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**PROJECT ON MANAGING
DECENTRALIZATION**

ON THE CONCEPT
OF
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In ordinary language, centralization possesses a stable meaning. It names that situation characterized by a "concentration of administrative power in the hands of a few" (Webster). The American College Dictionary presents the same meaning but applies it more directly to politics: the concentration of administrative power in a central government. The authoritative Oxford English Dictionary refers to a concentration of administrative powers in a single head or center, instead of distributing them among local departments. In all of these cases, to administer means to manage, to have executive charge of, to impose, and to dispose. Decentralization, simply stated, is its antonym--referring to the undoing of centralization. Terms such as devolution, deconcentration,¹ or decontrol are expressions of this process.

No problem attaches to the stability of meaning. The concept of centralization has been in use for close to two centuries and no essential lexical variation has occurred. A scholar, thus, embarking on a major analysis of Modernization and the Structure of Societies can begin his study by employing centralization and decentralization to "mean nothing more precise than the layman has in mind when he uses these terms."² And, generally speaking, we can follow his analysis fairly easily. The meanings in use are familiar and conventional.

There are some problems, however, and these have to do with valence and clarity. We take valence first.

¹ Webster's Unabridged, 2nd edition, uses deconcentration as a synonym for decentralization.

² Marion J. Levy, Jr. (Princeton, 1966), p. 16.

Valence

A lexical (dictionary) definition provides us with a report of how a word is employed in a language community. It is, therefore, empirical and cognitive in content. Such definitions may be true or false--a correct description of conventional usage, or not. But for many terms, lexical definitions do not exhaust meaning. There are words that carry implicit connotations which are essentially evocative, which exhort and entice, appealing to our emotions, our values, our interests. Such connotations, often called "persuasive", evoke images that are benign or malevolent, enjoyed or feared, good or bad. These are features of a term that can and often do take hold, and when this happens they override its cognitive content. We then respond to the feeling which is engendered, in accordance with our values and interests, and our analysis runs the risk of becoming little more than expressions of personal preference.

"Bureaucracy" exemplifies this. It entered the English language in 1848 and was soon stamped by Carlyle as "that continental nuisance." Over time it has become a "SHIMPFWORT", carrying any number of persuasive connotations: it is a threat to democratic values, a breeder of one-dimensional man,--of the insolence of office, of ritualism and red-tape. It is not the name of a type of formal organization built upon bureaus, nor is it the name of the system which Max Weber modeled for us--one which is objective and impersonal, which operates in terms of calculable rules and norms of rationality, which exercises control on the basis of knowledge. It is far more: for the term itself conjures up images that elicit emotional responses that beget a selective and persuasive rhetoric. So, a Carl Friedrich, in "analyzing" Weber's model of bureaucracy tells us that its

"very words vibrate with something of the Prussian enthusiasm for the military-type organization."³

Well then, what can be said of centralization. It is also characteristic of military-type organizations. Certainly, it is undemocratic--the concentration of authority in the hands of the few. From here one may easily move to H. L. Mencken's response to centralization as "strict regimentation." There is no dictionary which assigns this property to the term but the implicit connotations are there, developed over many years. And they are rather threatening. Indeed, the fears evoked may move us to undo centralization, to distribute those powers which have been concentrated in a single head, --which is precisely the lexical definition of decentralization. We may even have to go further: in order to undo, we may have to provide for the fullest participation, to invest as many people as possible as shareholders of distributed power.

In the American political system, this is a good, a value. The Constitution does not concentrate power: it separates and divides power. It provides a federalism which, the Kestnbaum Commission declared, "possesses values (that) warrant every effort to preserve and strengthen its essence."⁴ The essence is decentralization. Home-rule for cities is a long and powerful tradition. Our markets are, by law, required to be decentralized.

³ C. J. Friedrich, "Some Observations on Weber's Analysis of Bureaucracy" in R. Merton, et al., Reader in Bureaucracy (Free Press, 1952), p. 364. Or see A. Gouldner, "Metaphysical Pathos and the Theory of Bureaucracy", American Political Science Review, XLIX (1955). But see M. Landau, "Political and Administrative Development" in R. Braibanti, ed., Political and Administrative Development, (Duke University Press, 1969).

Monopoly, combinations and concentrations in restraint of trade are illegal. Our polity is flat; and the fear that the major political parties were peaking, tending toward a concentration of control, has led to massive changes in the interest of decentralization. We have come into a period when community control, maximal feasible participation, street-level government, are to transfer "responsibility and power to those very people who are affected by the program . . . in question."⁵ And this principle has guided changes in the nominating process, deregulation, and revenue-sharing. Even in industry the movement is apparent. Profit centers, cost centers, responsibility accounting and, in Peter Drucker's phrase, "organization by autonomous product" tend in the direction of a "federal decentralization" of the corporate entity.⁶ Pressure toward "democratizing corporations" has been building steadily and democratic management, public interest directors, industrial humanism, worker participation, and pluralistic corporate governments are now popular and congenial phrases. They point to a shared power that protects against the tyranny of the center.⁷ In the United States, centralization and decentralization are loaded terms and their persuasive impact is unmistakable. The latter is a good, the former a bad: and it is just possible that the present emphasis on decentralization in USAID derives from the negative connotations of its antonym--not from considerations of its utility.

⁵ R. K. Yin and D. Yates, Street-level Governments (Heath, 1975), p. 24.

⁶ P. Drucker, The Practice of Management (Harper, 1954), pp. 205-18.

⁷ See J. S. Jun and W. B. Storm, eds., Tomorrow's Organizations (Scott-Foresman, 1973).

Clarity

The second problem has to do with clarity, with establishing definitional criteria that allow for a determination of what is to count as an instance of decentralization. Here we also face difficulties. Efforts to clarify frequently resort to such synonyms as deconcentration and devolution, but this begs the question. For what is to count as an instance of devolution? The answers usually provided are based on the criterion of delegation of authority: the more the delegation of authority, the greater the degree of decentralization.⁸ The trouble here turns on the use of the concept "delegation."

To permit subordinates to make decisions in a proscribed domain is not to redistribute the right to control or determine the course of action to be pursued. Those receiving delegated authority act for those who delegate. They are agents or deputies who are instructed. And as instructed actors, they do not possess any independent status. The degree of discretion they enjoy is a function of direct authorization by a superior, not by a charter. Studies, thus, which employ delegation of authority to measure decentralization, merely indicate the extent to which subordinates have been deputized.⁹ If, however, decision-makers receive a formal grant of authority

⁸ It is frequently the case that "dispersion" of authority is used in place of delegation but its meaning is not different. See E. J. Walton, "Formal Structure: A Review of the Empirical Relationship Between Task Differentiation, Role Prescription, and Authority Dispersion", Organization Studies, Vol. 1, #3, 1980.

⁹ D. S. Pugh, et al., "A Conceptual Scheme for Organizational Analysis", Administrative Science Quarterly, Vol. 8, 1963; D. S. Pugh and D. J. Hickson, Organizational Structure in its Context (Saxon House, 1976); D. S. Pugh and C. R. Hinings, Organizational Structure: Extensions and Replications (Saxon House, 1976); P. Blau, "The Hierarchy of Authority in Organizations," American Journal of Sociology, Vol. 73, 1968; J. Hage and M. Aiken, "Relationship of Centralization to Other Structural Properties", Administrative Science Quarterly, Vol. 12, 1967.

such that they can act on their own, without resort to the warrant located in offices occupying higher positions in the organization, then the organization has been flattened--deconcentrated or decentralized. That is, a devolution has occurred precisely because decisional authority has been redistributed pluralistically.

There are other efforts to determine the extent of decentralization in an organization, the most important of which has to do with whether written rules and regulations in complex hierarchical systems are appropriate indicators. There are studies which presume to show that the use of rules promotes decentralization--which leads to the curious notion that the more an organization is governed by rules the less is it centralized.¹⁰ Which may be true,--but this would depend on the character and content of the rule. If, again, a rule constituted a formal grant of authority so that an office-holder is thereby made independent of his superior, it is then decentralizing in effect. The problem arises when rules, because they provide a jurisdiction, are taken per se as displacements of the authority of hierarchy.

Rules are mandated in the interest of impersonality, objectivity, and predictability or reliability of response. They seek to eliminate the force and effect of personal idiosyncrasy. That is, they constrain an incumbent to the specifications of his office so that actions taken are ordered, legal, and rational. They serve as instruments of control. It is possible, however, that a particular rule set could remove officers from the control

¹⁰ M. Meyer, Bureaucratic Structure and Authority (Harper & Row, 1972); Pugh, op. cit.; P. Blau, And see Walton, op. cit.

of a superior, and we have so indicated. But it is generally clear that rule systems do not per se decentralize, that they do in fact function to the opposite effect. Alvin Gouldner tells us, e.g., that rules are part and parcel of the hierarchical demand for control.¹¹ Herbert Simon demonstrates that a simple operations manual is a device for centralizing control:¹² while David Truman uses the extent and specificity of rules as an index of centralization.¹³ The sense of these positions has to do with the location of the authority which supplies the appropriate decision-premises contained in rules.¹⁴ This is a primary factor in determining instances of decentralization--which we shall try to clarify below.

In any event, it is apparent that no standard or operational definition exists which governs either organizational theorists or management science. As a result, research findings are inconclusive, variable, even contradictory. This problem is not simply academic: it has practical implications of major proportions--especially for those concerned to design or promote decentralization. If, e.g., we were to accept one hypothesis, seemingly supported by heavy survey research investment, that increases in the number of hierarchical levels compel decentralization,¹⁵ then we would follow the

¹¹ Patterns of Industrial Bureaucracy (Free Press, 1954).

¹² Administrative Behavior (Macmillan, 1947), p. 160.

¹³ David Truman,

¹⁴ J. C. March and H. Simon, Organizations (John Wiley, 1958).

¹⁵ See Meyer, op. cit., Ch. 3.

curious course of enlarging the number of supervisory levels in order to produce a decentralized organization. But the counter-hypothesis, modeled as a flat organization, remains in full force. The former is tied to a proliferation of rules which are conceived of as decentralizing, the latter is not. It rests on the assumption that the fewer the operational linkages, the more effective decentralization.¹⁶ Or, we can also find much research which turns on dispersion of authority and participation in decision-making as indicators of decentralization only to discover another curiosity--they are inversely related to each other. The more the dispersion, the less the participation.¹⁷ Following this "finding", organizational designers seeking to extend participation in decision-making should concentrate authority. Thus, to secure decentralization, they would centralize. The paradox vanishes, however, when we learn that this body of work defines dispersion of authority in terms of delegation of authority. And it is an old story in American administrative experience, beginning with the constitutional doctrine of limited government, that delegations of authority exclude unauthorized actors. And, as Max Weber made clear, so do written rules and regulations.

¹⁶ W. T. Morris, Decentralization in Management Systems (Ohio State University Press, 1968), A. Barton, et al., Decentralizing City Government (Lexington, 1977), Yin and Yates, op. cit., A. D. Chandler, Strategy and Structure (MIT Press, 1962), P. Drucker, Concept of the Corporation (Beacon, 1960).

¹⁷ See Walton, op. cit., pp. 245-6. This essay summarized a variety of such research and provides a bibliography. But see J. Pennings, "Measures of Organizational Structure: A Methodological Note", American Journal of Sociology, Vol. 79, 1973; and S. B. Bachrach and M. Aiken, "Structural and Process Constraints on Influence in Organizations", Administrative Science Quarterly, Vol. 21, 1976.

If we pressed on in this vein, we would find many such anomalies. But there is an explanation. It is not, as some urge, that survey research and case studies, as distinctly different methodologies, produce different results. It is, rather, that different conceptions and definitions of decentralization are employed and, therefore, different phenomena are being measured. The words may be the same, but they name different things.

Thus, while the lexical definition of "centralization" remains stable, such is not the case with its antonym. Scholars, and designers, seem to have great difficulty in marking its properties, in telling us what "undoes" centralization, or what is to count as an instance of decentralization. It is not poetic license to say that this definitional situation is "decentralized"--if we use the criteria of rules and participation. For here is a circumstance that is best described by a lack of standardized, and therefore exclusionary, rules which permit anyone to offer his own version of the concept. We also enter into this adventure and hope for the best.

Decentralization

Were we to be guided by the valence or persuasive connotations of this term, we would frame arguments so as to establish decentralization as an intrinsic good, as a desired end-state. It is, however, not easy to do unless one wishes to proclaim an arbitrary value-judgment. This, because invariably--in virtually every circumstance in which decentralization is proposed or defended, it is presented as a part of a means-ends chain. That is, when advocates--even of its intrinsic value--are pressed for justification, of necessity they present a list of benefits which will accrue. Its utility, therefore, establishes its value. Accordingly,

decentralization possess only an instrumental value and cannot be judged a priori. Said alternatively, proposals to decentralize are empirical propositions: whether they result in desired outcomes is a matter of experience, a matter of inquiry.

Because of its instrumental character, we are dealing with an organizational form that constitutes a solution set. In fact, if one surveys any body of relevant literature--theoretical or applied, decentralization is presented as a solution to a rather large number of problems. It promotes geographical equity, increases popular capacity to insure responsibility and accountability, enables easier access to decision points, reduces conflict, and is more democratic. It is also more effective and more efficient. It improves delivery of service, solves the problem of "switchboard overload", allows for careful consideration of local needs, encourages invention and innovation, provides more accurate descriptions of problems,--it even eases national planning problems through the provision of a more reliable information base.

There are claims: not hard fact. There exists some warrant for believing that they are correct, but this may be so only under certain circumstances. What is clear is that they cannot be accepted as articles of faith. To take decentralization as an axiom or guiding principle without regard to limiting conditions may produce situations that have just the opposite effect. Deconcentrating authority, e.g., to secure a geographical, ethnic, or administrative pluralism may create a Balkanization, a fragmentation, which reduces the effectiveness of the system on any dimension. Nor is it unusual for this condition to give rise to correctives that take shape as integrated coordination and control systems--which, in the interest of

control, become inhospitable to invention and innovation, foster red tape, reduce access, standardize operations, and mandate clearances. And we are back to concentrations of authority.

We do not wish to dwell on this now. But the problems for which decentralization is presented as a solution all derive from centralization. And the choice that is usually offered is dichotomous: one undoes the other.

This, however, is not a realistic alternative for any designer. For if there is one factor that marks the development of organizational systems, it is the unending movement toward centralization. Students of modernization, especially those concerned with "less developed countries", have been forced to confront this fact: their basic hypothesis, frequently implicit, is that modernization and centralization do not and cannot vary inversely. Marion Levy puts it quite directly: "as modernization increases, the trend is overwhelmingly and irreversibly toward more centralized structures in every case."¹⁸ The theory which informs this proposition can be stated simply. As a system develops, its parts assume definite structures and functions. These differentiated structures and specialized functions become subject to a central control. The control system is arranged in terms of levels, with the higher comprehending the lower. The more developed a system, the more is it centralized. The structured expression of centralization is hierarchy.¹⁹

¹⁸ op. cit., p. 58.

¹⁹ For a full analysis of this model, see M. Landau, Political Theory and Political Science (Macmillan, 1972), Chs. 4 and 6.

Whatever the precise mode of development, there is substantial warrant for this generalization. Local authorities have had to yield to regional, and regional to central. And so have their systems of public administration.²⁰ Federalism in the United States, that most classical system of decentralization, is far more a name than a fact.²¹ Hierarchies have displaced markets,²² and the economic scene has been marked by "concentrations of control", by monopoly, oligopoly, cartels, administered price systems, and by ever more pointed pyramidal organizations. Nor do we need to speak of trade unions, agrobusiness, or communication and power systems--the latter, regardless of the pattern of ownership, are organized into integrated and hierarchical networks. It is small wonder that such modes as "systems analysis" are now so pervasive for we seem to have reached the point where the critical question is not whether a system exists, but whether a component does.²³ Indeed, when our national planners and management scientists observe a plurality of organizations operating in the same policy space, that fact--a decentralization, is immediately taken as a case of "multi-organizational sub-optimality." The phrase is theirs, not ours; and it signals a demand for hierarchical coordination and control.

²⁰ See C. E. Black, *The Dynamics of Modernization* (Harper Tachbook, 1967).

²¹ M. Landau, "Federalism, Redundancy, and System Reliability", in Toward '76: The Federal Policy, Publius: The Journal of Federalism, Vol. 3, 1973.

²² D. E. Williamson, Markets and Hierarchies (Free Press, 1975).

²³ C. W. Churchman, Challenge to Reason (McGraw-Hill, 1968).

Set against this backdrop, the issue of decentralization cannot be put as a simple two-valued choice. It is, rather, how much, where, under what conditions, and toward what purpose. And our answers may vary from situation to situation. Proposals to decentralize are either meaningless or utopian if they are not delimited accordingly--for they involve a fundamental restructuring or rearrangement of authority. It is authority, which we shall later translate into "control of the agenda", that is the critical factor.

We see this if we understand the character of a hierarchy--which by definition is centralized. Hierarchies have two properties that concern us: their authority systems are asymmetrical and transitive. If we picture the usual pyramid with its layers and tiers, label the apex 'A' the second level 'B', and the third 'C', asymmetry refers to an ordering in which B is below A; i.e., A exercises authority over B. B's behavior, therefore, is under the control of A. Transitivity refers to the relation, where if A exercises control of B, and B controls C, then A also controls C--and so on down the levels. If the ordered relation is transitive, as it is in hierarchy, then A's authority governs every level of the organization. It establishes, enables, and sanctions the agenda of the entire organizations. This is the pure case and constitutes a very powerful system of coordination and control.

What is required to "undo" this system should be evident. It is to break its serial character. It is to introduce symmetries and intransitivities. If B is made equal to A, B is thus independent. And C is no longer authorized by A. This begins to flatten the organization. Enlarging symmetrical and intransitive relations moves us toward a decentralized system.

The pure case is that in which all deciders are independent and none are ordered in a command series.

The term "pure" case refers to the fact that there are no real instances--that the class is empty. And this is to say that there are limits to the extent to which a system may be centralized (or decentralized). Several factors are of relevance here.

1. A formal hierarchy is a system of centralized control. While there exist a variety of meanings assigned to the term control, they all stem from one primary property,--the ability to determine a class of events or state of affairs. Control is a causal construct. Every "controlled situation" turns on the values assigned to a causal factor and a dependent variable such that any specified change of the former produces a pre-determined change in the latter. The ability to control is, therefore, a function of knowledge. If, in a particular domain, our knowledge is complete (perfect) we can do so unerringly.²⁴ The design of a hierarchy, thus, assumes such a knowledge. This, in fact, is the legitimating principle of formal bureaucracy. It is a system of control, as Robert Merton put it, on the basis of knowledge.

A formal hierarchy, then, rests upon a truly heroic assumption: that its structure constitutes a fund of warranted decision rules or a repertoire of response so ordered as to produce internal operations that are entirely unambiguous and outputs that occasion no surprise. In its design,

²⁴ See M. Landau and R. Stout, "To Manage is Not to Control: Or The Folly of Type II Errors", Public Administration Review, Vol. 39, 1979.

it presents the image of a decision-machine that is a perfectly appropriate instrument for the domain of tasks it is cope with at a given moment.²⁵

It is likely that this picture will be taken as a caricature. If so, one needs to inspect, not just the formal properties and the logical structure of a hierarchy, but its physical arrangements as well. It is organized as a causal chain which is fully formed, serially ordered, strictly determined, and tightly-coupled.

There are no organizations that meet such standards. Such a system would be a monumental feat, truly staggering,--requiring an intelligence that would dwarf La Place's demon. Orders of knowledge of this magnitude do not exist; nor is it probable that they will ever be attained. That we continue to distinguish the "paper pictures" of a hierarchy from its actual behaviors is ample indication that the pictures are, at best, no more than a limit. It may be possible to so order a part or a component but only in areas where a formidable knowledge permits ordered, integrated, and controlled behavior. And even here, there will be deviation. For there is a natural noise in every organization.²⁶ There is no such thing as zero tolerance in the real world: no such thing as immunity from deviation. In every system, every component, man or machine, deviates from the calculated standard. The best, therefore, that anyone can do is to conceive of an organizational hierarchy as a statistical structure which must be described

²⁵ See Martin Landau, "On the Concept of a Self-Correcting Organization", Public Administration Review, Vol. 36, 1973.

²⁶ Simon Ramo, "Parts and Wholes", in D. Lerner, ed., Parts and Wholes (Free Press, 1963). And see K. Arrow, The Limits of Organization (Norton, 1974).

in terms of probabilities--not deterministic equations. Even in the most tightly prescribed hierarchy, where certainty is to be guaranteed by detailed blueprints and operational manuals, centralized control is no more than a modal pattern. There will be deviations from the mode and variations on the theme. Asymmetries weaken and transitivity is ruptured and this means that some significant loosening of authority has occurred. By definition, this is a movement toward decentralization. All hierarchies exhibit this phenomenon. The choice, therefore, cannot be dichotomous.

2. In the modern world, the striking feature of formal organization is its complexity. As organizations develop, simple division of labor gives way to differentiated units which are functionally specialized--each resting on a distinct technology. The knowledge revolution of the last 50 years has been mirrored by an explosion of specialization patently visible in a university, a major hospital, a large corporation, or a public bureaucracy. These are very complex systems: the number of differentiated components have increased by orders of magnitude--as have their degrees of interdependence; rates of change are very high--so high as to challenge the ability to provide an accurate description of the whole at any time slice. In terms of administrative management, this fact translates into problems of coordination and integration. As systems become more complex, the probability of random or erratic (uncoordinated) behavior rises. And the threat which this poses is disorganization. It is safe to say that the more complex the organization, the greater is this threat.

This is one of the major reasons for a centric hierarchy. Through its use, large numbers of dissimilar components are to be interrelated and made a part of the same system. As against the threat of disorganization, each

is to contribute toward a smoothly coordinated and uninterrupted flow of work and product.

In this context, hierarchy reduces the probability of random behavior by providing the law of the organization. It establishes a system of constraints which reduces freedom of action. It sets boundaries and fixes jurisdictions; it mandates channels of communication and patterns of information transfer; it orders decision procedures; and it authorizes action. It coordinates by intrinsic design: its structure constitutes a set of rules which instruct as to "who is to do what in response to what messages."

By this formulation, decision-points exist where lines of information intersect lines of authority. Such points are the linkage modes of an organization. Where there are many, a system is flat. A perfectly decentralized system is one in which each member is authorized to make decisions on the basis of information which comes to him alone. Hierarchy, to the contrary, provides few intersections and those that exist involve the combined information of all actors and components.²⁷

To coordinate by hierarchy, thus, requires a processing system capable of receiving, interpreting, and acting upon the entire information load of the organization. The magnitude of this task can only be appreciated when it is understood that specialization partitions knowledge, creates barriers to effective coupling, and thereby limits the capacity of any choice point either to receive or process information. Each specialization

²⁷ See J. Marschak, "Planning and the Cost of Thinking", Social Research, Vol. 33, 1966.

develops its own code, its own technical language,--known only to those who have received special training. Each pursues its own theories, which makes for variation, dissimilarity, and inequality of knowledge throughout the organization. Most importantly, however, knowledge creates expectations and each specialization works with its own set of anticipations. And because knowledge is distributed unevenly among actors, what one specialty expects, another does not. And it is the violation of expectation that is critical: for it is surprise, anomaly, the unexpected, and the deviation that is news,--that is information.²⁸ The uneven distribution of knowledge in an organization virtually insures that many such surprises will go unnoticed, that such signals will go undetected. And undetected signals lead to actions that can be quite costly to the system.

Hierarchy, again, is the design corrective. It establishes transmission rules, standardizes codes, and moves to eliminate "interference factors." Its problem is to protect against uncertainty in the system by reducing the random potential of variety. If this was accomplished on the foundation of knowledge, it would mean that an organization had developed a theory of such power as to simplify the empirical complexity that attends its entire domain of operations. It would have "organized" diversity, coupled each component in such manner as to integrate an organic whole--and would have done so by force of science, not force of power. Coupling, we will recall, is a causal construct and coordination and integration are, therefore, functions of knowledge.

²⁸ See Arrow, op. cit.; Landau, op. cit., the Self-Correcting Organization.

Now it may indeed be that "an organization will tend to assume hierarchical form whenever the task environment is complex relative to the problem-solving and communicating powers of the organizational members and their tools",²⁹ but it is problematic as to whether "hierarchy is the adaptive form for finite intelligence to assume in the face of complexity."³⁰ It might appear so since centric hierarchy is so ubiquitous a phenomenon. It is not often, however, that it attains the degree of integration sought--management control systems to the contrary notwithstanding. When it does it is only for parts of the system--and these are usually not the problem areas. The whole is generally elusive and when a hierarchy does not and cannot achieve internal integration and coordination, it then stereotypes its system of information coding and transmission, legislates a standardization of its internal operations, and mandates a simplified image of its task environment.³¹

This, invariably, is what hierarchy does. It establishes controls by dint of incumbency, by the power of office--mistaking administrative convenience for objectively effective coordination. It legislates cause-effect relationships, organizational facts, and rules of response. These are not discovered, they are commanded. The uncertainties which attend complexity are erased by regulations which impose predictable response.

²⁹ Simon, op. cit. New Science of Management, p. 43.

³⁰ Simon, ibid.

³¹ Landau and Stout, op. cit. And see H. Klages and J. Nowak, "The Mastering of Complexity", Theory and Decision, Vol. 2, 1971.

Channels and codes are "authorized" and clearance procedures are fixed. The information system of the organization is so tuned that it does not and cannot operate without bias. News which does not fit existing stereotypes is not permitted to enter and pass through the system,--it is dismissed as noise, often at the expense of great injury. Having imposed a standard repertoire of response, which Kenneth Arrow calls "an irreversible capital investment", a centric hierarchy is reluctant to alter its procedures. Searching for more adequate codes and channels, for more effective strategies of response, is not only costly in financial terms but it threatens to subvert the control system, and the appearance of certainty. William Morris records that "it surely is one of the most widely observed facts of organizational life that risk and uncertainty are not made explicit; indeed, they are suppressed to an overwhelming degree."³¹

In so doing, hierarchy cannot learn; it cannot close the gaps between its models of the task environment and the objective properties of that environment. Prone to error, it becomes an ever more faulty system. But it does suffer shock and trauma, and when this exceeds tolerable levels it proceeds to flatten itself. It decentralizes. It cedes authority back to the parts, to lower levels. These individually or in combination are to develop new potentials, new strategies, new channels in the interest of restoring vitality to the system. It takes on the property of acentricity-- a system marked by units which organize and coordinate themselves without

³¹ Morris, op. cit., p. 51.

resort to a centralized control.³² The cyclical pattern of centralization-decentralization in our public administration is some indication that hierarchies tend to collapse of their own weight.

3. The third element that we wish to bring to attention derives from our use of the concept decision node--the point where lines of authority intersect lines of information. We do not employ this idea in the interest of geography--even though the location of choice points is critical to an understanding of organizational behavior and, more particularly, of centralization and decentralization. It is, rather, the matter of authority that we want to consider now. For when an organization is approached as a decision system, authority itself imposes further limits on the extent to which it can be centralized. This may appear paradoxical, but it is nevertheless the case.

Decisions involve choice--the selection of one course of action from two or more alternatives. Choices are end-oriented; they are purposive, intended to attain some objective or goal, some desired state condition. Hence they contain ethical components. But they all also possess factual components. Selecting a course of action to achieve an objective generates a hypothesis; whether the action we have chosen will produce the result we desire is a factual question, an empirical question. It is on this ground that Herbert Simon stipulated a definition of decision that has become

³² For an illustration of such a system, see Martin Landau, Donald Chisholm, and Melvin Webber, On the Idea of an Integrated Transit System, Institute of Urban and Regional Development, University of California-Berkeley, 1980. See also Edgar Morin, "Complexity", International Social Science Journal, Vol. 26, 1974, on the use of acentricity.

standard--a choice which is made on the basis of valuational and factual premises.³³

In a formal organization, decisions are obviously made as part of a means-ends chain. The chain is a hierarchy: it is monocratic in authority. The normative theories which prevail, instruct that the apex formulates the premises that inform and constrain the decisions of the intermediate and lower echelons. Such premises are of both types, valuational and factual. But such theories also tell us that the actions of the apex have to do with the postulation of organizational objectives; thus their content is largely valuational. Lower-levels implement objectives and their decisions are largely factual. This, incidentally, is the basis of the policy-administration dichotomy in American public administration.

The power of the P-A dichotomy does not concern us. By definition, any decision contains both fact and value premises. Classifying a decision is, thus, a matter of weight. If it is largely valuational, it may be treated as a value-judgment without much loss of clarity. If its content is largely empirical; it may be treated as a factual judgment or a technical matter. What is of importance, however, is the way in which both classes of decisions are justified--shown to be correct. Upon what ground are they authorized as valid.

Factual statements are empirical claims: they are hypotheses and, therefore, subject to one test--that of experience. This requirement derives from the nature of a hypothesis. It constitutes an assertion about or

³³ Simon, op. cit., Administrative Behavior.

an anticipation of experience which, by definition, is not known to be warranted, confirmed, or validated. As such the only evidence that is relevant in determining its factual adequacy--whether it is a correct fact--is the experience described or anticipated by the hypothesis itself. It is for this reason, obvious as it may appear, that the rule of observation is indispensable in evaluating factual premises. But the rule of observation makes no sense when applied to value premises because these make no claims about experience. They simply express preferences. The only exception to this occurs when such preferences are alleged to be necessary and sufficient pre-conditions for attaining another preference. In this event, the allegation is causal,--i.e., hypothetical. For whether the initial preference produces the latter is an empirical matter. Short of this, the postulation of basic preferences, of desired outcomes and end-states has to be validated differently. In the public administration, such postulations are justified legally. They are authorized by an appropriate delegation to an incumbent--as when an act of the legislature or an executive order confers authority to act on a department head. It is important to note that such authority is not granted to a person, but to an incumbent. It lodges, thus, in the power of office.

On the matter of distinguishing fact and value, we are obliged to record that there is considerable controversy. There are social scientists and policy analysts who refuse to accept this distinction, arguing that all factual statements are value-laden. We dispatch this controversy with the following statements: if one declares that "Men should not steal" and men do in fact steal, the latter in no way invalidates the former. But

if one states, "Men do not steal", then the fact that men do steal invalidates this statement.

The essential point, then, is that different criteria of correctness must be employed in addressing the validity of a decision. It is this condition that gives rise to a dual authority in every administrative organization. If it does not want to destroy itself, such an organization must accept the authority of independent empirical test as well as the authority of office. Here we engage the well-known fact that in all organizations there exists an authority of expertise (or of knowledge) and an authority of incumbency. And these are frequently in conflict--oftentimes creating situations where lower-echelon actors, because of their expertise, exercise more authority than their superiors. It is not at all unusual for superiors to become wholly dependent on their subordinates in the process of making-decisions. In this respect, formal lines of intersection, which maintain the symmetry of hierarchy, easily become paper pictures that are vacuous. In their place, there develops de facto intersections which involve lesser officers and thereby disrupt the hierarchical order. No matter how tight the hierarchy is established, the unequal distribution of knowledge in any given system guarantees that this will occur.

Such intersections do not appear on organization charts, but their significance is not to be minimized. They are real decision modes and as organizations become more complex--more technically specialized, the more important they become. That is, the greater the technological base of an organization, the greater the authority of expertise. This extends even to questions of value: because an organization is a means-ends chain,

intermediate values can be challenged on empirical grounds. Superiors may establish a sequence of objectives on the basis of their preference orders only to be instructed that the step-objectives do not and cannot lead to the desired end-state. It is also the case that advances in knowledge, can render postulated end-states unnecessary or undesirable.³⁴

It should be quite clear that a centric hierarchy cannot be sustained, cannot operate as such, if its parts do not obey the organizational law. The authority of knowledge, however, sets up a competing force which virtually insures slippage in the duly constituted system of control. It also insures conflict. Alvin Gouldner's research finds that "one of the deepest tensions in modern organizations . . . derives from the divergence of two bases of authority--authority legitimated by incumbency and authority based on professional competence."³⁵ Victor Thompson's conclusion is stronger: the most symptomatic characteristic of modern bureaucracy is the growing imbalance between the two.³⁶

³⁴ See Ch. 6, "Development Theory", op. cit., Landau, Political Theory and Political Science. See also B. H. Klein, "A Radical Proposal for R and D", Fortune, Vol. 57, 1958; B. H. Klein and W. Meckling, "Applications of Operations Research to Development Decisions", Operations Research, Vol. 6, 1958; A. E. Hirschman and C. E. Lindblom, "Economic Development, Research and Development, Policy-Making: Some Converging Views", Behavioral Science, Vol. 7, 1962.

³⁵ "Organizational Analysis", in R. K. Merton, et al., eds., Sociology Today (Basic Books, 1959), p. 414.

³⁶ Modern Organization (Knopf, 1961), p. 6. See also R. L. Peabody, Organizational Authority (Atherton, 1964); M. Dalton, "Conflicts Between Staff and Line Officers", American Sociological Review, Vol. 15, 1950; F. Rourke, Bureaucracy, Politics, and Public Policy (Little-Brown, 1976); J. D. Thompson, "Authority and Power in Identical Organizations" in J. D. Thompson, et al., eds., Comparative Studies in Administration (University of Pittsburgh Press, 1959), M. Janowitz, "Changing Patterns of Organizational Authority: The Military Establishments", Administrative Science Quarterly, Vol. 3, 1959.

We can now capsule this type of limitation on the extent to which a system can be made centric: formal authority may be centralized but the authority of expertise is inherently a decentralized phenomenon.³⁷ No central office can monopolize knowledge.

4. The final limitation on hierarchy to be considered here has to do with "organizational informalities."

It is by now an accepted fact of sociological research that bureaucracies, large-scale formal organizations, are combinations of artificially designed and naturally developed systems. Apart from their fabricated features all formal organizations are characterized by informal groups, personal networks and communication channels, patron-client relations, brokers, coalitions, etc. The entire set of these elements, all of which arise spontaneously, may be referred to as the "informal structure" of the system. The informal structure is extra-legal; it is not official, but it possesses its own decision-nodes and its own loci of authority which significantly modify official practices and goals.³⁸

At one time, informalities were generally considered to be organizational pathologies eating away at the rationality of hierarchy. From the perspective of a centric organization, this is a correct assessment. For informalities operate on the basis of their own values, generate differences in perspective,

³⁷ Ibid, Modern Organization, See Ch. 3.

³⁸ See A. Gouldner, "Organizational Analysis" in R. K. Merton, et al., eds., Sociology Today (Basic Books, 1959); V. A. Thompson, Bureaucracy and the Modern World (General Learning Press, 1976); P. Selznick, "An Approach to a Theory of Bureaucracy", American Sociological Review, Vol. 8, 1943; D. Roy, "Efficiency and 'the Fix'", American Journal of Sociology, Vol. 60, 1954; G. Homans, The Human Group (Harcourt-Brace, 1950); F. J. Roethlisberger and W. J. Dickson, Management and the Worker (Harvard, 1941).

breed multiple-loyalties, establish their own controls and sanctions, socialize newcomers to these constraints,--in short, they break down the monocratic authority of formal hierarchy. In the language we used above, they inject into the system a competing source of decision-premises that disrupts the transitivity of the postulated preference order.

Disrupting formal hierarchy does not necessarily impair the organizational capacity to function, nor does it render an acceptable and effective set of goals improbable. Indeed, there is an irony in this situation because informalities can and do serve as protective redundancies that increase reliability,³⁹ provide dynamic coordination links, ease communication problems, attenuate levels of conflict, and even increase productivity. All of us are familiar with what happens when air-traffic controllers and New York City subway motormen decide to follow the hierarchically promulgated book of rules. When they follow those that have been legislated "informally", those that are unofficial and unwritten, trains and planes run on time, safely, and in proper order. When, however, they "go by the book", all hell breaks loose.

Even in so patent a command structure as the military, informalities are a capital resource, of vital importance,--an "organizational necessity", as it were. William M. Jones draws on his own experience in relating the difficulties that are created when official action takes no cognizance of informalities. Upon the introduction of PPB in the Department of Defense, which Jones describes as "restricting things to the formal level", the sharp

³⁹ On the concept of protective redundancy, see M. Landau, 'Redundancy, Rationality and the Problem of Duplication and Overlap', Public Administration Review, Vol. 29, 1969.

change in official organizational arrangements "shattered" a "well-recognized pattern" of organization and communication at the informal level. The result was a lengthy period of "false starts and general confusion." Jones adds, "it is also worth noting that the pace with which the new system has gained operating efficiency has been closely related to (and in the view of this writer, dependent upon) the rate at which a new subformal pattern has developed."⁴⁰

Whether informalities are of positive or negative consequence, or as sociologists would say--functional or dysfunctional for organizational effectiveness, is an empirical question. And any strong conclusions will, no doubt, be restricted to classes of problems and situations. But it is a hard clear fact that they exist. Even classical theorists like Mary P. Follette pressed this theme: in her view formal hierarchy sat on the foundations of a complex network of informalities that resulted in an inevitable distribution of authority throughout the organization.⁴¹ This recognition was also at the heart of Chester Barnard's concept of "organizational equilibrium" which, when attained, constituted a delicate balance of formal and informal elements. On this foundation, the prime managerial task emerged as a "linkage" problem: to integrate the interests of formal and informal entities into mutually supportive and interdependent networks.⁴²

⁴⁰ On Decision-Making in Large Organizations, Rand Corporation, RM-3963-PR, March, 1964, p. 7. Jones employs the term subformal as we use informal. And see Business Week, May 28, 1979, "Coping with Anxiety at AT&T", pp. 95-96.

⁴¹ See H. C. Metcalf and L. Urwick, eds., Dynamic Administration: The Collected Papers of Mary Parker Follette (Harper, 1942).

⁴² C. Barnard, The Functions of the Executive (Harvard, 1938).

In this context, formal hierarchical authority gives way to a decision strategy that seeks to reduce the tensions that are generated by differences in position and perspective. Were this a pious hope, we would set this statement aside. But there is sufficient empirical warrant to maintain its descriptive validity. Apart from the usual studies of "bureaucratic politics",⁴³ we want to call attention to the fact that in the post war period the Committee on Public Administration Cases published well over 100 studies of agencies, many in great depth and detail. Herbert Kaufman's review of this program carried one striking conclusion: if these cases demonstrated anything, it was "the intricate process of negotiations, mutual accommodation and reconciliation of competing values . . . which mark all of the agencies thus far studied."⁴⁴

The "intricate" process of negotiation, which never appears on an organization chart or a flow diagram, is invariably extra-legal and informal. That it occurs so frequently reveals a cardinal truth about hierarchical organizations: they disaggregate into coalitions which express the pluralism characteristic of any large system. Building consensus through bargaining challenges the principle of monocratic authority,—and the fact that it is so prominent a feature of large-scale formal organization is itself evidence that there are profound limits to the exercise of centric controls. Chester Barnard once observed that whether an order carries authority does not lie with the actor who issues it but with the actor to whom it is addressed.

⁴³ Too numerous to offer a list of citations but see M. Zald, ed., Power in Organizations (Vanderbilt University Press, 1970).

⁴⁴ "The Next Step in Case Studies", Public Administration Review, Vol. __, 1958.

That about sums up the inherent decentralizing thrust of the informal organization.

The term "thrust" carries the connotation of force, of a push in a specific direction. And this is what we mean to emphasize in concluding this section. It is not simply that the pure case of hierarchy is unattainable or that there are parameters which restrict the extent to which centralization can occur. To be sure, there is little doubt on this score. But it is more important to note that there exists a profound tension between centralizing and decentralizing forces which emerges as sharp, often bitter, and protracted conflict. Nor is this to be limited to the interactions of the formal and informal structures. If we treat only of the formal system, the designed organization, this conflict looms large.⁴⁵ Ely Devons, chief of British aircraft production during World War II, has described in painful detail the struggle between this pair of forces. "Every attempt at planning", he writes, was marked by this conflict. And the conflict "appeared at every stage in the administrative hierarchy"--from the central coordinators at ministry level on down. Department planners facing "supreme coordinators" would battle against their centralizing pressures and then proceed to demand the centralization of decision-processes in their own domains--a pattern followed by incumbents at each echelon of the organization, reaching to the production line. And "at each level the coordinators regarded the plans of the individual sectors as futile and wasteful, because they took no account of what was happening elsewhere; and (the) sectors regarded the plans of

⁴⁵ R. A. Dahl and C. E. Lindblom, Politics, Economics, and Welfare (Yale, 1953). See chapters 8 and 9.

the co-ordinators as theoretical, academic, and unrelated to the real facts of the situation."⁴⁶

To those who work in LDC's (less developed countries), the last quotation should sound quite familiar. And the similarity between aircraft production administration and development administration insofar as the issue of centralization is concerned, should be strikingly clear. What is not so clear, however, is that the effort to reorganize in one direction or the other, is not a simple, technical design problem. A sensible, indeed rational, decision on this count would require a cost-effectiveness analysis that comprehends the price of internal conflict. The dialectical tension which pervades this problem is so sharp as to require that such decisions "lie at the end of statecraft not at the beginning."⁴⁷

II.

With this caveat in mind, we turn to a consideration of the application of centralized and decentralized decision modes in organizations. More specifically, we want to relate these to classes of decision problems,--not questions of participation, self-reliance, etc. The reason we make this choice should become evident as we proceed. At this point, it is sufficient to suggest that attaining effective participation, e.g., is dependent upon an understanding of those limiting conditions that define a decision type.

⁴⁶ Cited in Dahl and Lindblom, p. 380.

⁴⁷ H. Hecllo, "Political Executives and the Washington Bureaucracy", Political Science Quarterly, Vol. 92, 1977.

As we shall show, there can be no rational determination of such questions until decisions are typified or classified. Indeed, it will also become evident that "rationality" is contextual in character.

In our earlier discussion, we suggested that differences in organizational form are a function of the way authority and information are treated. The authority involved here is that of incumbency,--permitting office holders to establish preferences and value premises. If the law of the organization allows large numbers of actors to choose courses of action on the basis of information which is directly routed to them, without any intercession from above, the organization tends to be decentralized. It tends to be flat. In this circumstance, such actors control their own agendas. They decide the things that are to be done; they establish their own goals; they evaluate information; and they choose their modus operandi. Their actions, governed by the law of the organization, are restricted to a specified domain, but within that domain they are the "deciders"--and they can act without clearance from above or accountability to a superior.

This situation is similar to what has been called "incrementalism."⁴⁸ Decisions are made at a very large number of separate choice points simultaneously. There is no attempt to be comprehensive, no effort to construct an integrated network of decisions. The basic assumption of this type of decision system is that it will as a whole reflect a considerable rationality--analogous to that of the free market. What is ignored at one

⁴⁸ D. Braybrooke and C. E. Lindblom, A Strategy of Decision (Free Press, 1963). And see C. E. Lindblom, The Intelligence of Democracy (Free Press, 1965), and see Lindblom, The Policy Making Process (Prentice-Hall, 1968).

point, will be acted upon at another. A failure at one point will be compensated for at another. The system, when viewed entire, will behave as a self-organizing, self-regulating, and self-correcting entity. And, as suggested of free market behavior, it does this at reduced cost and greater effectiveness. It reveals less difficulty in gathering and processing information and it more easily delivers relevant information to appropriate choice points,--thereby allowing situations to be dealt with precisely at the point where they are problematical. Such a system is, therefore, more flexible and responsive.

At the other end of the scale, the agenda is controlled by a limited number of deciders. Decision points are few and the choices which are made are informed by the information load of the entire organization. Subordinates route data, either routinely or on demand, to the apex and it is there that information intersects authority. This mode produces fewer decisions but of much wider scope, reflecting the synoptic strategy of problem-solving,⁴⁹ and is the programmatic expression of hierarchy. It takes the form of a fully integrated network or tightly-coupled means-ends chain, with each step a logical derivative of the one above. For any given task domain, a plan is devised which comprehends all of the known factors that relate to that domain--and it does so on the basis of clearly stated preference functions.⁵⁰

⁴⁹ Ibid.

⁵⁰ A preference function provides the criteria that are employed in the selection of a course of action. More specifically, it refers to the standard that is used to compare the utility of alternatives that are available. Choice function, criterion function or utility function are basically the same as preference function.

While this formulation⁵¹ is ideal, it sets the difference between centralization and decentralization in bold relief. But it does not provide any choice function. That is, it does not tell us under what conditions we should opt for one or the other. For this, we move to a matrix developed by James Thompson and Arthur Tuden,⁵² on the foundation of Simon's conceptualization of decision. The matrix subdivides this concept into four types and permits us to state some decision-rules with respect to centralization-decentralization. The Thompson-Tuden explication of the matrix says very little on this problem, and in the application which follows we have retained the logic of the matrix but our analysis and interpretation differs in important respects. We have also dispensed with some of its terminology.

Simon's definition of decision, recall, is built on factual and valuational premises. This requires further interpretation. In the context of a formal organization, designed as a means-ends chain, factual premises translate to a knowledge of causation; i.e., of the instruments or procedures deployed to realize a desired state. These are technical in character and their causal power is an empirical problem. On the other axis, values are indistinguishable from preferences: by definition, they possess motivational force setting up, at the very least, "drive states" which predispose toward specified end-states. They translate, thus, into preferred outcomes or desired goals.

⁵¹ We have drawn it from Arrow, Lindblom, and Marschak, op. cit.

⁵² "Strategies, Structures, and Processes of Organizational Design" in Thompson, op. cit., Comparative Studies.

For any organizational system, we indicated earlier, neither class of premise is beyond question. Factual premises are frequently problematic, subject to doubt, uncertainty, dispute, and challenge. And values are even more often objects of contention, of contrary and conflicting positions. That agreement and disagreement both exist enable us to produce a 4-cell matrix of decision situations.

		Values-Preferences	
		Agree	Disagree
Factual Judgments	Agree	1 Programmed Decision	3 Bargaining
	Disagree	2 Pragmatic Decision	4

Programmed Decisions

Cell No. 1 describes a situation which is unequivocal. There exists agreement as to goals, and the knowledge necessary to attain them is available. For all practical purposes, this is decision-making under conditions of certainty. The entire system--organization, operation, and the task domain--can be treated as a "closed set of variables",⁵³ and a detailed strategy governing the sequence of organizational response can be written as a set of

⁵³ Simon, op. cit., p. 83.

decision rules. Simon refers to this as a "program."⁵⁴ It can be made fully determinate, procedurally complete, and serially ordered.⁵⁵

This decision-strategy is the most powerful we possess. All that is needed "to decide" is contained in the program. There may, of course, be problems of calculation, some rather complicated, but there does exist rules of adequate solution. The critical point is that no actor need do anything other than to apply the appropriate decision-rule. Under conditions of certainty, the test of competence is the ability to understand and to comply with programmatic requirements.

Needless to state, the structural expression of programmed decision-making is hierarchy. It does not make any sense to consider decentralization here. A debate over its relative merit is pointless (although we shall, in the interest of full discussion, inquire into its effects in a few moments). For in this circumstance, the task domain can be mapped to a set of standard operating procedures that control and coordinate every element of the system, man or machine. The logic is not incremental (inductive); it is synoptic (deductive). The number of decision nodes required are few; information is pooled and intersects only a small number of authority points. A reliable and effective means-ends chain can be designed, it can be sequenced smoothly, operational linkages can be ordered,

⁵⁴ Simon, op. cit., New Science of Management.

⁵⁵ In our earlier discussion, we noted that there is a natural noise in every system, that certainty and perfect knowledge is literally unattainable. But if, as is the case quite frequently, we can accurately measure the probability distributions of the outcomes of alternative courses of action, then for all practical purposes, the situation can be treated as closed.

error signals can be established, and error can be corrected. Organizational structure and function mesh to produce what students of administration like to call "streamlined" operations.

We should not be misunderstood on this. We are not addressing whole organizational systems--a total department, ministry, or large corporation. We are speaking of a decision-strategy for a task domain that fits the conditions of Cell No. 1. It is both utopian and a folly to think that the entire set of tasks charged to a ministry can be dealt with under conditions of certainty. On the contrary, we are more likely to find that it structures itself "as if" certainty exists--a costly mistake which we shall discuss later. But it is a fact that for a number of tasks, Cell No. 1 conditions obtain; that is why automation, assembly lines, payroll and inventory control systems can be established. For such tasks, for those which can properly be "programmed", centric arrangements produce optimal performance.

We may now ask, of what value would it be to decentralize. What would be added; what would be gained. In what manner would performance be improved. Would decentralization increase responsiveness to felt needs; would a representational presence result in better product or more effective service. In each case the answer is negative. There is no real gain. The power attaching to decentralization does not apply under conditions of certainty. If, as is the case, it is an appropriate instrument for situations marked by diseconomies of scale,⁵⁶ Cell No. 1 is precisely the kind of condition that permits standardization--a prerequisite for economies of scale. If, as is the case, it is an effective response to noisy, expensive, and

⁵⁶ Morris, op. cit., pp. 18-22, for these hypotheses.

cumbersome communication systems, here no such problem exists. Even as regards innovation, where decentralization is held to be more conducive and more hospitable, its value would be limited. For under objective certainty, innovation is a function of error-correction. If no error occurs, there is no need to introduce modification. And when it does occur, in-built error correction procedures commence the search for solution. This not only protects working systems from meddlers, but it allows for costly search strategies only when needed.

At best, the contribution that decentralization can make here is quite marginal. It is, however, much more probable that decentralization would be disruptive and destructive--and spurious. If we allow for participatory involvement, the situation would be equivalent to placing a question of fact at the mercy of a vote--when that question has been settled by the weight of evidence. As regards responsiveness, it would be superfluous: for a programmed decision-strategy which meets Cell No. 1 conditions is designed to respond to a set of problems already agreed to. Nor will it help to create spheres of discretion: for within the limits which define the proper use of a programmed strategy, the exercise of discretion is exactly equivalent to the exercise of discretion by a machine. It is in need of repair.

Programming is indeed a powerful decision strategy,--when it is not "premature." That is, it must satisfy the requirements of Cell No. 1. For so long as the task domain remains under control, the proper mode of organization is centralization. Should the domain become disordered, should instrumentation prove faulty or agreement as to goals break down, the application of a programmed strategy is inappropriate and harmful. Once objective certainty is lost, entirely different strategies are required. We refer to one such strategy as "pragmatic."

Pragmatic Decisions

We use the term "pragmatic" in accord with Kant's original formulation: it stands for contingent beliefs that provide the basis of choice in a means-ends chain.

Inspection of the parameters of Cell No. 2 reveals agreement as to preferred outcome but an absence of the technology necessary to bring it about. Knowledge of causation is imperfect, the relative merit of alternative courses of action is in doubt, and there is no warranted basis for determining which alternative will be effective. This situation presents a pure "developmental" problem,--to find the technical knowledge appropriate to task. The problem is strictly empirical; the solution is a matter of search and re-search.

It is frequently the case, however, that decisions are required despite the lack of appropriate technology. Especially characteristic of stress and crisis conditions, it is also true of any public administration in the ordinary conduct of its affairs. If an agency had to wait upon perfect knowledge, it would cease to function. Its actions, thus, are undertaken in the face of risk and uncertainty. As regards LDC's, to say that they are less developed, is to say that the bulk of their decision-making occurs under conditions of uncertainty.

What is a sensible strategy for this class of problem. What is a rational methodology. For Thompson and Tuden, this class is defined by a "lack of acceptable proof of the merits of alternatives", hence the organization can rely only on "informed judgment." What they propose is a decision by "majority vote." Since no actor has indisputable knowledge, and no one is in a position to outweigh any other, the decision should be

a majority judgment. The deciders are to consist of all actors who possess some competence by virtue of previous training and experience.⁵⁷

To employ this procedure flattens the decision system. By our standards it decentralizes: it accepts a large number of deciders, each of whom acts (votes) on the basis of his own information. And it is an eminently rational method, founded on the fact that no single actor's knowledge reduces risk more than any other. There are, of course, systems of this type in operation, but they are generally, and officially, reserved to top executive levels.⁵⁸ We have already suggested that risk and uncertainty are not explicitly recognized limitations in the management of administrative organizations. Indeed, it is the persistent refusal to acknowledge this bound that propels the relentless drive for centralized management-control systems.⁵⁹ Here, a terrible irony is involved, and it derives from one startling fact: there are machines which, in the face of contingency, employ "vote-takers" and abide by the principle of majority judgment. The great Von Neumann called this arrangement a "majority organ", and its inclusion in the design of machines (computers and modern aircraft, e.g.) allows them to exhibit significant degrees of decentralization.⁶⁰ It is noteworthy that, in stark

⁵⁷ op. cit., p. 199.

⁵⁸ At lower levels, they are informal.

⁵⁹ Landau and Stout, op. cit. This essay deals entirely with the follies of such systems.

⁶⁰ Landau, op. cit., Redundancy. . . . See also W. H. Pierce, "Redundancy in Computers", Scientific American, Vol. 210, 1964; and see J. Von Neumann, "Probabilistic Logics and the Synthesis of Reliable Organizations from Unreliable Components" in C. E. Shannon and J. McCarthy, eds., Automata Studies (Princeton, 1956).

contrast to prevailing management theory, majority organs are introduced in order to compensate for and protect against imperfect knowledge.⁶¹

A decentralized mode of decision-making is, thus, an intelligent response to the constraints of Cell No. 2 pragmatics. Reliance on "educated guesses", the "best opinions of experts", the judgments of "experienced hands", extending to the ideas of those on the receiving end of program action, is a sensible methodology. Participation in this case protects against the conceits of office and illusions of certainty. It weakens resort to dogma, extends "freedom to analyze", and thereby raises the potential for error detection and correction. But, it must be stressed, judgments by "majority organs" are not, ipso facto, sufficient. The beliefs which inform them are problematical and the instruments chosen are, all too frequently, inadequate. These facts establish other compelling reasons to decentralize.

By the logic of the matrix, if the problem of causation was to be solved, the situation in question would pass to Cell No. 1. It could then be legitimately programmed. The critical task, thus, becomes that with which we opened this section--to find the knowledge that would enable passage. For this reason, pragmatic decision-making requires a research orientation and a heavy investment in experimentation. It will not hurt to explain why we emphasize the term require.

It frequently escapes attention that all policies, and the plans, programs, and projects that emanate from them, fall into the future tense. The object of any policy is to control, direct, or influence a future course

⁶¹ Landau, ibid.

of events which, upon reflection, are the only events subject to control. Policies are, therefore, hypotheses. They are assertions of the "if-then" form and they belong, ab initio, to the class of unverified propositions. Accordingly, the projects they give rise to are experiments. These provide, however inexact, evidence of causal power and instrumental value. It is evidence, not mere belief, which allows a policy to be established as a solution to a stated problem. And in this context it takes the form of a successful ordering of a task domain. When this occurs repeatedly, we know we have a process law; i.e., we know how to produce the outcome we desire. Such knowledge permits Cell No. 1 programming.

Now, pragmatic decision-making carries high error potential. Its moves are very risky. Its principle architects,--policy-makers, planners and analysts (they are the theorists, model builders and methodologists of an organization), stand on infirm ground. Their principles are literally premises; their plans (models) are untested; and their projects are trials. There are no known solutions and, therefore, no basis for an authoritative selection of courses of action. If, parenthetically, in the face of such uncertainty, executives exploit the power of office and order a specified program, they may be lucky and strike success. It is not likely, however. Problems are not ameliorated or solved by the imposition of formulas that bear only the authority of incumbency. Executive power may follow this course in the interest of control and economy, but the control will be a ritual and the economy false--for it will be acting "as if" it knows when it does not. It is not at all unusual for administrative organizations to present the appearance of rationality when they do not know what they are doing or why. This phenomenon is one form of the well-known "organizational paradox."

When it is understood, however, that solutions cannot be commanded, or that the best opinions of the most expert majority organs cannot legislate validity, then the knowledge producing function of administration becomes apparent and the concept of experimentation assumes paramount importance. This is not just a matter of "learning by doing": it is a matter of establishing a policy of redundancy, of plurality, that permits several, and we must emphasize, competing strategies to be pursued simultaneously and separately. Separately, because the moment that a policy or plan is put into effect, it becomes an experiment. And unless we introduce "controls", we cannot effectively learn and we cannot determine which is best. A project which is not conceived of as an experimental act, is a waste. But even if so conceived, there are no guarantees of success: if there were, the undertaking would not be experimental. This is simply another way of saying that the serial ordering of tasks, which establishes a means-ends chain, is a function of knowledge: it is an achievement, not an imposition. Asymmetry and transitivity are, therefore, pointless in this context. And destructive: under conditions of uncertainty there may be a strong propensity to centralize, but this serves only to cut an organization from the vital sources of information it needs for intelligent choice.

We expect, of course, to be reminded that scarcity of resource does not permit the luxury of such an effort. That, at best, we can generally afford only one project at a time. The effort, however, is a necessity, not an indulgence. And restriction to a single project, to one course of action out of a range of possibilities, does not obviate the necessity to treat it as an experimental act. Experimental acts are to be distinguished from terminal

acts.⁶² The latter presume validity, the former do not. Experimental acts precede terminal acts; they are required for terminal acts; for they are, in effect, decisions to collect information and search for knowledge. If a project is not treated experimentally, if its hypothetical status is not respected, it will be managed as if there is nothing to learn. The overwhelming administrative tendency to terminalize (or prematurely program) experimental projects accounts for Michel Crozier's oft-quoted remark that a bureaucratic organization is one that cannot correct its errors by learning from its errors.

With respect to development projects in LDC's, however, it is not likely that financial restrictions will limit to the single case. Many projects are of such an order as to permit several competing strategies to be employed. The Provincial Development Assistance Project, operating in 28 provinces in the Philippines, lost a powerful experimental advantage by not deploying varied management, planning, fiscal, construction and maintenance projects. It could have tested such classic issues as capital intensive vs. labor intensive strategies, synoptic vs. incremental decision modes,-- even centralized vs. decentralized systems of program administration. The PDAP central office mounted "development programs" as terminal acts, centralized under conditions of uncertainty, and for the first six years of its experience the record of this paradox is in accord with Crozier's dictum. When, for a variety of reasons, central control relaxed, and

⁶² H. Raiffa and R. Schlaifer, Applied Statistical Decision Theory (Harvard, Graduate School of Business Administration, 1962).

premature programming ceased, the project became a striking success.⁶³

Cell No. 2 situations require decentralized modes of decision. Under its constraints, the primary task is the development of hard, warranted, practical knowledge. Projects must, therefore, be treated as experiments. These, by their internal logic, are naturally decentralized modes of inquiry. If, in the absence of knowledge, decisional action is necessary, resort to a majority organ is a sensible move. In neither instance can a centric hierarchy be sustained rationally.

Bargaining

The third class of decision-making turns on differences in value premises. Issue does not arise as to causal relationships or choice of instrumentation. It attaches to the objective to be sought.

Theoretically, this problem does not arise in a centric system. Preferences are established at the apex, and the rest of the organization is an implementation device. If it should arise, a centralized system, it would seem, could handle positional differences quite simply. It could, by force of authority alone, establish direction, institute compliance machinery, and sanction deviants. Not surprisingly, there are actors, who, upon assumption of high executive office, employ the principle of hierarchy

⁶³ M. Landau, S. P. Bhakci, et al., Final Report: Provincial Development Assistance Program (Berkeley, Institute of International Studies, 1980). This program was stimulated by USAID and operated with its technical and financial assistance. PDAP Central is an agency of the Ministry of Local Government and Community Development, Government of the Philippines.

to negate the existence of difference and dispute. It was, e.g., within recent years that a newly appointed Administrator of AID declared that "the only weapon we have is sheer, stark terror, and it has to start at the top, and the man at the top has to drive his subordinates. . . ."64

Such postures ignore the plain facts of organizational life. We have no wish to rehearse our discussion of both formal and informal limits on the exercise of centralized authority, but if there is one organizational property that compels attention, it is the existence of extensive value differences on a myriad of dimensions. These can be quite deep, often involving incompatibilities that couple conflict, resistance, even sabotage, to officially proclaimed objectives. There is nothing mysterious about this phenomenon and it is not evil. It simply reflects the inherent pluralism of any administrative system. If, e.g., a chief executive, say the President of the United States, proposes to withdraw troops from Europe, the Army sees this as a threat to its budget and its position; the Budget Bureau welcomes the action as a way to save money; Treasury looks to a more favorable balance of payments; state is concerned with its effect upon NATO; and the President's legislative liaison grabs at the opportunity to ease relations with Congress.⁶⁵ That each actor pays a "selective attention" is simply an expression of difference in interest. Ely Devons described how such differences pervaded aircraft production in wartime England; the Public Administration Case Program

⁶⁴ Transcript of interview with J. J. Giligan, KSTP-TV, St. Paul, Minnesota, May 15, 1977. Released by Office of Public Affairs, AID.

⁶⁵ M. C. Halperin, "The Decision to Deploy the ABM", World Politics, Vol. 25, 1972, p. 65.

established competing interests as a prime characteristic of virtually every agency studied; and for political scientists conflict over preferences is the bedrock of bureaucratic politics. Bureaus contend with bureaus, field offices with headquarters, line with staff--and within bureaus, offices oppose offices, and so on down the line. This fact of life is inescapable: for the parties involved face "the blunt fact . . . that if one preference is satisfied, another is denied."⁶⁶

A centric authority may unleash all of its powers of office to establish its preference order as monolithic. It may choose to subdue disagreement and eradicate difference. It may even use sheer, stark terror. The result, however, is likely to prove paradoxical: the probability is quite high that it will undermine its purpose. Forced compliance "creates profound conflict;"⁶⁷ and we learned long ago that it generates a rigidity and ritualism that displaces original goals.⁶⁸ In this respect, rule-following, i.e., strict adherence to regulation, is a perfect act of administrative sabotage. Coerced adherence to executive preference is a logical expression of centralized control but it risks a vicious cycle of escalating conflict.⁶⁹

⁶⁶ Thompson and Tuden, op. cit., p. 200.

⁶⁷ J. D. Aberbach and B. A. Rockman, "Clashing Beliefs Within the Executive Branch: The Nixon Administration Bureaucracy", American Political Science Review, Vol. 70, June 1976.

⁶⁸ R. K. Merton, "Bureaucratic Structure and Personality", Social Forces, Vol. 18, 1970.

⁶⁹ Aberbach and Rockman, op. cit.

The alternative is simple and rational: it is to recognize the legitimacy of contending interests and to employ a strategy of mutual accommodation. That is, to negotiate differences in the interest of common agreement. If this can be accomplished, the problem can now be moved to Cell No. 1 and action can be programmed. Its conditions have been satisfied.

But there should be no doubt that bargaining washes out asymmetry. Parties at the table assume equal status regardless of formal rank. It is, clearly, a decentralized decision-process. To recognize it as an official mode of conduct is a formal act of decentralization. In the public administration, this rarely occurs. Prevailing management ideology is fixed on the notion of a singular central authority and reinforced by a principle of accountability that assumes hierarchy to be the only responsible form--irrespective of the class of problem to be faced. Not always, however. In the case of regulatory agencies, or of such public-private mixtures as COMSAT and AMTRAK, hierarchy is flattened by directing boards and commissions which are so constituted precisely in order to give expression to differences in preference and perspective. But any attempt to legitimate the internal representation of competing interests in a line organization, now pressed under the banner of "participation" (and, again, without regard to the class of problem to be dealt with), is almost certain to be resisted.⁷⁰

Yet participation is extensive. Our previous discussion of informalities indicates that the empirical norm is indeed negotiation. Coercive

⁷⁰ It will more easily be accepted when internal differences are expressed by external organizations. Hierarchy is less threatened when required to bargain with third parties--a trade union, a professional association, even a client organization.

force is generally displaced by bargaining arrangements that seek to reconcile and accommodate differences, producing a considerable de facto decentralization. This occurs in the most critical areas of administration. It is, e.g., frequently thought that the allocation of resources is guided by a set of optimizing decision strategies--that something so vital to organizational well-being must be subject to the most precise calculation and the most careful programming. But Bower's study of corporate investment and planning reveals otherwise: "In contrast we have found capital investment to be a process of study, bargaining, persuasion and choice spread over many levels of the organization. . . ."71 In the case of a public agency, Victor Thompson once referred to a budget as an annual treaty. Aaron Wildavsky is more specific: "budgets are mechanisms through which subunits bargain over conflicting goals, make side-payments, and try to motivate one another to accomplish their objectives."72

Public organizations are, thus, considerably more decentralized than is ordinarily thought. They seem to adapt naturally to the constraints of a Cell No. 3 decision problem. But the decentralization they reflect is implicit, informal, and de facto. In "open systems" language, this may be regarded as an organizational redundancy that retards the eruptions of schisms that lead to a Cell No. 4 condition. We shall get to this in a moment but it should by now be evident that when value premises are at issue,

71 J. L. Bower, Managing the Resource Allocation Process (Harvard, 1970), pp. 320-1.

72 A. Wildavsky, Budgeting: A Comparative Theory of Budgetary Processes (Little-Brown, 1975), p. 4. And see N. Caiden and A. Wildavsky, Planning and Budgeting in Poor Countries (Wiley, 1974).

the only sensible and rational option is to decentralize the matter of decision. This allows "voice" to the normal distribution of value differences to be found in any administrative organization. And it also builds "loyalty" and prevents "exit."⁷³ It will certainly be true that decentralized processes of reconciling differences will not, and cannot, produce the clarity and precision demanded by planners, policy analysts, operations researchers, or management-control designers. But they do something far more important: they generate organizational decisions that lie well within the "zone of acceptance."⁷⁴ Such decisions are frequently taken by purists to be a retreat from theoretical optima: in the world of everyday constraints, however, they are the practical optima.⁷⁵

Cell No. 4

This situation is described by an absence of agreement on both questions of fact and value. If persistent, it is dangerous in the extreme and can result in total breakdown. When an organization is in this state, the only move that is possible is resort to centralized power. The alternative is degeneration into warfare.

⁷³ A. O. Hirschman, Exit, Voice, and Loyalty (Harvard, 1970).

⁷⁴ See C. Barnard, The Functions of the Executive (Harvard, 1968), Ch. 12, "The Theory of Authority." And see Administrative Behavior, op. cit., Ch. 7, "The Role of Authority."

⁷⁵ Peter Drucker, once the leading popularizer of Management by Objectives, has now come to see that "forced agreement", at the heart of MBO, is fruitless and erroneous. See T. H. Hammond and J. H. Knott, A Zero-Based Look at Zero-Based Budgeting (Berkeley, School of Public Policy, 1977).

Seldom discussed in the literature of organization and management,⁷⁶ this condition is the ever-present threat of Cell No. 3. An inability to adjust differences, to negotiate resolution, may lead to such intense conflict as to spill over even to the concept of fact. This may appear strange but such distinctions as "bourgeois" and "socialist" fact have been around for a long time, rising in intensity during periods of strife and waning with mutual accommodation. And most of us will recall the distinctions between "black" and "white" facts which entered public organizations during the late 1960's and early 70's. A more prosaic but revealing illustration locates in a planning agency where "each side questions the other's basic methods, professional competence, moral commitments, and very justification for existence."⁷⁷ Once so deep a schism has arisen, it is a formidable task to restore a common ground for decision-making.

How can this problem be dealt with. In one sense, departmentalization offers a protective solution. Division of labor, differentiation of tasks, functional groupings, factor an organization in such a way as to narrow areas of disagreements within units. Personnel of similar training and orientation are placed in offices that are shielded from environmental uncertainty and assigned tasks that do not tend to generate conflict. These "buffered" zones,⁷⁸ tend to reduce both internally and externally induced

⁷⁶ But see M. L. and C. E. Needleman, Guerrillas in the Bureaucracy (Wiley, 1974). Written in terms of community planning experiments and from a different perspective, this study provides descriptions of Cell No. 4 situations.

⁷⁷ Ibid., p. 186.

⁷⁸ J. D. Thompson, Organizations in Action (McGraw-Hill, 1967).

risk. Hierarchical arrangements perform this function notably, and in point of fact Cell No. 4 situations are generally rare.

But they do arise with more frequency in the case of single issues or problems. In this case, organizations and subunits can pursue a policy of avoidance. No action is taken on the assumption that it will either pass or that later events may allow for accommodation. This is a common practice and it often works. Real difficulties arise, however, when such problems persist, extend, and envelope the entire unit. Here, there is no alternative but direct intervention.

Thompson and Tuden state that the circumstances of Cell No. 4 require "inspirational" decision-making.⁷⁹ What they mean is that this cell represents a state of anomie: it is, in Durkheim's terms, normless and deregulated. There exist no common constraints, and behavior is random and disordered. The scene is set, thus, for the exercise of charismatic authority. That is, they believe that anomic organizations require the production of new visions by leaders who are thought to possess solutions to intractable problems. Charismatic authority then displaces the legal rationality of modern public administration and transforms personnel relationships in terms of leaders and followers. Power is centered in the leader, the followers having relinquished their decisional rights. This, of course, is centralization with a vengeance.

There is no doubt, as far as polity and society are concerned, that this does occur. It would take us afield to discuss this at any length. But the

⁷⁹ Op. cit., Thompson & Tuden, pp. 202-3.

parade of charismatic leaders over the last 50 years has produced prematurely programmed decision systems that have been dictated without regard to knowledge levels or value differences, and maintained only by the threat of dire sanction. Martial law is also a variant of this.

Public administrative organizations are not. Agencies which operate under the mandate of an objective public law cannot institute charisma as the foundation for decision. Doing so would transform a corporate entity into a purely personal vehicle. Apart from the fact that such organizations are inherently unstable, they violate the conditions for their existence. Long before this stage is reached, on even the appearance of a general breakdown, external authorities intervene to re-establish equilibrium. The agency may be reorganized, its executive replaced, its jurisdiction modified, its tasks altered. "Fact-finding" commissions may be established on the one dimension, while on the other a battery of devices from mediation, to binding arbitration, to outright command, may be resorted to. Sometimes a new executive is given special power to "clean up the mess",--but whatever strategy is employed, centralized control is unequivocally imposed.

Instances of general breakdown are relatively rare, however. It is more frequently the case that subunits of an organization collapse--which is an appropriate term for a Cell No. 4 condition. When this happens repertoires are limited. But whatever is done requires the exercise of centralized authority. Units can be abolished or reorganized, personnel transferred, new complements of actors assigned, management replaced. The task is to assure adherence to organizational rules, regulations, and directives so as to eliminate disorder, i.e., to establish predictability of response. The objective is not so much to secure correct

decisions as it is to get a decision-system operating again. It is, thus, a problem of control; and the primary issue becomes compliance with the law of the organization. Discretion is held to a minimum, which means a sharp reduction in the number of deciders, and the unit is placed under the direct operational control of the center.

Clamping tight control over subordinate units, instituting strict compliance systems, imposing severe limitations on the exercise of discretion are risky undertakings even in this context. The risk attaches to the fact that the control cycle imposed is likely to be an instance of "premature programming" and "displacement of goals." The procedures to be followed become ends in and of themselves. If this property attaches to a long-term intervention, then the effort is a waste. If, however, the imposition of a central control system leads to the re-establishment of some significant degree of motivational unity, then at that point its problems may and should be dealt with pragmatically.

A Transitional Note

Before proceeding to Section III, which will be concerned with design problems, we want to make a few transitional observations.

Both students and practitioners of development tend to assign priority to the terms independent and dependent variables. The former is a causal factor, the latter the outcome, the result. When put in question form, one asks what factors (under what conditions) produce what outcomes. Normally, however, this question is placed in specific terms addressing a special problem as, e.g., how, under existing conditions, can we generate (some specified level of) employment in rural areas. The answer is at once a

function of knowledge and experience, and the critical factor is, of course, the causal variable. If several causal variables are proposed independently of each other, then we have a number of differing hypotheses. Whether any will work remains a matter of test. A priori certainty with respect to such choices is entirely subjective and can in no way affect outcome. It simply means that a person believes that his choice of causal mechanism is correct. If such beliefs are maintained without regard to the effects of experience, then they are nothing more than ideological expressions. This is to be contrasted to a posteriori certainty--i.e., objective certainty, which means that the choice has been validated as a matter of fact.

With respect to problems of administration, and to the type of organizational structure to be employed, a strong case can be made that much of what is proposed is ideology--and not much more. There is an inordinate a priori certainty attaching to questions of organizational policy.⁸⁰ In the sectoral domains (health, nutrition, population control, agricultural productivity, employment generation, etc.) policy is at issue--that is, solution variables are missing variables. Because this is recognized, there exists a rich discussion of "sectoral policy"--say, of agricultural policy--which produces many alternatives. But as regards "organizational policy", the yield is meagre. Organizational policy seems not to be at issue--despite lip-service to the rejection of the "one best way." Few options are offered and these are rather familiar forms that have been cycled regularly over the last fifty years: centralization vs. decentralization is one prime

⁸⁰ See Landau and Stout, op. cit.

example. Or, they are marginal alterations of the one basic bureaucratic model that governs choice in most countries of the world, whether the organization is public or private. Indeed, an examination of textbooks on management reveals extraordinary assumptions--that we not only possess the causal knowledge to produce effective administrative systems, but that our solution (independent) variables have a universal range of application.

It is only now, over the last few years, that questions of organizational policies have emerged. Our systems do not perform very well. And "Making Bureaucracies Work"⁸¹ is a major problem all over the world. Making them work, however, depends on an understanding that different organizational forms have different utilities for different problems. It should be clear from our use of the decision matrix, that no organization confronts only a single class of problems. It should also be clear that the type of system required for one class, is destructive in another. It is folly to create a structure for negotiation in a task domain that can be programmed; and it is equally foolish to establish a pragmatic structure for the same domain. Until this is recognized, we shall not ease our difficulties. Of these, the most compelling arises from the fact that the bulk of the work of an administrative agency falls into Cells 2 and 3 but its organizational structure is designed for Cell No. 1. This, we believe, is the prime organizational problem facing LDC's. In turning to a discussion of design, our analysis is offered without any a priori certainty attached. We believe that what we have to say is sensible; it remains to be determined if we are correct.

C. Weiss and A. Barton, Making Bureaucracies Work (Sage, 1979).