continuity of structure. . . . In the political structure of the United States, there must always be a President; at one time it is Herbert Hoover, at another time Franklin Roosevelt, but the structure as an arrangement remains continuous.[1]

We are speculating that a specialized political role-system comes to be out of ad hoc designations of limited powers to certain individuals or sets of individuals responsible thereafter for dealing, on behalf of the society, with certain kinds of problems. As specific individual succeeds specific individual, each finds himself more or less constrained by an "inherited" situation and by the set of expectations others entertain as to the limits and privileges of his role. Only if such a patterned set of political role-relationships persists over time could any ground be claimed for "political history" or "political development." Only if there are similar powers and constraints built into all political systems can any ground be claimed for cross-societal generalizations. We are here engaged most particularly in trying to ascertain the latter; we are trying to determine what contextual and processual rationale governs <u>all</u> political systems, rendering them comparable. We pursue the theory that they arise as deciders, specialists in dealing with threats from outside the society and, to that end, dominant within their own.

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[1]A. R. Radcliffe-Brown, <u>Structure and Function in Primitive Society</u> (New York: The Free Press, 1965), p. 10.

While, theoretically, it is possible to account for a political system's outputs by summing all the political roles and stating their relationships, just as, theoretically, we can account in full for a man's behavior with respect to any aspect of his existence by summing up and specifying the relationships among his cells or among his organs, it would be awkward and inconvenient--and unnecessary--to do so. Instead, we can say that the political system "acts," in the same way we say that a flower "turns" towards the sun, or a heart "beats," or a man "breathes." All these statements are, in a sense, reifications,[1] unless we understand them to be but shorthand expressions for the perceptible resultant of the

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[1] ". . . It is extremely easy to fall into the error of thinking of the visual heart as the very concrete heart itself. But of course the visual heart though 'real' is already an abstractum. The visual shape of the heart is a synthesis of many visual appearances. . . . Which of all the fleeting appearances it presents are we to call the structure of the heart? Obviously the heart is an event (or a part-event of the event of greater spatial extent which is the organism) of the kind which is only knowable as a non-uniform object. . . .

"It is not in the least derogatory to anatomy and physiology that they abstract since without abstraction they would be impossible. But if, when we come to interpret their results synthetically we forget their abstract nature, then we fall into the 'fallacy of misplaced concreteness' . . ." (Woodger, Biological Principles, pp. 328-9)

coordinated outputs of certain subsystems. To say the flower turns towards the light is merely a shorthand expression for a detectible consequence of the regularized relationship between some of its characteristic processes and a light source; in this sense it is valid to describe the net effect of such activity as a behavior "of the flower." For the purpose of relating outputs of the political system to events in the extrasocietal universe, it is useful for us to take the collectivity, the political system, as our unit of analysis. As a reminder, however, that this usage is a shorthand merely, we will put the verbs into italics: the political system *acts* or *behaves*.

There is one further point. We will be treating the extrasocietal outputs of the political system, its *acts*, as equivalent to outputs or *acts* of the societal system as a whole. Such a jump may appear, at first blush, unwarranted, and therefore requires justification. Each functional subsystem of a system, we have seen, deals with some aspect of the environment, and it deals within that area of its responsibility or concern *on behalf of* the total system: only the respiratory system is charged with carbon dioxide-oxygen exchange; only the nervous system controls and decides and thinks. The respiratory system *is* man, breathing, and the nervous system *is* man, thinking. We never undertake to question the synecdoche "John thinks" or "John breathes." The statement that the United States (or any society) *acts* rests upon the same logic, for each kind of "activity" is the result of some subsocietal system. If the United States'

economic system "produced" so and so much, then the United States "produced" so and so much. If the United States' language system is organized around English, then the United States is English-speaking. And if the United States' political system sends troops to Cambodia or negotiates a peace treaty, then the United States is sending troops to Cambodia or negotiating peace. The political system is the United States in its arena, just as all the other systems are the United States, functioning with respect to their arenas. The totality of these, in their relatednesses, are the United States--and it is nothing more.

We hope, with the foregoing discussion, to have made somewhat clear some general considerations surrounding the concept of organic system as we will employ it. Let us now attempt to put forth more specifically our conceptualization of a political system. Let us assume that society is a system,[1] ". . . the most inclusive social system . . . the only one that encompasses all the social interactions of the biological person involved."[2] Let us assume that the units of the society as system are individual human beings, and their relationships the interactions we commonly speak of as social,[3] political, economic, cultural, etc.

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[1]See Appendices B, Systems, and C, Human Society.

[2]Easton, Framework, p. 47.

[3]We use the term "societal system" to denote the entire society as system, reserving the term "social system" for that subsystem of society which is concerned with the integration of individuals as personalities into primary and secondary associations.

Let us assume, also, that the "political system" is a system, a subsystem of the society. As we said in the last chapter and as we shall develop further in the next, a biological model suggests to us a function peculiar to and raison d'etre for political systems. Political systems, we all know, in some sense "provide for the common defense": they deal, on behalf of their societies, with a universe of other societies, watching and responding to the behavior of other societies to the end of preserving their own. Political systems also "insure domestic tranquility," exercising at least some degree of control within their own societies over the individuals (and groups) comprising them: certain possible courses of individual (or group) behavior stand foreclosed by enforceable legislation or edict. In biological organisms it is the role of the nervous system to do just these two things: to monitor, interpret, and respond to events in the external environment and to govern the behavior of systemic components. In an organism the nervous system is the decider. We assume that, in analogous fashion, it is the political system's function to decide for its society.

> In the words of Ralph Linton, "Human beings are anthropoid apes attempting to live like termites," and there are no instinctual drives which determine how order is to be created. So order is a cultural creation which cuts through society and includes the individual, the family,

> group associates, and various forms of political and legal systems. Political science, accordingly (it seems to me), should be concerned with the creation and maintenance of order, and the various subdivisions and fields and disciplines are developed for convenience in handling the problem and are not inherently obvious or justifiable.[1]

We can approach our idea of the political system by way of the familiar Easton conceptualization, to which any systems analysis of political life must be indebted. David Easton abstracts, from out of a total society, those interactions which he characterizes as "political" according to the criterion, "that they are predominantly oriented toward the authoritative allocation of values for a society."[2] The political system as he defines it is bounded by (and open to) other systems of two general types: intra-societal and extra-societal. The political system receives inputs from its environment in the form of demands and supports at various levels (community, regime, authorities); it selectively processes demands and issues forth outputs whose effect upon the subsequent state of demands and supports is monitored by a feedback process. The political system's capacity to persist depends upon its ability to make such outputs as will lower the demand level and increase the support level and upon its undertaking, through "withinputs," such creative

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[1]Roland Young, "Comments on Professor Deutsch's Paper" in James C. Charlesworth, ed., A Design for Political Science: Scope, Objectives, and Methods (Philadelphia: American Academy of Political and Social Science, 1966), p. 195.

[2]Easton, Framework, p. 50.

reorganization as will alleviate deficiencies and permit it to function more effectively.

There is a difficulty with the Easton scheme. His definitions and diagrams notwithstanding, Easton has treated the political system as though there were only one environment, the intra-societal, effectively operant upon it. He conceives the political system's persistence as depending solely upon the appropriateness of its outputs and withinputs in terms of meeting members' demands and thus holding their support. His system also receives generalized, "diffuse" support from a near-universal belief in the legitimacy of the regime and of the authorities, and from a conviction that there exists a common interest, or general good which the system ought to, and generally does, serve,[1] but no systemic or genetic imperative is offered for their appearance.

The major threat to the system is the existence of cleavages so sharp and deep that meeting the demands of advocates of one viewpoint automatically lowers support from advocates of the other. We have here essentially a sophisticated utilitarian theory, accounting for political behavior in terms of individual (and group) demands, and assessing government in terms of its capacity to maximize the greatest good for the greatest number. It is difficult to see what the political system does beyond accurately

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[1]David Easton, A Systems Analysis of Political Life (New York: John Wiley and Sons, Inc., 1965), chs. 18 and 20.

reflect in its policies the relative power behind the demands arising from the social, religious, economic, and other subsystems of the society. The political system becomes, in Bentley's phrase, "Moses the registration clerk,"[1] rather than Moses the law-giver. It is reduced to a function of the other subsystems of society, and if it is merely a dependent variable, analysis might be more profitably directed elsewhere.

But is this all that we have normally and traditionally associated with the political process? Hasn't Easton in fact focussed upon one set of parameters to the neglect of another set with equally good credentials? What about the inputs from the extra-societal environment? A close reading reveals that, although a whole array of international political, ecological, and social systems are delineated on the flow charts as part of the environment, they are either treated as trivial: "For example, at times demands may originate in that part of the extra-societal environment that lies in other political systems, as in the case where an American law firm or lobby acts for a foreign industry or government to mold or defeat a bill before the American legislature."[2] or they are whisked unceremoniously in and out of the political system:

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[1]Arthur F. Bentley, The Process of Government (Evanston, Ill.: The Principia Press of Illinois, Inc., 1935), p. 163.

[2]Easton, Systems Analysis, p. 54.

> The government leaders may be responding to their own image, not of what is expected of them, but of what they view in any event to be necessary. . . . It is easy to neglect the fact that the authorities, no less than any general or specific member of the system, are to be found among the structural regulators of the input of demands. . . . The authorities must, therefore, be viewed as spanning the boundary between a system and its environment, on the input side. Later we shall see that they perform the same function on the output side.[1]

The totality of Easton's unconcern with what we could call intersocietal relations is visible in the discussion of his most detailed flow model:

> Of necessity, the diagram presents a crude and highly simplified approximation of the possible paths taken by demands as they move through the system. Nevertheless, using it as a point of departure, the box stands for the political system; and outside it is the <u>total environment</u>, intra-societal and extra-societal. In the environment, the general, <u>non-political</u> opinions, preferences, interests, ideologies and similar ideas and attitudes, what we shall be calling wants, are formed. As members of society express these wants in the form of expectations or desires that binding decisions should be taken with respect to them, they are by definition converted into demands and have become part of the political processes of that society.[2] (Italics mine.)

The noteworthy element in this passage is, of course, the tacit identification of "total" with "intra-societal" environment, to the neglect of the extra-societal. Because the intra-societal environment consists, by definition, of all subsystems of the society <u>other</u> than the political, the generalization is made that <u>all</u> wants being converted into demands are non-political.

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[1] <u>Ibid</u>., pp. 97-98.

[2] <u>Ibid</u>., p. 73.

But what of demands from other political systems, subsystems of other societies? Are not a declaration of war, an alliance between potential enemies, the granting or withholding of recognition, or a vote of censure in the United Nations significant inputs into the political system of a nation? Is not its being outlawed a significant input into the (para-)political system of a political party? Conceivably, such factors could be treated, as Easton seems to suggest, as demands on the part of the authorities as members, but to confine so important an area of activity to one corner of the "black box" that is the political system would seem profitless.

We suggest an alternative formulation, which we will develop after commenting that the root of the Easton difficulty seems to lie in his definition of political as having to do with the authoritative allocation of values. If, for the sake of argument, the political system were open and responsive only to the society, and that society constituted a closed system, then the definition would be adequate. Politics would revolve about the effort of members to secure maximum impress of their values upon the society as a whole; and the values as, in the event, actually embodied, would have been authoritatively allocated. Politics would be purely a matter of "who gets what, when, how."

But, as Easton acknowledges, a society is not a closed system. His conceptualization therefore violates one

of his own criteria[1] by failing to account for the traditionally significant element of political life, inter-societal relations. While, in my opinion, his formulation remains very useful in regard to "domestic" and "civil" aspects of political life, it must be broadened to include the other aspect we have indicated.

In Easton's first book is a statement to the effect that we participate in political life when our activities relate to the making and execution of policy for a society.[2] He arrives at this definition from the common-sense notion of politics as embodying two elements: 1) "politicking," or "maneuver for position and power," and; 2) "government or the making of policy for the whole society in which we live."[3] "In this quite natural and unstrained kind of reasoning we can see that in its most comprehensive aspect and in the sense normally used when referring to public affairs, the central theme of a political problem is as much the kind of policy at stake as the means used to influence that policy."[4] As he makes clear, "policy" consists of decisions and actions.[5] And this is just the point. The political system allocates activity--publicly recruited, socially structured, and binding upon the entire population. It not only allocates the values of those who would, for example, see the

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[1]Easton, Framework, p. 48.

[2]Easton, Political System, p. 128.

[3]Ibid., p. 127. [4]Ibid., p. 128. [5]Ibid., p. 130.

United States fight in Viet Nam; it also allocates authoritatively a massive set of activities: production under government contracts, the drafting, training, and engagement of men in battle, etc. This activity is an output of the political system, on behalf of the societal system, into the extra-societal environment.

Chester Barnard[1] some years ago developed a pair of criteria for any viable organization: it must be effective and it must be efficient. By "effective" he meant that it must be successful in accomplishing those goals for which it exists as system gua system. If it is a business corporation designed to manufacture shoes at a profit, then it must indeed succeed in manufacturing shoes at a profit if it is to survive. By "efficient" Barnard meant that the organization must be able to provide adequate incentives to ensure the appropriately cooperative behavior of the members who compose it. For a business firm, this means it must attract and hold employees by providing money, prestige, promises for the future, or whatever.

For a societal subsystem, efficiency would mean that it can offer adequate incentives, an adequate balance of satisfactions over discontents, to keep its members as members. In Barnard's terms, we might say that the flaw in the Easton conceptualization is that he presents effectiveness of a political system as nothing more than a function of

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[1]Chester Barnard, The Functions of the Executive (Cambridge, Mass.: Harvard University Press, 1942).

efficiency. Effectiveness for the political system should consist in its output of activity "realistically" appropriate to a set of parameters with which Easton does not deal: Realpolitik--outputs of other societies' political systems, constituting a geometry of hazard (physical conquest, economic exploitation, ideological isolation, "We will bury you!") and of opportunity (manifest destiny, Lebensraum, a world safe for democracy, world revolution).

To summarize: we have suggested that the political system might usefully be conceived of as existing in two types of environment which must be distinguished because they constitute two sets of parameters, one revolving about the relationship between the political system and the other subsystems and individuals constituting the society of which it is a part, and another revolving about the relationship between the society as system and the other systems which constitute its environment. These relationships are diagrammed in Figure 1. Circuit I, the inputs, outputs, and feedback loop joining the political and intra-societal systems, constitutes the Easton pattern. We would add Circuit E, another set of inputs, outputs, and feedback loop joining the political and extra-societal systems. The emphasis in this work will be upon this circuit, and we will treat of it by exploiting its evident resemblance to the Stimulus-Organism-Response pattern of biological behavior.

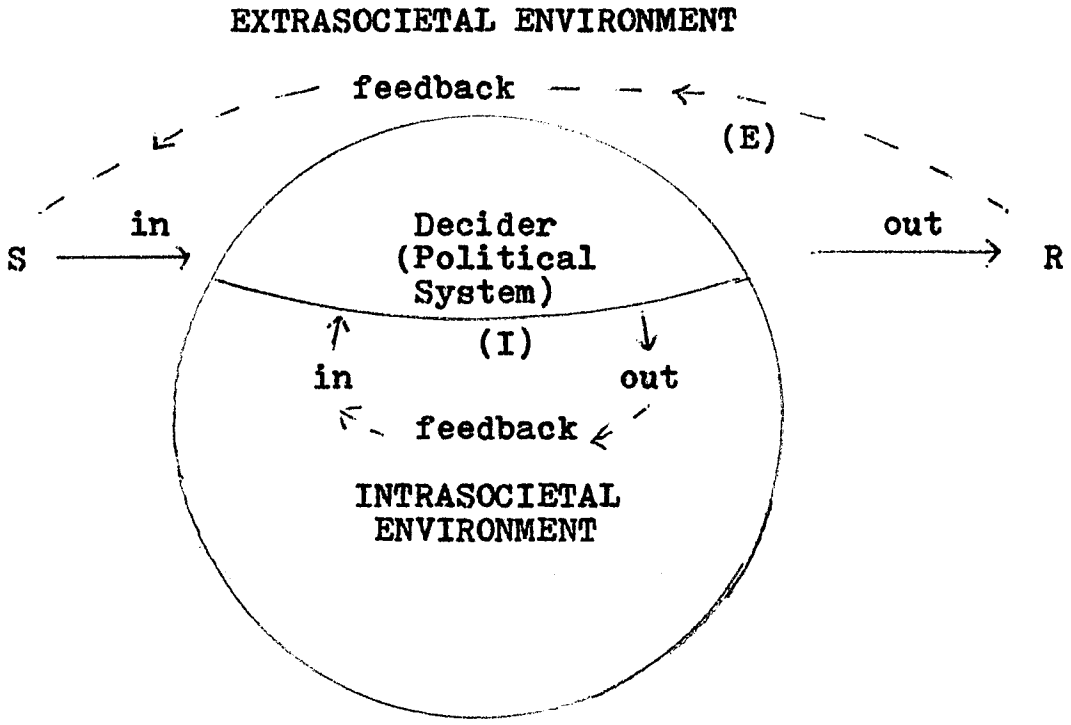

Fig. 1.--A Two-Parameter Political System

Persistence capability of a political system would have to conform to two types of criterion: efficiency and effectiveness: $P = S_E S_I$ (letting P = persistability, S_E = effectiveness, and S_I = efficiency). A political system would have to detect and act against external threats (at the very least, it would have to avoid conquest) and it would have to maintain internal order (at the very least, it would have to avoid successful revolution). This linkage of the political system with two environments demands that "politicians" or "policy-makers" must ride two horses simultaneously: they must see that events in either environment are adapted to. This suggests possibilities for

creativity, initiative, and power for the political authorities, through their unique position enabling them to assess alternatives and potentialities within and without the system. The interplay between "domestic" and "international" policies,and processes, the kind of question with which Machiavelli dealt in exploring the relationship between a prince's successes or failures abroad and the nature of his supports at home, has, as Rosenau points out,[1] fallen between the stools of the comparative and international schools of political science. Machiavelli was the exception; classical theorists from Plato and Aristotle on have concerned themselves with the relationship of individuals or groups with the state, as if there were no intersocietal environment. With the urgent necessity for intersocietal accommodation in a world rapidly become one, the effect of external imperatives upon internal arrangements (and vice versa) has begun to receive attention recently.[2]

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[1]James N. Rosenau, "Toward the Study of National-International Linkages" Prepared for delivery at the 1966 Annual Meeting of the American Political Science Association, Statler-Hilton Hotel, New York City, September 6-10. Copyright, 1966, The American Political Science Association.

[2]See, e.g., Wolfram F. Hanreider, "Compatibility and Consensus: A Proposal for the Conceptual Linkage of External and Internal Dimensions of Foreign Policy" American Political Science Review, 61 (December, 1967) 970-982.

CHAPTER III

THE FUNCTION OF THE POLITICAL SYSTEM

What should we expect of a political system? What characterizes it? How is it related to other parts of the society? How does it work?

As is typical when faced with something to be understood, we seek comparison with something else which seems similar and whose qualities are better known to us. We seek a model.[1] We are trying to understand the political system, which is at once part of a larger system (society) and also made up of the activity of many, essentially similar yet functionally differentiated, smaller systems (individuals). The parallel with biological organization, by which cells are integrated into subsystemic specialties and a systemic whole, is highly suggestive. Perhaps the conclusions natural scientists have come to about biological organisms and subhuman societies can serve us, suggesting expectations and lines of inquiry. We can effect a "translation" by assuming given political structures or functions to be logical equi-

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[1]This paragraph rests upon some "tedious arguments of insidious intent" (with apologies to T. S. Eliot). To avoid lengthy digressions, these are offered in Appendices D, Paradigm, Theory, and Model, and A, Science and Political Science.

valents of given biological ones, and deduce conclusions which we might then proceed to test.

We must not consider learning from lower forms beneath our dignity. It may be that, just as true wisdom in astronomy began with acceptance of the fact that the Earth was not the center of the universe, and insight into evolution necessitated the surrender of claims to human uniqueness, and psychology demanded the concession that man was not the rational creature he had fancied himself, so understanding of man's societal arrangements will require that he acknowledge them to be not far removed from commonality with other forms of biological organization. Biologists have long urged this view, and current popular interpretations of human behavior by zoologists and anthropologists conform to it.

Certainly man's societal behavior is more "primitive" than his individual development. How else could a society which produced a Leibnitz and a Beethoven have obeyed a Hitler? Despite advanced abstractive abilities and the capacity to comprehend that all humans are not unlike one another, men still differentiate "we-they" and with a sense of justice and pride kill "them," perceiving their own most aggressive behaviors as defensive. Despite the capacity to conceive of a far more satisfactory way of living, and to foresee the consequences of evidently-outmoded patterns, men cling stubbornly to them. Behavior is changed only when (and where) a pinch begins really to be felt. It was not the

justice or logical inevitability of it, but riots in the streets which goaded change towards black equality with whites in the United States. It will probably not be before the discomforts and hazards of overpopulation are actually upon us that we will undertake revision of human breeding habits. Such irrational elements might prove comprehensible in terms of what we know about the simpler forms from which we have evolved.

A biological model suggests a number of things to us. Firstly, in biology there is no such thing as a subsystem without a function. The existence of such a system is significant of something in the systemic environment.

> It is possible to analyze the organism into parts and show that these are adapted to corresponding environmental parts, or to parts into which the environment is analysable. . . . The whole organism is a complex of organized events amid the complex of events constituting its environment, and its endurance is the outcome of the mutual relation of its parts to one another and to these environmental events.[1]

For a human being, the digestive system is dedicated to converting free environmental energies into systemic structure and work. The respiratory system assures the oxygen necessary to that process. The nervous system detects and authorizes reaction to environmental threats. We can conceive of the economic system of a society as performing the metabolic function, converting material and energy resources into usable form and distributing them to all elements of the society. We must expect that the political system performs a function;

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[1]Woodger, Biological Principles, p. 437.

it must "do something," something more than get along with the other subsystems.

Secondly, there is no such thing as a system without a decider. The decider polarizes, co-ordinates, and commands the system so that it can behave purposefully with respect to environmental events of consequence for it. The decider is so important that its existence determines the systemic nature of activity: all living systems ". . . contain a decider, the essential critical subsystem which controls the entire system, causing its subsystems and components to coact, without which there is no system."[1] "Of these [subsystems] only the decider is essential, in the sense that a system cannot be parasitic or symbiotic with another system for its deciding."[2]

From this viewpoint. an "anarchistic society" would constitute an impossible, self-contradictory proposition. Homo sapiens represents a biological system ". . . so thoroughly and completely regulated that from a central controlling unit the activities of all members of the system are so integrated as to suppress all local independence and to turn all the processes of energy transformation efficiently to account in the requirements of the individual as a whole."[3] Ostensibly, at the other extreme, ". . . we should expect to

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[1]James G. Miller, "Living Systems: Basic Concepts" Behavioral Science, 10 (July, 1965), p. 204.

[2]Ibid., p. 222.

[3]J. William Buchanan, "Intermediate Levels of Organismic Integration" in Redfield, Levels of Integration, p. 43.

find an organism representing an equalitarian condition, a physically continuous system in which all parts are co-equal, exercising complete independence without evidence of cominance of any. No such organism exists."[1]

The decider is the dominant system, primus inter pares: "The gradient of control, in the multicellular organism, is as obvious--in the institution of royalty, in the organization of a university or of a department store--in the epiorganism."[2] We must immediately interject a disclaimer: our purpose in analyzing systemic implications as they appear in biology is the isolation of appropriate variables (such as dominance); it is not to present, as organic views of the state may have done in the past, a brief for any particular value of these variables. That is, to note that systemic behavior requires some minimal degree of dominance is not to exalt, as the Fascist theorists have done, systemic over individual identity and goals. Some degree of subsystem dominance is quite compatible with systemic behavior; democracy is a system. What must be insisted upon is that polarization requires some relationship of dominance and subordination, some asymmetry.[3]

The decider permits the system to act as one so as to seek the desirable and avoid the hazardous. For an

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[1] Ibid.

[2] Gerard, "Higher Levels of Integration," p. 78.

[3] Richard A. Schermerhorn, Society and Power (New York: Random House, 1961), p. 11.

organism, its deciding is done by its nervous system, with or without a brain. "A brain in general is a structure primarily devoted to the analysis of afferent information, and to the integration of this information into patterns of useful behavior. All the brains, and there have been a series of them, have originated in relation to the special sensory systems. They still function basically as analyzers of sensory information and integrators of motor patterns."[1] In short, the nervous system ". . . is an apparatus not only for response to environmental stimuli but also for the integration of the organism."[2] (Italics mine.) It is a weakness, in my opinion, of steering or communications models for political life that they tend to emphasize the response aspect, taking integration for granted, an assumption inappropriate for the loosely-structured political system which would seem to bear a closer resemblance to loosely- or intermittently-structured lower biological forms, such as multicellular protozoa (see Appendix E, Complex Biological Systems) than to electronic circuitry.

We believe that it is the function of the political system to act as decider for its society. It can be located at that point where lines of incoming information cross lines of authority. A man runs out of the bush,

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[1]George H. Bishop, "Feedback Through the Environment as an Analog of Brain Functioning," p.125.

[2]von Bertalanffy, Problems of Life, p. 45.

shouting that he has seen something. If his information is conveyed to a man or council who instruct that specific behavior be undertaken with respect to the occurrence, we have described the existence of a system and located its decider. In a modern context, information about the extra-societal environment flows inward from more or less specialized "sensors"--espionage agents, defectors, military observers, diplomats, radio and foreign press monitors, reporters and journalists and their "sources," travelers, border villagers, international businessmen, the "independent sources" of Congressmen, and, of course, the direct contact between leaders in international conference, through exchange of visits, or via "hot line." The decision may be formulated by one man or many, by dictatorial fit, clique agreement, or through a complex, broad-based representational system of assent. The behavior undertaken may involve the activity of one person or an effort involving much of a society's energies for years. But the principle remains the same. This is the Stimulus-Organism-Response process of Circuit E in Figure 1 (p. 42). The function of the political system is to detect and evaluate environmental events in terms of systemic steady state and to decide upon, authorize, and coordinate behaviors appropriate to countering or forestalling threats to the entire society.

A biological model suggests a third point. As we have indicated, biologists tell us that each subsystem is significant of some particular aspect of the extrasystemic environment. We have suggested the theory that the political system has its genesis in outside threats to the society and is significant of the society's need to cope with them, the maintenance of internal order and control being a necessary, but not a sufficient condition for its existence. The political system's function is detection, integration, and response; it is the irritable subsystem. Because of its intrasystemic linkages, it responds, as we shall see, to threats to the main variables of all the society. The response of the political system to extra-societal threats constitutes an "allocation of public resources,"[1] a "mobilization of the total relational context as a facility relative to the goal in question."[2] Talcott Parsons has concluded that, because the political system so integrates all aspects of society, it can never be studied as an analytical entity:

> These considerations throw some light on the problems of the status of political science as a discipline. . . . Neither power in the political sense nor the operation of government as a subsystem of the social

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[1]Herbert A. Simon, "The Changing Theory and Changing Practice of Public Administration" in de Sola Pool, Contemporary Political Science, p. 108.

[2]Talcott Parsons, The Social System (New York: The Free Press, 1951), p. 126.

> system can be treated in terms of a specifically specialized conceptual scheme of the same order as that of economic theory, precisely for the reason that the political problem of the social system is a focus for the integration of all of its analytically distinguishable components, not of a specially differentiated class of these components. Political science thus tends to be a synthetic science, not one built about an analytical theory as is the case with economics.[1]

Of course, as we see it, the political system is not a subsystem of the social system; rather the social system and the political system are both subsystems of the societal system. The main point, however, is that this conclusion illustrates the advantage of adopting a model overtly and explicitly. Any "action system" rests at least implicitly upon a biological model. In a biological organism the nervous system maintains control of, integrates, and acts for "all of its analytically distinguishable components"--yet it has all the qualities of and is studied as a differentiated, specialized (sub)-system in its own right. There need be no contradiction, as the model makes clear.

The fact that each subsystem, while interrelated with all other constituents of the system, is alone significant of only one aspect of the total system's environment means that, if we choose, we can adopt either one of two analytical perspectives: we can deal with the relationship between a functional subsystem and the rest of the system or we can shift our

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[1] Ibid., pp. 126-7.

focus, as it were, and deal, as system, only with the subsystem and that aspect of the environment for which it is significant. In this way, a mammalian respiratory system might be studied either from the standpoint of its relationship to other aspects of the organism of which it is a part or from the standpoint of its relationship with the atmosphere. For a physician treating emphysema, the first perspective would prevail; for those calculating the oxygen available to a trapped miner, the second might be more significant. In parallel fashion, a political system may usefully be analyzed either from the perspective of its relationship to other subsystems in the societal whole or from the perspective of its relationship to appropriate aspects of the intersocietal environment--in this case, to a universe of other political systems. These two perspectives correspond, it is evident, to the traditional fields of "domestic" and "foreign" politics.

This dual approach, it is noteworthy, permits us a simplification and justifies us in begging the question of "functionalism." That is to say, the problem of grounds for explanation of what (and "how" and "why") the political system does for the society can be reduced to two simpler demonstrations: 1) how the political system reacts to other subsystems of the society; and 2) how the political system reacts to political aspects of the extrasocietal environment. We are permitted, in effect, a non-teleological statement, relating part to part and part to environmental

part, without having to relate part to whole. This is a "pay-off" of employing a model; the logic of our biological model suggests that the question of "functionalism" need not arise in analysis of systemic relationships.

A biological model suggests, fourthly, that the political system must be compatible with the other subsystems. They must not prevent one another from functioning, although they will compete, each in terms of its own (sub)-systemic interests, for resources and for the projection of its particular "values" upon the rest of the society, in obedience to the biological generalization that, insofar as they are unlike parts cooperate but, insofar as they are alike, they compete.

Each subsystem performs its own function, taking care, as it were, of its particular responsibility towards the system. When, however, it encounters a circumstance beyond its powers, it must adapt,[1] undergo some change, thereby affecting the other subsystems which, to preserve themselves as unchanged as possible, bring their resources into play to return the situation to as near normal as possible. The organizational advantages of such an arrangement are obvious: the versatility and expertise of subsystemic specialization is supported by mutual dependence and mutual rescue capability (see Appendix F, Adaptation).

In this way, matters affecting social structure (e.g., abolition of a caste system), economic system (e.g.,

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[1]Woodger, Biological Principles, pp. 200-01.

industrial revolution), etc., will have ramifications for a political system, but political matters, it bears remembering, ramify likewise upon the other subsystems: tax laws upon the economic, equal rights laws upon the social, land grants upon the educational, etc. The main point is that, although other subsystems (religious, economic, social, etc.) may influence the particular form a political subsystem takes, they do not determine it, for it has a central core, a function of its own quite independent of theirs--in fact, its role as dominant subsystem requires that its influence be the greatest.

Finally, a biological model suggests that the political system must be compatible with its constituent individuals. Biology tells us that complex forms have evolved through the differentiation and specialization of once-similar individuals for the purpose of furthering the interests of those individuals (see Appendix E). Just as cells which are part of a body have a better probability of survival than have free-floating unicellular organisms so, it is evident, is the member of a complex industrial society safer from the hazards of disease, exposure, predators, and starvation than was his tree- or cave-dwelling ancestor--but both pay a cost in terms of freedom.

> The centrally important fact is that with the division of labor, which is implicit in the massing of cells in great multitudes and their arrangement in specific organs, most of the individual units become fixed in place so that they cannot forage for themselves. In primitive conditions, small human groups . . . were, indeed, free to move about over wide ranges and to forage for them-

> selves, but they were dependent on what their immediate environment at the moment could furnish. . . . The expert mechanic in a large urban industry, for example, can neither grow his food, make his clothing, nor procure his fuel directly. He must rely on members of other groups for these things. He can do his part only so long as the others do theirs.[1]

The surrender of independence is compensated for by increased security--the classical liberty-security dilemma. "A nerve cell has lost the ability to reproduce, but has acquired a superlative skill in transmitting excitation. Social man has lost the freedom to run naked in summer, but has acquired the freedom of turning on the furnace in winter."[2]

Like human individuals in society, biological components are distinct entities. "We must not overlook the fact that when cells grow in masses they still remain living units. Like the isolated single cell each cell in a complex organism has its own life processes."[3] The component units not only have their own identities and needs, but are in a state of competition, as well as co-operation, with each other: "Not only in a 'dividuum,' such as a budding polyp, do the components compete for building material which each one strives to grasp; the same is true for every living system. . . . Thus unity by competition of parts is present in every biological system, organisms as well as supraindividual

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[1]Walter B. Cannon, The Wisdom of the Body (New York: W. W. Norton & Company, Inc., 1932), pp. 308-10, passim.

[2]Gerard, "Higher Levels of Integration" in Redfield, Levels of Integration, p. 83.

[3]Cannon, Wisdom of the Body, p. 306.

units of life."[1] Although co-operating, individuals remain individuals first and foremost. They "watch out for Number One." They behave in terms of their own interests, competing for resources and satisfactions.

Co-operation is grounded upon self-interest, whether enlightened or narrow and short-sighted. Regularization of co-operative behavior results from conditioning by successful experience. Predictability based upon sharing of expectations results in orientation not only to the co-operating "other" but to the larger system their patterned, organized outputs have created. Preservation of this useful structure, this regime in Easton's sense, becomes a goal for its actor-members, anticipating their need to "play the game again." Competition between actors is thus mitigated or contained as Schelling has demonstrated,[2] but not completely eliminated.

For the individual, the political system must protect him from the outside world, for that is the reason for which he entered society. And it must protect <u>him</u>--that is, it must make his world safe in terms of what <u>he</u> values. Hobbes said it long ago: "Whensoever a man transferreth his right, or renounceth it; it is either in consideration of some right reciprocally transferred to himself; or for some

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[1] von Bertalanffy, <u>Problems of Life</u>, p. 54.

[2] Thomas C. Schelling, <u>The Strategy of Conflict</u> (New York: Oxford University Press, 1963), ch. 4.

other good he hopeth for thereby."[1] Within broad limits, the political system must conform to Barnard's criterion of efficiency; there must be a balance between what it offers the individual and what it demands of him, in terms of his values, that is not too unfavorable. (And it demands of him more than "supports"; energy resources must flow from the citizenry to the political system--in the form of taxes (for money may be viewed as potential work), military service, elective-office-holding, etc.--if it is to be capable of activity.)

This is the area of the classical "individual and the state" problem in political philosophy, for which this conceptualization of the political system carries some implications:

1) The state does exist for man, not man for the state.

2) Men do voluntarily enter a sort of social contract--not always consciously and certainly not tout à coup, but by way of behavioral evolution. (It is a commonplace that emergency ad hoc powers tend to harden and take on the attributes of permanence, as witness the New York City Rent Control Laws.)

3) Contrary to the view of most social contract theorists, however, the end for which men first surrender

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[1]Thomas Hobbes, "Leviathan" in Ebenstein, Great Political Thinkers, p. 348.

independence is not security against one another but against "them"--or "it"--some extrasocietal environmental threat.[1] Grim as it sounds, Nature would find no quarrel with Hobbes' war of all against all, as long as enough of the stronger survive to ensure the continuation of the species. Indeed, she has developed dominance and territoriality precisely to guarantee that some get enough, regardless of the fate of others. To say this is not to draw any Spencerian political moral.

To be viable, then, the political system, if it is governed by the same logical structure as are biological systems, has to be adapted at three levels:

1) Goal-attainment: its very existence as subsystem is significant of a particular aspect of the environment with which it deals on behalf of the entire system of which it is a part; its performance must be appropriate to that function.

2) Integration: it exists as a subsystem, peer to other subsystems at essentially the same level although, as

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[1]Rousseau was the exception among social contract theorists in ascribing to survival benefits the impetus for man's entry into society: "I assume, for the sake of argument, that a point was reached in the history of mankind when the obstacles to continuing in a state of Nature were stronger than the forces which each individual could employ to the end of continuing in it. The original state of Nature, therefore, could no longer endure, and the human race would have perished had it not changed its manner of existence." (Jean-Jacques Rousseau, "The Social Contract" in Sir Ernest Barker, ed., Social Contract [New York: Oxford University Press, 1962], p. 179) Rousseau, having said this, proceeded to treat of the society as if the extrasocietal environment ceased to exist.

we have noted, deciders must dominate to some degree at least; it must be adapted to them, and they to it.

3) Latency: it incorporates component sub-subsystems, whose patterned outputs constitute its identity; it must be so adapted to them as to be assured of their appropriate participation without unduly stressing their capacity or their identity as systems.

As Deutsch put it, "in operational and in normative terms, I prefer a system that has three properties, that is, it does not destroy the larger community, the larger system in which it exists; it can co-exist with other systems on its own level; and it is solicitous of its components."[1]

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[1]Karl W. Deutsch, "Conference Discussion on Methods" in Charlesworth, Design for Political Science, p. 231.

CHAPTER IV

POLITICAL ADAPTATION

A political system, we have said, must be adapted at three general levels. It must be adapted to the environment surrounding the society, and it must be adapted to two intrasocietal environments--to the universe of individuals elemental to the society and to the universe of other functional role-systems into which the society is organized.

The boundary between all these environments might be drawn by distinguishing the origin of the activity, behavior, or event which becomes a matter for political concern. All behaviors are ultimately those of individuals, but, for our purposes, they are distinguishable analytically along official-personal, we-they lines. Is a behavior that of a private citizen demanding security, equality, or some other personal satisfaction--or perhaps maneuvering for access to a role in the political system? Such activities constitute events in the "latency" environment. Or is it a demand by a role-actor, by someone in his "official capacity" as president of a national agricultural organization, as religious leader, as "spokesman" for the lower class, etc? Such activities constitute events in the "integration"

environment. This private-public distinction is not one we will be exploiting here, and so, for the purpose of simplification, we will lump together all events (demands, activity, behavior) originating from individuals within the society and will consider them (as Easton, essentially, does) events in the intrasocietal environment. The other, we-they, distinction is an important one for us. When events (behaviors, demands, activities) originating from individuals (usually, political role-actors) in other societies are matters for political attention, concern, or decision within a society, we consider them to be events in the extrasocietal, "goal-attainment" environment of that society's political system.

We have reduced the three environmental "levels" of the political system to two: intrasocietal, embracing both constituents and peer subsystems, and extrasocietal. As our discussion of adaptation will suggest, we would expect that normally an event in either environment would be succeeded by outputs from the political system into the same environment. Under the condition that effective outputs exceed the capability of the political system, however, the "issues" caused by these events can ramify into the other environment. For instance, a purely domestic issue, such as the pressure of a society's population upon its territory and resources, can lead to an extrasocietal output, such as aggression upon a neighbor in the name of Lebensraum; conversely, a foreign event tends to become a domestic issue

if the political system is having difficulty in dealing with it. Such recourse to the other arena, however, would generally be expected only where the political system's resources with respect to the appropriate arena have first been tried and found wanting. Until then, the boundary between "foreign" and "domestic" is usually easily distinguishable.

It was the evident resemblance between the logic of a political system thus conceived as dichotomous and that of the nervous system which had lent encouragement to the exploitation of biological principles, for: "according to its functions the nervous system may be separated into two great divisions: that acting outwardly, in relation to the external environment of the individual; and that acting inwardly, on the viscera, and governing principally the internal environment."[1]

As we have tried to stress, this analytical divisibility is not to be read as total independence; to regard political science as two separate fields is to lose its essence, which lies in the political system's function of preserving its own society, with all its domestic characteristics, intact[2] in a "foreign" world. The political system

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[1]Cannon, Wisdom of the Body, p. 244.

[2]We mean this in the literal, dictionary sense of the word: "unimpaired; left entire." Each society is made up of its members and their interaction in certain, patterned ways: each is distinguished by its own characteristic social codes, language, economy, educational system, law,

is simply constrained by two sets of parameters; put another way, there are two sets of limiting factors, one reflective of the requirement that it be adapted to (i.e., maintain its identity within) the larger world, and the other that it be adapted to (i.e., maintain its identity within) the society itself. Again, it must be effective and efficient. What we hope to demonstrate, at least in some preliminary outline, is a theory of how the political system is linked to both sets of variables, how it behaves, and how it learns, adapting itself to other factors within the society and to the world in which the society functions.

Faced with two sets of variables, with two kinds of factors influencing a situation, the usual procedure is to tackle them one at a time. This is accomplished by selecting one parameter as the independent variable and manipulating it so as to observe its effect upon the situation, while holding the other variable constant. If, for example, we want to judge the effects of heredity and environment upon intelligence or some other aspect of personality, we can select heredity as the independent variable and hold environment constant by comparing different stock in the same environment. Conversely, we can judge the effect of environment by seeing how the intelligence of the same stock varies

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transportation and communication system, political role system, music, religion, art forms, dress, etc. We are postulating that the political system's outputs into the extrasocietal environment are organized around meeting or forestalling threatened disruptions of all or part of this total pattern or "way of life."

with different environments; comparison between identical twins, separated at birth and raised differently, has been exploited in this way. To select either factor as independent variable is not, of course, to deny the effect of the other upon the situation.

In this case, we are interested in the effects of both an extrasocietal environment and an intrasocietal environment upon the structure and function of a political system. In parallel fashion to the nature-nurture illustration, we could undertake either to compare varying intrasocietal environments while regarding the extrasocietal as essentially constant or we could compare varying extrasocietal factors while regarding the intrasocietal environment as unvarying. In other words, we can select either parameter as an independent variable to observe its effect upon the other. Temporarily to treat of the other parameter as constant is, it cannot be stressed too strongly, not any reflection upon its role in and contribution to the whole. If, as we will, we select the extrasocietal environment for treatment as our independent variable, we are not thereby denying the effect of events inside the society upon the nature and outputs of the political system.[1] We are simply

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[1]Certainly the spontaneous act of even one individual, for example a political assassin, can change the course of history. We can, of course, never hope to predict the unique course of history; our explanatory tools are only probabilistic. We could, however, determine the general effect of assassination by reversing phase, as it were, and, now treating the extrasocietal environment as constant, comparing

assuming, ceteris paribus; we act as though only external events affected a political system, to see whether there are any regularities we can observe by comparing societies with respect to such matters.

We are particularly interested in the possibility that societies display adaptive behavior. If they seem to, if we can treat of them as though they "experience" and "learn" and "adapt," then we might have a useful tool for organizing observation and possibly even for predicting. The aspect of a political system's adaptation with which we will concern ourselves is adaptation to outside events; for the moment regarding domestic factors as constant, we shall deal from now on only with the adaptation of the political system to its extrasocietal environment.

What does it mean, in general, to say that a system is "adapted?" Simply that is is[1] such and characteristically behaves[2] so that it is able to survive (i.e., to continue its characteristic internal processes) within its environment. Adaptability is never unlimited;[3] no system has the capability to cope with all the conceivable challenges of its environment. All open systems do, however, achieve some

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societies in which assassination characteristically occurs with those in which it does not, to see how, other things being equal, factors within the political system vary with its incidence.

[1]Woodger, Biological Principles, pp. 436-7.

[2]G. Sommerhof, Analytical Biology (London: Oxford University Press, 1950), p. 38.

[3]Ibid., p. 19.

independence of the environment through their tendency to produce a set of activities such as to rectify or forestall environmental disturbances of their equilibrium. "The homeostatic mechanisms . . . extend from those that work wholly within the animal to those that involve its widest-ranging activities; the principles are uniform throughout. . . . Man's civilized life is not exceptional."[1] Adaptivity is, then, it should be noted, clearly <u>essentially responsive</u> (or anticipatory of a foreseeable need to respond, which comes to the same thing).

A system acquires its characteristics and maintains itself by a process of adaptation. It may seem anomalous to suggest that a system "changes" to "preserve itself intact," but that is the point about adaptation:

> The persistence of a thing without intrinsic change is an expression of the absence from its environment of other things, relation with which would involve changes leading to its destruction. Such a thing persists because 'dangerous' changes do not occur in its environment. But suppose a thing were such that changes in its environment were related in such a way to changes in it that the latter changes resulted not in its destruction but in its further persistence, then clearly it would manifest a new type of persistence. . . . It would be independent in a new way--not through <u>absence</u> of change, but <u>through</u> change. . . . Now it is a characteristic feature of living things that they do manifest in various degree this type of persistence--this further mark of thinghood. Moreover the 'higher' an organism is the greater is the variety of external changes to which it is capable of making 'appropriate' changes or 'responses.'[2]

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[1]Ashby, <u>Design for a Brain</u>, pp. 60-62, <u>passim</u>.

[2]Woodger, <u>Biological Principles</u>, pp. 200-1.

An open system will tend to remain as it is, in dynamic equilibrium or steady state. Given an environmental event of consequence for it, it will characteristically produce a response appropriate to overcoming or neutralizing any threat the event poses to that equilibrium. If a successful response is produced, we say the system has the power to deal with the situation; in Deutsch's terms, it can afford not to change; it can regain steady state and keep its characteristic identity, undisturbed. If, however, no behavior which it produces proves successful, then the system will have to undergo some change, reestablishing itself at a new steady state with a different critical value for one or more of its critical variables.[1] For example, if a government is threatened with the annexation of a portion of its territory by the neighboring state (or with the secession of a rebel province) it will attempt by diplomatic or military means to preserve itself. If unsuccessful, it must restabilize as a changed state, with new territory and population size, and perhaps a shift in ethnic, linguistic, or religious complexion.

Behaving, restructuring, learning, and evolving are all but different aspects of adaptation, differentiated as to time-scale. "Shoart-run adaptiveness responds to what we ordinarily call problem-solving, long-run adaptiveness

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[1]Much of this chapter relies upon the more technical discussion in Appendix F, Adaptation.

to learning."[1] "What are called structures are slow processes of long duration, functions are quick processes of short duration."[2] Systems are as systems do. Systems are organized complexes of characteristic processes performed by their constituents. A change in typical behavior is therefore a change in structure; successful, "learned" behaviors shade off into habits: ". . . process leaves behind it structure--behaving shifts to becoming and alters being."[3] Indeed, ". . . every determinate system changes so that, as time goes on, its state is characterized more by the experiences that have come to it than by its state initially."[4]

What are the elements of adaptive behavior? What goes into it? At the risk of making the adaptive process seem more mechanical than it might be, let us try to isolate and list the basic elements which, theoretically, would make for political adaptation. Later we will try to exploit this list in an empirical way.

Adaptation begins with a system, an open system in steady state, surrounded by an environment. Our system is the society and we are postulating that it is the function

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[1]James G. March and Herbert A. Simon, Organizations (New York: John Wiley & Sons, Inc., 1958), p. 170.

[2]von Bertalanffy, Problems of Life, p. 134.

[3]Ralph W. Gerard, "Units and Concepts in Biology," Behavioral Science, 3 (April, 1958), p. 203.

[4]W. Ross Ashby, "The Effect of Experience on a Determinate Dynamic System," Behavioral Science, 1 (January, 1958), p. 38.

of the political system of that society to organize behavior with respect to the extrasocietal environment. "The society" is not just a number of individuals--it is the individuals in their consistent patterns of relatedness. These relatednesses take the form of complex, specialized (sub)systems, patterns of activity which persist, as role-structures, despite the replacement of specific individuals. The total society is the totality of all these economic, philosophical, educational, linguistic, religious, social, communications, ideological, cultural, and a raft of other subsystems in which individuals participate. The normal[1] functioning of these systems constitutes the steady state of the societal system. The society in steady state is "doing its thing," acting out its character; it is enjoying the freedom to be itself.

For every system there are certain key variables, or values, certain fundamental factors which must be preserved from displacement beyond tolerable limits if the system is to continue in steady state. For example, the United States' material distribution system could not perform if destruction overtook more than a certain percentage of its gasoline storage tanks, its paved roads, its rubber tires, or its drivers. The normal state of all these variables is the "goal-state" of the system. The systemic

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[1]Just what is "normal" for any system would be a matter for empirical determination, as are the "normal" temperature, pulse rate, or blood-sugar levels for animals.

key variables are values; their reestablishment after disturbance (or the forestalling of anticipated disturbance) is a goal. Whether or not an environmental event has consequences for the system depends, then, not only upon the nature of the event, but upon the nature of the system as well.[1] For example, a high-pitched sound that might hurt a dog's ears and send him seeking relief would be an event of no importance to a human, whose ears are not "sensitive" to it.

As Appendix F describes more fully, all the specialized subsystems in a multistable complex system become adapted to one another in such a way that, although they retain relative functional independence, they attain a linkage which permits an intolerable disturbance of any key variable to be passed along to the other subsystems which, by their own homeostatic efforts, lend it support. In this way, assuming society to be a multistable system, the political system, monitoring the extrasocietal environment, reacts to protect the main variables of all the societal subsystems. We assume, with Morton Kaplan, that "the political system has the metatask capacity to act as the ultrastable regulator of the larger system in which it functions. It thus regulates the system by adapting it to environmental disturbances in such a way that the critical values of the

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[1] In this sense, Hegel and Marx were both right: a system tends to "act out" an idea, to shape reality to its own pattern while, on the other hand, material conditions are determinants of interests and shapers of goals.

system are maintained. In other words, it chooses the behaviors consistent with the critical values of the critical variables of the system."[1]

To make this point clearer, we are suggesting that, of course, the political system will regard as values those factors critical for the preservation of its own identity: it will "want" to preserve the lives of its authorities and the (democratic, communist, socialist, fascist, etc.) nature of its regime. But it will also behave so as to preserve salient factors in the identity of other systemic subsystems: the political system of a capitalist-economied state will behave towards capitalism as a value, while the political system of a socialist- or communist-economied state will react in terms of the protection of their particular economic system's identity. The same principle holds with regard to language systems, religious systems, etc. Again, just which language, or economic system, or religion, etc. a society will act so as to preserve is a matter of internal politics, explicable in terms of interest-group theory and culminating in an authoritative allocation of values, as per Easton.

If adaptation rests upon the steady state, it begins, a biological model tells us, with an environmental event.

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[1]Morton A. Kaplan, Macropolitics: Essays on the Philosophy and Science of Politics (Chicago: Aldine Publishing Co., 1969), pp. 67-8.

Something happens, changing the system's "field" or "life-space." The biologist Sommerhof[1] coined the name "coenetic variable" for an event which has the dual consequence of: 1) causing a change in the environment and; 2) acting as a stimulus to a behaving organism. He accounted for the anticipatory nature of biological behavior (e.g., the cat jumps not where the mouse <u>is</u> but where it will be) by postulating that the organism sets a goal state in terms of which it decides upon a response. In other words, the responses are "paired" to anticipated changes in the environment in such a way that they will bring about the desired goal-condition. For a system in steady state, this goal-condition is, of course, homeostasis, the re-establishment of that state. Appendix F deals more fully with Sommerhof's conceptualization, but we can diagram here just how the S-O-R linkage we are assuming would fit into his scheme.

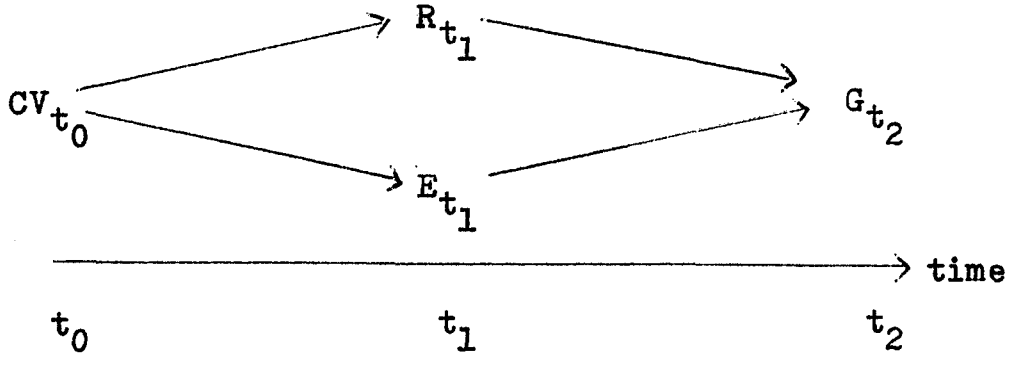

Fig. 2.--Sommerhof's Adaptive Behavior Scheme

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[1]G. Sommerhof, <u>Analytical Biology</u> (London: Oxford University Press, 1950), p. 53.

According to Sommerhof, the event, CV, at time t_0, gives rise to new environmental conditions, E, at subsequent time, t_1, and stimulates an organism's adaptive response, R, at that time, t_1, such that it, paired with E_{t_1}, leads to goal condition G at some future time, t_2.

It is the decider's job to determine just what behavior will be appropriate to meeting the environmental condition. As Ashby points out, this is a judgment or habit which is learned by trial and error, behavior and feedback. The cat has to learn how to catch the mouse. As Figure 3 illustrates, the political system, as adaptive decider, would

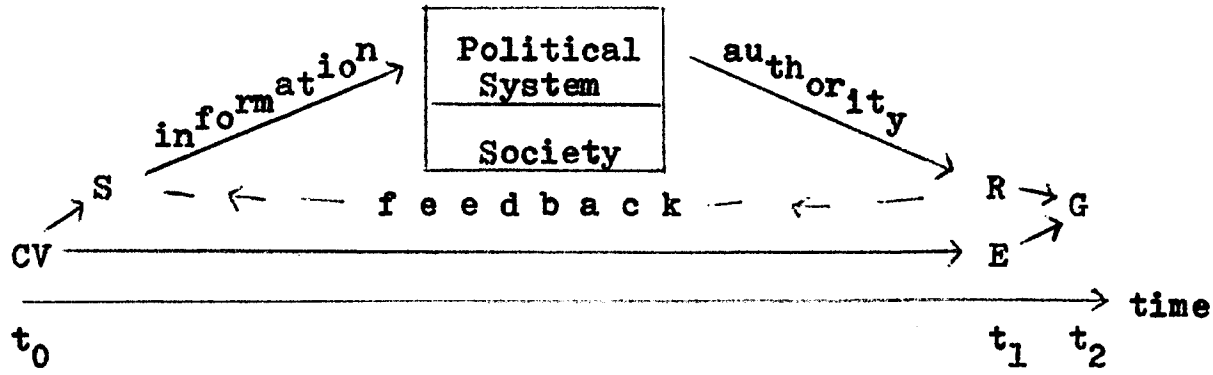

Fig. 3.--An Adaptive Political System

determine whether or not the event is a stimulus (that is, whether or not the event is significant for the society) and decide upon and authorize a behavior, R, which, paired to the environmental condition, E, should bring about the goal state, G, for the society.

An event having taken place, then, the first step in any decision process would have to be assessment of its dual

consequences: 1) What effect will it have on the environment? That is, what does it portend, and what will be its consequences?;[1] 2) What does this mean for the system, in terms of systemic values? Is it significant? Is it a threat or a problem? This is the process of evaluation, which we use as Parsons does: "Cognitive mapping has alternatives of judgment or interpretation as to what objects are or what they 'mean.' There must be ordered selection among such alternatives. The term 'evaluation' will be given to this process of ordered selection."[2] Parsons' reference to evaluation here pertains to an individual actor and his situation. What I am proposing is that we take this actor-centered orientation "up" several systemic levels, past small groups and large associations and major subsystems, to the society itself as system. Then these modes pertain to debates and resultants within society. Because, however, society is structured of individuals, each with his own "steady state" and, therefore, his own set of values, there is the possibility of disagreement within the society as to what the event "is" and what it "means." Despite socialization, politicization, acculturation, etc., variation in individual evaluations gives rise to opposing interest groups,

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[1]The "objective validity" of such an assessment will be reflected in the effectiveness of any behavior based upon it as premise, but has no other significance. If, e.g., all the Arab world perceives the Aksa Mosque fire as the work of Israel, then that will be the perception upon which Arab behavior is based, regardless of how others might see the event.

[2]Parsons, Social System, p. 7.

to varying ideologies, to different definitions of the national interest, and to different political preferences in general. The political system exists to resolve these (by some combination of persuasion and coercion) into some resultant which can serve as a basis for action by the society as a whole.

Something has happened and been evaluated. The decider must determine what behavior ("no behavior" is of course also a behavior) is to be undertaken. Biology, again, suggests that two "loops" or "circuits" are consulted before the decision is made.

The first loop has to do with memory. An incoming stimulus is "shunted through mechanisms which retain a record of previous experience,"[1] which serves to offer a basis for comparison in the assessment and evaluation of events, and also provides information as to what behaviors have been undertaken in the past, and with what success. "The resultant pattern, modified by matching of the present stimulus with previously registered patterns, will be reflected back into the main stream."[2]

The second loop has to do with capability. This is, essentially, the power question. The decider must have information as to what systemic resources are available for (and whether they are equal to) any particular course of

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[1]Theodore H. Bullock, "Evolution of Neurophysiological Mechanisms" in Roe and Simpson, Behavior and Evolution, p. 170.

[2]Bishop, "Feedback Through Environment as Analog of Brain Functioning," p. 137.

action under consideration. In the case of man, of course, resources include tools--both physical and psychological (a man can control the behavior of a larger and stronger tiger with a chair, a whip, and some understanding of "how a tiger thinks").

In highly integrated biological organisms, this scanning of past experience and of capability is almost instantaneous and can only be inferred from behavior. As human individuals we are aware of a sort of mental checking process by which possible behaviors are weighed in terms of reasonableness and feasibility. Pitifully, these are often most vividly evident ex post facto, as we rehearse in our minds the things we could have said (but didn't) or could have done (but didn't) in a situation we have mishandled. Within societal systems, fortunately for our purposes, these factors are assessed inter-individually and more or less publicly, by way of dialogue, discussion of ideas and alternatives, presentation of knowledge, cabinet debates, position papers, reports, military capability assessments, etc.

> Kenneth Colby tells the fable of an object that arrives from outer space and that resists all efforts by the physicists and astronomers to determine its composition, structure, or function, till at last a psychologist has the happy thought of asking, "What's your name?" and the object replies, "Ralph"! The circumstance that behavior includes speech allows to the behavioral scientist precious techniques denied to other scientists.[1]

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[1]Abraham Kaplan, The Conduct of Inquiry (San Francisco: Chandler Publishing Co., 1964), p. 31.

I would extend this parable and suggest that, for political science, not only the output of Ralph's brain but its internal debates are characteristically matters of record.

Let us say that a behavior has been decided upon, authorized, and undertaken. In political life, troops have been ordered out, a note sent, a counterthreat broadcast, approval voiced, or "a wait-and-see attitude is being adopted--no action is being taken as this time." The process of adaptive change begins with <u>behavior</u>. Something happens, and one reacts. If the reaction is adequate to restore "normalcy," the behavior has been successful; it has been "adaptive." The memory of it is stored and, upon repetition of this kind of event, the same behavior will probably be resorted to, a "threshold" having been lowered. (Anyone who has ever been a clerk knows that the prime rule is never to accept "as a special favor" and "just this once" an unusual responsibility; next time the situation arises the precedent will be resorted to "well, you already know how to do it.") Upon relatively frequent repetition, the habitual nature of such response will be established, and the characteristic of responding to this kind of situation with this kind of behavior will have become part of the characteristic repertoire of the system; it will have become part of its structure, as we have already indicated.

To know whether or not a behavior is successful, a system must monitor its outputs through a <u>feedback</u> process. "In a nervous system so essentially unsuitable for the making

of precise and adequate responses to the limited information usually available to it, such a means of continuous correction and adjustment is an appropriate and necessary adjunct."[1] If the situation has been alleviated or the goal approached, the behavior is reenforced; the system has learned this behavior. If the behavior goes unrewarded, it will, according to our systemic model, be dropped after a trial-time, and search for an alternative will be begun.

If it can find or is capable of imposing no alleviative behavior, the system may have to accept some change. It will have to "settle for less," or "learn to live with," accepting alteration of some of its characteristics so as to preserve intact as many of the rest as possible. This is the point at which the political system, unable to cope alone with its speciality, may impose upon the other subsystems; e.g., a free economy may be required to accept restraints and urban-renewal or pollution-elimination programs be postponed because the political system cannot achieve an international military or diplomatic goal it has set itself. Conversely, under the stress of urban blight and noxious physical and biological environment, the society might rearrange priorities, through decisions of the political system that, to maintain itself with respect to the intrasocietal environment, it must allocate the limited resources to the other subsystems and accept, itself, more limited goals. This is

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[1]Bishop, "Feedback Through Environment as Analog of Brain Functioning," p. 139.

what we meant by the suggestion that political leaders must ride two horses simultaneously.

This conceptualization of adaptation, in Ashby's words, ". . . in a sense develops a theory of the 'natural selection' of behaviour patterns,"[1] accounting for the shaping of behavior to circumstance.

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[1]Ashby, Design for a Brain, p. vi.

CHAPTER V

THE EMPIRICAL INVESTIGATION

We have offered the theory that political life is systemic in nature and that the roles which constitute the political system are organized around two processes: manufacturing outputs across the societal boundaries appropriate to preventing undue external disturbance of key societal functions, and manufacturing outputs within the societal boundaries appropriate to ensuring the necessary participatory activity. These processes would conform to the criteria, respectively, of effectiveness and efficiency. Selecting the former process as the particular object of our attention, we have undertaken to concentrate most specifically upon the relationship between environmental circumstances and the extrasocietal outputs of the political system. We postulate that "effectiveness" is achieved through a process of adaptation, and we have isolated ten factors which, theoretically, enter into adaptation.

In specifically political terms, we are theorizing that any political system, regardless of form, would be functioning, essentially, to preserve the domestic way of life from outside threat and to ensure governmental control within the society. The political process with respect to

the extrasocietal arena would consist, theoretically, of monitoring and evaluating extrasocietal events in terms of societal self-awareness and values and of formulating decisions in the light of such evaluation and upon consideration of capabilities and of previous experience. Further, theoretically, the actual outputs in obedience to such decision would be followed up by a process of assessing their consequences and by judgment that the behavior (the pattern of outputs) was or was not successful and therefore useful in the circumstances.

All this theorizing, of course, proves nothing. The theory itself is not susceptible of direct proof; no theory is. We cannot hope to demonstrate that the political system is a system. But we can hope to deduce from our theoretical assumptions some conclusion which can serve as a hypothesis which can be directly or indirectly checked empirically. We should like, within the limitations of this work, to undertake a modest, but methodologically self-conscious empirical investigation, attempting to check out broadly and generally whether or not some aspect of "real" political behavior seems to conform to our theoretical assumptions. (By "real" we mean, of course, from the realm of experience.) To this end we want to exploit the "Ralph" principle--the availability of words as objects of study in social-scientific phenomena. Words should be of particular applicability to our problem because we expect on theoretical

grounds that the emergence of a specialized decider requires the intrasystemic transfer of information. We will argue that, in the case of societies, words serve to convey orientation and rationale, as well as instructions, to the conscious actors, thus revealing "Ralph's" internal workings. If we can study information thus being transferred within a society, we should be able to determine whether or not the kinds of considerations we have postulated are indeed entertained. Further, we could determine what kinds of specific issues command attention and, in particular, whether or not there is evidence for "learning"--for, if societies seem to learn, that would be evidence that they are indeed open-systemic in structure and adaptive in behavior, because both of these are necessary conditions for learning.

In some hypothetical or actual State of Nature where every individual makes his own decisions and undertakes his own activity with respect to events around him, there is no system and no need for communication. Science-fiction writers play with the idea of the opposite extreme--a society of robots, exhibiting complete automaticity of obedience to one individual leader who, alone, decides and authorizes behavior. Between such extremes of complete randomness and total organization lies life, marked by (systemic) organization patterns which permit the persistence of essentially "self-interested" individuals

(e.g., cells or humans) through their acceptance of some limitations upon their behavior. "Tight" organizations of this kind constitute "structural" systems, such as complex organisms; "loose" organizations of this kind constitute "functional" systems, such as symbiotic relationships and societies.

Members of a human society may share many perceptions and orientations as well as a general sense of identification or "common fate," but intersubjective correspondence is never complete. Few individuals perceive any one event directly, or from the same "angle"; the values of individuals do differ, despite socialization, and so do their memories and their guiding assumptions. Even within a society, then, individual perspectives differ on "what is going on," "what it means," and "what do we do about it." Yet societies act as units: they declare war, lend money, and "establish relations." Such unitary behavior means that there must be some one policy, some one, authoritative set of guiding definitions of what is happening, what it means in terms of what the society stands for, and of what the society can and should do about it. By some means some "official position" must emerge to organize and guide activity. We postulate that political systems--all political systems--emerge specifically as mechanisms (deciders) to make possible coordinated, unitary societal behavior despite the lack of complete consensus.

The point, for our purpose, is that political systems function to arrive somehow at some basis for integrated behavior by political role-actors--and that basis includes some one, authoritative definition of the situation. It is not important that everyone <u>believe</u> the authoritative definition.[1] It is important only that, whether because he believes others believe it and therefore opposition would be futile, or because he fears coercive physical or other reprisal, or because he ideologically accepts temporary minority status within a democratic process, or for whatever reason, the political actor <u>behaves</u> as though he thinks he ought to conform to it. Of the many Americans entertaining serious misgivings about Viet Nam policy, far and away the vast majority continued to pay taxes and accept conscription into the armed services.

On the assumption that an authoritative policy guides the performance of every political system with respect to extrasocietal circumstances, we would like to examine such policies to see whether their selection and content reflect our theoretically-derived characteristics of the adaptive process. We assume that the members of a society must be somehow made aware of what the extrasocietal issues "are." Since the leaders must depend upon the members' cooperation, yet cannot count upon it as automatic, they must transmit

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[1] In complex societies leaders frequently exploit their position within the structure to transmit or repress information selectively, so as to manipulate members' perceptions of what is going on, what it means, and how successful official policy has been. This gives them the opportunity to enhance efficiency--but at a cost in effectiveness.

information, not only in the form of direct instructions to specific actors (e.g., to diplomatic representatives abroad) but also in the form of general orientation and rationale to the general membership of the society so as to predispose them to appropriate activity. The public must be aware, if nothing else, of who is an enemy--and why. We are not concerning ourselves with the internal struggle over whose definitions come to prevail; this is the arena we are choosing to regard as constant for our purposes. We <u>are</u> concerning ourselves with the really very remarkable fact that, out of a multiplicity of competing individuals, every viable political system does manage to create an authoritative set of working hypotheses about the nature of the society and its relationship to its environment.

Humans transfer information most characteristically through words. "Efferent" information about extrasocietal affairs flows from political leadership (and, in open societies, from other observers) to the general public. The mass communications media (radio and the press) are the chief carriers of this information in the large societies of today. If we want to learn what issues and policies engage a society, we can do so by attending to the information these media carry. This will <u>not</u> necessarily inform us as to whether or not the information is "true" (i.e., conformable to actual events as perceived by others); this will not inform us as to whether information is deliberately selective or skewed; this will not inform us as to what degree there exists potential opposition to and/or discontent with official

leadership and policy (although, in open societies, such information might be included). We can be certain only that this will tell us the very obvious--what the authoritative issues and policies are. Our interest is in these, the obvious, unsophisticated, and unsubtle orientations; they are what integrates the political activity of leadership and followership and every appropriate actor in between.

It should be noted, parenthetically, that leader, no less than led, is constrained by the working definitions. A Pope cannot extol atheism; an Israeli leader cannot renounce Jewish statehood. Either, doing so, would be more likely removed and committed to a mental hospital than followed obediently by the membership. As a less exaggerated example, Roosevelt could not ask Congress for a declaration of war before Pearl Harbor, in the light of the prevalent isolationist definition of America's relationship to the world. Conversely, his own propaganda and the expectations it engenders can force a leader to pursue a course of action he might not otherwise choose. Leadership can, and does, initiate major policy changes, but these require time for the transmittal and internalization of information appropriate to causing a shift in orientation throughout the society.

For our purposes, media content is significant in revealing the authoritative definitions, regardless of how they came about--whether openly and democratically or through manipulation and control. We can "tap" this content and analyze it for our own purposes, which is an insight into the process of output formulation and the relationship between

outputs and environmental circumstances. To that end, we propose a small empirical investigation, designed to analyze and compare a few societies under extrasocietal stress to see whether or not they give evidence of adaptivity, particularly in terms of "learning." We will analyze the contant of representative media material in terms of theoretically-suggested categories to determine: 1) whether the material lends itself readily to such a classificatory system; and 2) what kinds of insights the material, so arranged, provides us as to <u>how</u> each society "sees things" and whether or not they give evidence of "learning."

We have isolated some of the factors theoretically making up the adaptive process:

1) a system in steady state, with homeostatic tendency;
2) certain critical variables (values) which are to be preserved from undue displacement if the system is to remain in steady state;
3) an environmental event;
4) evaluation of such event;
5) referral to memory;
6) assessment of capability;
7) making an authoritative decision;
8) behavior (authoritative output; coordinated systemic activity);
9) feedback;
10) learning (reenforcement--or extinction and new trial).

If the political system functions to formulate adaptive responses to extrasocietal threats, then "foreign policy" aspects of the political process should be analyzable in terms of those factors characterizing adaptive behavior. Do societies regard themselves as under stress? Do they evaluate events in the light of their self-perceptions? Do they refer to a group "memory?" Do they evaluate capability and "decide?" Do they "behave?" Are they "conditioned" to patterns which have brought success in the past? Do they "learn" not to repeat unsuccessful behaviors? That societies "say" that they perceive themselves in these terms would constitute evidence for our presupposition. That is, if empirical study indicates that societies do "speak of themselves" as having an identity which they intend to protect, as regarding certain societal components or societal processes as vital and to be defended from possible disruption, as assessing events in terms of their probable consequences for these societal components or processes, etc.,--then the hypothesis that these are indeed elements of societal behavior would be bolstered. To test our deduction, we will direct our attention to one actual situation of intersocietal stress and try to see whether or not what the participant societies' political systems "see" or "talk about" in the situation is readily reducible to the postulated factors.

Our empirical approach will be to take a clear case of intersocietal stress (the Arab-Israeli conflict) and to

attempt, through analysis of radio broadcasts within the countries concerned, to determine whether or not discussions of "international affairs" reflect those factors (and only those factors) we have assumed they should reflect. There are numerous difficulties and shortcomings in any such undertaking, but we shall try to guard against them as well as the limitations of time permit.

Time is the chief difficulty. The postulated process of formulating, executing, and correcting authoritative societal behavior suggests a temporal perspective in which behavior-time is of the order of weeks or months, and adaptive change is of the order of years or decades. Common-sense observation suggests that a great deal of time is usually required for the process of developing societal awareness that a threat exists, of deciding what the society can and should do about it, and of putting the response into action--let alone deciding whether or not the behavior is proving effective and whether or not a new tack should be undertaken. Thus, the Cuban Missile Crisis, an important period of intense activity, constituted in our scale but one "trial-and-extinction" for the Soviet Union and one "trial-and-reenforcement" for the United States in the attempt each was making to deal with what it perceived as a threat from the other. It had taken years, e.g., just for the "polarized," "authoritative" American perception of Russia to go from "World War II ally" to "Cold War enemy." It took almost a decade for the Allied powers, before World War II, to evaluate as a threat

the (unsubtle and unambiguous) behavior of the "have-not" Axis powers and to try first one behavior (appeasement) and then another (war) until successful in eliminating that threat.

The consequence of this temporal scale is that, in order for the factors we are looking for to be able to emerge at all, any study would apparently have to cover several months at least (our empirical study covers 100 days in 1956). On the other hand, the best instrument which suggests itself for the kind of study we envision is the content analysis, a time-consuming undertaking, usually confined to a relatively small number of documents. The "squeeze" between these two factors will tend to shape our analytical procedures: 1) we must limit the area of exploration; 2) we must limit the amount of material to be explored; 3) we must limit the refinement of our exploration. In fine, if we want to observe behavior over a long time, we cannot study too many societies, we cannot analyze too many materials from each, and we cannot analyze these in too great detail.

The Area

The Middle East over the past twenty years recommends itself as a good digging ground for evidence of behavior with respect to intersocietal stress. For historically demonstrable reasons, Arab nationalism and Jewish nationalism have emerged here as mutually stressful; neither group can act out its self-perceptions in the presence of the other, for both regard Palestine as vital and as intrinsically theirs. Since the

failure, in 1948, of the world attempt to institute a sharing arrangement through partition of the area and internationalization of Jerusalem, Arabs and Jews have faced each other, each group dedicated to making the land its own. The consequence has been the "Middle East conflict" and often the "Middle East crisis" of the past two decades.

The Middle East in general offers a number of advantages for empirical research. Despite the intrusion of other elements, it is not a satellite area. If offers a universe on a "manageable" scale. The Middle East is unusually rich in systemic levels. Below the state level, tribal and/or village identifications and loyalties often constitute para-political systems effectively intermediary between individual and national political system. Transcending the state level, these societies are penetrated by either pan-Arab or pan-Jewish supra-national cultural and social and, to a lesser degree, economic and political interaction systems. Finally, at the super-super-systemic level, the United Nations, as nascent world system, has been here, more than anywhere else, a presence, an actor, and an object of orientation. The Middle East offers states varying broadly in governmental form and in degree of economic and social development; such similarities of behavior as emerge can offer higher claims to generality than could those based upon comparison, for example, of only developed, or only democratic societies. Finally, the magnitude of the inter-societal stress in the Middle East is so great in comparison with domestic issues as

to facilitate our analytical scheme of dealing only with external events as independent variable while holding domestic issues "constant."

As a consequence of the first of the three limitations upon our scheme, we selected for study just three Middle Eastern countries, rather than all those involved in the prime conflict there. Egypt, Israel, and Syria were chosen for attention, on the grounds that they represent both sides of the mutually-stressful situatuon and also offer variation in size, degree of development, kind of government, religion, and culture, and ultra-systemic orientations. In short, these three states, although similarly involved in a stressful situation, represent differing entities, of differing character, in differing environments.

The Material

Having determined upon the area of attention, our next question is that of selecting objects for analysis which can be regarded as indicative or reflective of the underlying processes we are seeking to study. The behavior of complex systems depends upon transfer of (matter and) information. In his societal behavior man, the symbol-wielder, uses chiefly the word for the transfer of information. Theoretically, the ideal source of evidence as to just how a society makes a decision would therefore be a word-by-word record of all communication, at all levels, among all participants in the process. In realistic terms, of course, only few records exist and access to such as there are is usually limited.

One object of investigation does present itself in this age of mass communications, however. For the societal system to function as a system, some minimal level of integration must be maintained between the political leadership and the other societal units or subsystems whose behavior, appropriate to leadership decision, must be somehow evoked. Governments act to inform and persuade their publics, communicating not only decision but rationale. Public opinion and ideologies serve to express and organize the orientations of individuals as personality systems. And some minimal support/demand ratio, as suggested by Easton, must be maintained as well for sub-systemic multi-individual role systems, whether informal or highly organized (e.g., religious groups, interest groups, or "the economy"). This process of evoking supportive orientation being necessarily a largely public one, we could hope to glean, from such public utterances as link the political system with the society in general, evidence of the process by which are arrived at authoritative societal self-perceptions, evaluations, assessments, behaviors, learning, etc.

The question arises of the sincerity of these utterances. The communications media may disseminate misinformation, exaggerations, half-truths, and distortions but, whether or not what they say is objectively "true," it is for our purposes significant only that they communicate with their publics. (Public speeches, like the private utterances of individuals, may be fraught with rationalization, exaggeration,

and suppression but, as in the case of individual psychoanalysis so in analyzing public statements, just what one feels himself bound to say, just what one chooses to exaggerate or suppress, may in itself constitute evidence of a very useful sort.) In any case, it is what the listeners believe (or believe they should believe) which governs their behavior. The Big Lie is equal, in this sense, to a truth--except that false information renders the behavior based upon it irrational in terms of real situations.

For areas of relatively low literacy or poor communications, such as parts of the Middle East, radio has come to play an important role in the dissemination of political information. Fortunately for our purposes, the Central Intelligence Agency of the United States monitors radio broadcasts the world over, and the Foreign Broadcast Information Service publishes selections from these, in mimeographed form, as daily Reports.[1] These Reports cover the home and foreign broadcast services of each country, reporting on speeches, editorial commentary, and reviews of the press. Items are processed, they tell us, from the first or best available source. The format of reporting is the same for every country. Each item is identified as to radio station, wavelength and date and time of transmission, and is labeled, "Text," "Excerpts," or "Summary."

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[1]These Reports are on file at the Library of the Council on Foreign Relations, New York, to whom gratitude is hereby expressed for its generous assistance.

As a research source the Reports present the disadvantage that the material is obviously selected in terms of United States interests. Coverage of any country's radio appears to be expansive or minimal accordingly as events there seem to hold significance in the eyes of the United States. Thus, for example, in 1956--the year of Egyptian receipt of Czech arms, withdrawal of the United States offer to help finance the Aswan Dam, the emergence into significance of the doctrine of positive neutralism, and the Suez Crisis--coverage of Egyptian media was very heavy, as compared with coverage of the same media at other times and of other nations' media at the same time. Since, however, we will be interested in verbiage only as an index of relative amounts of attention devoted to particular aspects of the issues before any one nation's public at any time, heavy or slim coverage might affect richness of information, but would not necessarily distort our insight into intranational factors and priorities. In general, the distortion introduced by the monitoring service is of the nature we would ourselves impose: we, too, are more interested in "international" than in "domestic" issues, and more interested in situations of strain than in ongoing peaceful accommodation. Ostensibly, the monitoring is done for the purpose of informing the State Department as to other societies' perceptions, interests, orientations, intentions, etc.; any selection process unduly distortive of these would undermine that purpose. (Although it is beyond our scope to undertake it here, a useful cross-

check might be the analysis of other monitorings, by other societies, designed to inform them as to our subject societies' self-perceptions. Comparison of numbers of these might develop a standard against which the accuracy of any one reportage [including the FBIS Reports themselves] might be assessed.) At all events, the material in the Reports is, for our purposes, "pure" in the sense that it was collected in innocence of the theory we will be using it to test.

The chief advantage of the Reports is that they represent a compilation, in one place and in English, of many and varied materials not always readily available in a Western language. During the period selected for analysis the speeches of President Nasser, although often very lengthy, were reported in full text. Egyptian newspapers reported on (editorials, too, were often broadcast in full text) included the semi-official Al-Ahram, Al-Akhbar, Ash-Shab, and Al-Jumhuriyah. Israeli coverage, generally lighter than that of Egypt, included news commentary, together with occasional excerpts from Knesset debates, as well as coverage of the editorial commentary in some dozen newspapers representative of numerous political parties or other interests. The papers included Haaretz, Davar, Al Hamishmar, Haboker, Hakol, Shearim, Herut, Hatzofe, Hamodia, Lamerhav, and the English-language daily, The Jerusalem Post. Coverage of Syria was disappointingly scanty during the period selected, but we decided to include it, glean what we could, and present the results cum grano salis.

(Interestingly enough, the profile of Syria which finally emerged from the analysis suggests an explanation for the low United States attentiveness.)

The FBIS reduction of these numerous materials to an economical few pages per day thus, in effect, performed for us the task of gleaning from many sources (and on some equally arbitrary grounds) a manageable body of materials which might be considered indicative of political discussion within each subject country. The limitation in quantity of material to be analyzed (our second limitation) was, thus, made for us by the FBIS monitors and was deemed acceptable by us on the assumption that their "filter" was probably quite similar to ours and that, to repeat, it was in any case independent of our theoretical presuppositions. There is also the advantage that Radios Cairo, Jerusalem, and Damascus are reported on in comparable and consistant format, facilitating a content analysis per se.

Some of the material was excised immediately, and not subjected to study. We eliminated all foreign-service broadcasts on the assumption that they perform a different function than do home service broadcasts and are of less significance for our purposes. In particular, we suspect they would tend to <u>veil</u> the subject societies' societal self-interests, couching arguments and appeals, rather, in terms of what they assumed to be the interests of those they were trying to persuade. We therefore deleted broadcasts such as Cairo's "Voice of the Arabs" in Arabic to the Middle East, in Swahili

to Africa, and in Arabic or Hebrew to Israel. We also eliminated Israeli broadcasts to the Arab countries and English-language broadcasts from Israel to the Diaspora. Comparable Syrian material was also deleted, leaving only reports of broadcasts from the three radio services to their publics.

The Technique

The research technique which offers itself as most appropriate for studying such material is the content analysis. It is predicated upon the systemic bias we are employing, as Janowitz points out in his evaluation of the contributions of Harold D. Lasswell to the field: ". . . content analysis is more than a research technique. It embodies a theoretical perspective which seeks to assign a major role to communications in the analysis of social organization and political change. . . . [Lasswell] was a systems analyst long before the term came into vogue."[1] While alternative techniques, such as the interview or questionnaire, might offer better control over the possibilities of experimental manipulation, content analysis provides ". . . unique access to historical social situations and to some current social situations which are otherwise difficult or expensive to observe. Moreover, these are data

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[1]Morris Janowitz, "Harold D. Lasswell's Contribution to Content Analysis," Public Opinion Quarterly, 32 (Winter, 1968-69), p. 649.

in a 'natural' social setting."[1]

Content analysis, as its name suggests, consists of isolating a body of verbal material, subjecting its contents to classification or categorization on some grounds, counting the material in each category, and analyzing the resultant data in terms of some theory. Each step bears its characteristic set of limitations and possible sources of error but, with appropriate methodological safeguards, the procedure can be made to yield relatively objective and general statements.[2] Some methodological considerations surrounding each of these steps will receive attention in the discussion of the particular research design we are undertaking but, before that, a few general observations might be in order.

Content analysis has not been a major social science research tool.[3] Its early use by social psychologists and communications experts was "primarily for descriptive rather than for hypothesis-testing purposes."[4] Berelson, whose book, Content Analysis in Communication Research, published in 1952, constituted the standard treatise in the field, was

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[1]Robert C. Angell and Ronald Freedman, "The Use of Documents, Records, Census Materials, and Indices," in Leon Festinger and Daniel Katz, eds., Research Methods in the Behavioral Sciences (New York: The Dryden Press, 1953), p. 323.

[2]Dorwin P. Cartwright, "Analysis of Qualitative Material" in Festinger and Katz, Research Methods, p. 423.

[3]Robert E. Mitchell, "The Use of Content Analysis for Explanatory Studies," Public Opinion Quarterly, 31 (Summer, 1967), p. 230.

[4]Ibid., p. 231.

concerned chiefly with inductive generalization based upon frequency count of manifest content.[1] Lasswell later broadened the conception of content analysis to include inferred, latent content as well.[2] The content analysis approach, never having achieved great importance, suffered almost complete decline until quite recently. The Berelson treatise went out of print, never revised; in Lasswell's The Future of Political Science, published in 1963, there is, as Janowitz points out, not a single reference in the index to content analysis.[3]

The technique has been receiving attention again of late, spurred by recent breakthroughs, notably the development of computers and mechanical translators, along with the emergence of the fields of psycholinguistics and sociolinguistics. Teams of researchers at Stanford, Yale, and Berkeley have been conducting major social science content-analysis programs.[4] Investigators are using computers for word-by-word analysis, employing coding techniques which provide weight for intensity, as well as frequency, of words,

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[1]Bernard Berelson, "Content Analysis," in Gardner Lindzey, ed., Handbook of Social Psychology I (Reading, Mass.: Addison-Wesley Publishing Co., Inc., 1954), pp. 488-522.

[2]Janowitz, "Lasswell's Contribution," pp. 647-48.

[3]Ibid., pp. 652-53.

[4]Mitchell, "Use of Content Analysis," p. 232.

phrases, or thoughts.[1] Recent interest in the field also includes attentiveness to its potential for explanatory, hypothesis-testing, as well as descriptive use.[2] In this vein, we shall endeavor to utilize a content analysis of the broadcast Reports for testing some deductions from our theory.

There is no "orthodox" approach to content analysis. Our prime procedural criterion will be appropriateness to achieving a valid first-order approximation; we are seeking a ground for conclusion lying somewhere between intuitive insight on the one hand and a meticulous examination of every word on the other. Cartwright has pointed out the limitations of the former: "To the extent that investigators cannot communicate to others how their insights are accomplished, the ability to achieve them is retained as a private property of individuals. These conditions would produce, at best, experts in a body of knowledge."[3] As he goes on to add, "The objective of content analysis is to convert recorded 'raw' phenomena into data which can be treated in essentially a scientific manner so that a body of knowledge may be built up."[4]

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[1]See, e.g., Ole R. Holsti, Richard A. Brody, and Robert C. North, "The Management of International Crisis: Affect and Action in American-Soviet Relations" in Dean G. Pruitt and Richard C. Snyder, eds., Theory and Research on the Causes of War (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969), pp. 62-79.

[2]Mitchell, "Use of Content Analysis."

[3]Cartwright, "Analysis of Qualitative Material," p. 434.

[4]Ibid., pp. 434-35.

The analysis of "raw phenomena" must always involve some arbitrary decisions. In the present instance, not only do considerations of time militate against a word-by-word analysis, but so does the hunch that, in a study of the kind and scope we are undertaking, such detailed analysis might be tantamount to using micrometer calipers to measure an entity we can, at least now, designate only as "bigger than a breadbox." For our purposes (and we shall discuss this in greater detail below), the "thought," rather than the word, will be the recording unit. For purposes of counting, we will refer to the running page of text, rounded off to the nearest one-eighth page. The "thoughts" will be characterized through inferences imposed in the process of characterization (with, of course, specification of the grounds for characterization). In sum, we shall employ content analysis to provide some of the specification of assumption and verification of observation which characterize a scientific approach, but we will make considerable inference and quantify only roughly (our third limitation).

Dorwin Cartwright has summarized the specifications which must be made in a content analysis. One must specify units, the kind and degree of inference being made, the category system, and the grounds for classification.[1]

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[1] Ibid., passim.

Two kinds of unit are involved in a content analysis: the unit of enumeration, "the unit in terms of which quantification is performed," and the recording unit, "that segment of the content which gets labeled when the analyst codes the content."[1] In general, the preferred units, if theoretically meaningful, are physical units (mass, length, time) because they are susceptible to reliable mathematical manipulation. We will employ physical units of length, measuring the running page from the Reports. On the basis of preliminary experimentation, the unit of one-eighth page was selected as unit of enumeration. It proved to be generally fine enough to include not more than one "thought" yet large enough to permit reasonably expeditious analysis of each page. The recording unit can vary--from the individual word, to the theme (subject and predicate, or the equivalent), through the paragraph or other natural unit of meaning, on through the item, such as article, speech, radio program, etc. We will compromise with a "middle-sized" unit, the thought, described, again by Cartwright, as the "smallest segment of content required to yield a single characterization, such as an adjectival phrase, value judgment, and the like."[2] This compromise, like the others here, is intended to reconcile refinement and feasibility. Thus, while a word-by-word analysis cannot be undertaken for the hundreds of pages to be analyzed, we can

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[1] Ibid., p. 440.

[2] Ibid., p. 459.

"afford" to do better than enumerate the number (or length) of speeches or even the number (or length) of paragraphs devoted to various thoughts. As we employ them, typical recording units might be, "The West wants to subjugate us," or "We are a free people," or "Reporting border violations has done no good."

The question of recording unit leads directly to the problem of inference. Every use of a word involves inference: words literally the same may not "mean" the same when used by different people, or read in different contexts or by different readers. Even word-by-word analysis, therefore, requires some inferential "translation" in order for it to receive meaningful interpretation. One need do no more than point to the variety of meanings assigned to the word "democracy" by different communicators.

For some studies, where literal words are catalogued by computer or by unsophisticated analysts, interpretation can be made after the coding process. In other studies, the genotypic significance of material should be interpreted directly. In general, ascent to larger and larger recording unit requires increase of inference. Where a "thought" is to be characterized and classified, as in this study, some inference must precede the coding process: the statements, "we desire freedom" and "we do not want to be dominated" bear little literal resemblance but would be coded, for our purposes, as equivalent and their lengths would be added in counting the space devoted to this one thought. This pro-

cedure obviously has pitfalls. Data can easily be biased; objectivity, in terms of intersubjective duplicability, becomes more difficult to achieve; independent evaluation of the significance of results is handicapped. Some safeguards can, however, be provided. Indeed, "in the broadest sense, content analysis is a system for objectifying the process of inference, since the meaning of the symbolic environment can be derived only by a process of inference."[1] Self-consciousness about the hazard is the first step. It goes almost without saying that any analysis of all of a material automatically prevents the fallacy of selecting only favorable content, supportive of a theory, to the neglect of the unfavorable. A generally scientific orientation on the part of the analyst can help prevent inordinate prejudice in the interpretation as well as in the selection of the material. A clearly stated theoretical framework as the basis for classification renders the categories less vague and therefore less susceptible to the inappropriate assignment of material. Reliability can be enhanced by the use of several judges, independently classifying the same material, the degree of correlation among their results constituting an index of reliability.[2] As always, the significance of any possible source of error must be measured

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[1] Janowitz, "Lasswell's Contribution," p. 648.

[2] Roger W. Heyns and Alvin F. Zander, "Observation of Group Behavior" in Festinger and Katz, Research Methods, pp. 410-412.

against the conclusiveness of the results, and there is no foreseeing that before the experiment begins.

The specification of categories for a content analysis is essentially an arbitrary process, guided only by prospects for utility in describing or interpreting the material. If conclusions are to be of any consequence for a theory, the categories must be derived from it. Cartwright again:

> It is an all too common error to equate 'scientific' with 'reliable and quantitative.' . . . In constructing the analysis outline, it is necessary to compose it of variables which mirror the variables of the researcher's a priori conception. . . . If the content is classified simply according to its superficial similarities and differences, little will be learned of relevance to 'pure' theory or 'practical' application.[1]

Our categories for the classification of all the thoughts in our material are determined a priori by the theoretical framework. They are:

1. system and homeostasis
2. critical variables
3. events
4. evaluation
5. memory survey
6. capability survey
7. decision
8. behavior
9. feedback
10. learning

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[1]Cartwright, "Analysis of Qualitative Material," pp. 448-49.

These will be described in full after a few more methodological aspects of the classification procedure have been dealt with.

To begin with, items must be classifiable into the same category on grounds specified as explicitly as possible. Ideally, a full list of indicators and all their possible variations would provide a full operational definition of the categories but, "unfortunately, most categories with which social scientists deal cannot be defined in actual practice by an exhaustive listing of indicators. Instead of attempting to construct a complete list, the analyst will find it more effective to rely upon the ability of a trained person to respond to indicators in a systematic way. To respond systematically, the coder needs a rationale . . ."[1] Our list of categories will be accompanied by an outline of the form to which it should be generally reducible, a number of illustrations from the text, and an exposition of the theoretical rationale as well.

A category system may or may not be continuous. (Classification of societies according, e.g., to degree of modernization would exemplify a continuous scheme.) Our system does not reflect the quantity of particular indicators present. It is composed, instead, of arbitrary, discrete pigeonholes, regrettably permitting more serious misinterpretation of material than the continuous systems, in which the usual distortion is merely the misshaping or transposition

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[1] Ibid., p. 437.

one way or another of a single curve. What we are seeking for are indications of behaviors, attitudes, and properties analogous to those of our model and, in the absence of any present ability to link these neatly with a few determinants, we must settle for discontinuous classification, despite its drawbacks.

A category system may or may not be exhaustive, meaning that there may or may not be a category for every relevant item. Given the nature of our categories, it is impossible to prejudge whether or not every thought will fall "naturally" into an a priori pigeonhole. If all the material does so, it would be reassuring and serve to enhance the promise of our formulation, but it would do no more than that; Mitchell has warned against the circular fallacy of applying back the fact that coded data hang together in some associational structure as "proof" that they are indeed so related, when their association merely reflects the coding scheme, which is based in turn upon the hypothesized relationship.[1] Hopefully, a classification of all the material for a given period should prove our system exhaustive. Whatever material fails to find a home should be demonstrably irrelevant or must be regarded as calling attention to some factor(s) not yet accounted for in the theory. We will use the full array of categories in the analysis of the Reports for several months to study the societal decision "structure."

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[1]Mitchell, "Use of Content Analysis," p. 236.

The classification scheme is mutually exclusive; each thought is put into one, and only one, category.

That all the material has been neatly sorted into boxes may not prove anything, but just what turns out to be in each box and how it compares with what is in other boxes is a source of information. If, for example, we were to collect all thoughts equivalent to the statement, "we want something," although the general class, "we want X," may be the result of a priori designation, just which "somethings" or "X's" emerge from the material would be quite independent of the theory. Qualitatively, comparison of "somethings" between societies or within the same society at different times might be profitable. Quantitatively, it might be useful to compare between societies and/or over time what proportion of the total space is devoted to this thought. And if the set "we want X" turns out to be an empty set, that would say something about the theory which had suggested the establishment of that category. The amount, as well as the kind, of content emerges independently of the theory.

The final procedure in content analysis is counting, which brings us, full circle, back to the unit of enumeration. Fractions of uniform pages, like the column-inch or other units of physical length, are among the few coding schemes used in content analysis which meet the requirements for a true variable; that is to say, they establish serial order,

equal intervals, and absolute zero.[1] One must also ask whether metrically equal scores do indeed represent equal distances on a psychological dimension, and whether there is indeed an absolute zero.[2] The relative text length which we will be measuring corresponds closely to relative broadcast time. Broadcast time is listeners' attention-time, and the amount of it a communicator elects to devote to various topics is an index of their relative significance, timeliness, priority, or urgency from the standpoint of the communicator and/or audience. When a topic is not called to the listeners' attention, receiving no broadcast time and therefore no space in the Reports, we have an absolute zero.

The following chapter first discusses the basis for assignment of material to each category, and then presents the actual count of how much of the material fell into each category for each country during the period May 14 through August 21, 1956.

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[1]Cartwright, "Analysis of Qualitative Material," p. 443.

[2]Helen Peak, "Problems of Objective Observation" in Festinger and Katz, Research Methods, p. 250.

CHAPTER VI

THE CONTENT ANALYSIS

The Categories

1. System and homeostasis. This category was established on the assumption that, specific issues aside, each society might evince a general perception of itself as an open system in the terms we have proposed: as an entity, made up of elements in their relatednesses, and characteristically protective of its "normal" functioning. Criteria for assignment of any thought to this category would therefore include self-characterization as one system (reacting, behaving, thinking, feeling, or deciding as one),[1] expressions of awareness of characteristic systemic processes, and indications of a general predisposition of the system to protect the elements and processes that make it up.

Accordingly, we classified here thoughts reducible to the form:

we are (are not) X (systemic)

we have (do not have) X (collective qualities)

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[1]This category, like all the others, must be understood to embrace also any and all thoughts which present negative versions of the same idea. Thus, self-characterizations as not one people, etc., would be classified here, but counted according to their negative nature.

we are (are not) made up of X (individuals, processes)

we characteristically defend X (individuals, processes)

we characteristically react to (do not react to) disturbances of our system

Thoughts reflective of systemic nature emerged typically as: "we are a people," "we have honor, dignity, prestige," Egypt is "the sum total of interactions between the past and the present," etc. References to "stability" and "independence to act according to our interest," etc., were taken as indicative of steady state. Evidences for homeostatic tendency were also classified here: "we will resist--," "we need to regain--," we must "take all necessary measures to insure . . . safety in the face of threats," etc.

A study of the thoughts which had been classified in Category 1 revealed that most of them fit the preconceived scheme, evincing awareness of societal "self" (Categories 1.1-1.6),[1] tendency towards steady state (largely in terms of self-determination) (Category 1.8), or homeostatic tendency (largely in terms of readiness to fight to protect freedom) (Category 1.9). A considerable part of the material, however, although assigned to Category 1 because it patently dealt with the society as system, nevertheless failed to fit easily into these three general classes. Further analysis revealed it all

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[1]The tally later in this chapter contains a full set of categories, with documented examples from the material.

to be (unlike any other material in Category 1) "domestic" in nature.[1] Further, it was all pertinent to the matter of a collective decider. Some of the material simply reflected the recognition of a collective decider (Category 1.7.1), but most of it centered neatly about the latency function, the enhancement of the individual-decider relationship, and was readily organizable into four major groupings: placation of individual misgivings about central power (Category 1.7.2.1), inducements to individuals, in terms of individual interests (Category 1.7.2.2), exhortation (Category 1.7.2.3) and coercion (Category 1.7.2.4). These data suggest some of elements entering into "efficiency," the provision of adequate incentives to keep societal members as members, which we had postulated as one of the two theoretical conditions for persistence of a political system.

2. Critical variables; values. In a biological organism, one critical variable may be temperature; if the body goes beyond given limits, the total system will be unable to continue its characteristic processes and will die. If large areas of skin are destroyed and can no longer protect the interior elements from external conditions unfavorable for them, it will die. If the components of that body could speak with one another, they might refer to keeping the tem-

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[1] About 15.3 per cent of the total Egyptian material, as well as 19.8 per cent of the Israeli and 12.1 per cent of the Syrian, was domestic in nature; such material as a whole will be discussed in the succeeding chapter.

perature constant and maintaining its boundaries intact as "values." Because, in our view, societal systems are analogous, we should expect to find recognition that some factors are crucial, their disturbances a "stress," a "problem," or a "challenge," and their preservation at some tolerable level a "value."

Criteria for inclusion of a thought in this category would include its reducibility to the form:

X is (is not) good

we like (do not like) X

we will (will not) defend X

we will (will not) consider it hostile of an outsider to affect the value of X,

where X is understood to be any systemic element or process. Examples of material so classified are: "we want strength for our army, progress for our economy," "you are defending your land," and "we will not permit ourselves to be turned into refugees."

Analysis of the thoughts classified in Category 2 revealed that they tended to focus upon the systemic nature of the society per se as a value, in terms of unity (Category 2.1.1), steady state (Category 2.1.2), or homeostatic capacity (Category 2.1.3) as goals. Other critical variables referred to explicitly (Category 2.2) seemed to focus, as they do for organisms, on factors necessary for "metabolism" and exchange of information: land (Category 2.2.1), water (Category 2.2.2), oil (Category 2.2.3), and

communications resources (Category 2.2.4). (These seem to correspond, it is merkwürdig, to what an enemy society or a rebel group "goes for" during a war: capture of land and resources and disruption of communications.) Variables significant for religious systems are also among the values (Category 2.2.5). The only extrasystemic value, "one Arab flag," (Category 2.2.6) is a Syrian goal of some significance, as will be discussed later.

3. Events. This category consists simply of objective statements of occurrences in the environment. They would be of the form,

X happened.

Although statements of what "has happened" or "is happening" may range from the objectively veridical to those which may have suffered considerably in "translation" through the leader or others making report, the form alone (i.e., X happened) determines the classification. Thoughts typically classified here were: "Jordanians opened fire from the Old City," "a Syrian-Soviet Union cultural co-operation agreement was announced today in Damascus," and "Dulles withdraws Dam offer."

It must be mentioned that the line between "event" and "behavior" was sometimes difficult to determine in the case of cultural exchange agreements, technical aid missions, and exchanges of visits between national leaders. This is because such situations involve both an offer from the outside (event) and the actualization of a societal decision to

participate (behavior). We have classified such items as "events" if they seemed to be overtures from the outside and as "behaviors" where they reflect primarily the subject society's undertaking to participate.

The thoughts classified as "events" fell into four subcategories: outputs (both physical and verbal) of other entities (Category 3.1); changes internal to other entities (Category 3.2); events in the intrasocietal environment (Category 3.3); and one output of the biological environment, a wheat blight (Category 3.4).

4. Evaluation of events. Whether or not an objective event becomes a stimulus to a system depends upon whether or not it is interpreted by the system as of significance in terms of its steady state. To interpret the significance of the event is automatically to set a general goal, insofar as factors likely to be affected must be protected. Thus, to view border incursions as a threat means to establish the general goal of eliminating them.

Most simply, thoughts classified here would be those characterizing given events in terms of their consequences for the system. They would be reducible to the form:

> the occurrence of X is (is not) viewed as significant for this society's well-being, future, survival, etc.
>
> X constitutes (does not constitute) a threat to our values (land, people, institutions, etc.)

A typical statement of such interpretation of events would

be, "Israel was not created just to constitute a national Jewish home but to doom Arab nationhood in this part of the world."

In addition to assessments of specific, current events as being of consequence for the system, there emerged from the material thoughts expressive of general, ongoing goals, correctives to previously-defined stressful situations. These were also classified here and took such forms as: "destroy Israel," "put an end to Arab terrorism," or the more generalized, "obtain a better arms balance."

Thoughts which had been assigned to Category 4 fell naturally into two major classes--in addition, that is, to one containing simply neutral indications of an evaluative process as such (Category 4.1). Evaluative statements either: 1) assessed events more or less objectively (Category 4.2)--as acceptable at face value (Category 4.2.1) or to determine "real motivation" (Category 4.2.2), "real meaning" (Category 4.2.3), or probable consequences (Category 4.2.4)--or; 2) they assessed events subjectively, in terms of systemic values (Category 4.3), as consistent or inconsistent with them (Category 4.3.1), thereby determining goals and orientations (Category 4.3.2). This dichotomy had not been imposed in the coding process, but developed in the sorting of material already assigned to Category 4. It should have been predicted from the theory, for an event in the environment, it will be recalled, was considered a coenetic variable insofar as it had two consequences: 1) the environ-

ment was changed by it, was different after it; and 2) it became a stimulus to the behaving organism. Evaluation could be seen, then, as involving "factual" assessments of what environmental consequences are likely to arise from the event, plus "valuational" assessments of the significance of such consequences in terms of the organism's "well-being." That the dichotomy, having been overlooked at first, emerged spontaneously from the material constituted a bit of independent empirical verification of a theoretical presupposition.

5. Memory survey. The characterization of any event, as in Category 4, involves from analogical process, as does all recognition; one perceives a creature to be a cat by analogy between its qualities and those of creatures one has already known as cats. This of necessity involves memory, but the recognition-time is very short and the process fairly automatic. This is not the kind of "memory survey" we refer to here (but, see below). We intended this category to include all thoughts indicative of a self-conscious referral to stored information about prior situations and the consequences of behaviors with respect to them. The existence of such a "circuit" in the decision process is, of course, suggested by our model. Intuitive recognition of its role in decision-making is reflected in the old saw, "those who do not learn from history are doomed to repeat it." Such thoughts would be of the form:

This situation is like (unlike) some previous situation

We tried X before and it did (did not) work.

Material so classified included: "we have had experience of false parliaments, ruling on behalf of the few," "but we remembered the year 1948 and feared that Israel might expand . . ." and "Nasser's speech is like the tactics of former dictators; compromise with a dictator to avoid war brings war nearer."

When the material actually assigned to Category 5 was analyzed, it was seen to group into three subclasses: thoughts simply evincing a collective memory (Category 5.1), thoughts indicative of the role of memory in the decision process, as we had expected, (Category 5.3) and, unexpectedly, thoughts indicative of the role of memory as a guide to recognition and evaluation (Category 5.2). This process which we had assumed, from analogy with individual behavior, to be instantaneous proved to be less than automatic, and a subject for deliberate discussion. Here, again, material which defied the planned classification scheme led to a refinement of the theoretical statement, in this case also supporting our assumption of a significantly slower temporal scale for societal than for individual behavior.

6. Capability. This category, like "Memory," is intended to include thoughts indicative of a circuit or loop through which is effected retrieval of information necessary to decision-making. It is part of "consciousness" in both

the colloquial and the Deutschian sense.[1] The capability loop assesses power, weighing possible behavior in terms of feasibility. The capability, or power, of a system with respect to any goal is definable, as is physical power, in terms of energy and time. If enough energy can be put forth quickly enough to "do the job," one can be said to "have the power" or "have the capability" to accomplish a goal. We have defined the political system as circumscribed by two sets of parameters, one having to do with external events and the other having to do with internal command. Correspondingly, power with respect to a goal can be viewed as having two components: internal and external.

The internal component is analogous to the physically-structured or chemically-cued one-way control of biological governors over effectors. The brain "controls" the muscles insofar as instructions from it recruits activity (energy expenditure) of the muscles in amounts and directions appropriate to its decision. The organism as a whole is then "behaving" appropriately. The political system's control is, as we have seen, something less than automatic, but the principle is the same. In order for it to function, it must evoke from appropriate role-actors activity so directed and so expended as to add up to the behavior decided upon. In the case of human societies, as we have already indicated, such recruitment rests upon socialized habits plus a favorable quid pro quo in terms of the interests of the actors,

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[1]Deutsch, Nerves of Government, pp. 98-104.

all of a large number of factors being considered. The perspective is similar to that of March and Simon in their concern with motivational analysis of participation in organizations:

> The Barnard-Simon theory of organizational equilibrium is essentially a theory of motivation--a statement of the conditions under which an organization can induce its members to continue their participation, and hence assure organizational survival.[1]

Thus, an American executive decision to fight in Viet Nam can be effected only if, as Tolstoi might also have told us, enough members of the society behave co-operatively with respect to that decision by fighting, producing, paying taxes, etc. This internal component of power is reviewed by decision-makers, who must be aware, if they are to remain decision-makers, of what the people will "stand for" or "support" or "go along with." Fitting particular decisions to domestic considerations is part, then, of the assessment and manipulation of capability. Although we will forego analysis of such processes, regarding them as part of the domestic variable we are attempting to hold constant, we will recognize the existence of such process by classifying here thoughts referring to systemic capability with respect to any possible decision. Systemic capability assessment reflects not only a psychological estimation of the willingness of members to contribute to the achievement of a given behavior but also an estimation of what physical energy

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[1]James G. March and Herbert A. Simon, Organizations (New York: John Wiley & Sons, Inc., 1958), p. 84.

resources are available within the system, and whether these are adequate to the task. Such considerations would also be classified here.

While internal power potential suggests analogy to musculature, external power potential suggests analogy to tools. The extrasocietal environment presents opportunities as well as stresses: "The enemy of my enemy is my friend." To recruit an ally is to recruit his energy potential in a direction reflective of your (common) interest, and he is your ally only insofar as your interests coincide or can be made reciprocal. It is precisely an extension of this principle which accounts for the general tendency of a society to woo the world to its interests--to project itself upon its environment, in Deutsch's words.[1] Literally, a "world safe for democracy" is one offering less potential environmental stress for a democratic system.

All of man's behaviors are colored by the fact that he is a symbolizing, generalizing creature. As a consequence, it should be anticipated that many of these categories will inherit not only material dealing with specific issues, but material dealing with generalizations abstracted from specific, concrete situations. Thus, in this area of capability, the desire for power with respect to specific goals can become generalized, in principle by the drive for power per se, and in concrete form by the establishment and maintenance of

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[1]Deutsch, Nerves of Government, p. 111.

military and police forces.

Thoughts placed in this category would be of the form:

we have (do not have) the capability of successfully effecting a proposed decision

our powers are (are not) growing (we gain or lose allies, means, etc.)

the people (or specific societal subgroups) will (will not) support this goal (policy, decision)

another society is (is not) on our side, favorably disposed towards us, etc.

another society (group, organization) will (will not) support (oppose) us with respect to a given goal.

Typical thoughts classified here include: "we have a weapon; the West needs oil," "the people are mobilizing spontaneously," "Syrian workers, universities, lawyers support Egypt," "Iran and the Soviet Union support us against the British," "France is on our side," and the viewpoints of Tito and Nehru are "in line with the Arab view."

The material actually assigned to Category 6 fell into six general classes. Some thoughts indicated the society's assessment of its own power potential with respect to tasks before it (Category 6.1). Some thoughts simply acknowledged the principle that intersocietal co-operation reflects interests and is a source of strength (Category 6.2). The preponderance of material in this category reflected identification of others as means (allies and supporters) or opponents (enemies and their supporters), together with assessment

of the "pro" and "con" power positions (Categories 6.3 and 6.4). Category 6.5 reflected shifting assessments of power, and Category 6.6 reflected a "neutral" power factor, the A-bomb.

7. Decision. This category includes thoughts suggesting the actual formulation of a decision, reflecting minority as well as authoritative opinions. Such thoughts would be of the form:

the best course for us is X

we should do X, not Y

we will do X

Actual examples thus classified included: "we shall work for Arab nationalism against Israel," "we will build the dam ourselves, as we desire," "we will join hands with Egypt and cooperate with Jordan," and "Jordan must be told it is playing with fire."

Thoughts actually assigned to Category 7 grouped themselves around the decision to decide (Category 7.1), the "thought process" itself (Category 7.2) or the announcement of a decision (Category 7.3).

8. Behavior. This category was meant to include thoughts communicating the information that some physical output of the society is taking place, implementing some decision. These would be in announcement form:

today we (leader, government, society) did X

Typical of such statements would be Nasser's announcement of the nationalization of the Suez Canal and Syria's announce-

ment that it was giving to the Jordanian National Guard some monies received from the Amir of Qatar.

We focus upon such behaviors as culminations of the decision process and as "beginnings" in the learning process.

It should be noted that, as the two examples illustrate, our particular scheme provides no index to the relative importance or significance of behaviors.[1] The importance of any behavior depends upon how much activity it involves, and not upon how many words announce it, the classical example being the General's order, "Attack!"[2]

In the process of classification we came upon a large number of thoughts which suggested the "Behavior" category because they reflected outputs from the political system to the extrasocietal environment, but which did not fit the category as pre-defined insofar as they did not herald activity other than the communicating process itself. These thoughts suggested another aspect or kind of behavior we might have anticipated, but did not: some behaviors are verbal outputs, pure and simple, communicating "positions" (policies, offers, intentions, etc.) and persuading

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[1]Had we classified the material in terms of issues occupying the airwaves in a given period, and counted the space devoted to each, there might have been some correlation, but we have chosen to classify it in terms of process, cutting the loaf, as it were, along another plane, across the issues.

[2]The General's power lies, of course, in his occupancy of a particular position in the role-structure wherein society stores potential behavior. His position enables him, with ease, to loose quickly potential physical energies of great magnitude.

others (through arguments, threats, etc.) to positions and courses of action favorable to the societal system in terms of its steady state. All these thoughts fit together and "made sense" when perceived as psychological in nature, designed to manipulate an alter's expectations and perceptions. Significantly for us in terms of our thesis, all the material of this kind fell very naturally into almost all the categories we had established; all the persuasive arguments were evidently being aimed at affecting one or another of the factors we had postulated as governing adaptive behavior. This "mirror image," revealing the society's set of working assumptions about how <u>other</u> societies decide and learn, constitutes, insofar as it is congruent with our own image, a confirmatory instance for the theory. These verbal behaviors (Category 8.1) seemed clear attempts to affect other societies' steady state (Category 8.1.1), perception of events (Category 8.1.2), evaluations (Category 8.1.3), capability assessments (Category 8.1.4), decisions (Category 8.1.5), behaviors (Category 8.1.6), feedbacks (Category 8.1.7) and learning (Category 8.1.8).

Of the behaviors which were not purely verbal, some announced outputs to the intrasystemic environment (Category 8.2), an example being the Israeli announcement that the Defense Minister had been granted a three-month extension of his authority to call up reservists. The rest of the behaviors (Category 8.3) conformed to the category as originally defined.

9. Feedback. This category includes thoughts reflecting a judgment as to the consequences of behavior, and would characteristically imply a comparison of the environmental situation after the behavior with the situation before it. The form might be:

since we did X, things are (are not) better

since we did X, we are (are not) nearer our goal, more free of stress, etc.

Statements from the material classified here include Nasser's statements that, as a consequence of the Revolution, Egypt is no longer oppressed, occupied, or usurped and that, since Egypt announced an independent policy, the West takes it into account: "in the past we were kept waiting at their offices . . . today they know we are a nation."

The thoughts assigned here grouped themselves, upon analysis, into four subcategories. Some thoughts dealt with the effect of a behavior upon domestic demands and supports (Category 9.1). Others reported specific reactions in word (Category 9.2) or deed (Category 9.3) from the extrasystemic environment. The rest assessed the situation as alleviated or unalleviated after systemic output (Category 9.4).

10. Learning. This final category is intended to include any thoughts characterizing a behavior as having been vindicated or discredited. According to theory, behaviors adjudged discredited would tend to be dropped. Successful behaviors would be continued or repeated, leading, through conditioning, to habit and thence to characteristic, thus

completing the transition from function to structure.

Thoughts classified here would be of the form:

we have found that it was (was not) wise (good, useful, effective) to have undertaken behavior X

we have learned to use (not to use) behavior X in this kind of situation

we will (will not) continue to use behavior X

Thoughts classified here included the conclusion that the Arabs must rely on themselves: "no longer will they be tricked by Security Council resolutions" and the Israeli change in behavior pattern as evinced in her declaration that, since Jordan "has disregarded former protests" to the Mixed Armistice Commission about border violations, "therefore, the Israeli delegation did not submit any draft resolution to the Armistice Commission."

All the material assigned to this category fell, as predicted, into reflections of re-enforcement (Category 10.1) or extinction (Category 10.2) and of adaptation in terms of new behavior pattern, new structure (Category 10.4). There was one indication of "borrowing" or vicarious learning (Category 10.3) as Israel drew a lesson from a successful Egyptian behavior: "the lesson of the Canal is, be strong."

The Tally

The analysis of the content of the Reports covered one hundred days: May 14, 1956 through August 21, 1956. After elimination of foreign broadcast service materials, a

total of about 448-1/4 pages of home service broadcast reports remained. Of these, 332-3/8, or 71.9 per cent, covered Radio Cairo; 104-1/4, or 23.3 per cent, covered Jerusalem; 21-5/8, or 4.8 per cent, covered Damascus.[1]

The mechanics of the analysis involved, first, putting each independent thought, either paraphrased or in the form of a direct quote, onto a separate slip of paper. The slip indicated the amount of space devoted to the thought and identified its source. When all the material had been thus transcribed, each slip was assigned to a prime category on the basis of its logical reducibility to one of the model forms. A study of the content of each category suggested that the materials tended to cluster into subcategories indicative of various aspects of that class. The final procedure involved counting the amount of space devoted to each subcategory.

A tabulation of the findings follows. The number of (one-eighth-page) units devoted to a class of thought is indicated for each country in columns headed "E," "I," and "S" (for Egypt, Israel, and Syria, respectively). Because of the degree of inference involved and to illuminate the scheme as much as possible, we have included illustrative material for almost all the categories. This material is paraphrased,

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[1]Fractions being in general an aesthetically displeasing lot, we report the quantity of material in terms of whole units, each equal to one-eighth running page; e.g., "103 units" equals "103/8 page" or 12-7/8 page." So expressed, 2579 units covered Egypt, 834 covered Israel, and 173 covered Syria, for a total of 3586 units.

unless contained in quotation marks. Broadcast sources for these illustrations are indicated in brackets (e.g., [E,3]), with letters to indicate the country and serial numbers to designate the fuller references which we have, in the interests of readability, relegated to the end of the chapter.

	E	I	S
1. System and homeostasis			
1.1 personification	2		
1.2 process "Society is the sum total of interaction between the past and the present." [E,1]	8		
1.3 collective history, future "We have come of age." [E,2]	40		1
1.4 collective qualities "It is a society which feels happiness and prosperity." [E,3]	23		
1.5 collective object of cognition	5		
1.6 collective interest	8		
1.7 collective decider			
1.7.1 recognize collective decider The state represents society, must guide, control, plan. [E,4]	12		
1.7.2 enhance individual-decider relationship			
1.7.2.1 placate misgivings			
1.7.2.1.1 people as end "Egypt exists for its children." [E,5]	16		
1.7.2.1.2 procedural safeguards Constitution versus "exploiters"; National Union as tool, watchdog. [E,6]	55		

	E	I	S
1.7.2.1.3 leader subservient to, embodying, general interest Nasser not out for "selfish gain" [E,7]; Nasser not man of Russia or America, but man of Egypt. [E,8]	15		
1.7.2.2 inducements			
1.7.2.2.1 security	4		
1.7.2.2.2 economic, social, cultural services, progress Broadcasts for oriental immigrants so they are not forced to listen to "neighboring stations." [I,1]	9	1	
1.7.2.2.3 realization of interests Revolution came from ranks of people, "experienced their feelings." [E,9]	24		
1.7.2.3 exhortation "Let us ... strive to sacrifice a little for the sake of much and personal interests for the sake of public." [E,10]	12		
1.7.2.4 coercion towards unity We give freedom, but not for enemies of the people [E,11]; "Arab jailed as subversive" [I,2]	32	1	
(Total 1.7)	(179)	(2)	(0)
1.8 steady state			
1.8.1 stock-taking (consciousness) (population statistics; export, unemployment, shipping figures, etc.)	7	15	1
1.8.2 self-determination "We are now a country exercising its right and sovereignty." [E,12]	13		
1.8.2.1 tendency to project "We must find the opportunity to spread those principles" [E,13]	2		

	E	I	S
1.8.3 steady state as determinant "We have taken it upon ourselves to pursue an entirely independent policy, emanating from our own conscience, interests, people, and struggle" [E,14]; Israel's rights not insured by West or Cairo; she should insist on rights without taking sides re: Canal. [I,3]	25	4	
(Total 1.8)	(47)	(19)	(1)
1.9 homeostasis			
1.9.1 preservation of steady state as general goal "We will not permit any state ... to draft plans with a view to directing our affairs and thereby determining our fate" [E,15]	15		1
1.9.2 readiness to react to preserve steady state We seek peace, but will fight for freedom [E,16]; Unless aggression ends it is natural to use self-defense [I,4]	47	7	
(Total 1.9)	(62)	(7)	(1)
Total 1:	374	28	3
2. Values, critical variables			
2.1 systemic nature			
2.1.1 unity			
2.1.1.1 unity against outside We will not permit "foreigners to sow dissension" [E,17]	2		
2.1.1.2 latency function			
2.1.1.2.1 higher material level "... industrializing our country and extricating ourselves from our backwardness" [S,1]	53	4	1

	E	I	S
2.1.1.2.2 better material distribution Cost of living allowances [I,5]; Tax system more just, distribute lands, implement social security [S,2]	52	2	3
2.1.2 steady state as general value			
2.1.2.1 peace Peace should be encouraged [I,6]	8	5	
2.1.2.2 self-determination "We announced to the world that our sovereignty and independence and our freedom of action are most sacred to us" [E,18]	50		2
2.1.2.3 security "We cannot build ... while threatened ... with invasion and with being turned into refugees [E,19]	9	1	
2.1.2.4 exterminate imperialism	9		
2.1.3 homeostatic capacity A strong national army which would defend these people, safeguard the people's aspirations in the face of aggression and foreign interference and domination [E,20]; A strong Israel, with equal arms, is the only guarantee of peace [I,17]	19	14	4
(Total 2.1)	(202)	(26)	(10)
2.2 critical variables			
2.2.1 land Fears Israeli land may be taken for Canal substitute [I,8]	10	2	
2.2.2 water	4		
2.2.3 oil	8		

	E	I	S
2.2.4 communications resource[1] Suez Canal belongs to Egypt, was built "for Egypt and for Egypt's interest" [E,21]; Concern is plain; we want free passage of Israeli ships through the Suez Canal [I,9]	22	4	1
2.2.5 religious observance Anniversary of destruction of Temple brings new demand Jordan honor armistice, permit Israeli access to The Wall [I,10]; Combat atheism, moral degradation [S,3]		5	1
2.2.6 Arab unity Look forward to one Arab flag [S,4]			2
(Total 2.2)	(44)	(11)	(4)
Total 2:	246	37	14

3. Events

3.1 outputs of other entities

3.1.1 border violations (firing, thefts, mines, etc.)		55	
3.1.2 other U.S. Senator says U.S. will reconsider the Dam if Egypt abandons its Soviet rapprochement [E,22]; Israel-Jordan Mixed Armistice Commission findings [I,11]; Turkey holding Syrians [S,5]	63	62	23

3.2 changes within other entities

3.2.1 structure "New Syrian cabinet formed" [E,23]; Military shakeup in Jordan [I,12]	11	5	
3.2.2 decision process "Syrian government preparing to recognize People's China [E,24]	9		

[1]The size of this category reflects the prominence of the Suez Canal as an issue during this period.

	E	I	S
3.3 domestic events "New newspaper, Al-Masaa, to be started" [E,25]; Attempt to establish Reform synagogue [I,13]; Histadrut meeting [I,14]; Transport strike [I,15]	2	53	
3.4 outputs of biological environment Wheat harvest blighted [I,16]		1	
Total 3:	85	176	23
4. Evaluation			
4.1 questioning "What is the London Conference for? [E,26]	17		
4.2 assessment of events			
4.2.1 accepted prima facie Eden: we need oil, must defend interests. "This is a very frank statement. Eden did not try to hide anything." [E,27]	10		
4.2.2 assessed as to "real motivation"[1]			
U.S. opposes E independence	30		
U.S. wants to dominate others	27		
West wants to dominate E	26		
West wants to preserve imperialism	17		
West wants to exploit us	14		
U.S. tries to keep us weak	11		
U.S. tries to punish our independent behavior	10		
West wants to hinder our progress	6		
West opposes our freedom	6		
West wants to sow dissension	5		
West wants to interfere with us	4		
West opposes our nationalism	2		
West wants to prove it is strong	1		

[1]The assessment is generally arrived at by juxtaposing a behavior with another behavior which contradicts the motivation claimed for it. Thus, the British and French claim that they are interested in freedom of shipping in the Suez Canal is belied by their efforts to persuade the pilots to quit. The Western contention that it seeks peace is belied by its ignoring the U.N. as a means.

	E	I	S
U.S. tries to get us to choose sides	1		
West out to deceive	1		
Nasser wants trouble, hostile to I, arms for aggression, not defense		14	
Arabs both unify and compete at I's expense		8	
West, Russia, disparage I to appease Arabs		6	
Russia is not seeking peace		6	
West concerned with own interests, not freedom of Canal		5	
Russia hostile to I		4	
Nasser loathe to antagonize I during Canal takeover		3	
Jordan's peaceful intent questionable		3	
E hates British, West, foreign influence		2	
U.S. policy contradictory		2	
U.S. wants E to recognize I		1	
"some in West" want to involve I re: Canal		1	
Russia wants to prevent Canal solution		1	
Russia seeks Middle East position at I's expense		1	
U.S. disapproves Egypt's policies			2
4.2.3 <u>assessed as to "real meaning"</u> Israel is tool of the West; internationalization proposal for the Canal is a plot, a "polite term for imperialism" [E,28]; New incidents along Jordanian border indicate Arab decision to cancel adherence to cease-fire [I,17]	66	39	
4.2.4 <u>assessed as to consequences</u> Jewish immigration suggests Israel will need to expand--into Arab lands [E,29]; If Nasser succeeds with Canal, next step will probably be against Israel [I,18]	18	16	
(Total 4.2)	(255)	(112)	(2)

4.3 <u>evaluation</u>

4.3.1 <u>in terms of systemic identity, steady state</u>

	E	I	S
4.3.1.1 consistent with state Syrian decision to join U.A.R. welcomed as "consistent with the Egyptian constitution" [E, 30]; Negotiations with World Bank acceptable, offer "nothing to interfere with our sovereignty" [E,31]	10	6	
4.3.1.2 inconsistent with state U.S., recognizing Israel, "broke into the homes and lives of every Arab," ignored "what would our fate be?" [E,32]; Any international agreement circumventing Israeli shipping freedom will "lack value" [I,19]	88	17	2
4.3.2 orientation determination Battle today is against imperialism and Israel, its vanguard [E, 33]; Arms to Arabs but not Israel is threat to peace--cure is arms to Israel [I,20]; Resistance to imperialism, Zionism, Israel [S,6]	37	8	1
(Total 4.3)	(135)	(31)	(3)
Total 4:	407	143	5

5. Memory

5.1 collective memory

5.1.1 history of society "For more than 2,000 years our fatherland was governed by conquerors" [E,34]; Review of accomplishments since Revolution [E,35]	65		3
5.1.2 history of dealings with others With World Bank re: financing the Aswan Dam [E,36]; History of relations with the U.S. regarding the Sudan [E,37]	33		

	E	I	S
5.2 memory as guide to evaluation Eden is trying to reenact threats which worked in 1936 [E,38]; "I then gazed at Mr. Black ... and I imagined that the person seated before me was Ferdinand de Lesseps" [E,39]; The West did nothing to curb restrictions on Israel when they held the Canal; what will they do now for Israel? [I,21]	16	10	
5.3 memory in the decision process			
5.3.1 memory of specific events In the past 3 months there were 99 incidents for complaint to MAC--6 Israelis killed, 7 wounded, Jordan found guilty 4 times [I,22]	19	7	
5.3.2 memory of behaviors and results We tried to prevent Israel, and failed [E,40]; "...such an alliance which we tried and under the aegis of which we lived for tens of years is nothing but foreign domination.." [E,41]; We strove for independence and sovereignty and got it; imperialism surrendered [E,42]	22	6	
5.3.3 "lessons of history" "I then told him: look here, we are allergic in these matters. We do not want to bring a Cromer again so that he may rule us" [E,43]; Nasser's speech like former dictators'; compromise with dictator to avoid war brings war nearer [I,23]	11	3	
Total 5:	166	26	3
6. Capability assessment			
6.1 the society's power 1948 war was lost for lack of arms, but "all this is over ... the arms are now in your hands" [E,44]; For foreseeable future Israel will not have the same quality and quantity of ships as the Arabs; however, we have skill, spirit [I,24]	15	12	

	E	I	S
6.2 others as instrumental			
6.2.1 cooperation reflects interests We choose friends "who neither plot against us nor side with our enemies" [E,45]; We will work with anyone willing to help us [E,46]	22		
6.2.2 cooperation as source of strength It is a question of being practical; "Our strength lies in our [pan-Arab] nationalism." [E,47	12	1	
6.3 means (allies and supporters)			
6.3.1 identified			
6.3.1.1 Arabs Their battles are ours; our fates are linked; we are "brothers" [E,48]; Egypt is right and Arabs are together [S,7]	37		7
6.3.1.2 all victims of imperialism, small nations, opponents of Western domination	26		
6.3.1.3 Afro-Asian nationalists	15		
6.3.1.4 Soviet Union "the Soviet Union offers cooperation based on community of interests" [E,49]	18		
6.3.1.5 others (Italy, Yugoslavia)	9		
6.3.1.6 France French opinion backs Israel strongly [I,25]		5	
6.3.1.7 United States		4	
6.3.1.8 others (Canada, West) Canada help limited: stops arms to Israel under pressure from Hammarskjold, Burns [I,27]; West "interested in their own satisfaction" [I,28]		4	

	E	I	S
6.3.2 "pro" power assessed West needs oil, trade, military bases in Arab lands [E,50]; If not for Soviet veto in U.N., "we would have to yield to a fait accompli" [E,51]; Big powers not interested in or capable of restraining Arab leaders' anti-Israel feelings, aggressive designs [I,29]; Egypt has "high standing in the world" [S,8]	13	16	4
(Total 6.3)	(118)	(29)	(11)

6.4 opponents and their supporters

6.4.1 identified

6.4.1.1 Zionist imperialists

6.4.1.1.1 Zionists as dominating U.S., France, Britain — 24
Zionism "has the upper hand in the Security Council, the House of Commons, the U.S. Senate and the French National Assembly [E,52]

6.4.1.1.2 U.S., Britain, France as supporters of Zionism — 30
How can the U.S. expect us to believe its good intentions to Arabs when it gives to Israel? [E,53]

6.4.1.2 France and supporters (U.S., NATO (vs. Algerians) — 23

6.4.1.3 West, West Germany — 13
support unpopular governments in Arab lands, give reparations to Jews

6.4.1.4 big powers aiding enemy — 4
East arms Egypt, West arms Iraq [I,30]; big powers encourage Arab military imperialism [I,31]

6.4.1.5 Arabs — 12
Egypt claims to be at war with Israel [I,32]

	E	I	S
6.4.1.6 Soviet Union Soviet ships for Egypt [I,33]		17	
6.4.1.7 United Nations Security Council submissive to Arab pressure [I,34]		5	
6.4.1.8 Bandung Resolution signers Reaffirm Resolution supporting Arabs versus Israel [I,35]		3	
6.4.2 "con" power assessed Britain, France threaten force, but will France take forces from Algeria? [E,54]; Jordan cannot control infiltrators (vs.) Jordan not unable to control hotheads, but is using them [I,36]	35	8	
6.4.3 domestic ramifications Elimination of political parties inside Egypt eliminates a vehicle for imperialism [E,55]	8		
(Total 6.4)	(133)	(49)	(0)
6.5 changing assessments Eden has switched suddenly from pro-Arab to pro-Israel [E,56]; French-Soviet talks indicate Soviets may be softening towards Israel [I,37]	14	3	
6.6 "neutral" power factors The A-bomb will "drive the world to live in peace for a long time" [E,57]	2		
Total 6:	316	94	11
7. Decision			
7.1 decision to decide Knesset rejects proposal to debate countering Arab boycott [I,38]; Government in extraordinary session over deaths resulting from Jordanian border violations [I,39]		16	
7.2 thought processes, debate			

	E	I	S
7.2.1 analysis of "pros" and "cons" Considerations in favor of recognizing People's China: trade, size, role of pressing for its U.N. admittance, etc. [E,58]	30	13	
7.2.2 justification (consistent with behavior patterns) Re: Brioni, neutral "third force" is not a bloc; participation is therefore consistent with opposition to blocs [E,59]; support of Algerians involves no domestic interference [E,60]	24		
7.2.3 possible alternative courses Nasser takes not U.S. aid, not Soviet offer, but third way to finance Dam, using Canal resources [E,61]; Israel should support Egypt's stand; Israel should not have dissociated itself from the West [I,40]	9	27	
7.2.4 anticipated feedback Nasser did not preannounce nationalization of Canal because he "would have been subjected to pressure" [E,62]; If Washington complains about our decision, "you can kill yourselves" [E,63]; Warlike action in cooperation with the West would be dangerous [I,41]	12	1	
7.3 decision We will "organize our defense and found it solely on the Arab nation and homeland, without the participation of any non-Arab country or any big power" [E, 64]; Policy: extend bilateral agreement with Egypt, consolidate Arab League, aid Jordanian Arab Legion, resist peace with Israel, tighten boycott [S,9]	58	5	6
Total 7:	133	62	6

8. Behavior

8.1 verbal: official arguments, refutations, threats

	E	I	S
8.1.1 attempt to affect steady state To U.S. Senators: give your Negroes the rights you give your "treacherous Jews" [E,65]	3		
8.1.2 attempt to affect perception of events British public is "ignorant of the facts" of the Suez problem [E,66]; The West lies in saying our economy is unsound [E,67]	34	1	
8.1.3 attempt to affect evaluation West, with its "imperialist complex" [wrongly] sees the non-aligned as a "bloc" [E,68]; Exclusion of Israel from Canal means potential exclusion of anyone else [I,42]	106	7	
8.1.4 attempt to affect capability assessment How would West like Egypt to call a conference of world states re: Algeria, Kenya, or Aden? [E,69]	12	7	
8.1.5 attempt to affect decision To U.S.: conditional aid will lose you friends [E,70]; Disregard of Israeli rights will block London Conference from vital achievement [I,43]	52	8	
8.1.6 attempt to affect behavior Al-Jumhuriya asks end of nuclear tests [E,71]; Hammarskjold should press for cease-fire observances by Egypt, Jordan [I,44]; Asks contributions for Algeria [S,10]	29	10	3
8.1.7 attempt to affect feedback "World opinion sees the face of imperialism" in 3-power statement [E, 72]; U.N. personnel injured by Egyptians are victims of own U.N. encouragement of Arab aggression [I,45]; Appreciation to Algeria, Palestine border fighters [S,11]	27	16	2

	E	I	S
8.1.8 attempt to affect learning "Let the conferees admit failure" [E,73]	13		
(Total 8.1)	(276)	(49)	(5)
8.2 domestic outputs			
8.2.1 restructuring authorities Nasser names new cabinet [E,74]; Sharett resigns as Foreign Minister [I,46]; General Chief of Staff replaced [S,12]	9	32	3
8.2.2 restructuring regime New impeachment bill [E,75]; Advisory economic council reorganized [I,47]	42	3	
8.2.3 restructuring community Jewish orphans from Poland [I,48]; Immigration from Morocco [I,49]		18	
8.2.4 preparation to fight National Liberation Army set up [E,76]; Air raid drills [E,77]; Civil defense exercises [I,50]	18	8	2
8.2.5 economic activity Land distribution [E,78]; Group plans shipping expansion [I,51]; National bank opened [S,13]	11	23	7
8.2.6 verbal activity (refuting domestic critics No government can be held responsible for Egyptian-Czech arms deal, Soviet penetration into Middle East, and arms boycott [I,52]; Wheat permits approved for France in error; corrected [S,14]		5	5
(Total 8.2)	(80)	(89)	(17)
8.3 outputs to extrasocietal environment			
8.3.1 information exchange Nasser accepts Hussein invitation to visit [E,79]; Hammarskjold-Ben Gurion talks [I,53]; Radio-telephone lines in, Damascus-Maghreb [S,15]; Book exchange with Italy [I,54]; Al-Quwwatli dinner for Nehru [S,16]	75	22	42

	E	I	S
8.3.2 material exchange Czech-Egyptian trade and technical aid agreement [E,80]; Israel-Netherlands trade agreement [I,55]; Syria receives 500,000£ from Qatar, gives half to Jordanian National Guard [S,17]	30	8	15
8.3.3 undertaking cooperative (political) agreements Recognize Peking, establish diplomatic relations [E,81]; Reject internationalization of Canal ownership [E,82]; Talks with Cairo re: unity [S,18]	24	14	21
8.3.4 ad hoc actions Nationalization of Suez Canal [E, 83]; Complaints filed against Jordan, Syria [I,56]	23	35	
(Total 8.3)	(152)	(79)	(78)
Total 8:	508	217	100

9. Feedback

9.1 status of domestic support/demand ratio

9.1.1 supports Rector of Al Azhar Mosque calls Canal nationalization legal act, united Egypt behind it [E,84]	22		
9.1.2 demands, criticism If Sharett policy failed, all the government should resign [I,57]		15	

9.2 others' attitudes

9.2.1 as object of attention Reviews of Western reactions to Canal nationalization [E,85]	16		
9.2.2 support and thanks			
9.2.2.1 Arab Syrian workers, universities, lawyers support Egypt [E,86]	44		

	E	I	S
9.2.2.2 other Moscow approval of recognition of People's China quoted [E,87]	29		
9.2.3 opposition Uproar in London and Paris, as expected [E,88]	14		
(Total 9.2)	(103)	(0)	(0)
9.3 counteractions			
9.3.1 others' behaviors seen as consequence of systemic outputs Withdrawal of Aswan offer on day of Brioni Statement reflects Western anger over nonidentification policy [E,89]	32	1	
9.3.2 counteractions seen as:			
9.3.2.1 effective			
9.3.2.2 ineffective London Conference failing [E, 90]; British freeze of our sterling reserves won't harm us [E,91]; Egypt can get along without U.S. dam aid [E,92]	47		
9.4 conditions after output			
9.4.1 success (stress alleviated) Goal of exterminating imperialism has been achieved [E,93]; Syria has removed foreign influence [S,19]	34		2
9.4.2 situation satisfactory, improving Cotton exports up, in part due to China trade pact [E,94]; Egypt has grown in international field [E,95]; International opinion improved--world now "recognizes the character of Nasser" [I,58]	56	2	2
9.4.3 situation unsatisfactory Enemies grow stronger daily, tension unabated [I,59]; Arabs have failed to unite vs. Zionism [S,20]		6	2
Total 9:	294	24	6

	E	I	S
10. Learning			
10.1 reenforcement			
10.1.1 behavior deemed successful When we got arms from the East, there was no more "dictation by arms" [E,96]	23		
10.1.2 dissuasion refused Western dam finance refusal is "Price of independence"; glad to pay it [E,97]	15		
10.2 extinction Arabs will "no longer ... be tricked by Security Council resolutions [E,98]; Will not repeat history, let economic dependence lead to loss of political freedom [E,99]; Egypt disregarding resolutions on Israeli Canal use, therefore "there is no sense being faithful to the United Nations where the organization is ineffective" [I,60]; Border incidents "prove that all efforts by the Armistice Commission to induce Jordan to keep its promises to adhere to a cease-fire have failed"--additional condemnations futile [I,61]	6	7	
10.3 vicarious learning Lesson of the Canal--be strong [I,62]		4	
10.4 adaptation (new behavior, structure) Nationalization is a fact--things have changed. Discussion of it is discussion of Egypt's rights [E,100]; Condemnation of Jordan useless, "... therefore, the Israeli delegation did not submit any draft resolution to the Armistice Commission [I,63]; "Aggravation of the defense situation" made necessary Sharett resignation, the better to coordinate Foreign and Defense Ministries [I,64]; Successful vs. imperialism but not Zionism, therefore join hands with Egypt, cooperate with Jordan re: "defense line" [S,21]	6	16	2
Total 10:	50	27	2
Grand Total:	2579	834	173

Broadcast Sources

Cairo

E,1 June 1, 1956, Nasser speech inaugurating Second Session of the General Cooperative Conference at Cairo University (Text)
E,2 July 24, 1956, Review of the Press
E,3 Same as E,1
E,4 Same as E,1
E,5 June 19, 1956, Nasser speech in Republic Square (Text)
E,6 Same as E,5
E,7 Same as E,5
E,8 August 4, 1956, Review of the Press
E,9 Same as E,1
E,10 July 17, 1956, Nasser Greeting on Al-Adha Holidays (Text)

E,11 Same as E,1
E,12 August 12, 1956, Nasser speech (Text)
E,13 July 26, 1956, Nasser speech at a public rally in Liberation Square, Alexandria, on occasion of the Fourth Anniversary of King Farouk's expulsion from Egypt (Text: 40 pages)
E,14 May 19, 1956, Nasser speech at graduation of cadets at Alexandria Naval College (Summary with Quotes)
E,15 Same as E,14
E,16 Same as E,12
E,17 July 23, 1956, Al-Jumhuriyah editorial by Anwar al-Sadat, Secretary General of Islamic Conference (Summary with Quotes)
E,18 July 27, 1956, News commentary by Muhammad Sharaf (Summary with Quotes)
E,19 May 15, 1956, News broadcast
E,20 Same as E,1

E,21 Same as E,13
E,22 July 22, 1956, Review of the Press: Al-Ahram
E,23 June 14, 1956, News broadcast (Text)
E,24 June 17, 1956, News broadcast
E,25 June 12, 1956, News broadcast (Text)
E,26 August 15, 1956, Review of the Press (Summary with Quotes)
E,27 June 10, 1956, Review of the Press (Summary with Quotes)
E,28 August 13, 1956, Text of Nasser statement August 12 at press conference; read by announcer
E,29 May 23, 1956, Review of the Press: Text from magazine Akhir Saab of Nasser's statements in Life magazine
E,30 July 5, 1956, Nasser to Middle East News Agency (Text)

E,31 Same as E,13
E,32 Same as E,29
E,33 Same as E,13
E,34 June 18, 1956, Nasser address to compatriots on Evacuation Day (Text)
E,35 Same as E,5
E,36 Same as E,13
E,37 Same as E,13
E,38 August 9, 1956, News broadcast (Text)
E,39 Same as E,12
E,40 Same as E,29

E,41 June 7, 1956, Review of the Press: Al-Shab (Excerpts)
E,42 Same as E,13
E,43 Same as E,13
E,44 May 15, 1956, Nasser speech to troops in Gaza (Text)
E,45 May 18, 1956, Review of the Press: Al-Jumhuriyah
E,46 Same as E,5
E,47 May 31, 1956, Nasser interview with Kamil Al-Shinnawi, Editor, Al-Jumhuriyah (Text)
E,48 Same as E,13
E,49 Same as E,41
E,50 August 2, 1956, Review of the Press: Al-Shab (Summary with Quotes)

E,51 July 10, 1956, Review of the Press: Al-Diyar of Lebanon quoted (Text)
E,52 May 24, 1956, News commentary (Summary)
E,53 Same as E,17
E,54 Same as E,12
E,55 Same as E,1
E,56 May 16, 1956, Review of the Press: Al-Akhbar
E,57 June 10, 1956, Review of the Press: Al-Shab
E,58 May 18, 1956, Review of the Press: Al-Ahram (Text)
E,59 July 8, 1956, Review of the Press (Summary with Quotes)
E,60 Same as E,1

E,61 July 27, 1956, Editorial report
E,62 August 13, 1956, Nasser Press Conference (Text)
E,63 Same as E,13
E,64 Same as E,1
E,65 June 29, 1956, Review of the Press (Summary)
E,66 May 22, 1956, Review of the Press: Al-Jumhuriyah
E,67 July 24, 1956, Nasser speech at inauguration of Cairo Oil Refinery and Suez Cairo Oil Pipeline (Text)
E,68 July 21, 1956, Review of the Press: Al-Jumhuriyah article by Anwar al-Sadat (Excerpts)
E,69 August 20, 1956, Review of the Press
E,70 Same as E,41

E,71 July 13, 1956, Review of the Press: Al-Jumhuriyah (Summary)
E,72 Same as E,12
E,73 August 17, 1956, Review of the Press: Al-Jumhuriyah (Summary with Quotes)
E,74 June 29, 1956, News broadcast (Summary)
E,75 June 13, 1956, News broadcast (Excerpts)
E,76 Same as E,38
E,77 August 13, 1956, News broadcast
E,78 June 18, 1956, News broadcast
E,79 July 23, 1956, News broadcast (Excerpts)
E,80 July 3, 1956, News broadcast (Text)

E,81 May 17, 1956, News commentary (Text)
E,82 Same as E,26
E,83 Same as E,13
E,84 August 2, 1956, Communique from Sheikh Abd Al-Rahman Taj, Rector of Al Azhar Mosque (Text)
E,85 July 30, 1956, Review of the Press: Al-Akhbar (Summary with Quotes)
E,86 August 2, 1956, News broadcast
E,87 May 18, 1956, News broadcast
E,88 July 28, 1956, Nasser speech to crowds welcoming him from Alexandria (Text)
E,89 July 22, 1956, Review of the Press (Excerpts)
E,90 August 9, 1956, Review of the Press: Al-Jumhuriyah (Summary)

E,91 Same as E,63
E,92 July 22, 1956, Al-Akhbar lead article (Text)
E,93 Same as E,5
E,94 Same as E,88
E,95 Same as E,13
E,96 Same as E,13
E,97 July 23, 1956, Review of the Press (Excerpts)
E,98 May 15, 1956, Review of the Press: Al-Ahram
E,99 Same as E,13
E,100 August 2, 1956, News commentary

Jerusalem

I,1 May 15, 1956, Review of the Press: Jerusalem Post
I,2 July 16, 1956, Review of the Press (Excerpts)
I,3 August 13, 1956, Review of the Press: Al-Hamishmar (Summary with Quotes)
I,4 July 25, 1956, Review of the Press: Hatzofe (Summary)
I,5 June 25, 1956, Review of the Press (Excerpts)
I,6 May 15, 1956, Review of the Press: Lamerhav
I,7 July 24, 1956, Review of the Press (Excerpts)
I,8 August 6, 1956, Review of the Press: Herut (Excerpts)
I,9 August 16, 1956, Review of the Press: Al-Hamishmar (Summary with Quotes)
I,10 July 17, 1956, Review of the Press (Summary with Quotes)

I,11 August 2, 1956, News broadcast (Text)
I,12 May 27, 1956, Review of the Press (Summary with Quotes)
I,13 August 8, 1956, Review of the Press (Summary with Quotes)
I,14 June 20, 1956, Review of the Press (Summary with Quotes)
I,15 Same as I,5
I,16 May 23, 1956, Review of the Press
I,17 July 11, 1956, Review of the Press; Davar (Summary with Quotes)
I,18 August 12, 1956, Review of the Press: Hatzofe (Excerpts)
I,19 August 6, 1956, Review of the Press: Lamerhav (Summary with Quotes)
I,20 May 22, 1956, Review of the Press: Haboker

I,21 August 1, 1956, Review of the Press (Summary with Quotes)
I,22 July 11, 1956, News broadcast (Text)
I,23 August 14, 1956, Review of the Press: Hatzofe (Summary with Quotes)
I,24 June 20, 1956, Ben-Gurion speech (Summary with Quotes)
I,25 July 10, 1956, News broadcast (Summary)
I,26 July 22, 1956, Review of the Press (Excerpts)
I,27 Same as I,2
I,28 Same as I,21
I,29 May 30, 1956, Review of the Press (Excerpts)
I,30 Same as I,29

I,31 June 13, 1956, News commentary
I,32 June 24, 1956, News broadcast (Excerpts)
I,33 August 11, 1956, News broadcast (Summary)
I,34 June 5, 1956, Review of the Press: Lamerhav (Excerpts)
I,35 Same as I,26
I,36 Same as I,7
I,37 May 22, 1956, Review of the Press: Davar
I,38 June 6, 1956, News broadcast (Excerpts)
I,39 Same as I,22
I,40 August 6, 1956, Review of the Press (Excerpts)

I,41 August 15, 1956, Review of the Press: Hamodia (Summary with Quotes)
I,42 August 12, 1956, Review of the Press: Davar (Excerpts)
I,43 August 16, 1956, Review of the Press: Davar (Summary with Quotes)
I,44 July 19, 1956, Review of the Press (Summary)
I,45 July 26, 1956, Review of the Press: Haboker (Summary)
I,46 June 18, 1956, Moshe Sharett speech in Knesset (Text)
I,47 June 24, 1956, News broadcast (Excerpts)
I,48 June 20, 1956, Review of the Press (Summary)
I,49 June 13, 1956, News broadcast
I,50 Same as I,2

I,51 August 9, 1956, Review of the Press (Summary with Quotes)
I,52 June 18, 1956, Reportage of Knesset debate: Mapai (Summary with Quotes)
I,53 Same as I,26
I,54 Same as I,16
I,55 May 16, 1956, Review of the Press: Davar (Summary)
I,56 June 20, 1956, News broadcast
I,57 June 18, 1956, Reportage of Knesset debate: Herut (Summary with Quotes)
I,58 July 30, 1956, Review of the Press: Davar (Excerpts)
I,59 May 22, 1956, Review of the Press: Hatzofe
I,60 August 9, 1956, Review of the Press: Herut (Summary with Quotes)

I,61 July 24, 1956, Foreign Ministry spokesman (Summary)
I,62 July 31, 1956, Review of the Press: Davar (Summary with Quotes)
I,63 July 17, 1956, News broadcast (Summary)
I,64 June 19, 1956, News broadcast (Text)

Damascus

S,1 June 27, 1956, Policy statement ready by Premier Sabri Al-Asali in Chamber of Deputies (Summary)
S,2 Same as S,1
S,3 Same as S,1
S,4 July 18, 1956, address of President Shukari Al-Quwwatli on Id Al-Adha (Excerpts)
S,5 Same as S,4
S,6 Same as S,1
S,7 August 14, 1956, Editorial report
S,8 July 23, 1956, Statement by Premier Sabri Al-Asali to Press (Text)
S,9 Same as S,1
S,10 July 5, 1956, News commentary

S,11 Same as S,4
S,12 July 7, 1956, News broadcast (Excerpts)
S,13 August 1, 1956, President Al-Quwwatli, speech at opening Central Bank (Excerpts)
S,14 May 29, 1956, Communique from Ministry of National Economy (Text)
S,15 July 13, 1956, News broadcast
S,16 June 21, 1956, President Al-Quwwatli dinner in Nehru's honor (Excerpts)
S,17 July 3, 1956, News broadcast
S,18 June 23, 1956, News broadcast
S,19 Same as S,1
S,20 Same as S,1

S,21 Same as S,1

CHAPTER VII

RESULTS

In all, some 3,586 units were classified and counted. Table 1 summarizes the results of the tally of all the material, indicating the absolute and relative amounts of space devoted by each society to each category.

TABLE 1

AMOUNT OF SPACE DEVOTED BY EACH SOCIETY TO EACH CATEGORY

Category	Egypt		Israel		Syria	
	No. Units	Per Cent	No. Units	Per Cent	No. Units	Per Cent
1	374	14.5	28	3.4	3	1.7
2	246	9.5	37	4.4	14	8.1
3	85	3.3	176	21.1	23	13.3
4	407	15.8	143	17.1	5	2.9
5	166	6.4	26	3.1	3	1.7
6	319	12.3	94	11.3	11	6.4
7	133	5.2	62	7.5	6	3.4
8	508	19.7	217	26.0	100	57.8
9	294	11.4	24	2.9	6	3.4
10	50	1.9	27	3.2	2	1.2
Total	2579	100.0	834	100.0	173	99.9

Table 4 (page 165) presents these results, corrected so as to exclude some 582 units of purely "domestic" material. Figure 4 illustrates these findings in bar-graph form, with the percentages from Table 1 appearing as thick bars and the percentages from Table 4 appearing as thin bars.

The first clear evidence of the graph is that <u>there is no empty set</u>. All the factors we had expected to find were, indeed present. Also, <u>all</u> the material proved classifiable in terms of the categories. Whatever material "resisted" classification at first was found, as we have described, to point to some facet of the theoretical framework that we could have foreseen. All the material thus proved consistent with our framework, although the degrees of inference upon which material was assigned did vary. Some thoughts were precisely set in the ideal form; many had to be reduced to it.

Secondly, the proportions of time devoted by each society to each category are, as will be seen from the graph, at least roughly comparable; the only extreme deviation, that of Syria in Category 8, is explicable on the basis of sample size (see below). This cross-societal resemblance conveys the important suggestion that <u>there is a similarity among human societies, behaving as societies, which is independent of differences in politics, economics, culture, religion, social arrangements, etc</u>. We are not speaking here of such similarities of <u>interest</u> as we are told should unite men in brotherhood, although, with H-bombs,

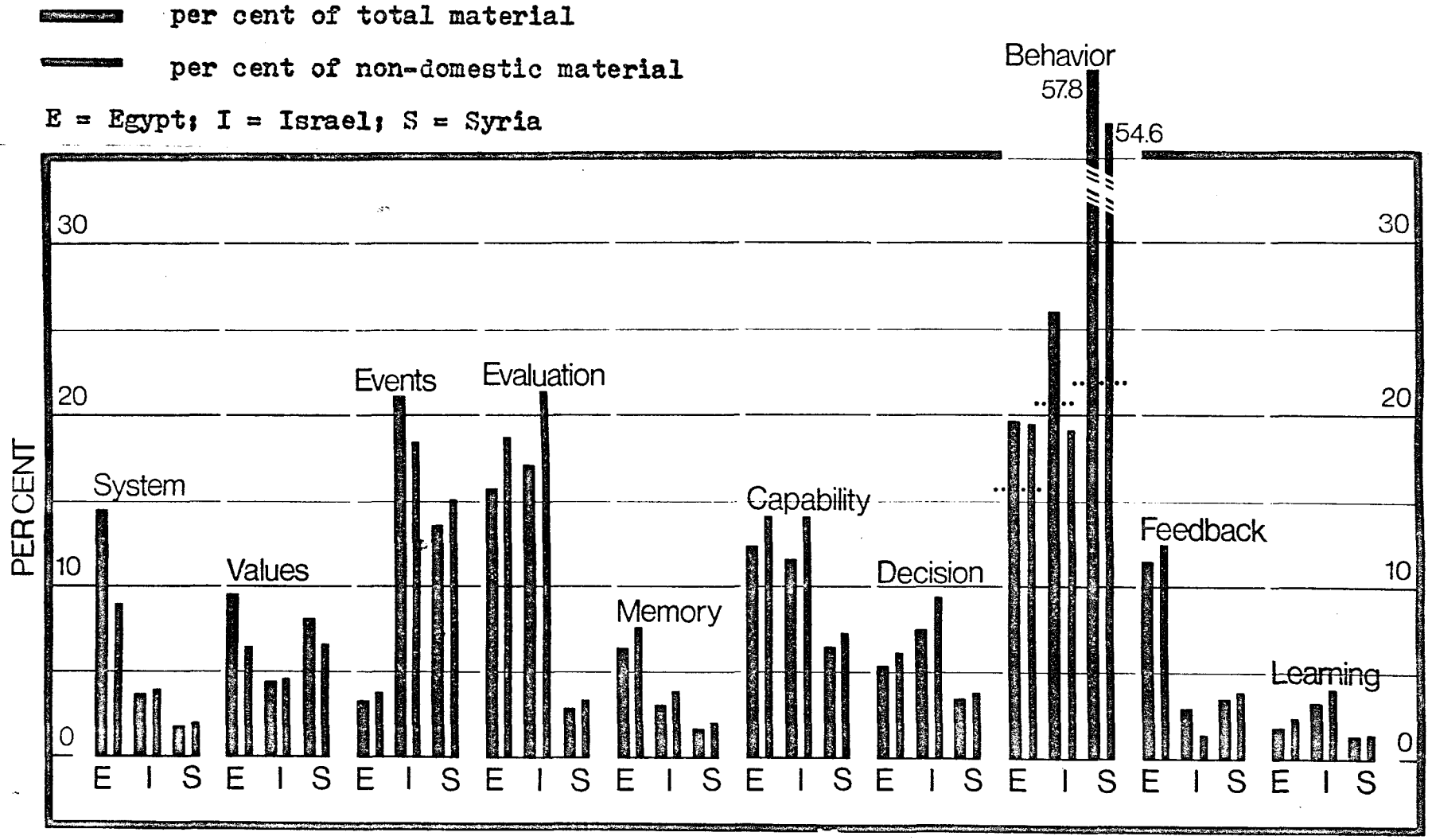

Fig. 4.--Percentage of its Space Devoted by Each Society to Each Category

environmental pollution, and moon voyages, men are coming to an increasing awareness of common fate. We are speaking, rather, of similarities of process by which different societies pursue their (different) interests and handle their (different) problems. A human tragedy like the Middle East conflict moves us to ask wherein the roots of the conflict "really lie." To the extent that their behavior-processes appear factorable into like elements, the several societies become susceptible of comparison along these dimensions to ascertain within which one(s) the disagreement lies. We will attempt such a judgment later, after we discuss the raw results themselves.

Effects of Sample Size

The disparity in sample size for the three societies has been pointed out before. Egypt received almost 72 per cent of the space, as opposed to but 5 per cent for Syria. The disparity in number of discrete "thoughts," however, was not as great as the disparity in units, as is indicated by Table 2. This means that each Egyptian "thought" took more words than did the others, which is probably ascribable to the fact that the Egyptian material contained many full speeches while the others were composed chiefly of summaries and excerpts. (One might be tempted to ascribe the difference to a peculiarity of the Arabic language, were it not for the fact that Syria runs, similarly to Israel, counter to Egypt in this respect.) The Syrian figure remains small

TABLE 2

UNITS AND THOUGHTS

	No. Units	Per Cent	No. Thoughts	Per Cent
Egypt	2579	71.9	774	61.7
Israel	834	23.3	401	31.9
Syria	173	4.8	80	6.4

even in percentage of thoughts, but the Israeli material becomes more comparable, representing one-half the Egyptian figure, rather than one-third, as it did in terms of units.

Because of the small sample size, Category 8 is distorted for Syria in two ways. For one thing, the Reports contain, in addition to lengthier speeches and editorials, a number of brief daily announcements--trade agreements, cultural exchange visits, the arrival of ambassadors, etc. These appear to form a fairly constant "base" within the Reports, regardless of coverage of other matters. They amounted to a comparable 57 units for Egypt, 41 for Israel, and 35 for Syria. However, while these units formed only 2.2 per cent of the Egyptian "behavior" category and 4.9 per cent of the Israeli, they accounted for 20.2 per cent of the Syrian "behavior." In addition, Syria's receptions of Shepilov and Nehru during this period were evidently objects of particular United States attention, receiving 28 units of space. Comparable Israeli ("Yugoslav delegates feted") and Egyptian (Nasser meets with Nehru, Tito at Brioni; refuses

to attend London Conference) material received, respectively, 3 and 52 units. Because the Syrian coverage was generally so sparse, these two interesting visits accounted for 16.2 per cent of the Syrian "behavior" class. By contrast, the Israeli and Egyptian material of this nature made up just 0.3 per cent and 2.0 per cent, respectively, of Category 8.

Removal of the two distorting factors would reduce Category 8:

	Egypt	Israel	Syria
from:	19.7 per cent	26.0 per cent	57.8 per cent
to:	15.5 per cent	20.8 per cent	21.4 per cent

The effect this would have is indicated by a line across each bar in Figure 4.

Another effect of sample size may have been the exclusion from the lighter coverage of the more colorful, evocative, and hortatory verbiage characteristic of lengthy speeches. This seems to be indicated by the fact that Categories 1 (with its emphasis upon group identification) and 5 (with its attentiveness to group memory) seem to vary directly with the amount of total coverage.

Altogether, however, the figures indicate that each society devoted broadly the same kinds of attention to the same kinds of concerns.

Domestic Material

Although theoretically it has no place here, we included whatever purely domestic material appeared in the

Reports, chiefly out of curiosity to see at what points such material might touch upon extrasocietal behavior. All this material, 396 units or 15.3 per cent of Egyptian coverage, 165 units or 19.8 per cent of Israeli coverage, and 21 units or 12.1 per cent of Syrian coverage, clustered naturally within just six subcategories, as follows (see Table 3).

TABLE 3

DOMESTIC MATERIAL

	Egypt		Israel		Syria	
Category	No. Units	% of Whole	No. Units	% of Whole	No. Units	% of Whole
1.7	179	6.9	2	0.2	0	0
2.1.1.2	105	4.1	6	0.7	4	2.3
3.3	2	0.1	53	6.4	0	0
6.4.3	8	0.3	0	0	0	0
8.2	80	3.1	89	10.7	17	9.8
9.1	22	0.8	15	1.8	0	0
Total	396	15.3	165	19.8	21	12.1

Category 1.7--All domestic material regarding systemic characteristics either recognized a collective decider or was devoted to a latency function, enhancing individual-decider relationships through reassurances, inducements, and coercion.

Category 2.1.1.2--All domestic material regarding values concerned the desirability of domestic programs to provide rewards, either by increasing the material level or by better material distribution.

Category 3.3--Within the events category, some occurrences (none in Syria and only 2 of 85 "event" units in Egypt, but 53 of 176 such units in Israel) represented outputs from subsystems other than the political within the society. They were usually of the nature of strike announcements or bulletins from particular agencies within the society.

Category 6.4.3--Regarding capability assessment, 8 units from Egypt were devoted to a concern for a domestic ramification of foreign opposition capability. They had to do with the elimination of political parties within Egypt to remove a "vehicle for imperialism."

Category 8.2--One subcategory of behavior was entirely domestic, having to do with "withinputs" and outputs of the political subsystem into the intrasocietal environment: chiefly, restructuring (changes in authorities, regime, or community) or economic and defense activities.

Category 9.1--Not surprisingly, outputs into the intrasystemic environment were accompanied by feedback from that environment.

In sum, all domestic units had to do with (Categories 1 and 2) encouraging "efficiency" through psychological and material rewards and (Categories 3, 8, and 9) an S-O-R linkage of the Easton variety, purely internal to the society and functioning to maintain a satisfactory support/demand ratio. Category 6, affecting only Egypt and that in a minor way,

seems to be a special case growing out of the memory of indirect rule.

In the case of Egypt, as can be seen from Table 3, the larger domestic categories seem to be those reflecting the integration-latency function. This is not unexpected in light of the background: the period under study included "Evacuation Day," the removal of the last British forces from Egypt, and it included the Fourth Anniversary of the exile of King Farouk, both occasions for the celebration of freedom and for statements of independent identity and goals. One might conjecture that an analysis, for example, of Israeli material ca. 1948 would produce similar results. The Israelis at that time were saying, in effect, "Thanks be to God, after 2,000 years we are free and self-determining," essentially just what Nasser said on Evacuation Day.

In the case of Israel, by contrast, the larger domestic categories involve attentiveness to domestic events, behaviors, and feedback--the Easton linkage--and they indicate stress: of the 53 domestic events, 26 have to do with strikes; 32 of the 89 behavior units are devoted to changes in authorities; <u>all</u> the domestic feedback indicates dissatisfaction (in contrast with the Egyptian, all of which indicates satisfaction). That one does not voice dissatisfaction may reflect upon the openness and democratic nature of his society, but where one does voice dissatisfaction, he is ostensibly free to voice satisfaction as well, so that its absence must be regarded as significant.

The Syrian domestic data is too limited to form a basis for any conclusions.

Our focus upon the extrasocietal requires us now to remove the 582 units of purely domestic material, and to correct the "amount of space devoted by each society to each category" so as to exclude it. The corrected figures appear as thin bars on the graph, Figure 4. As we indicated, for Egypt Categories 1 and 2 are diminished by exclusion of the domestic material; for Israel Categories 3, 8, and 9 suffer.

TABLE 4

AMOUNT OF SPACE DEVOTED BY EACH SOCIETY TO EACH CATEGORY (CORRECTED TO EXCLUDE DOMESTIC)

Category	Egypt		Israel		Syria	
	No. Units	Per Cent	No. Units	Per Cent	No. Units	Per Cent
1	195	8.9	26	3.9	3	2.0
2	141	6.5	31	4.6	10	6.6
3	83	3.8	123	18.4	23	15.1
4	407	18.6	143	21.4	5	3.3
5	166	7.6	26	3.9	3	2.0
6	308	14.1	94	14.1	11	7.2
7	133	6.1	62	9.3	6	3.9
8	428	19.6	128	19.1	83	54.6
9	272	12.4	9	1.3	6	3.9
10	50	2.3	27	4.0	2	1.3
Total	2183	99.9	669	100.0	152	99.9

All succeeding references to the results will be meant to refer to the "corrected" figures in Table 4.

Profiles (May-August, 1956)

Our selection of certain classifications, in terms of which the study of material from subject societies is performed, affords us, in effect, a certain set of indicators which, to the extent that they prove salient, could be more or less effective analytical tools. They cannot give us a complete portrait, but they might afford a useful profile--rather like a doctor's examination which, by checking the status of only certain, strategic factors, gains a useful indication of a patient's general condition.

We will differentiate this "profile-society," gleaned from analysis of the material, from the society as generally recognized thus: Egypt' means our data profile; Egypt means what political scientists generally take it to mean. To the extent that comparison of our profile with independent observations on the nature of the subject society at the time yields or fails to yield congruence, we can adjudge this particular mode of analysis to be more or less trustworthy and our theoretical assumptions to be more or less vindicated.

For each of the societies under study, the results of the content analysis did begin to yield up a sort of profile, a characterization resulting from mutually-supportive[1] propositions derived, independently, from the

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[1]Every statement in the material, like every statement of an individual, does not, with its utterance, guarantee its accuracy. It is possible that exaggeration and suppression, projection and transferrence characterize the utterances

content of each category. We first discuss our findings for each society and then project them, as it were, upon what we "know" from other sources in order: 1) to "test" whether the results of the analysis appear "reliable" insofar as they correspond to the conclusions of political scientists and; 2) to see whether they offer illumination of any moot points or suggest relationships among generally-observed facts.

Syria'--Abdicating Decider

What do the results of the tally indicate for Syria in the middle of 1956?

1) Syrian' systemic characteristics per se receive very little attention: 2 per cent of the Syrian units apply to Category 1, compared with almost 4 per cent for Israel and almost 9 per cent for Egypt. The material reflects less concern with identity, characteristics, integrity, and self-determination than does that of the other subject societies.

2) Of all the world-wide universe of events which might receive attention, the Syrian material never transcends the Middle East. Of 23 "event" units, 3 refer to Turkish outputs (Turkey is a neighbor and traditional antagonist).

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of public role-actors just as they do the utterances of private personalities. Does a man shout, "I am important!" because he knows he is--or because he suspects he isn't? The test, in any case, as it is for all propositions, is consistency with other propositions. If they tend to bear out the statement, they lend it credence, as it lends them. See Appendix A, Science and Political Science.

All of the other 20 units refer to Arab behaviors, 7 of which are Egyptian.

3) Evaluative activity (Category 4) is extremely low; 3.3 per cent of the Syrian units deal with this, as compared with 18.6 per cent for Egypt and 21.4 per cent for Israel. Syria' is patently not vigorously monitoring world events and assessing their consequences for it.

4) Regarding capability assessment (Category 6), the Syrian material makes no mention whatsoever of Syrian capability. All 11 units in this category are devoted to identification with Egypt (7 units) and to assessing (favorably) Egypt's power position (4 units).

5) The one continuing stress to which reference is made is the existence of Israel (Category 9.4.3).

6) Not only does the one item of learning (Category 10) specifically refer to joining with Egypt as a means of eliminating that stress (the existence of Israel), but, beyond that, Syria' "internalizes," values as its own, an extrasystemic goal--"one Arab flag" (Category 2.2.7).

All this adds up to the profile of a political system which is not performing as we have postulated a decider should. Syria' (the abstraction assembled from analysis of the material) displays (we so interpret the pattern of its outputs) little awareness of self, is not vigorously monitoring world events or assessing their consequences for it. It attends only to the Middle East and, in addition, seems to be abdicating its function to another state.

The small size of the sample would lead us to hold these consistently "abnormal" or "pathologic" indications

suspect, except that they do bear out what we know about Syrian history and political behavior as revealed by other sources. Syria did not have a "normal," authoritative decider, and Syria was abdicating its decision process to Egypt. A little over a year after this period Syria did urge and undertake union with Egypt, accepting a subordinate place within that union. Perhaps the very low United States attentiveness to Syria, as evidenced by the skimpy coverage in the Reports, is attributable to a United States' recognition that Syria was not an effective entity, and that if there was any bellwether to her perceptions and orientations, it was Egypt--which may, again, have contributed to the heavy coverage we have noted for Egypt.

The boundaries of modern Syria were drawn by the great powers, not by patterns of "natural" group interactions. The varied groups within those boundaries have never been welded into a state. "The Syrian people, as well as their leaders, were imbued with sectarian, family, and tribal loyalties which did not extend to that abstract, yet vital, idea of the nation. If the state was to survive, these loyalties had to be submerged. They never were, except during brief crises with an alien power and an alien people . . ."[1] Manfred Halpern blames this on a failure to complete the process of social change: "Among the social groups that make up the politically active minority, the landowners, the older

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[1]Gordon H. Torrey, Syrian Politics and the Military: 1945-1958 (Ohio State University Press, 1964), p. 388.

bourgeoisie . . ., the new middle class, the workers have each either grown, declined, or split internally just enough to be able to act only as veto groups . . ."[1] Whatever the reasons, "instability" appears to be the word most frequently used in describing the Syrian political system: "Syria's entire life as an independent nation has been characterized by internal turmoil, near chaos at times, and continual governmental instability."[2] In December, 1948: "Syria, at this crucial moment in her history, was a country without either a government or the prospect of one coming from a competent civilian leadership . . ."[3] In 1951: ". . . Syria went through continual political crisis."[4] In June of 1956, the period with which we are concerned: "Although the formation of the 'national' cabinet was supposed to be the elixir to cure the country's ills, the remainder of 1956 was to become one of the most turbulent periods since the Palestine War of 1948."[5]

Our data, indicating low systemic identification and a malfunctioning of the political system, might have provided a forecast of what was to come: "By the late summer of 1957 Syria was on the verge of disintegration as an

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[1]Manfred Halpern, The Politics of Social Change in the Middle East and North Africa (Princeton, N.J.: Princeton University Press, 1963), p. 212.

[2]Torrey, Syrian Politics, p. 387.

[3]Ibid., p. 110. [4]Ibid., p. 193. [5]Ibid., p. 309.

organized political community. Not only was there no general agreement on the rules governing political behaviour but, worse still, many Syrians had lost confidence in the future of their country as an independent entity. . ."[1]

Much of Syria's difficulty in maintaining its systemic character lies in its history. Had the Arab dream of an Arab nation--a nation that the Hashemite leader, Sherif Hussein of Mecca, was promised during World War I--ever come into being, its core would have been Syria. The Sykes-Picot Treaty precluded that. The limbs, so to speak, were separated from the body national, leaving Syria as what has been called the "bleeding heart" of the Arab nation. It has, perhaps least of all the Arab states, come to terms with its condition. On the one hand, interference in Syrian "domestic" politics by Arab neighbor-states has retained a certain legitimacy; on the other hand, Syrian aspirations and orientations "outward" remain as part of its heritage. Lying between the traditional rival river systems of Egypt and Iraq, Syria represents a necessary ally in any bid either might make for Arab rule. These rivalries have been further aggravated by rivalry among the great powers. The Syrian political system became subjected not only to external pressure, but to "penetration." Egyptian, Iraqi, and Saudi interests "bought" Syrian politicians and newspapermen. "Bribe money and external pressures of all sorts had

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[1]Patrick Seale, The Struggle for Syria: A Study of Post-war Arab Politics 1945-1958 (London: Oxford University Press, 1965), p. 307.

for years been undermining whatever moral basis there might once have been for Syrian political life, while the public was assailed by rival radio stations and propaganda campaigns and driven to near hysteria by plots, coups d'etat, and threats of invasion."[1]

As to extrasystemic identification, Syria had carried over into its statehood a sense of participation in the Arab nation. It had entertained, in 1949, the desire to join in a union with Iraq, but, although a majority of the cabinet favored such a move,[2] it failed for what Seale has called a lack of "will."[3] History is clear that, as our data indicate, the Syrian government in 1956 was oriented towards Egypt. "In less than two years, between January 1955 and October 1956, Syrian suspicion of Egypt and distaste for her military junta had turned into passionate championship of 'Abd al-Nasir and everything he stood for."[4]

Despite its political ineffectuality (even the army, which has undertaken coups, is split and fragmented), Syria is not politically "primitive." Seale has called it "perhaps the most politically sophisticated of all Arab countries." Its most significant contribution has been giving rise to the Ba'ath Party, which advocates a Socialist and,

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[1] Ibid.

[2] Torrey, Syrian Politics, p. 154.

[3] Seale, Struggle for Syria, p. 167.

[4] Ibid., p. 262.

quite consistently with Syrian history and orientation, an Arab Nationalist program. It was the Syrian Ba'ath Party which, having achieved control of the country with Communist help but then fearing a Communist takeover, finally achieved the union with Egypt in 1958, thus forming the United Arab Republic, from which Syria withdrew several years later.

There is no doubt, then, that Arab nationalism is a very real Syrian' end, a goal towards which it has attempted to act in at least two different ways within a decade. Our results would tend to bear this out. But they also suggest an interesting point: the presence of an Arab entity as goal in the Syrian' "value" category suggested the question of why such a goal was not represented among the Egyptian values for, after all, Egypt talks at great length and often of pan-Arab feelings. A rechecking of the data revealed that Egypt' did, indeed, talk of Arab unity--but always as a means, in terms such as "Let us be practical. Our strength is in our nationalism." This suggests that when Egypt' and Syria' talk about Arab nationalism, <u>they may be talking about two different things</u>, Syria' about a systemic end to be realized, but Egypt' about a means, a co-operative base. This could account for Egyptian reluctance to accept union with Syria[1] and for Egyptian sponsorship of the Arab League as an alternative to regional groupings.[2] Egypt had, after

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[1]Torrey, <u>Syrian Politics</u>, p. 378.

[2]Seale, <u>Struggle for Syria</u>, p. 90.

all, come relatively late to pan-Arabism. "It was not until the 1940's that Egypt decided to embrace the Arab cause."[1] ". . . Nasser and his companions . . . began to elaborate and systematize the essential Arab nationalist principles into a doctrinal base for foreign policy. In this endeavor they looked beyond Egypt to find their resources and opportunities in the wider Arab community . . ."[2]

Israel--Dissatisfaction Syndrome

What do the results of the tally indicate for Israel in mid-1956?

1) Israeli material reflecting self-awareness as a system (3.9 per cent of the material is devoted to Category 1) is half that of the Egyptian material (8.9 per cent) but twice that of the Syrian material (2.0 per cent), an "average" figure.

2) Most of the Israeli material on "values" focusses upon "peace" and "homeostatic capacity," usually equating the two. These occupied, respectively, 13.5 per cent and 37.8 per cent of Category 2, in contrast with 3.2 per cent and 7.7 per cent for the Egyptian material. The Israeli material suggests preoccupation with ability to retaliate.

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[1]Henry Siegman, "Arab Unity and Disunity," in Benjamin Rivlin and Joseph S. Szyliowicz, eds., The Contemporary Middle East: Tradition and Innovation (New York: Random House, 1965), p. 251.

[2]Charles D. Cremeans, "Nasser's Approach to International Politics" in Rivlin and Szyliowicz, Contemporary Middle East, p. 519.

3) Attentiveness to events is high (18.4 per cent), comparable to that in the Syrian material (15.1 per cent), but, unlike the Syrian', Israeli' "attention" goes beyond the Middle East. While border violations account for almost half the events, the Israeli material also evinces attentiveness to the great powers.

4) Evaluation of events in the material reflects the conclusion that Israel' is threatened. Arab and Russian attitudes are characterized as hostile; Egypt is planning aggression and blockade. The United Nations cease-fire agreement is characterized as breaking down, the Arabs having decided no longer to honor it and the Security Council "undercutting" Hammarskjold's efforts.[1] The Western powers are characterized as really concerned with their own, and not with Israeli' interests.

5) The Israeli material contains assessments of Israeli' capability, which is characterized as wanting. Israeli' power, the total of Categories 6.1 (the society's power), 6.3.2 ("pro" power position), and the negative of 6.4.2 ("con" power position), reveals 8 favorable units to 28 unfavorable units. (Egypt', on the other hand, assesses 56 favorable units to 7 unfavorable units.)

6) A considerable percentage of the Israeli material is devoted to the decision process (8.5 per cent of all attention went to categories 7.1 and 7.2, compared with 3.4 per cent for the Egyptian material and 0 for the

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[1]Jerusalem Radio, June 6, 1956, Review of the Press.

Syrian), but conclusions are sparse (0.7 per cent for Category 7.3, compared with 2.7 per cent for Egypt').

7) Israel' is behaving internationally; 19.1 per cent of its total time is attentive to exttasocietal outputs (Categories 8.1 plus 8.3)--exactly the same figure as for Egypt'. However, half (18 of 35) of the Israeli' behavior units beyond the routine--Category 8.3.4--are relatively passive, in the nature of complaints, protests, etc., in contrast to the Egyptian' behavior units, only 1 out of 23 of which covers a request. Also, the Israeli' feedback is domestic only, an implication that its extrasystemic outputs are either trivial or ineffectual.

8) There is 0 perception of success (Category 9.4.1). Things are worsening (Categories 9.4.2 and 9.4.3). The domestic[1] feedback (Category 9.1) is entirely indicative of dissatisfaction: the government should resign, for Israel's position has declined from that of victor to that of pawn between the great powers;[2] Shepilov visited Egypt, why not Israel?;[3] lack of government initiative is to blame

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[1]Domestic material is not included in the percentage calculations, but will be introduced wherever it serves qualitatively to illuminate a point.

[2]Jerusalem Radio, June 18, 1956, Reportage of Knesset debate.

[3]Jerusalem Radio, July 18, 1956, Reportage of Knesset debate.

for the fact that Israel is "overlooked" again;[1] Israel's foreign policy is partly to blame for the exclusion of Israel's interests from the Suez Canal discussions,[2] etc.

9) Finally, the "learning" category reveals no re-enforcement of behavior. We do, however, find both extinction and the undertaking of search activity. Fifteen of the 27 units in Category 10 are devoted to the thought that the United Nations, having failed to enforce Israeli use of the Suez Canal and having failed to maintain border peace, should not be relied upon. This lession, "there is no sense in being faithful to the United Nations where the organization is ineffective"[3] is accompanied by a change in behavior pattern: since Jordan has "disregarded former protests," Israel makes no more formal complaint to the Armistice Commission.[4] The restructuring of the authorities (3.8 per cent of all units, as compared with 0.3 per cent for Egypt) is tied in the material to the "aggravated" defense situation.[5] Moshe Sharett resigns as Foreign Minister because of "personal difficulty" in working with the (more aggressive) Premier-

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[1]Jerusalem Radio, August 16, 1956, Review of the Press: Herut.

[2]Jerusalem Radio, August 20, 1956, Review of the Press: Hakol.

[3]Jerusalem Radio, August 9, 1956, Review of the Press: Herut.

[4]Jerusalem Radio, July 7, 1956, News broadcast.

[5]Jerusalem Radio, June 19, 1956, Ben-Gurion statement in Knesset.

Defense Minister, David Ben-Gurion. Golda Meyerson (later, Meir) succeeds. In addition to the adaptive restructuring of authority, the conclusion is drawn that Nasser's success is a consequence of the "helplessness" shown by the West and that the lesson of the Canal is, "be strong."

Altogether, Israel' (profile-Israel) at this time might be said to evince a "dissatisfaction syndrome" and to suggest a system under unrelieved stress. Israel' is watchful, sees trouble, doubts its present ability to cope, searches for a solution, tries, sees no success, drops an old behavior pattern and searches for a new one.

Our data on Israel suggests four particularly interesting questions:

1) What accounts for the apparently "normal" and effective functioning of so new a society?

2) What light can the data shed on two partisan perspectives on Israel; is she vulnerable or aggrandizing?

3) How is the internal political struggle linked to the extrasocietal parameter?

4) Is Israel "learning" militarism?

To the extent that Israel' reflects Israel, the material suggests some conclusions about these questions.

Regarding Question (1), we have noted that the Israeli' attentiveness to its systemic nature falls between that of Egypt' and Syria'. The figures might, as we have suggested, simply be reflecting the amount of coverage--varying, as they do, directly with the amount of material. The background suggests, however, that they reflect realities: the

large Egyptian' figure suggests such aroused self-awareness as would naturally accompany the departure of occupying forces and the low Syrian' figure may mirror a real lack of systemic cohesion, as our earlier discussion suggests. That the Israeli' figure appears intermediate or "average" even in this three-nation universe is noteworthy in light of the fact that, in 1956, the state was but eight years old. More significantly, "alone among the nations of the world, most of its adult citizens were born elsewhere, and have come to the country with some part of their diverse native cultures still intact."[1] "Moreover, they came into the new state . . . without bringing with them adequate capital of their own."[2] Yet it is clear that Israel has functioned from the beginning effectively as a system. "More significant than the specific mechanisms of Government is the fact that there has been no really fundamental challenge to the authority of governmental institutions since independence. Taxes are collected, laws obeyed, court edicts upheld, legislation passed, and elections held, with no untoward difficulties."[3]

In addition, like Egypt' but in contrast with Syria,' Israel' evinces independence of authoritative decision-making.

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[1]Leonard J. Fein, Politics in Israel, The Little, Brown Series in Comparative Politics (Boston: Little, Brown and Company, 1967), p. 1.

[2]S. N. Eisenstadt, "Israel: Traditional and Modern Social Values and Economic Development" in Rivlin and Szyliowicz, Contemporary Middle East, p. 397.

[3]Fein, Politics in Israel, p. 30.

Egyptian and Israeli attentiveness to evaluation, assessment of capability, decision-making, and behavior are strikingly comparable: 18.6 versus 21.1 per cent; 14.1 versus 14.1 per cent; 6.1 versus 9.3 per cent; and 19.6 versus 19.1 per cent, respectively (see Figure 4).

An answer to why Israel so early manifested a well-functioning societal system and authoritative "decider" may lie in the fact that Israel represents, in a sense, the reverse of the Syrian political experience. Where Syria had a territory but was inhibited by its historically-derived "structure" from developing a sense of statehood and an effective political "decider," Israel had a sense of statehood and a para)political decider before it had a territory. The World Zionist Organization, the Jewish Agency, and Jewish armed forces such as the Haganah and the Palmach antedated statehood.

The Israeli sense of societal identity and acquiescence in a decision system may be, our systemic model suggests, the consequence of two things: 1) the universal minority status in the Diaspora of scattered fragments or "colonies" of what had once been a territorial (Jewish) societal system,[1] and; 2) the "lesson" almost all of these

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[1]The preservation of a characteristic systemic identity or steady state over time and space is suggested by--and in this case illustrates--the tendency of systems in steady state to maintain themselves so, even when fragmented. The perpetuation, e.g., in the American colonies of the British, Spanish, or French ways of life illustrates the same principle, although such colonies--Jewish, British, or whatever--would be expected to adapt and vary in response to local conditions.

had "learned" by 1945--minority status in most cases meant an intolerable assault upon systemic identity. "Nazism gave Zionism its impetus . . . It is misleading to dismiss Zionist propaganda of the time as nothing more than propaganda. It revealed a state of mind--a crisis of awareness--which had done with doubts, hesitations, and qualifications . . . There grew up a desperate conviction that there had to be a state, that it had to work, that it would be unbearable to return to the old ways."[1] As Ben Halpern puts it in more clinical terms: "One major ideological difference existed between historically effective Zionism and the proto-Zionism of earlier decades: the idea of the Return to Zion and of the restoration of Jewish sovereignty was now conceived as a solution for the modern Jewish problem."[2]

This successful integration of diverse peoples into a viable societal system with a viable political system is explicable, essentially, then, in terms of efficiency and effectiveness. The Jewish state is "efficient" insofar as it offers its Jewish citizens something they have come to regard an as overriding value: security from attack upon their personality systems because of their Jewishness. An oleh (new immigrant to Israel) is quoted as saying, "In Rumania I ate better, but here I sleep better." The Israeli political

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[1]Earl Berger, The Covent and the Sword: Arab-Israeli Relations 1948-56 (London: Routledge & Kegan Paul Ltd., 1965), p. 10.

[2]Ben Halpern, "Zionism and Israel" in Rivlin and Szyliowicz, Contemporary Middle East, p. 277.

system's "effectiveness" consists in its successfully preserving such a societal system safe for Jewish values.

Question (2) arises in any perusal of the literature on the Arab-Israeli conflict. The conflict is a severe one, feelings run high, and scholarly objectivity is difficult to achieve. It becomes evident that the clearest clue to a given writer's bias, one way or the other, is to be found in his characterization of any given foray--for truly, one man's "raid" seems to be another man's "retaliation." To historian Kennett Love, e.g., the Suez War of 1956 began with the Israeli raid on Gaza in February of 1955, and after another Israeli storming of Egyptian positions in the Gaza strip in August of 1955, Nasser launched the first Fedayeen reprisal raids and decided upon Russian arms.[1]

> Why did the Gaza Raid rather than some of its own antecedents mark the beginning of the Suez-Sinai Wars? Because it was the last free action in the dialogue between the two nationalist premiers, Ben-Gurion and Nasser. What followed was not freely chosen action but rather reaction and counterreaction . . . Ben-Gurions's personal decision to strike at Gaza--to seed the storm cloud--begins the story.[2]

To George Kirk, on the other hand,

> It is remarkable that . . . perspicacious analysts of the Middle East crisis . . . should have chronicled the Gaza raid as 'one of the most fateful dates in Middle East history' without even mentioning . . . [he goes on to quote The Times] . . . 'the exasperation caused in Israel by espionage, raiding, and sabotage directed from the

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[1]Kennett Love, Suez: The Twice-Fought War (New York: McGraw Hill Book Company, 1969), pp. xvii-xviii.

[2]Ibid., p. 4.

> Gaza enclave . . . as well as . . . the continued detention of the freighter Bat Galim; the interference with Israel-bound traffic in the Suez Canal; the execution of two of the Jewish defendants in the Cairo spy-trial . . .[1]

Within the United Nations forces in the Middle East, differing perspectives upon these events caused some Chiefs of Staff or Mixed Armistice Commission Commanders to be regarded as pro-Israel, others as pro-Arab.[2] Thus, not only the protagonists but scholars and servants of world peace "see" different significance in the same events. And perhaps therein lies the heart of the conflict. Perhaps the same event really is several different things.

Given two systems in steady state, if their steady states "overlap" in such a way that each requires the same (finite) factor or value to maintain itself, then each sees its own claim upon the value as a matter of necessity and right and the other's claim as a usurpation and act of aggression. Each "truly" perceives itself as threatened and the other as aggressor. Without rehearsing all the arguments on both sides of the Middle East conflict, it is patent that such differences in perception and evaluation are quite characteristic. Basically, the Arab states see Israeli occupation of a territory within the Arab lands as an act of aggression and her occupation of more territory with each war

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[1]George E. Kirk, Contemporary Arab Politics: A Concise History (New York: Frederick A. Praeger, 1961), pp. 35-36.

[2]Berger, Covenant and Sword, pp. 70-71.

as confirmation of aggressive intent; Israel sees Arab border violations as acts of aggression and Arab threats, boycott, and refusal to make peace as confirmation of their aggressive intent.[1] Each side therefore sees its own exercise of force as defensive. Nasser:

> We never intended to strengthen the army for wars. . . . We want arms so that we can be tranquil, so that we feel at peace and not threatened.[2]

Ben-Gurion:

> On 28 October there was a meeting. . . . I told them that we must destroy the bases of the Fedayeen in Sinai. And this was our aim in invading Sinai . . . Since then we have had less trouble with the Gaza strip. . . . So the main aims which we had in going into Sinai were achieved.[3]

As between rival claims to the same value, unless one espouses a particular broader frame of reference (e.g., all United Nations members deserve respect for their integrity; all [democratic, Arab, Jewish, Muslim] societies deserve the backing of all other [democratic, Arab, Jewish, Muslim] societies), there is no judging. "Two vital claims are opposed to each other, two claims of a different nature and a different origin . . . between which no objective decision can be made as to which is just [and] which is unjust."[4]

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[1] See, e.g., Bernard Lewis, "Friends and Enemies," Encounter, February, 1968.

[2] Quoted in Love, Suez, p. 24.

[3] Quoted in Peter Calvocoressi, Suez: Ten Years After, Pantheon Books (New York: Random House, 1966), p. 71.

[4] Martin Buber, quoted in Love, Suez, p. 26.

There is also no hope for reconciliation;[1] "There is no middle ground between Arabs who lament their lost Palestinian 'homeland' and Jews to whom every inch of Palestine is sacred soil of Zion."[2] In the last analysis, there is but one way in which such genuine conflicts of interest can be ended; one side or both must adapt, accepting a new steady state, with a different value for a critical variable (in this case, territory) which somehow eliminates the area of overlap. But such adaptation must be "learned," through re-enforcement and extinction, carrot and stick: is the value worth the cost? The calculus can be acted out physically or anticipated mentally. The cost can be imposed by antagonists on each other or by a third party.

Despite compromises, such as the Arab signing of the General Armistice Agreements in 1949 or the Israeli pull-back out of Sinai in 1956, neither side has accepted renunciation of its claim to the disputed area as homeland. Neither has "had to learn" to adapt--Israel because it has been able to maintain and enhance the defensibility of its boundaries and because its stakes are high, for its population has nowhere else to go, and the Arab states because their losses have not been more than they have been able to tolerate and because they feel time and numbers are on their side. This conflict

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[1]See, e.g., Love, Suez, p. 34 and Berger, Covenant and Sword, p. 9, for essentially the same view.

[2]John C. Campbell, Defense of the Middle East: Problems of American Policy (New York: Frederick A. Praeger, 1960), p. 321.

over incompatible goals is, therefore, likely to continue into the indefinite future, barring a deus ex machina in the form of big-power massive interference.

Perhaps there is room for one kind of meliorative process in such situations. The general tendency of each side to regard specific behaviors of the other as aggressive can be exaggerated to a perception of the other as bent upon limitless domination--which may or may not be the case. Perhaps the scholar can play a relevant role by providing a relatively objective "reading" of predispositions and intentions, so as at least to diminish the probability of escalation based upon misunderstanding. The point is suggested, to return finally to our data, by its reflection upon two common perspectives on Israel. To most Jews and to others recalling the holocaust, Israel is seen as a beleaguered refuge for a mistreated people who wish only to live in peace. To most Arabs and to some of the New Left, Israel is seen as a confident, aggressive, imperialist state.

In the summer of 1956 what were Israeli' self-perceptions? Was she confident or fearful, determined or uncertain? The data suggest, first, that Israel' was not exercising will, as would be indicated by closure to external information; Israeli' attentiveness to external events was high (18.4 per cent as compared with 3.8 per cent for Egypt). One hundred per cent of Israel's attention to the steady state as a general value (Category 2.1.2) focussed upon peace and

security,[1] compared with 22 per cent for Egypt. Evaluation of events brings Israel, as we have said, to the conclusion that it is threatened. Egypt is seen as planning aggression while the United Nations' cease-fire arrangement is breaking down. The Israeli power assessment is negative, as we have noted. Israel at this time sees itself as at an arms disadvantage with respect to the Arabs, whom both the Soviets and the West are arming while it falls further behind. It sees the United States' Middle East policy as "bankrupt,"[2] the West no longer able to impose peace in the region,[3] and the Soviets ranged against it and against peace. Israel is deciding and behaving, but there is no perception of success. The domestic feedback indicates only dissatisfaction with Israel's decline in international position, its being snubbed by Russia, and its exclusion from the Canal.

The content analysis findings, for this brief period at least, tend rather dramatically, then, to sustain one perception of Israel over another. They tend to bear out, e.g., Berger's definition of the situation:

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[1]This is substantiated for a later period by the Cantril survey (Hadley Cantril, The Patterns of Human Concern [New Brunswick, N.J.: 1966]) "which shows that . . . war if by far the most pervasive fear, and this is true for every subgroup within the population. . . . Similarly, peace with the Arabs is the chief hope for the nation, for the population as a whole . . ." (Quoted in Fein, Politics in Israel, p. 201).

[2]Jerusalem Radio, May 22, 1956, Review of the Press: Hamodia.

[3]Jerusalem Radio, May 24, 1956, Review of the Press.

> April 1956 was a very bad month for the Israelis. The armistice regime was in ruins; the Security Council was useless; the Tripartite Declaration was virtually disowned . . . All the safeguards laboriously built up around the cease-fire in 1948 had disappeared . . . Fedayeen, controlled by Egyptian military attaches, operated across all four of Israel's borders. . . . By early 1956 the Israeli population was severely exercised by its lack of security and its grim future prospects.[1]

The findings would tend to contradict Love's characterization:

> For the Israelis, the modern world's most purposeful adepts at improving upon their own history, Suez served as a rehearsal for the reprise nearly eleven years later in which they won larger and more enduring conquests.[2]

Our findings and conclusions, of course, reflect the situation only in May-August of 1956. Israel received French planes and arms during the summer, and invaded Sinai at the end of October. Although we cannot undertake it here, a similar study of the later summer period is very inviting. One would hypothesize little significant change in Egyptian perceptions between mid-August and the invasion, but analysis should reveal considerable change in the Israeli material.

What light can the data shed on (Question (3)) how the internal political struggle may be linked to extra-societal parameters? During the subject period, there was a change in Israeli authorities; Moshe Sharett resigned as Foreign Minister under pressure from Premier-Defense Minister

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[1]Berger, Covenant and Sword, p. 206.

[2]Love, Suez, p. 2.

David Ben-Gurion. The data, projected against the background, seems to bear out the notion that part at least of the internal struggle takes place over not only the authoritative allocation of value, but the authoritative allocation of activity.

Border violations constitute the largest single class (47 per cent) of outputs of other entities attended to during the subject period. The high-priority goal of their elimination is not contested. What has been contested within the country up to the point with which we are concerned is the means for securing that value. Ben-Gurion was Defense Minister and Premier from 1947 to 1963, except for fifteen months in 1953-55. It was he who transformed Israel's "voluntary, semi-professional, and highly politicized security organization into a unified, compulsory, professional, and depoliticized army."[1] Gen-Gurion and his follower, Moshe Dayan, advocated a policy of retaliation and border raids (and the pre-emptive strike) to punish and forestall violations. On the other hand, ". . . although he was not opposed to the strengthening of Zahal [the regular Israeli army] . . . Sharett advocated adopting an attitude of conciliation towards the Arabs, thereby hoping to strengthen the position of moderate leaders in the Arab world."[2] (Both Ben-Gurion and Sharett, it should be noted, were members of the same

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[1]Amos Perlmutter, Military and Politics in Israel (New York: Frederick A. Praeger, 1969), p. 54.

[2]Ibid., p. 84.

party, Mapai, "pre-eminently the party of the establishment,"[1]--although Ben-Gurion, together with Dayan, split off to form the Rafi party in 1965.)

In general, "the struggle for political power in Israel in the decade and a half between 1953 and 1968 took place over Israel's defence and foreign policies."[2] In 1949, it had become evident that the armistice agreements were not being followed by a peace settlement as the Israelis had anticipated they would be.

> In politics what matters is not the truth but what people think is the truth. The Israelis were convinced that the Arabs did not want to make peace . . . This meant that the 'activists'--Premier David Ben Gurion, the Ministry of Defence and the Army--inexorably took control of policy towards the Arabs away from the Foreign Ministry, stronghold of the 'moderates' led by Moshe Sharett.[3]

In October of 1953, Israeli troops, reacting to a wave of raids, destroyed the village of Qibya, killing over fifty civilians. In December, Ben-Gurion retired and Sharett became Prime Minister: ". . . the public's strong reaction against the excesses of Qibya had given him and the other moderates considerable influence over border policy."[4] A promising Nasser-Sharett rapprochement failed, after which border incursions accelerated and penetrated deeper.

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[1]Fein, Politics in Israel, p. 77.

[2]Perlmutter, Military and Politics in Israel, p. 80.

[3]Berger, Covenant and Sword, p. 15.

[4]Ibid., p. 101.

> [Egyptian Minister of National Guidance] Salim's statements, together with the strong evidence of organized sabotage, painted too plain a picture for the Israelis to ignore. The position of the moderates, particularly Prime Minister Sharett, became increasingly difficult. On 17th February 1955 Ben Gurion returned from his retirement in the desert to become Minister of Defence.[1]

On February 25th the Gaza raid was launched. Nasser made a deal for Czech arms, and by April of 1956 Ben-Gurion, who had also become Prime Minister in November of 1955, had decided that war was inevitable, while Sharett held to his views.

> There had been no 'official' retaliation raids, not even during periods of great provocation. The one exception, Tiberias, had been undertaken without his knowledge when he was out of the country. Considerable effort--to the extent allowed by public opinion--had gone into co-operating with the Egyptians and Hammarskjold but there was nothing to show for it. . . . Every day Israel's position compared to that of the Arabs continued to deteriorate. Every day their capacity to destroy her increased.[2]

Sharett was removed from the cabinet in June:

> The reason B-G forced my resignation was because he felt that I was an impediment to his policy . . . He insisted I had to go and threatened to resign. My colleagues said they couldn't permit this because we needed him. Which meant they didn't need me.[3]

What we are suggesting is that Ben-Gurion and Sharett represented alternative "programs" for behavior with respect to alleviating what they agreed was a major stress: border violations. Throughout the years, each continued in his viewpoint, and doubtless each strove continually for the

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[1] Ibid., pp. 180-81.

[2] Ibid., p. 202.

[3] Quoted in Love, Suez, p. 123.

impress of his policy upon the public and within the "political machinery." Love's opinion that "men bulk larger in the story than governments or impersonal societal forces" notwithstanding, it appears evident from the foregoing brief history that each shift in power was presaged by unfavorable extrasystemic and domestic feedback, as if extinction and search for alternatives were preconditions to a power shift. "The public" and "my colleagues" opened the way for replacing one tack with another.

Our data for the subject period, in the middle of which such a change took place, reveals the existence of the appropriate conditions: 1) continuation of stress; 2) discrediting of (the Sharett policy) hope in others; and 3) the old lesson, "compromise with dictators to avoid war brings war nearer" and the new lesson, "be strong," both reflecting the Ben-Gurion alternative. In other words, "ineffectiveness," an unrewarded societal activity pattern, evokes alternatives and a power shift.

The subject period discloses a shift towards a military solution (Sharett ouster; "be strong") in the light of an unrewarded alternative means (complaint to the U.N. Mixed Armistice Commissions). Theoretically, extinction of unsuccessful behavior is followed by a search for alternatives, while successful behavior is resorted to under parallel circumstances, thus "conditioning" the society's behavior. Question (4) asks whether Israel is not being "conditioned" to military behaviors. The briefest historical sketch sug-

gests she may well be, despite a characteristic Jewish disinclination to physical violence.[1]

British promises (the Balfour Declaration), contradictory to those she had already made the Arabs, established Jewish settlement in Palestine as legitimate. (To the Arabs, of course, Britain was giving what was not hers to give. We are, however, dealing for the moment only with Israel and its perceptions, behaviors, and learning--without prejudice to other societies' perspectives on the same events.)

Under the Mandate, what Fein has called "British non-feasance"[2] made self-help a necessity for the Jewish settlers. Arab raids in the 1920's and 1930's were met with force--at first only in reaction to Arab initiatives. Later the policy of Jewish counter-raids was initiated; meeting with success, it came to form a habitual element in the Israeli repertoire of behaviors. "Their punitive retaliations inflicted more casualties and damages on the Palestinian Arab community than Arab terrorists inflicted on the Jews. Independent Israel continued the pattern, striking with gunfire and explosives at Arab villages beyond her borders in raids designed to punish past incursions and deter future ones."[3]

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[1]See Howard Singer, Bring Forth the Mighty Men: On Violence and the Jewish Character (New York: Funk and Wagnalls, 1969), Ch. 3.

[2]Fein, Politics in Israel, p. 34.

[3]Love, Suez, p. 10.

In the 1940's, when Britain was limiting Jewish immigration into Palestine while those who had survived the killing of six million of their numbers lingered on behind barbed wire, the Israelis "found that 'model deportment had brought compliments and ultimate disaster,' while 'gunpowder and dynamite earned them ultimately the coveted prize (a state in Palestine).'"[1] This constituted another re-enforcement for arms, while the British White Paper of 1939, the refusal of the Allies to bomb gas chambers or railroads leading to concentration camps, and the disinclination of the Allied countries to accept Jewish refugees all combined to discourage faith in the big powers.[2] The words of the Talmudic sage, Hillel, came to be quoted more and more often: "im ayn ani li, mi li?" (If I am not for myself, who will be for me?)[3]

The United Nations Partition Plan established the Jewish society's sovereignty over a territorial base. The Arab military challenge to the new state was met and overcome not by the U.N. but by Israel itself, re-enforcing military behavior. By the period with which we are concerned, the United Nations' inability to maintain the safety of her borders was "teaching" Israel that "there is no sense

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[1]Alfred M. Lilienthal, There Goes the Middle East (New York: The Devin-Adair Company, 1957), pp. 111-12, quoting Moshe Brilliant, New York Times reporter in Tel-Aviv.

[2]See Singer, Bring Forth, Ch. 4.

[3]Hillel added, "When I am only for myself, what am I?"

in being faithful" to the U.N. United Nations' failure to ensure Israeli use of the Seuz Canal, access to holy places in Jerusalem, and observance of other armistice terms had made the way for this conviction.

Military action, in co-operation with France and Britain, brought Israel success in the Suez War. Under big power pressure, Israeli forces withdrew from occupied territory, only to find that, despite whatever assurances had been received from the United States, the situation was essentially unchanged, with the Canal denied and Egypt once again in control of Gaza and the heights commanding the Straits of Tiran. When Egypt closed the Straits again in 1967, Israel made the pre-emptive strike, gaining more defensible borders and control of the Gulf of Aqaba.

This precis reveals an almost entirely consistent pattern of simultaneous reward for Israeli use of arms and discrediting of faith in others. A survey of the Israeli memory circuit today would suggest the response to arguments that Israel withdraw from occupied territories, rely on U.N. border forces, or trust in big-power guarantees: we tried it and it did not work. Conversely, to the arguments against military solutions, it might answer: force is the only thing that has worked.

Egypt--Success Story

What do the results of the tally tell us about Egypt in mid-1956?

1) The Egyptian material includes considerable reference to systemic self-awareness, as the large Category 1 suggests. Even with the elimination of domestic material, Egypt devotes 8.9 per cent of her attention to her systemic nature, as compared with 3.9 per cent for Israel' and 2.0 per cent for Syria'.

2) Self-determination is a very important value at this time. It occupies 25.9 per cent of Category 2, as opposed to 0 for Israel'. Within subcategory 2.1.2, "steady state as general value," self-determination accounts for 77.6 per cent of the space, the other 22.4 per cent being devoted to peace and security.

3) The Egyptian material reflects very little attentiveness to events in the environment, to the behavior of others. 3.8 Per cent of the Egyptian material is devoted to Category 3, contrasted with 18.4 per cent of the Israeli material and 15.1 per cent of the Syrian.

4) Evaluation of the motivations of others (Category 4.2.2) in the Egyptian material centers upon self-determination. Of this subcategory, 67.5 per cent is devoted to an estimation of the United States and/or the West as out to dominate Egypt, oppose its independence, oppose its nationalism, its freedom. The establishment of Israel represents a stress; opposition to it and to imperialism are goals.

5) Memory in the Egyptian material focusses upon the bitterness of foreign rule, the frustrated hopes for independence, and the final success of the Revolution. It dwells

upon an unsuccessful behavior--the agreement with Britain regarding the Suez Canal which resulted in the loss of Egyptian independence (Category 5.3.2). Egypt' (profile-Egypt) does not want to repeat this experience.[1]

6) Egyptian' power assessment is favorable, as we have remarked. Unlike the situation in 1948, Egypt's men now have arms; it has a population of 23 million "ready to die" for what it values. The West needs oil, trade, and military bases in Arab lands. Russia backs Egypt against the West regarding the nationalization of the Canal,[2] and Russia has a veto in the U.N. British imperialism is ending in Aden; France is tied down in and unable to defeat Algeria.

7) One-third of the space devoted to "pro's" and "con's" rehearses the pitfalls of "unequal" alliances which the West wants as the price of aid. The decision: Egypt' will work hard for its goals (17 units), build the dam itself (16 units) and found its defense solely upon the Arab nation (20 units). These units account for 91 per cent of Category 7.3.

8) The major Egyptian' behavior during this period was the nationalisation of the Suez Canal with the announced intention of applying the profits to the building of the dam.

9) Domestic feedback conveys only support. Foreign reaction was attended to (Category 9.2.1 refers only to the

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[1]Cairo Radio, July 26, 1956, Nasser speech in Liberation Square.

[2]Cairo Radio, August 10, 1956, Review of the Press: Al-Shab.

Canal issue), and support is seen to outweigh opposition (73 units versus 14 units). All counteractions were dismissed as ineffective and the conditions after behavior were adjudged either perfectly successful or satisfactory.

10) As to learning, there was extinction of the former pattern of dependence upon others; the Arabs will rely only upon themselves. Egypt will accept no strings, no economic dependence. There was reenforcement for independent behavior. It was effective: it earned friends and got Egypt unconditional aid and arms. It was successful: Nasser won the fight against imperialism, demonstrating that right confers might. Threats were defied, counteractions rejected as insignificant.

The general profile of Egypt' which emerges at this period suggests successful self-assertion. Aware of herself, bent upon self-determination despite the desire of others to inhibit her, paying little attention to the behavior of others, assessing her powers as adequate, Egypt' (the profile reflected from the material) makes (we so characterize the output pattern) decisions, carries them out, and, discounting counteractions and aware of vast support, assesses her behavior as successful. This appears to be a particularly clear example of the exercise of "political will" as Deutsch defines it:

> Will may be taken to consist in the putting into operation of data proposed from the past of a decision-making system in such a manner as to override most or all of the information currently received from its environment. . . . Emotionally, it may mean to individuals and groups the acting out of their own preferences, personality characteristics, and culture patterns, unburdened by

> the task of having to reassess or revise them in terms of ever new data from the present.[1]

As Deutsch also makes clear:

> Will is thus ineffective without power; but power is only randomly effective without will. . . . By the power of an individual or organization, we then mean the extent to which they can continue successfully to act out their character. . . . Power in this narrow sense is the priority of output over intake, the ability to talk instead of listen. In a sense, it is the ability to afford not to learn.[2]

While the material on Israel lends itself to analysis of a society's internal decision process, including as it does debates, criticisms, and alternatives to policy, the very absence of these elements from the material on Egypt permits us to treat of that society as if it were monolithic, and so to illuminate starkly the entire system-event-decision-behavior-feedback-learning chain we have postulated.

We indicated in the discussion of Israel that Egypt's attentiveness to evaluation, assessment of capability, decision-making, and behavior is closely comparable to that of Israel; both systems, in contrast with Syria, evince independence of authoritative decision-making. During the period with which we are concerned, the chief issue for Egypt was the nationalization of the Suez Canal Company; the Arab-Israeli conflict was distinctly a secondary issue

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[1] Deutsch, Nerves of Government, p. 246.

[2] Ibid., pp. 110-11.

for Egypt at this time.[1] Only 9 per cent of Category 4 referred to Israel or Zionism.

Prior to this period, Egypt had refused the conditions under which the United States was willing to supply arms, and had turned for the first time to the Eastern bloc, obtaining arms on a no-strings basis from Czechoslovakia. As the period began, Egypt extended full diplomatic recognition to Communist China and soon after that Nasser joined in the Brioni Conference with other leaders to affirm their neutrality in the Cold War. Suddenly, the United States, through Secretary of State Dulles, withdrew its offer to help finance the Aswan Dam. This event and those that followed illustrate the behavior of a system under stress. To trace that behavior we will "pull out" of the data material concerning this issue.

To begin with, Egypt, like Israel, but unlike Syria, represents a well-integrated <u>system</u>. Eighty-six units, some 44 per cent of the large Category 1 (corrected to exclude domestic material), are devoted to collective qualities and fate. Isolated for millenia by two deserts, the Mediterranean, and the cataracts of the Nile, Egypt has

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[1]The material indicates that Egypt was "playing it down": there is no mention of Zionism at all in several of Nasser's lengthy speeches and press conferences just after nationalization, and a broadcast in Hebrew from Cairo (not used in our calculations) congratulates Israel on its aloofness from the West regarding the nationalization. Israeli assessment of Egyptian motivations (Category 4.2.2) notes an Egyptian disinclination to antagonize her during the Canal takeover period.

managed to absorb a succession of conquerors into one civilization, bound by dependence upon the Nile. It was unified, further, in this century by an awareness of nationalism such as stirred many peoples. The longing to be rid of British occupation cut across class lines and other cleavages in the society. "The rapid response, particularly to challenges or affronts, which characterizes Nasser's conduct of foreign policy is made possible by the highly centralized system of policy and strategy formulation. Its explanation lies in the Egyptian--and Arab--sensitivity to insults, inherited from long years of discriminatory treatment by foreigners."[1] The material indicates, further, that this system is bent upon self-determination. "Nasser's use of public media of communication . . . is much more than an indulgence in Arab fondness for poetic expression. Behind it lies a deeply held belief in the power of self-determination."[2]

Is Nasser "a giant who molds historic forces to his own will, or is he simply the instrument through which these forces express themselves?"[3] The answer may well be, "both." In our terms, if an entire society achieves for its coordinated activity "polarization" in the form of authoritative, "dominant-myth," definitions of self, of event, of policy, etc., then both leader and subjects feel constrained

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[1]Cremeans, "Nasser's Approach," p. 512.

[2]Ibid., p. 514.

[3]Ibid., p. 508.

to behave as though governed by these definitions. (Theoretically, only a lack of success would bring latent misgivings and alternatives to the fore; e.g., the emergence in the United States of criticism of the Viet Nam war took place in the context of evident inability of the society to achieve the goals it had set itself.) It is in this sense, then, that "propaganda has a life-force, a power of its own. It becomes policy, it makes policy. It forces the leaders to do what they now primised."[1]

This system had, prior to the subject period, decided upon the goal of building a dam, presumably to relieve stresses upon the economic and other subsystems. "President Nasser described it as the most enduring monument Egypt has ever constructed, more important than the largest pyramids, and the Dam would be for the living not for the dead."[2] "The Dam was something that Nasser had set his heart on. It was to be the centrepiece of his domestic programme and it seemed that the American and British governments, and the World Bank, were prepared to finance it with certain considerable contributions from Egypt. Then in the middle of July 1956, the Americans went into reverse."[3]

The United States introduced certain conditions about the Egyptian economy and riparian rights for the

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[1]Berger, Covenant and Sword, p. 178.

[2]Emil Lengyel, Egypt's Role in World Affairs (Washington, D.C.: Public Affairs Press, 1957), p. 57.

[3]Calvocoressi, Ten Years After, p. 5.

Sudan.[1] This event was then evaluated. ". . . Abdel Nasser protested that these conditions were prejudicial to Egypt's sovereignty, . . . that they represented 'a trick and a very major act of deception,' and that the intent behind them was 'economic domination and despotism.'"[2]

Reference to memory informed the decider that Britain's entrée into Egyptian affairs had come by way of a similar pact, and "its forces continued to occupy the homeland, infiltrate its affairs, and dominate every minor and major issue until the popular revolution . . ."[3] (The patent Egyptian disinclination to undertake any pact requiring a commitment may be laid to this memory.) Also, Egypt had "learned" (and remembered) that it could take what it needed. It had succeeded in overthrowing Farouk, seeing the British out, and obtaining Russian arms.

Reference to capability suggested that the means of self-assertion were at hand, making an acquiescence in American terms unnecessary. The last British troops had just left and Egypt was receiving arms from the Soviets. "Here was the promise of armed strength such as the Arabs had never known before. . ."[4] The data indicates, as we have seen, a favorable capability assessment.

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[1]Kirk, Contemporary Arab Politics, p. 41.

[2]Ibid., pp. 41-2.

[3]Cairo Radio, May 31, 1956, Nasser interview with Kamil al-Shinnawi, Editor, Al-Jumhuriyah.

[4]Campbell, Defense of Middle East, p. 91.

The decision was then to be made. What action would be taken? "The next day we began the meetings and discussions, and we studied the whole situation. On the 23rd we decided to nationalize the Suez Canal Company."[1] Nasser wrote an "appreciation" of the situation, and decided that France was too preoccupied in Algeria to react with armed force and that Britain would not be able to act for several months, during which time some diplomatic settlement might be achieved; he excluded Israel altogether.[2]

The takeover was arranged for and the words, "Ferdinand de Lesseps" in Nasser's speech at Liberation Square on July 26th signalled the behavior; Egyptian forces moved in. This action was accompanied and followed by considerable verbal activity aimed at setting the record straight, reassurance that the nationalization was no threat to the freedom of the Canal, and generally persuading others to accept the action (57 per cent of Category 8.1 refers to the Canal and to the London Conference set up to discuss it).

Egypt attended to feedback. There was adverse reaction, "as anticipated," from the West, but the British actions of freezing Egyptian sterling reserves and calling the London Conference were dismissed as inconsequential. On the other hand, Arab support was enthusiastically favorable. "He won this impressive support because his successes

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[1]Nasser, quoted in Calvocoressi, Ten Years After, p. 44.

[2]Love, Suez, p. 336.

corresponded to the profound emotional desires of so many Arabs: to assert pride in themselves, their feeling of unity, their right to equality, their sovereignty, their place in the sun. . ."[1] "As he walks on the world stage, millions of Arabs see him playing the role they would like to play and doing the things they would like to do. When Nasser denounces the 'imperialists and their agents and stooges' and tells them that he will have no more of their interference in Arab affairs, he says things that are in the hearts of individual Arabs everywhere . . ."[2]

The action, as of the end of this period, was a success. "Nasser was riding high"[3] but in this exercise of will "President Nasser and his government managed to antagonize just about everyone who was in a position to do them harm."[4]

The rest of the drama moves beyond our scope. Egypt was of course attacked by Britain, France, and Israel. Israel's military success in the Sinai desert was a humiliation, but when all the dust had settled, as it were, Egypt returned to her geographical boundaries, reoccupied Gaza, and emerged in control of the Canal; and the dam got under way.

Figure 5 summarizes the whole process diagramatically.

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[1]Campbell, Defense of Middle East, p. 77.

[2]Cremeans, "Nasser's Approach," p. 508.

[3]Love, Suez, p. 334.

[4]Berger, Covenant and Sword, p. 213.

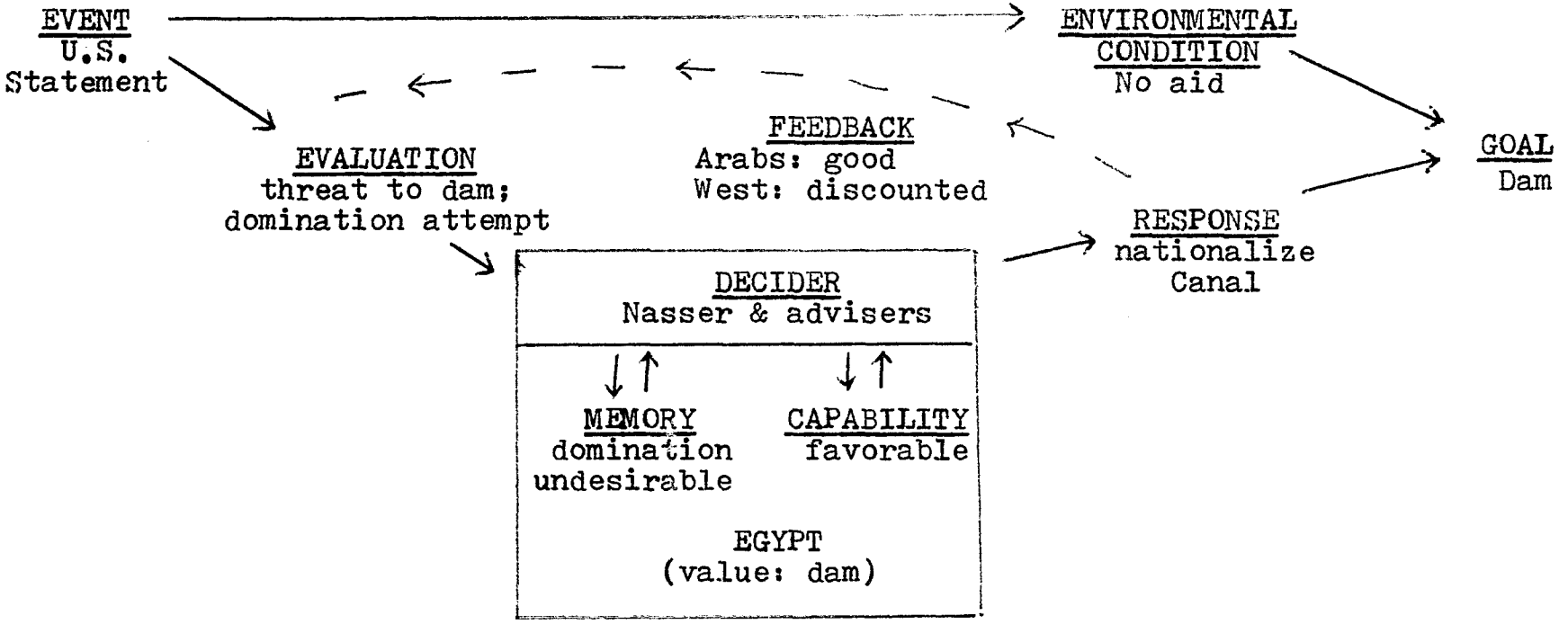

Fig. 5.--The Nationalization of the Suez Canal as an Adaptive Response

Conclusions

Over all, the data for this 100-day period seems to correspond with our general knowledge of the Egyptian, Israeli, and Syrian political systems. In some ways the results seem to throw light upon some phenomena or serve to organize others within a framework. The study is primitive, the period a small one in the scheme of things, and the results must be regarded as tentative, but it would appear that the Reports, analyzed in terms of the categories derived from the theory, are compatible with the framework suggested by the theory. All in all, the scheme proved exhaustive; no patently unclassifiable material was encountered. Such unpredicted elements as emerged served to elaborate the scheme in reasonable ways. No unpredicted elements denied the scheme.

There are hints in some of the spontaneous results that use of this kind of analysis might be developed into an instrument of value in "reading" perceptions and predispositions (e.g., Israeli attitudes) and possibly in prediction of behavior (e.g., Syrian abdication). It could serve as an index to societal "rationality" in terms of intersubjective correspondences. For example, Israel and Egypt, although conflicting in interest, appear "rational" insofar as they both see what looks like essentially the same world: they see each other as antagonists, Egypt sees itself (and Israel sees it) as successful, getting its

way, asserting itself; both see the West as losing control in the Middle East and the Soviets as involved in, if not the key to, the Canal situation.

As to the ramifications of the empirical study upon the theory as such, then, we can only conclude that the conceptualization has been in some part roughly operationalized and bolstered by some confirmatory instances, while no significant disconfirmatory instances have arisen.

The theory offers certain advantages which may make it worth pursuing. It accounts for the universal nature of the values independence, freedom, and sovereignty and for the universal regard of one's own forces and military behaviors as "defensive." It accounts for some internal change as a function of inability to cope with external stresses. It offers a theory of modernization based upon the necessity, when in contact with more advanced societies, for "underdeveloped" societies to change somewhat in order to remain as much the same as possible--in other words, to adapt. It offers a cross-cultural comparability of process, despite differences in societal identity and "life-space," suggesting, perhaps, that there are no villains and no heroes. It suggests a categorical imperative. In our increasingly-interacting world, each society, in acting, is also teaching. Conditioned behaviors will add up to the world system that is emerging. Developing a capacity for taking the role of the other, an element in community-building, becomes therefore a Golden Rule of international political morality.

APPENDIX A

SCIENCE AND POLITICAL SCIENCE

Epistemologists[1] tell us that an individual's "knowledge" of anything, whether directly evident or not, rests ultimately upon two factors: raw perception and some assumptions about the relatedness of things, some pattern which has served to organize previous experience, previous propositions about things. In this sense, "There is more to seeing than meets the eyeball."[2] How we see things depends upon what we have seen, and what we see depends upon how we see things. (Depth perception is a commonplace example, and witness the shifting perspectives and trompes d'oeil evoked by psychologists' drawings to illustrate Gestalt.) Knowledge becomes more certain as one accumulates more and more propositions about reality which concur and re-enforce one another.

If I may offer a homely illustration, I "think I know" that the object I see down the street is my dog because I judge its size to be appropriate by comparison with other

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[1]See, e.g., Roderick W. Chisholm, Theory of Knowledge (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966).

[2]Norwood Hanson, quoted in Abraham Kaplan, Conduct of Inquiry, p. 131.

objects near it whose size and fixed distance from me are matters of experience, because it is the right shape and color, and because its action patterns display conformity with the remembered actions of my dog. I am more certain it is my dog when I hear it bark, and find the sound consistent with my remembered experience of my dog's bark. I "know" it is my dog when it responds to my call and when I feel the familiar texture of its fur. The hypothesis that this is indeed my dog gains strength as each proposition lends support to it. I pay attention to these particular "data" out of all the myriad of observables on the street because I am looking for my dog, on the theoretical assumption that I have a dog. But if my dog had died the week before, I might pinch myself and awake to find that I had been dreaming. And if I find that I had not been sleeping, I might want to reassess my theories of mortality and reincarnation.

This conceptualization of knowledge, it should be noted, is Galilean rather than Aristotelian. It contents itself with relationships among observable surface, or even secondary characteristics, rather than insisting upon grasping some "inner meaning" or "final end." It is a pragmatic conceptualization. All we know of something is how it appears to us over time and under various conditions (and the longer the time and the more varied the conditions, the "better" we feel we know it). There is no recourse to any a priori, absolute, final "truth."

The interplay between observation and theoretical evaluation suggests that, even for the individual, knowledge is a hypothetical matter. Knowledge of things, of others, and of the past must be gleaned through a comparison of perceptions; even the directly evident "facts" must meet the criterion of consistency with other "facts." Where observations fit preconceptions, there is reassuring confirmation. But where anomalous observations are encountered, they must be dealt with, either by testing the observation ("rubbing one's eyes" and looking again) or by altering conceptions. A set of dual criteria, a two-way "fit" for knowledge thus emerges: logical consistency and correspondence with empirical observation. Error is possible in both respects. To explore the consistency of implications of preconceptions is to be philosophical, and deliberately to test those implications against observations is to be scientific.

It should be noted also that the view of knowledge which we have been discussing is essentially inductive. While deductive proof depends only upon logical consistency (if the premise is true, then the conclusion, properly made, must be so), the nature of inductive proof is much more complicated and has still not received epistemological clarification.[1] We observe the sunrise every morning, but cannot have experience of all mornings that have ever been and ever

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[1]Wesley C. Salmon, Logic (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1963), p. 53.

will be. What justification, then, do we have for the generalization, "the sun rises every morning?" What "proof" do we have that it will rise tomorrow morning? The best we can do is build a probabilistic demonstration, based upon many, concurring observations. This is common sense, and it is this sort of conclusion which guides our everyday activities. When conscious care is taken that there be enough observations, unbiased observations, and observations under as varied conditions as possible, for the explicit purpose of testing implications of the generalization, then we are by way of doing science.

There is no such thing as a "scientific method" in the sense of a set of techniques which guarantee success in the achievement of knowledge. Science, rather, constitutes a method in the sense that it is attentive to procedural rules, to methodology, to what has been called its "logic of justification."[1] Scientific procedure is often described as involving four steps--not necessarily descriptive of an actual sequential practice, but meant rather to distinguish analytically some aspects of the ever-interacting, observing-reasoning-observing process we have been discussing.

The first step could be called generalized experience. It involves practical familiarity with a body of phenomena, such as is acquired by an observant traveler, a

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[1]Richard Rudner, Philosophy of Social Science (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966), p. 5.

laboratory putterer, a bird watcher, journalist, or careful student of human nature. Such experience is built upon deliberate and careful attention to a subject, and may include some preliminary experimentation upon materials or "experiments in the mind." However, while obviously some unifying abstraction serves to distinguish for the interested one those elements of experience which fit into his areas of attention from those which do not, the unifying conceptualization remains unconscious, implicit, inchoate.

The second step involves an inductive leap, culminating in the formulation of a theory, a hypothetical statement identifying and linking significant variables. "The essence of scientific genius (whether in the natural or the social sciences) is just this ability to discover points of view from which new arrangements of facts are visible and under which order and system can be introduced into what has hitherto appeared as hopeless chaos. The weakness of the ordinary accounts of induction is that it minimizes this inventive genius."[1] Poetic and prophetic insights belong here, as do the great physical laws and the insights of the giants of classical political theory. But, whereas, in common-sense usage, it is easy (and common) to forget the hypothetical, tentative nature of knowledge and to overlook the presuppositions implicit in it, science seeks to make all presupposi-

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[1]Morris R. Cohen, Reason and Nature: An Essay on the Meaning of Scientific Method (2nd ed.; Glencoe, Ill.: The Free Press, 1953), p. 366.

tions overt and to preserve awareness of the eternally hypothetical status of all generalizations. "The books, so to speak, are never closed on any hypothesis . . ."[1] Theories must be tested, for ". . . a theory remains otiose for scientific inquiry until it is linked by some correspondence rules to experimentally identifiable properties of a subject matter."[2] The testing of a theory must be done indirectly, through its implications, using the theory as antecedent and an empirically observable as consequent. In other words, deductions are made, from the logic of the theory, as to what kinds of consequences one would expect to find in the real world if things went as postulated.

The third step in scientific procedure involves, then, making deductions from the hypothetical statement. These are of the form, "if, then" and are designed to exploit the logic of the hypothesized relationship so as to yield up conclusions. One set of standards to which these deductions must conform is that regulating logic: the test for consistency. Philosophy stops here. So does mathematics and the Cartesian thinking which assigns to the hypothetical statement, cogito, ergo sum, the status of axiomatic truth. So, too, does classical political theory: justice consists in the rule of head over heart and appetite, so in a just state

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[1]Rudner, Philosophy of Social Science, p. 77.

[2]Ernest Nagel, The Structure of Science (New York: Harcourt, Brace & World, Inc., 1961), p. 105.

the philosopher should be king; the state is like a machine, and therefore power should be balanced against power. The accusation that classical theory is often normative or prescriptive springs from this point--the hypothetical nature of the theoretical statement from which deductions are drawn comes to be forgotten.

The fourth step is concerned with empirical confirmation, testing the deductions against nature. ". . . Scientific objectivity is safeguarded by the principle that while hypotheses and theories may be freely invented and proposed in science, they can be accepted into the body of scientific knowledge only if they pass critical scrutiny, which includes in particular the checking of suitable test implications by careful observation or experiment."[1] The same world of "facts" and practical reality which yielded up coincidences and parallels and sequences suggestive of a hypothesized relationship is not observed more intensively in the light of particular conclusions, testing whether not only supportive, but nonconfirmatory evidence appears. It is this set of observations, obtained via experiments designed to isolate and test for alleged factors, which is most commonly associated with "being scientific." This requirement of empirical checking accounts for the stipulation that the logical consequences of theoretical generalizations must be stated operationally.

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[1]Carl G. Hempel, Philosophy of Natural Science (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966), p. 16.

Science has emerged as a powerful instrumentality for the understanding and control of significant aspects of human experience, but there are those who deny its applicability to political phenomena. Arguments sometimes run to the effect that social science cannot achieve general laws because the evidence upon which they must be based will always be incomplete. But these are essentially arguments against the validity of inductive proof, as are arguments against statistical explanation, both of which modes are usefully employed in biology, for example.

The problem of verstehen (that is, the question of whether the social sciences require a kind of cognition based upon empathy) can, I believe, be dealt with along the lines we have been developing--in terms, that is, of inductive hypotheses sustained by concurring propositions. However, whether or not verstehen might be a problem for sociology, for which Weber developed the concept, I do not believe that it is significant at all for political science, at least insofar as the significant unit of analysis is the society, or the state, or the group, or the political system because, in contrast with the individual, whose mental processes lie hidden, the values and goals of a supra-individual system are subjects of discussion by the conscious actors whose communications are observable by conscious analysts.

Pejorative comparisons of social science with natural science often spring from a misunderstanding of the nature of

natural science. For one thing, science need not be limited to materialism. As Whitehead has demonstrated,[1] materialistic physical science from the seventeenth century to this achieved remarkable progress through simplifying assumptions about the nature of location in time and space. In so doing it disregarded value, and the intuition that cold science was a machine, rolling relentlessly over something fragile and peculiar to life began with the Romantic movement and survives today. Whitehead maintained that this mechanical scheme was defective in that it omitted concepts of life, organism, function, order of nature, and "the immediate psychological experiences of mankind."[2] He described how the Theory of Relativity led to emphasis upon process and to considerations of goal and value;[3] he advocated that the scientific scheme be recast, "and founded upon the ultimate concept of organism."[4] Value, far from finding exclusion in modern science, has become a central concept. Contemporary antipathy towards a science of society is usually expressed in terms indicative of a conceptualization of science as, if one must date it, pre-Einstein, and a philosophy of science which is pre-Whitehead.

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[1]Alfred North Whitehead, Science and the Modern World (New York: New American Library of World Literature, Inc., 1948), Chs. 3 and 4.

[2]Ibid., p. 71

[3]Ibid., pp. 97-100.

[4]Ibid., p. 63.

APPENDIX B

SYSTEMS

The contemporary focus upon systems may be said to have originated in the work of the theoretical biologist, Ludwig von Bertalanffy, who developed an "organismic" theory of life in the early 1930's. Before him, the field of biology had been a battleground, contended over by mechanists, who assumed the reducibility of life processes to nothing more than physical and chemical reactions, and by vitalists, who assumed that only a metaphysical agency, an "entelechy," unamenable to scientific investigation, could account for the unique characteristics of living things. It was von Bertalanffy's contribution to suggest a systemic perspective on life. "There is no living substance, but only living organisms. . . . The vital properties are system-properties arising out of the arrangement of the materials and processes, and must therefore disappear when this arrangement is destroyed."[1]

> Every organism represents a system, by which term we mean a complex of elements in mutual interaction. . . . The behavior of an isolated part is, in general, different from its behavior within the context of the whole. . . .

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[1] von Bertalanffy, Modern Theories of Development, pp. 47-8.

> The actual whole shows properties that are absent from its isolated parts. The problem of life is that of organization.[1]

von Bertalanffy proceeded to urge the exploration of evident resemblances among all systems, whatever their particular subject matter.

> From the statements we have made, a stupendous perspective emerges, a vista towards a hitherto unsuspected unity of the conception of the world. Similar general principles have evolved everywhere, whether we are dealing with inanimate things, organisms, mental or social processes. What is the origin of these correspondences? We answer this question by the claim for a new realm of science, which we call General System Theory. . . . General system theory can serve therefore as a tool . . . to lead to legitimate conceptual models and the transfer of laws from one realm to another.[2]

As of today, a significant body of generalization about the properties of systems has been developed.[3]

"System" is the name we give to patterned interrelationships. Thus, the relatively fixed, recurrent motions of the planets and the relatively fixed orbits of satellites around some of them, and the relatively regular return of comets along highly eccentric ellipses with the sun at one focus--all this activity can be distinguished as "the solar

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[1] von Bertalanffy, Problems of Life, pp. 11-12.

[2] Ibid., pp. 199-200.

[3] See, e.g., James G. Miller, "Toward a General Theory for the Behavioral Sciences" in White, State of Social Sciences; James G. Miller, "Living Systems: Basic Concepts" Behavioral Science, 10 (July, 1965), pp. 193-237; James G. Miller, "Living Systems: Structure and Process" Behavioral Science, 10 (August, 1965), pp. 337-379; and also the Yearbooks of the Society for the Advancement of General Systems Theory.

system" because, for example, compared with the background cosmic dust we encounter in the form of meteors, the solar system's constituents display regularized, organized, patterned activity. In the same way, although bodily processes vary over time, with pathologies and anomalies not uncommon, and despite ongoing replacement of dead cells, still the continuation, as a statistical matter, of characteristic internal activity is enough to identify the existence of a biological system.

Systems may be "open" or "closed." By a closed system we mean a set of objects in their relatednesses as isolated from any environmental influence. An ideal system of classical mechanics, which relates masses and their motions and assumes the exclusion of extraneous factors, such as resistance due to friction, is a closed system. Chemical reactants, confined to the stoppered test tube at constant temperature, constitute a closed system. Closed systems tend towards increasing entropy, a higher-probability, more random, distribution of energy; e.g., heat (molecular agitation) flows from warmer to colder masses, but not vice versa. The universe, perceived as a closed system, is therefore said to be "running down."

By an open system we mean one which interacts with environmental factors. Open systems--and all living systems are open systems--are characterized by two particularly interesting properties: they maintain characteristic patterns

of internal relationship despite disturbances and they create structure (i.e., they are "self-organizing"), thus apparently defying the universal law of increasing entropy.

> In the last analysis, the beast is not distinguished from its dung save by the end-serving and integrating activities which unite it into an ordered, self-regulating, and single whole, and impart to the individual whole that unique independence from the vicissitudes of the environment and that unique power to hold its own by making internal adjustments, which all living organisms possess in some degree.[1]

The problems of defining persistence and boundaries plague observers of all systems. At what point does death occur in a human? All one can do is stipulate one (or more) process as "vital" and select one (or more) test for whether that process has effectively ceased. Thus, definitions of death can be made to hinge upon cessation of heartbeat, cessation of respiration, or cessation of brainwave activity, each as tested by some indicator: pulse, breath on a mirror, or electroencephalogram. In any case, the definition is ultimately an arbitrary one. Logically, it should be permissible to define non-persistence of a political system as the return to randomness of some critical, previously-structured activity or activities, probably the making of unitary, authoritative decisions. Like the essentially-temporal dimension of persistence, the essentially-spatial dimension of systemic boundary must be defined statistically and demarcated arbitrarily. Even where an entity seems morpho-

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[1]Sommerhof, Analytical Biology, p. 6.

logically distinct, definition of boundaries may be confounded. Is the rusted portion of a nail part of the nail or not? What of the layer of dead cells on the human skin? Or a cancer within it? These questions are raised to illustrate comparability with such problems as one encounters in defining the boundaries of a society or of a political system.

An open system without an environment is inconceivable because the building of structure, the attainment of the improbable condition we call organization, depends upon the tapping of energy sources.

> I propose to continue the use of the term 'self-organizing system,' whilst being aware of the fact that this term becomes meaningless, unless the system is in close contact with an environment, which possesses available energy and order, and with which our system is in a state of perpetual interaction, such that it somehow manages to 'live' on the expenses of this environment.[1]

Under favorable conditions, open systems attain ". . . a time-independent state where the system remains constant as a whole and in its phases, though there is a continuous flow of the component materials. This is called a steady state."[2] A system in steady state maintains its composition independently of (and constant in) a varying import of materials and tends, after disturbance, to a re-establishment of the steady state. Why are steady states maintained?

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[1]H. von Foerster, "On Self-Organizing Systems and their Environments" in Yovits and Cameron, Self-Organizing Systems, p. 33.

[2]Ludwig von Bertalanffy, "The Theory of Open Systems in Physics and Biology," Science, III (January, 1950), p. 23.

Perhaps White is correct when he says, "In a sense, it is pointless to ask 'Why does a body at rest remain at rest?' . . . Similarly, it is rather senseless to ask, 'Why do living beings exert themselves to preserve their lives, both as individuals and as species?' . . . We raise these questions merely to dispose of them; they are not sensible scientific questions."[1]

However arrived at, a steady state is a state of dynamic equilibrium, a processual balance such that any deviation from it constitutes a strain, against which the system will react, faithful to Le Chatelier's Principle, so as to re-establish equilibrium. A steady state is thus a preferred state. The maintenance of the steady state may be said to be a systemic value, and the return to normal of any disturbed component might be designated a goal. Thus, a tilted gyroscope will "aim" towards re-establishment of its normal axis. Thus, too, an animal whose blood sugar level is falling will institute food-hunting behavior. "This leads to the important conclusion that in the end it is not so much the external influence, the stimuli, but rather the internal situation, the distance from a normal state--the "need," psychologically speaking--that determines the reaction of the organism."[2]

The term "homeostasis" was coined by Cannon to refer to the tendency of organisms to maintain bodily conditions

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[1]Leslie A. White, The Evolution of Culture (New York: McGraw Hill, Inc., 1959), p. 207.

[2]von Bertalanffy, Problems of Life, p. 119.

within a normal range. He identified mechanisms whereby the body compensates for displacement of such factors as temperature and sugar- or salt-levels in the blood. He urged the extension of his work: "Are there not general principles of stabilization? May not the devices developed in the animal organism for preserving steady states illustrate methods which are used, or which could be used, elsewhere? Would not a comparative study of stabilizing processes be suggestive? Might it not be useful to examine other forms of organization--industrial, domestic or social--in the light of the organization of the body?"[1] A significant consequence of Cannon's work was that it explained end-directedness in a fashion which avoided teleological explanation, a mode subject to criticism on the grounds that to explain a phenomenon in terms of purpose is to be anthropomorphic and/or to assume that the future acts causally on the present. Cannon's demonstration of triggering mechanisms permitted explanation of teleological systems in evolutionary terms: those systems with certain attributes tending to protect vital processes tend to survive and perpetuate themselves whereas those systems without these attributes tend not to survive. It should be added, as Nagel has made clear, that ". . . some teleological explanations patently do assume the existence of deliberate plans and conscious purposes; but such an assumption is not illegitimate when, as in the case of teleological explanation of certain

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[1]Cannon, Wisdom of the Body, p. 305.

aspects of human behavior, the facts warrant it."[1] Whether chemically cued or consciously guided, systems in steady state may be described as homeostatic in the sense that, once disturbed, they tend towards redressing the disturbance. "When we talk about actual systems, such preferred states are frequently referred to as the goals or goal states of the system. And such teleological systems, whether purely physical (e.g., servo-mechanical systems such as thermostats), physiological, psychological, or social, are frequently referred to as 'goal-oriented,' 'goal-directed,' or sometimes even 'purposive,' systems."[2] In short, "you cannot conceive of a living organism, not to speak of behavior and human society, without taking into account what variously and rather loosely is called adaptiveness, purposiveness, goal-seeking and the like."[3]

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[1]Nagel, Structure of Science, p. 24.

[2]Rudner, Philosophy of Social Science, p. 95.

[3]Ludwig von Bertalanffy, "General System Theory" in Society for the Advancement of General Systems Theory, General Systems, Yearbook I (n.p., 1956), p. 6.

APPENDIX C

HUMAN SOCIETY

As Ralph Waldo Emerson put it so long ago, ". . . the gods, in the beginning, divided Man into men, that he might be more helpful to himself . . . you must take the whole society to find the whole man. Man is not a farmer, or a professor, or an engineer, but he is all."[1]

Why have societies evolved? "There is no doubt that animal societies have been a success; they have arisen independently many times in the course of evolution. . . . The question then is what advantages emerge for animals grouped together in a society?"[2] "Why have such different organisms separately evolved division of labor, societal integration and the reproduction of social patterns? Why do these properties show parallels to the properties of organisms?"[3] The answer is, survival value. Two men, back to back, are

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[1]Ralph Waldo Emerson, "The American Scholar" in Claude W. Simpson and Allan Nevins, eds., The American Reader (Boston: D. C. Heath & Co., 1941), p. 224.

[2]John Tyler Bonner, Cells and Societies (Princeton, N.J.: Princeton University Press, 1955), p. 20.

[3]Alfred E. Emerson, "Basic Comparisons of Human and Insect Societies" in Redfield, Levels of Integration, p. 169.

much safer than either could be alone (provided they "can trust each other"). They might, pushing together, provide enough power to move a rock in a minute which neither of them, exerting force all day, could budge. (A corollary of this proposition might read that two men, pushing against each other, could prevent each other from moving a rock either could easily roll alone, illustrating the importance of "interests" and "polarization" in societal interactions.)

The term "syntality" is used as a dimension of group structure to describe the degree to which the members of a group act as a unit, or in concert, in the achievement of some group goal. ". . . Syntality can have survival value, and, in fact, is specifically geared to survival and improvement of group life. A group whose members can coordinate their behavior to the achievement of some group goal has better chances of survival than one whose members act independently. . . . On the other hand, while syntality may favor group survival, it may act against individuals, particularly when specialization of roles is extreme."[1] It is an important, if grim, fact that "in nature" it is not every individual, but rather the population which evolves and survives. The bee, the baboon sentry, and the human soldier sacrifice "for their country," "for the folks back home," and "to preserve our way of life." The thing that is evolving is phylogeny, ". . . the whole complex of populations genetically

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[1]William R. Thompson, "Social Behavior" in Roe and Simpson, Behavior and Evolution, p. 304.

continuous through time . . . compounded from ontogenies, the life histories of the individuals composing populations."[1]

Only insects and men reach society in the full sense, which is characterized by the division of labor among adults of the same sex, and it is by no means insignificant to our thesis to note that the automatically coordinated insect society ". . . lacks close analogues to political government and law, police, educational institutions and religion."[2] These institutions apparently serve to ensure the coordination not genetically programmed among humans. Man alone

> . . . has developed an additional mechanism supplementing . . . biological heredity. Instead of repeating the social pattern of past generations through gene combinations as seems to be the case for most insect social behavior, man has symbolized his experience by means of tools, money, language and pictures and transmits these symbols through exchange, talk, writing . . . not only to his immediate associates, but to all parts of the world and to all succeeding generations. . . . Through our enlarged capacity for learned behavior, we have discovered an additional mechanism of evolution producing rapid and complex social changes and at the same time conserving the successful patterns of past generations. . . . We are socially more versatile than the insects and less stereotyped and automatic, but we are less perfectly coordinated.[3]

As Gerard summarizes it, "The gene, materialized as a macromolecule, and the idea, materialized as an engram, chiefly among the transmitters of enduring order, are the bearers of structural and behavioral heredity; they carry the past of the entity and account for its individuality."[4]

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[1]George Gaylord Simpson, "Behavior and Evolution" in Roe and Simpson, Behavior and Evolution, pp. 525-26.

[2]Emerson, "Basic Comparisons," p. 167.

[3]Ibid., pp. 167-68.

[4]Gerard, "Units and Concepts," p. 205.

APPENDIX D

PARADIGN, THEORY, AND MODEL

The term paradigm is borrowed from Kuhn. As he defines them, paradigms are ". . . universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners."[1] The paradigm underlying this present work is the assumption of a systemic nature of societal entities, and the assumption that demonstrations of this can be made on an inductive, probabilistic basis as they have been made in biology. The adoption of a paradigm is an act of faith. "The competition between paradigms is not the sort of battle that can be resolved by proofs."[2]

The way towards "proof" lies through theory. A theory, as we use the term, refers to a hypothesized relationship among phenomena. It is the statement of a guess about how particular kinds of things are related. Theories are "about" unobservables;[3] they are about entities and processes that may or may not be or do as they are postulated to be and do. Thus,

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[1]Kuhn, Structure of Scientific Revolutions, p. x.

[2]Ibid., p. 147.

[3]Hempel, Philosophy of Natural Science, p. 70.

when we assume that societies and political behavior patterns constitute open systems, we can never "observe" the "system" or "prove" that such systems "exist." Theories must be testable, but the testing of a theory must be done indirectly, through its implications. The theory which we will undertake to propose is that every human society constitutes an open system, the political system (also constituting an open system) being a subsystem of society, open to both an intrasystemic and an intersystemic environment, and performing for the society the function of "decider," so integrating its activities as to make possible adaptive responses by the society, as a unit, to environmental stress.

We use the term model as Rudner does: ". . . a model for a theory consists of an alternative interpretation of the same calculus of which the theory itself is an interpretation."[1] A model is the "embodiment of a structural analogy,"[2] an isomorph. "To employ a model is always to propose the existence of an analogy."[3] "Any two kinds of objects are alike in many respects and unlike in many others. The crucial question for analogical argument is this: are the objects that are being compared similar in ways which are relevant to the argument? To whatever extent there are relevant similarities, the analogy is strengthened. To whatever extent

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[1]Rudner, Philosophy of Social Science, p. 24.

[2]Kaplan, Conduct of Inquiry, p. 266.

[3]Martin Landau, "Due Process of Inquiry" American Behavioral Scientist, 9 (October, 1965), p. 7.

there are relevant dissimilarities, the analogy is weakened."[1] As figures of speech, analogies are differentiated from metaphors in that, while both exploit the assumption of comparable properties between things, analogies employ terms such as "like," "so," "as," or "than," while metaphors make the comparison entirely implicitly. Landau[2] has warned of the dangers of implicit comparison: "concealed" metaphors are taken literally, mixing of metaphors beclouds analysis, and the transfer of incidental, inappropriate characteristics goes unchecked. There is, he suggests, a "due process of inquiry" which requires that analogies be made in unambiguous form and employed rigorously.[3]

A model is a "scientific metaphor."[4] We commonly speak of two kinds of models. One usage refers to a miniature replica of something. The deliberate construction of such a model is common in the physical sciences: one builds a model bridge, or performs a laboratory-scale chemical "run" or devises a cybernetic model of simplified brain processes. The object is to learn from observation of the model whether its behavior deviates from that predicted by the theory, as a test for unanticipated variables. Another usage, ours, for the term "model" has to do with some paragon, some pre-existing

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[1]Salmon, Logic, pp. 70-71.

[2]Landau, "Use of Metaphor."

[3]Landau, "Due Process."

[4]Kaplan, Conduct of Inquiry, p. 265.

referent whose qualities embody those characteristics in which one is interested. The logic of the model, about which more is known, suggests expectations regarding the subject.

The scientist may choose a model freely, but once he has chosen he is constrained by its logic. To use a model, one must:

> . . . understand its characteristics, its formula, its essential concepts and properties before it can serve him. . . . The difficulties are great but correspondence is not a luxury: it is a necessity--a precondition for the verification of the proposed analogy. . . .
>
> There are, then, several stages in the use of a model:
>
> 1. its initial selection, transfer or formulation--which is anyone's guess
> 2. the clarification of its logical properties and basic concepts
> 3. the stipulation of correspondence between the elements of the model and the problem under scrutiny
> 4. the derivation of hypotheses and their check
> 5. the acceptance, rejection, modification of the model itself on the basis of the research undertaken which in turn leads back to stage one.[1]

It is a demanding program, and one to which social science has not generally adhered. The attempt to approach deployment of a model along these lines forms an intrinsic part of this work.

The particular model we wish to employ is a biological one. For an organism, which has the properties of an open system, the subsystem whose function it is to enable it to act as an adaptive whole is the nervous (sub)system. Knowledge of characteristics of the nervous system will be tapped as suggestive of conclusions regarding political phenomena within a

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[1]Landau, "Due Process," p. 7.

society; it bears stressing that we are not assuming that political systems have all the characteristics of nervous systems any more than we are suggesting that a society is a biological organism. What we are suggesting is that there seems to be an isomorphism, a similarity of underlying abstract calculus.

Why theory now? Because we know enough to have become dissatisfied with superficial laws. And because we know little enough to rush into generalization where, had we better information, we might fear to tread.

> For the development of a theory it is particularly advantageous if experimental methods and observations do not at once furnish data possessing a great deal of accuracy and in this way enable us to ignore a number of secondary phenomena which make difficult the establishment of single quantitative laws. If . . . Kepler had had at his disposal the highly precise observations which we have at present then certainly his attempt to find an empirical law owing to the complexity of the whole phenomenon could not have led him to simple and sufficiently clear results.[1]

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[1]The Russian physicist Lazareff, quoted in I. Michael Lerner, Genetic Homeostasis (New York: John Wiley & Sons, Inc., 1954), p. 114.

APPENDIX E

COMPLEX BIOLOGICAL SYSTEMS

Some open systems, such as the single-celled life forms, can be quite simple. Each cell leads an independent existence, obtaining free energy (nourishment) from its medium and tending, however cued and in however primitive a fashion, towards the avoidance of inhospitable conditions. At the other extreme some life forms, such as the human organism, achieve an architectural magnificence such as to inspire awe that so many differentially segregated yet hierarchically integrated processes could be encompassed in one skin.[1]

Biological evidence tells us that the complex forms have arisen from less complex ancestors through a process of natural selection. Why--and how--should such forms arise? The "why" of evolution from simple to complex forms is to be found in the advantage which co-operative behavior affords to units in terms of their survival.

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[1]Kaplan quotes von Neumann as estimating that, even using the smallest components available to us, if we knew how to link up a system analogous to the human brain, it would require a housing roughly the size of the Empire State Building to house it. (Kaplan, Macropolitics, p. 53)

> The naked cell . . . lived in less optimal conditions than did the cell in a group. Through division of labor and coordination between cells, . . . organisms successfully competed with less well organized primitive types and invaded ecological niches formerly closed to them. . . . Man and insects have accomplished these feats through societal systems . . . 'United we stand; divided we fall' is an adage with true biological as well as sociological implications.[1]

The transition from simpler to more complex systems in organisms takes place through the dual process of differentiation, or specialization, and hierarchical arrangement. How do essentially similar units undertake specialized functions? Evidence for such a process is fortunately evident in biology. The protozoa are particularly useful to us, since they evince both unicellular and multicellular forms.

> The difference between a spherical colony of protozoans and a spherical multicellular individual like Volvox is obviously a functional one. In the first case, the cells act in independence of each other, each is capable of performing all functions, and the colony rolls about aimlessly. In the second case, the cells act in coordination, the colony is polarized . . . and each cell is not capable of all functions. . . . Such coordination . . . can result only from a relation of control of one part of the colony . . . over the rest of the colony.[2]

Another protozoan, the slime mold, provides still more specific evidence of how the transformation of "individual" into "part," from independent system to subsystem, takes place.

> Each individual is clearly a single multicellular organism with its constituent cells differentiated into characteristic structures . . . Each developing spore reproduces

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[1]Emerson, "Basic Comparisons," pp. 171-74, passim.

[2]Libbie M. Hyman, "The Transition from the Unicellular to the Multicellular Individual" in Redfield, Levels of Integration, pp. 38-9.

> ultimately an individual with the same type of reproductive body as that from which it came. Yet, during the greater part of the existence of such a single organism, its constituent cells behave as completely independent individuals. . . . As the food reserves fail, however, and a state of 'emergency' develops, the separate cells stream from all directions to focal points . . . Each group of myxamoeba then forms a . . . new multicellular unit . . .[1]

The parallel between such a phenomenon and human behavior during emergency is striking: strangers forego the usual privacies and behave like acquaintances during a blackout or when the news spreads of a declaration of war or the death of a president. As Gerard suggests, in a state at war individual mobility and independence give way to tighter control and closer integration.[2] Rationing, price-fixing, job-freezing, and military discipline are typical of ways in which subsystemic wills yield to greater system dominance.

The regularization of specialization proceeds from intermittency to consistency, from plasticity to rigidity. Nature, again, furnishes clues through the coexistence of lower and higher forms; lower forms can regenerate damaged parts while the more highly structured cannot. By way of societal parallel, it is interesting that Riggs[3] analyzes modernization as the process through which relatively undifferentiated societies evolve into structured complexes of

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[1]Gerard, "Higher Levels," pp. 80-1.

[2]Ibid., pp. 81-2.

[3]Fred W. Riggs, Administration in Developing Countries (Boston: Houghton Mifflin, 1964).

highly specialized institutions, although Riggs himself employs a physical model.

It is evident that specialization requires flow of material and of information within the system. The detecting-deciding specialists must receive and transmit information and must receive nourishing material from the economic specialists, the energy-capturers. Conversely, the material processors must receive instructions and guidance from the decider. Specialization therefore also implies different "needs" for each kind of part. It also implies hierarchy, dominance, asymmetrical relationships.

The "why" of organization rests upon enhanced capacity to survive versus the external environment. The organism's subunit whose specialty is dealing with that environment is the one which must dominate if the system is to survive. Patterns of energy, or information, convey inward intelligence about the environment. Instructions outward to systemic effectors (muscles) impel their activity in such fashion as to direct their energies efficiently towards the achievement of systemic purpose. The linkage center where lines of information cross lines of authority for the system is the decider: the nervous system in a biological organism and, in our hypothesis, the political system in a society. The criterion according to which the significance of the environmental stimulus is assessed is maintenance of the steady state--the characteristic, patterned, systemic identity, the integrity of the parts in their relationship.

APPENDIX F

ADAPTATION

Adaptation refers to the adjustment of a system to its environmental circumstances. It is, by and large, the result of behavioral and structural modifications over time, incorporating a system's successful responses to "problems" or threats to its steady state. "The study of adaptation is not an optional preoccupation with fascinating fragments of natural history; it is the core of biological study. The organism is not just a system some features of which may or may not be adaptive; the living system is all adaptation insofar as it is organized."[1]

Adaptation is a satisficing, rather than a maximizing process; reasonable relief and security from experienced or anticipated stress constitutes the goal. Any system, at any moment in time, stands as the product of its history, ". . . not as Paley's perfection demanding an intelligent designer, but rather as a patchwork of makeshifts pieced together, as it were, from what was available when opportunity knocked . . ."[2]

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[1]Colin S. Pittendrigh, "Adaptation, Natural Selection, and Behavior" in Roe and Simpson, Behavior and Evolution, p. 395.

[2]Ibid., p. 400.

Adaptation embraces several processes: behavior, structural modification, and evolution. It begins, in any case, with behavior. "Considered as an element in evolutionary adaptation, behavior . . . has . . . certain greater or lesser distinctions that give it peculiar interest in this connection. It is commonly the actual means of interaction between physical organization and the environment. . ."[1] An environmental event such as a severe drop in temperature may affect behavior by driving a fox deeper into his shelter or setting a man to shivering, stamping his feet, and blowing on his hands; in a social context, it might cause a hospital patient to ring for the nurse and ask for another blanked; in evolutionary perspective, it may select for death those animals with thin coats, thus altering the gene pool of a species.

Any ongoing system, "photographed" at an instant of time, reveals a structure. A morphologist might distinguish certain parts within the whole. And although no two systems are ever identical, as every horse alive today is a unique individual and what we call "the horse" today differs from prehistoric eohippus, comparative analysis yields up analogies of arrangement and similarities of shape, size, and complexity which permit us to generalize, to classify individuals as "a horse" or a form of "the horse." Such treatment permits of only limited information, as Radcliffe-Brown

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[1]Simpson, "Behavior and Evolution," p. 521.

has pointed out,[1] qualities of integration, interconnectedness, functional consistency and, in general, "organic unity" evade the classificatory approach.

Setting loose the time variable, we can learn more about the system. We can observe ongoing processes of varying periodicity or rhythm which characterize the internal workings of the system throughout its existence. Biological systems, it has thus been observed, are universally characterized by two processes, aside from growth and senescence which we will, for the sake of simplicity, disregard for our purposes (despite "life-cycle" theories of the state). These two universals are metabolism and irritability.[2] All biological systems metabolize; they capture, convert, and exploit free energy. All human societies capture environmental energy through the activity of specialists, from "hunter" and "yam-grower" to "atomic scientist." Parsons' use of the term "adaptivity" refers to this, essentially economic, function. All biological systems display irritability, the propensity to react to stimuli. Higher forms of life have developed anticipatory detection systems: "Where organisms are said to 'possess minds' rendering prevision possible it is not difficult to see that an enormous possibility of independence of contingent circumstances will

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[1]A. R. Radcliffe-Brown, A Natural Science of Society (Glencoe, Ill.: The Free Press, 1957), p. 22.

[2]von Bertalanffy, Problems of Life, p. 131.

thereby be achieved."[1] The very highest form, man, has developed the capacity to generalize far beyond his immediate experience: even while he has food to waste he can conceive of the danger to food supply posed by a population explosion.

The distinguishing feature of vital activities is their anticipatory quality, their apparent subservience to needs lying in the future: development, regulation, reproduction, etc. This feature presents some theoretical difficulty. "One of the great puzzles of behavior stems from longer sequences of acts which lead, in one way or another, to a biologically adaptive outcome. Construction of a web by the spider; stalking of prey by the predator; . . . and the economic behavior of civilized man are examples of such prolonged, drawn-out sequences."[2]

Sommerhof, attempting to make a qualitative mathematical statement of adaptation,[3] encountered this problem of the justification for linking causally two occurrences at the same moment of time. If the behavior of an organism is appropriate to the state of its environment <u>at that instant</u>, how could one factor be said to have evoked the other? He postulated that they could be so related at time $\underline{t}_1$ only if

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[1]Woodger, <u>Biological Principles</u>, p. 416.

[2]Henry W. Nissen, "Axes of Behavioral Comparison" in Roe and Simpson, <u>Behavior and Evolution</u>, p. 196.

[3]Sommerhof, <u>Analytical Biology</u>, pp. 30-1.

there had occurred at some prior time, t_0, an event with the dual effect of contributing to the change in environment and of evoking the organism's response; he called such event a coenetic variable, CV. Sommerhof reasoned further that the appropriateness of response to environment at time t_1 could make sense only with respect to the attainment of some future goal state, which he called a focal condition, G, at time t_2.[1] He defined response, R, and environmental condition, E, at t_1 as directively correlated with respect to the goal. He assumed, further, that for any adapted organism in steady state there would be a repertoire of responses so matched to environmental events that the system could cope with an array of them (see Figure F1). Thus, letting $R_{t_1} \cdot E_{t_1} = V$; $R'_{t_1} \cdot E'_{t_1} = W$, etc.,[2] response will be so suited to environmental condition as to conduce to the focal condition. "The statement that a given response is adapted tells us ". . . that the rifleman, the gun, the organism, or whatever the case may be, is such that under this or that alternative set of circumstances it would have

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[1] As Parsons has indicated, goal-directed behavior ". . . must be clearly distinguished from 'stimulus-response' in that the latter does not make the orientation to the future development of the situation explicit." (Parsons, Social System, p. 8) In stimulus-response situations, the response R_{t_1} is appropriate not to E_{t_1}, but to E_{t_0}, when it was triggered.

[2] Sommerhof, Analytical Biology, p. 60.

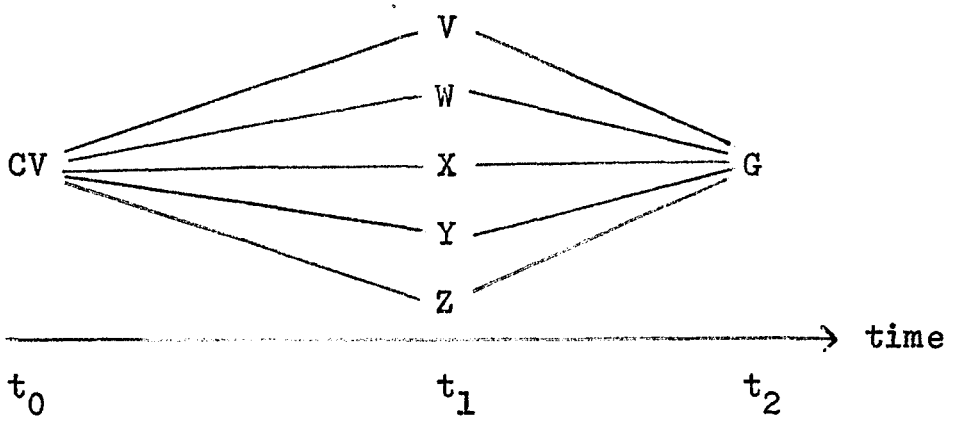

Fig. F1.--A Sommerhof Response Repertoire

reacted in this or that modified way."[1] In this way the system achieves greater independence of many kinds of environmental events.

In Sommerhof's terms, short-term directive correlation refers to adaptations in which $(t_1 - t_0)$ is of the general order of behavior time. From this short time-perspective we can observe behaviors, systemic outputs. Men and animals move, build, forage, fight, etc. Like organisms, societies behave: they launch rockets to the moon and go to war. Medium-term directive correlations refer to ontogenetic adaptations, to those lying within but comprising a significant portion of the life-history of an individual. From this longer time-perspective we become aware of changes in individuals. They reorganize structure (within limits), developing callouses and powerful muscles from repeated toil or suffering disabilities and scars from disease and mishap.

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[1] Ibid., p. 51.

They also learn, structuring a repertoire of habitual appropriate responses to particular kinds of situations. Like individuals, societies change. Successful ad hoc behaviors become precedents and harden, under repetition, into expectations, usages, traditions, and institutions. A description of New York City's structure in 1945 would not include a City University; in 1965 it would. Long-term directive correlation refers to phylogenetic adaptations in which the $(t_1 - t_0)$ interval is large enough to permit evolutionary change to take place in a population. Over the very long time-perspective we can perceive the trend along which successive alterations of structure bring eohippus to horse and some uniquely-carnivorous primate, Australopithecus, to homo sapiens. Societal evolution is also evident--from low-energy, relatively undifferentiated societies to high-energy, highly ramified structure.

> Very often a biological situation may derive its purpose-like character from all three types . . . simultaneously and it is important to realize that this may lead to confusion unless the directively correlated variables and coenetic variables of each type are carefully separated. . . . If a bird pecks at a certain caterpillar selected as edible . . . this action itself involves several short-term directive correlations; the acquired habit of selecting the respective type of caterpillar is based on a medium-term directive correlation; and the bird's ability to acquire this habit is based on a long-term directive correlation.[1]

We shall not concern ourselves with genetically-determined, reflex behaviors or with genetically-reproduced structures, but will concentrate on behavior and learning.

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[1] Ibid., p. 126.

How are goals defined? For any system at a moment of time we can, theoretically at least, describe its state (G) by describing the values which its variables hold at that instant.[1] Such variables might be "parts or processes, such that the activities of a certain number (possibly all) of them are causally relevant for the occurrence of G."[2] A system may be said to be surrounded by a field, which Ashby defines as ". . . the phase-space containing all the lines of behaviour found by releasing the system from all possible initial states."[3] In less technical terms, the field represents all the possible states permitted by combinations of variable change. (Lewin's field theory for the social sciences[4] presents a "hodological geometry," describing life-space in terms of a series of pathways along which one might act, an actor's "life-space" being the sum of all his possible positions with respect to all possible goals. If we consider goals as the negative of variable-displacement from steady state, Ashby's "field" and Lewin's "life-space" seem to be the same.) An environmental event, which is to say a change in the value of some environmental variable significant for the system, changes the system's field. The change

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[1]Ashby, Design for a Brain, p. 18.

[2]Nagel, Structure of Science, p. 411.

[3]Ashby, Design for a Brain, p. 22.

[4]Kurt Lewin, Field Theory in Social Science (New York: Harper, 1951).

in field, if of sufficient magnitude,[1] induces a change in the appropriate systemic variable, which the system must maintain within critical limits. The changed value of a variable means the system is in a different state, displaced from its G-state and will set as its goal a return to that G-state.

On the basis of evaluation of stimulus, consultation with memory and assessment of capacity, the decider of a system determines upon a response appropriate to meet conditions and relieve whatever stress the event presents or threatens. After a response has been made, there is a modification of the stream of afferent impulses due to the changed relationship of body to environment as a consequence of the response. As the responsive activity proceeds, then, this feedback through the environment informs the system as to whether or not the stressful condition is being alleviated or, what is the same thing, whether or not the goal state is being approached.

Thus, insofar as events in the environment have real consequences for a system, whether or not the system is

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[1] Our reservation about the magnitude of the change reflects the fact that organic systems are frequently characterized by thresholds, below which no reaction takes place. "The property of 'threshold' leads often to behaviour of part-function form. For if x dominates y, and if, when x is less than some value, y remains constant, while, if, when x is greater than the value, y fluctuates as some function of x, then, if x is a full-function and fluctuates across the threshold, y will behave as a part-function. In the nervous system, and in living matter generally, threshold properties are widespread; part-functions may therefore be expected to be equally widespread." (Ashby, Design for a Brain, p. 163)

capable of recognizing or coping with them, there may be said to be an objective aspect of adaptation, an imperative for rationality. Some events in the environment may lie beyond the capacity of the system to compensate for or avoid. "Adaptivity is never unlimited. It may be very extensive, as in the higher organisms and especially in Man, but no living organism has the power to cope with all the conceivable challenges of its environment."[1] If the earth were to fall into the sun tomorrow, humanity could not save itself. Some events, although "theoretically" or "objectively" rectifiable, may fail to evoke appropriate response because of patent systemic inadequacy: a paralytic cannot be warned by pain and a drug addict might be incapable of assessing a dangerous situation. In general, however, the fact that a system has persisted implies that it is capable of making appropriate responses to events.

But what if a system, displaced from G-state, cannot achieve its goal of return to that state? Ashby, concerned with the characteristics of the nervous system, tried to reconcile automatic and purposive aspects of the brain's behavior.[2] He was looking for some key to how random variations could produce better adaptation, and found an answer in the fact that many organic variables are part-functions, so that displacing a variable beyond a given threshold may

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[1]Sommerhof, Analytical Biology, p. 19.

[2]Ashby, Design for a Brain, p. 1.

trip a "step-function," causing it to undergo transformation, like the blowing of a fuse--a sort of quantum leap to a new value. He concluded that, if a system is incapable of returning some essential variable to its usual value, the variable may remain fixed at a different value, at which the system is again stable, but in a new state, having undergone an adaptive structural change.

If the value of the variable does not permit a steady state, it will continue to trigger new states by random switches, or aimless "tries" until a stable situation is achieved (or the variable goes beyond its critical limit and the system "breaks" or "dies.")

> In order to be definite about what 'trial and error' implies, here is the concept defined explicitly:
> (1) The organism makes trials only when 'dissatisfied' or 'irritated' in some way.
> (2) Each trial persists for a finite time.
> (3) While the irritation continues, the succession of trials continues.
> (4) The succeeding trial is not specially related to the preceding, nor better than it, but only different.
> (5) The process stops at the first trial that relieves the irritation.
> This knowledge is sufficient to place the critical states in the functional sense: they must have values intermediate between those of the normal state and those of the essential variables' limits.[1]

A system which can stabilize at new states consistent with its survival is called ultrastable. "An ultrastable system acts selectively towards the fields of the main variables, rejecting those that lead the representative point to

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[1] Ibid., p. 112.

a critical state but retaining those that do not."[1] "The ultrastable system will therefore always produce a set of step-functions which is so related to the particular set of parameter-values that, in conjunction with them, the system is stable."[2] An ultrastable system, therefore, is a system adapted to its environment.

When a number of ultrastable systems are bound together as subsystems of a larger, complex whole, they form a multistable system; ". . . within a multistable system, subsystem adapts to subsystem in exactly the same way as animal adapts to environment."[3] And although his argument is beyond our scope, it is interesting to note that Ashby reaches a conclusion echoing Woodger's empirical generalization quoted in Chapter 3: "We can predict, therefore, that in general if a multistable system adapts to an environment composed of P independent parts it will tend to develop P independent subsystems, each reacting to one part."[4] The consequence of this organizational form is that the system attains competence and flexibility. It can develop "specialists" in dealing with many possible kinds of events, and the system can deal simultaneously with a number of events. In addition, the total system is more stable because, in anthropomorphic language, a subsystem faced with a stress beyond its powers to rectify can count on help from

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[1] Ibid., p. 91. [2] Ibid., p. 101. [3] Ibid., p. 174.
[4] Ibid., p. 185.

other subsystems. The process by which this occurs depends upon the fact that ". . . a multistable system consists of many ultrastable systems joined main variable to main variable, all the main variables being part-functions. . . . In particular, the multistable system will reject all unstable fields of its main variables but will retain the first occurring stable field. In other words, the multistable system will 'adapt' just as will any other ultrastable system."[1] Each subsystem tending towards ultrastability, a system can be most efficient when local responses can be made to local conditions which do not drive the local (or specialized) subsystemic variables beyond tolerance. Profound stimulus evokes linked subsystems' support because essential variables are so linked that an extreme of one is associated with an extreme of the other.[2] "Each unit responds to loads imposed on it by its environment . . . with responses of its subordinate units that tend to eliminate the stress on the whole, even at the expense of a greater temporary displacement of the part."[3] "One set of activities in the organism . . . has as focal condition the creation, maintenance or regulation of the special . . . conditions which

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[1] Ibid., pp. 171-72, passim.

[2] Ibid., p. 41.

[3] Gerard, "Units and Concepts in Biology," pp. 202-03.

are required by another set of activities . . ."[1] "In short, the characteristic unity of the higher organisms derives from the fact that their activities are united by hierarchies of directive correlation."[2]

The complex systems, therefore,can be seen to have properties that are characteristic of only the whole, and are not assignable to any part of it.

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[1]Sommerhof, Analytical Biology, p. 138.

[2]Ibid., p. 140.

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