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BUREAUCRATIC STRUCTURE
AND DECISIONMAKING

Anthony Downs

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Bureaus, including government civil and military organizations, are among the most important human institutions in every part of the world. But until recently economists and political scientists have paid little attention to them in their attempts to describe how major decisions are made.

This Project RAND Memorandum is a result of a program of background research in the fields of organization and decision theory, bargaining theory, and communication and control. It describes some general or typical characteristics of bureaucratic organizations and begins the development of a theory of bureaucratic decisionmaking that is intended to help analysts to predict at least some aspects of bureau behavior. Although the study may not be directly applicable to specific problems, it is believed that it will provide useful insights for Air Force officers and other government officials who are concerned with understanding and improving decisionmaking in their own organizations. It may also prove useful to those concerned with organizational behavior and bargaining under stress and crisis conditions.

The present Memorandum is a revision of an earlier work, RM-4646-PR, March 1966. Section V, dealing with the processes of change in bureaus, has been added.

The author is a consultant to the RAND Economics Department and the Vice President and Treasurer of the Real Estate Research Corporation of Chicago. He took his Ph.D. in Economics at Stanford University, and is the author of An Economic Theory of Democracy, New York: Harper & Brothers, 1957.
SUMMARY

This study analyzes the behavior of bureaucratic organizations in a wide variety of situations. Bureaus are organizations that are large, have paid members, hire and promote their members on the basis of role performance in the bureaus themselves, and produce goods and services that cannot be evaluated in markets. Thus almost all government agencies in both democratic and nondemocratic societies, most private non-profit organizations, and some parts of large corporations qualify as bureaus.

The study has three central axioms. First, all social agents pursue their goals rationally; that is, efficiently. Second, the internal structure and operations of each bureau are greatly influenced by the nature of its social functions. Third, bureau officials are motivated at least in part by their own self-interest, even when performing official duties. All officials are divided into five types. Climbers and conservers are purely self-interested; zealots, advocates, and statesmen are motivated respectively by loyalty to narrow policies, to organizations, and to the nation as a whole.

Using these axioms and assumptions, the study explores how bureaus are likely to behave in a realistic world where information is costly and there is uncertainty. A great many facets of bureau behavior are examined, including their life cycles; internal structural elements common to all bureaus; communications processes and problems; the processes of change; internal control difficulties and devices; wasted motion; search processes; how their functions and activities affect the goals of their members and vice versa; their use of such goal-influencing devices as selective recruitment, indoctrination, and ideologies; how ignorance affects budgeting; and the relationship between the increasing bureaucratization of society and individual freedom.

This extensive analysis results in the development of several hypotheses about bureau behavior under various circumstances. These hypotheses and the analysis underlying them provide significant insights that should help both bureau members and those dealing with
bureaus to better understand their nature, problems, and operations. Also, application of the hypotheses to real-world situations should enable analysts to make more accurate predictions of bureau behavior in many instances.

Some of the more significant conclusions of the study can be summarized as follows:

1. Rapid growth or shrinkage in the size of a bureau produces significant changes in the quality of its personnel. These changes alter its ability to perform the social functions assigned to it.

2. As bureaus grow older, they formulate more extensive rules, learn to perform their tasks more efficiently, broaden the scope of their activities, develop more rigid procedures, shift their attention from task-performance to organizational survival, and devote a higher proportion of their activities to internal administration.

3. Since every large organization must devote significant efforts to tasks unrelated to its formal goals, it is impossible to define the "perfectly efficient" behavior for any bureau.

4. Although bureaus are supposed to behave impersonally, personal loyalty actually plays a key role in every bureau, since it helps top-level officials conceal many of the potentially embarrassing actions which inevitably take place in any large organization.

5. Top-level officials can minimize the distortion of information and leakage of authority which occur in every hierarchical organization only by using such seemingly wasteful devices as redundant communications channels, by-passing, overlapping authority assignments, and outside monitoring agencies.
ACKNOWLEDGMENTS

Like most supposedly original works, this study owes a great deal of its content to the thoughts and efforts of persons other than the author. My greatest debts are to Gordon Tullock of the University of Virginia, whose ideas inspired my approach and are used extensively throughout the analysis; and William Jones of The RAND Corporation, whose experience and insights regarding large organizations enabled me to test many of my hypotheses and who contributed several key concepts. RAND colleagues Richard R. Nelson and James R. Schlesinger, and James Q. Wilson of Harvard University all spent many hours reading my earlier drafts and offered crucial suggestions which I have profitably followed. Roland N. McKeen of The RAND Corporation talked me into the project in the first place, and encouraged me through the exploratory stages. Also, my thanks go to RAND colleagues Armen Alchian, Eugenia Arensburger, Edmund Brunner, Thomas K. Glennan, Jr., Paul Y. Hammond, Michael Intriligator, David C. McGarvey, Frances I. Mossman, Robert L. Perry, Almarin Phillips, Bruce L. R. Smith, and Oliver E. Williamson, all of whom made very helpful suggestions.
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I. INTRODUCTION

THE PURPOSE OF THIS STUDY

It is ironic that bureaucracy is still primarily a term of scorn. In reality, bureaus are among the most important human institutions in every part of the world. For one thing, they provide employment for a very significant fraction of the world's population. They also make critical decisions that shape the economic, educational, political, social, moral, and even religious lives of nearly everyone on earth.

Yet the role of bureaus in both economic and political theory is hardly commensurate with their true importance. Until the recent proliferation of organization theory, economists and political scientists largely ignored bureaucratic decisionmaking when constructing theories of how the world operates.* In contrast, beginning with Max Weber, sociologists have performed heroic deeds of analysis upon bureaus. But their approach has suffered from lack of any well-developed structure of decisionmaking theory.

This Memorandum is an attempt to develop a useful theory of bureaucratic decisionmaking. The theory should enable analysts to predict at least some aspects of bureau behavior accurately, and to incorporate bureaus into a more generalized theory of social decision-making -- particularly one relevant to democracies. It would be impossible to solve all the problems involved in this immense and complex field. However, we hope we will solve many, and create a framework upon which solutions to still more may be built by other theorists.

*There are some significant exceptions to this generalization, such as Robert Michels, Herbert Simon, Duncan Black, James Buchanan, and Gordon Tullock. Nevertheless, until very recently, most of the writing on bureaucracy by economists and political scientists was empirical and descriptive rather than theoretical; hence it stands outside the main body of theory in both disciplines.
THE BASIC APPROACH

The Central Hypotheses

The fundamental premise of the theory is that bureaucratic officials, like all other agents in society, are significantly -- though not solely -- motivated by their own self-interests. Therefore, this theory follows the tradition of economic thought from Adam Smith forward, and is consistent with recent contributions to political science made by such writers as Simmel, Truman, Schattschneider, Buchanan, Tullock, Riker, and Simon.

Specifically, the theory rests upon three central hypotheses:

1. Bureaucratic officials (and all other social agents) seek to attain their goals rationally. In other words, they act in the most efficient manner possible given their limited capabilities and the cost of information. Hence all the agents in this theory are utility maximizers. In practical terms, this implies that whenever the cost of attaining any given goal rises in terms of time, effort, or money, they seek to attain less of that goal, other things being equal. Conversely whenever the cost of attaining a goal falls, they seek to attain more of it.*

2. Bureaucratic officials in general have a complex set of goals including power, income, prestige, security, convenience, loyalty (to an idea, an institution, or the nation), pride in excellent work, and desire to serve the public interest. Our theory postulates five different types of officials, each of which pursues a different subset of the above goals. But regardless of the particular goals involved, every official is significantly motivated by his own self-interest even when acting in a purely official capacity.

3. Every organization's social functions strongly influence its internal structure and behavior, and vice versa. This premise may seem rather obvious, but some organization theorists have in effect contradicted it by focusing their analyses almost exclusively on what happens within an organization.

*The Theoretical Environment*

The world in which these hypotheses apply is as realistic as we can make it. In this respect, it differs sharply from the "perfectly informed" world of traditional economic theory. Instead, it more closely resembles the environment assumed by most political and sociological theorists. The following general conditions prevail:

Information is costly because it takes time, effort, and sometimes money to obtain data and comprehend their meaning.

Decisionmakers have only limited capabilities regarding the amount of time they can spend making decisions, the number of issues they can consider simultaneously, and the amount of data they can absorb regarding any one problem.

Although some uncertainty can be eliminated by acquiring information, an important degree of ineradicable uncertainty is usually involved in making decisions.

The basic institutional setting of this theoretical world can be either democratic, totalitarian, monarchical, traditionalist, or have any other form in which bureaus are likely to be found. As pointed out by Max Weber, bureaus probably require a money economy rather than a barter economy.** But there are no other particular constraints on the type of society to which the theory applies.


Two further observations are in order. First, there is no attempt to test any of the hypotheses or propositions empirically in any systematic fashion. Second, the theory covers only a small part of the total activities of bureaus. The subject is so gigantic that we have concentrated upon what we think to be the most important facets of bureau behavior. The theory can easily be extended to fit hundreds of particular situations that might be of interest to analysts of real-world bureaus.

THE NECESSITY OF ABSTRATION AND ARBITRARINESS

Like all theories -- indeed, like all human knowledge -- this is an abstraction from the richness and complexity of reality. It uses varying degrees of simplification in the formulation of definitions and propositions. This inevitably introduces a certain degree of "unreality" into the analysis. For example, all bureaucrats are classified into five "ideal types," which are certainly vastly oversimplified in relation to real people. Consider one of these types, climbers, defined as bureaucrats motivated solely by the desire to maximize their own personal power, income, and prestige. Few -- if any -- officials in the real world always pursue so few goals (although maximizing one's power, income, and prestige is rarely simple). Even men who usually behave like climbers are also sometimes moved by charity, anger, patriotism, loyalty to superiors, envy, craftsmanship, and myriad additional goals not covered by this definition.

Moreover, the use of five particular types is admittedly arbitrary. We could have used any number of types, or defined these five somewhat differently. The five types used here represent our own best judgment of the "optimal classification" of bureaucrats, but some other typology may be more useful for certain kinds of analysis aimed at other purposes.

Both the simplification and the arbitrariness embodied in the theory are justifiable for two reasons. First, some simplification
and arbitrariness are inescapable in all human knowledge. Second, the particular forms of simplification and arbitrariness developed here enable us to make forecasts about the behavior of officials and bureaus that will hopefully prove more accurate than forecasts made with alternative forms. Hence even what appears to be gross oversimplification or arbitrariness may prove useful.

Furthermore, much of our analysis is wholly independent of how the five specific "ideal types" of officials are defined. This analysis and the propositions that flow from it follow directly from the three central hypotheses. Examples are the inevitability of hierarchies in bureaus, the existence of distortion in communications and control, and the use of selective recruitment to reduce indoctrination and control costs. These and a host of other conclusions would be equally valid if the theory were developed in terms of a single type of official, so long as that type behaved in accordance with the central hypotheses. Therefore, even if the reader rejects this particular typology of bureaucrats, he need not reject the majority of conclusions so long as he accepts the basic postulates concerning rationality, self-interest, and the interaction of a bureau's environment and structure.

WHAT ARE BUREAUS, AND WHO ARE BUREAUCRATS?

What Are Bureaus?

Any organization is a bureau if and only if it exhibits all four of these characteristics:

1. It is large. Generally, any organization in which the highest-ranking members know less than half of all the other members can be considered large.

2. A majority of its members are full-time workers who depend upon their employment in the organization for most of their income. As a result, most of the members have a serious commitment to the bureau; they are not dilettantes. Also, the bureau must compete for the services of most of its members in the labor market.
3. The initial hiring of personnel, their promotion within the bureau, and their retention therein are based at least partly upon an assessment of the way in which they have performed or can be expected to perform their organizational roles, rather than solely upon either ascribed characteristics (such as religion, race, social class, family connections, age) or periodic election to office by some constituency outside of the bureau.

4. The major portion of its output is not directly or indirectly evaluated in any markets external to the organization by means of voluntary quid pro quo transactions.

Thus, General Motors as a whole is not a bureau because its outputs are evaluated in the outside markets for automobiles, diesel engines, refrigerators, and so on. However, the Public Relations Department of Chevrolet may be a bureau, because there is no accurate way to evaluate its output in dollar terms.

Who Is a Bureaucrat?

It might seem logical to conclude that a bureaucrat is any member of a bureau. However, that is not the definition in this study. Instead, a bureaucrat is a person whose employment has the following characteristics:

1. He works for a large organization.

2. He is employed full-time by the organization and derives a major portion of his income from such employment.

3. The organization's personnel policy (including hiring, promotion, and retention) toward both a significant part of its members and the person in question is at least partly based upon role performance as described above.

This means that the person himself is not periodically elected to office by any constituency outside the organization, nor is his continuance in office tied directly (either legally or by custom) to the continuance in office of some other person periodically elected.
4. His own output cannot be evaluated directly or indirectly on any markets by means of voluntary quid pro quo transactions, regardless of whether or not most of the output of the organization he works for is so evaluated.

Several characteristics of this definition are especially important. First, a bureaucrat can work for an organization that is not a bureau. This definition therefore allows us to talk about bureaucrats in private organizations that are intrinsically different from bureaus.

Second, not all the employees of a bureau need be bureaucrats. For example, Harvard University sells books. Insofar as the outputs of certain of its employees can be evaluated with reference to the book market, they are not bureaucrats.

Third, the term bureaucrat as we use it has no pejorative connotations whatever. Bureaucrats as individuals are neither more nor less efficient, honest, hard-working, thorough, public-spirited, nor generally worthy of admiration than nonbureaucrats. Of course, the institutional structure of bureaus may cause important differences between bureaucrats and nonbureaucrats regarding some of these qualities. But this does not mean that bureaucrats as individuals form some inferior (or superior) class of human being.

Still, there is age-old opprobrium attached to the word bureaucrat; therefore, throughout most of this study, the more neutral word official will be used instead.

Types of Officials

In this study, we assume there are only five types of officials. Admittedly, these "ideal types" are oversimplified. Every man pursues a great many goals, not only the small number we posit for each type. Furthermore, utility maximizers actually trade off among their many goals as the relative values thereof change, but some of the officials in our theory sacrifice everything else for one or two goals. Finally, no small number of "ideal types" can encompass the bewildering
variety of personalities and characters encountered in the real world. Nevertheless, we believe use of these five abstractions will provide significant insights into the way bureaus actually behave.

The five types of officials in our theory, and the values they exhibit, are defined as follows:

Purely self-interested officials are motivated almost entirely by goals that benefit themselves rather than their bureaus or society as a whole. There are two types of such officials:

Climbers consider power, income, and prestige as nearly all-important in their value structures.

Conservers consider convenience and security as nearly all-important. In contrast to climbers, conservers seek merely to retain power, income, and prestige they already have, rather than to maximize them.

Mixed-motive officials have goals that combine self-interest and altruistic loyalty to larger values. The main difference between the three types of mixed-motive officials is the breadth of the larger values to which they are loyal. Thus:

Zealots are loyal to relatively narrow policies or concepts, such as the development of nuclear submarines. They seek power both for its own sake and to effect the policies to which they are loyal. We shall call these their sacred policies.

Advocates are loyal to a broader set of functions or to a broader organization than zealots. They also seek power because they want to have a significant influence upon policies and actions concerning those functions or organizations.

Statesmen are motivated by loyalty to society as a whole and a desire to obtain the power necessary to have a significant influence upon national policies.
and actions. They are altruistic to an important degree because their loyalty is to the "general welfare" as they see it. Therefore, statesmen closely resemble the theoretical bureaucrats of public administration textbooks.
II. THE LIFE CYCLE OF BUREAUS

HOW BUREAUS COME INTO BEING

Types of Bureau Genesis

Bureaus are generally created in one of four different ways. First, a bureau can be formed by what Max Weber called the routinization of charisma.* A group of men brought together by their personal devotion to a charismatic leader may transform itself into a bureaucratic structure in order to perpetuate his ideas. Second, a bureau may be deliberately created almost out of nothing by one or more groups in society in order to carry out a specific function for which they perceive a need. Many of the agencies in the federal government formed during the New Deal years are of this type. Third, a new bureau can split off from an existing bureau, as the Air Force did from the Army after World War II. Fourth, a bureau may be created through entrepreneurship if a group of men promoting a particular policy (such as communism) gains enough support to establish and operate a large nonmarket organization devoted to that policy.

All of these geneses have three things in common: the bureau is initially dominated either by advocates or zealots; it normally goes through an early phase of rapid growth; and it must immediately begin seeking sources of external support in order to survive.

Dominance by Advocates or Zealots in New Bureaus

In a vast majority of cases, a bureau starts as the result of aggressive agitation and action by a small group of zealots who have a specific idea they want to put into practice on a large scale. This is true by definition of bureaus created through spontaneous entrepreneurship. Charismatic leaders also qualify as

zealots. They attract a small group of disciples who eventually need to support themselves. This need tends to modify the original group into some more formal organization. In many cases, it becomes a predominantly bureaucratic organization. Thus, the Franciscan Order can be considered a bureaucratic offshoot from the leadership of St. Francis.

Almost every bureau formed by splitting off from an existing bureau is initially generated by the zealotry of a few members of the existing bureau. Some zealots are found in all bureaus -- indeed, in almost all human organizations. This is true because the personal characteristics necessary for zealotry occur spontaneously in a certain fraction of any society's population. This fraction is higher in modern societies than in tradition-oriented societies, since the former encourage innovation in general. Also, the proportion of zealots in a given bureau may differ sharply from that in society as a whole, because some bureaus tend to attract zealots and others to repel them. As a result, the proportion of zealots in different bureaus varies widely. Nevertheless, a certain number appear spontaneously in every bureau.

When a group of such zealots somehow conceive a new function they believe their bureau should undertake, they form a nucleus agitating for change. Enthused by their idea, they persuade their superiors to give them such resources and manpower to develop it. If their efforts prove successful, they gradually enlarge their operations. For these operations to generate a new bureau, they must be technically distinct from the other activities of the parent bureau. As the practitioners of the new specialty become more immersed in it, their terminology, interests, and even policy outlooks become more unlike those of the remainder of the parent bureau. Hence a growing conflict usually springs up between these two groups. The new specialists eventually become convinced that they cannot fully exploit the potentialities of their operations within the parent bureau.
This marks a critical stage in the life of the new section. It can either be suppressed by the traditionalists, or successful in breaking off into a new bureau. The key factor is the amount of support the new section generates outside of the parent bureau. If the new section's leaders can establish a strong clientele or power base beyond the control of their immediate supervisors, then they have some leverage in agitating for relative autonomy. In some cases, they will establish autonomy very quickly; in others it will take years of struggle and a strong push from the external environment. But in all cases, it is the purposeful agitation of men specifically interested in promoting a given program that generates the splitting off of new bureaus from existing ones (or new sections within a bureau from existing sections). Hence the new bureau (or section) is initially dominated by the zealots whose efforts have brought it into being.

Only in bureaus created out of nothing by external agents is there initially no "small band of warriors" whose agitation has founded the bureau. In this case, politicians, existing bureaucrats, or members of private firms or unions have discerned the need for a new organization designed to accomplish a specific purpose. They round up the legal authority to establish this organization, select someone to run it, and give him an initial set of resources. Examples of such creation are the Commodity Credit Corporation and the new campuses of the University of California.*

However, new bureaus thus formed out of nothing usually behave very much like those formed around a nucleus of zealots. The ideas upon which a new bureau is based have generally originated with some group of zealots. In many cases, the leading proponents of these ideas are immediately put in charge of the bureau. In any case, whoever is running a bureau entrusted with a new function soon finds

that his recruiting efforts are most successful with men who have a
proclivity toward that function -- including the zealots who started
the idea, or their disciples. Moreover, since the top administrator
and his staff will normally be judged by their success in carrying
out this function, they also tend to become strong advocates themselves.
Thus, even bureaus created almost out of nothing are usually soon
dominated by advocates or zealots energetically promoting its functions.

The Struggle for Autonomy

No bureau can survive unless it is continually able to demonstrate
that its services are worthwhile to some group with influence over
sufficient resources to keep it alive. If it is supported by volun-
tary contributions, it must impress potential contributors with the
desirability of sacrificing resources to obtain its services. If it
is a government bureau, it must impress those politicians who control
the budget that its functions generate political support or meet vital
social needs.

Generation of such external support is particularly crucial for
a new bureau. True, some "new" bureaus have already succeeded in
gaining support, or else they would not have been able to split off
from their parent agency. Similarly, an organization created by
entrepreneurship can grow large enough to qualify as a bureau only
if it has external support. Even bureaus formed by the routinization
of charisma have attracted outside support because of the personal
magnetism of their original leader. Thus only bureaus created almost
out of nothing come into being without already having provided valu-
able services for "outsiders." Even they have some ready-made sources
of external support, since their functions were being demanded by
someone.

Yet the survival of new bureaus is often precarious. Their
initial external sources of support are usually weak, scattered, and
not accustomed to relations with the bureau. The latter must therefore
rapidly organize so that its services become very valuable to the
users. Only in this way can it motivate them to support it.

Eventually, the users of the bureau's services usually become
convinced of their gains from it and develop routinized relations
with it. Then the bureau can rely upon a certain amount of inertia
to keep on generating the external support it needs. But in the
initial stages of its life, it must concentrate on developing these
"automatic" support generators. This critical drive for autonomy
will determine whether or not it will survive in the long run.

This does not mean that members of the new bureau are interested
solely in its survival. In fact, they are more interested in perform-
ing its social functions. This follows from the fact that the new
bureau is initially dominated by advocates or zealots, who are not
primarily motivated by self-interest.

In some cases, the social functions involved are inherently
incapable of generating external support in the long run. For example,
a bureau set up to plan a specific operation (such as the invasion of
Normandy) tends to eliminate its external support when it carries out
its function. However, most bureaus have functions that cannot be
adequately discharged in the long run if the bureaus do not continue
to exist. Hence even pure altruism would lead their top officials to
be vitally concerned about bureau survival.

To this motive must be added the motive of self-interest described
by Peter Clark and James Wilson as follows: "Few [organizations]
disband willingly, as neither executives nor members are eager to end
an activity that rewards them." Thus officials in almost every new
bureau place a high priority on creating conditions that will insure
the bureau's survival.

As Clark and Wilson point out, bureau survival is closely
related to the creation of relative autonomy by each bureau:

* Peter B. Clark and James Q. Wilson, "Incentive Systems: A
  Theory of Organizations," Administrative Science Quarterly, Vol. 6,
The proliferation of associations and the division of labor in society has meant that there is almost no way for an organization to preserve itself by simply seeking ends for which there are no other advocates. Thus, the maintenance of organizational autonomy is a critical problem. By autonomy we refer to the extent to which an organization possesses a distinctive area of competence, a clearly demarcated clientele or membership, and undisputed jurisdiction over a function, service, goal, issue, or cause. Organizations seek to make their environment stable and certain and to remove threats to their identities. Autonomy gives an organization a reasonably stable claim to resources and thus places it in a more favorable position from which to compete for those resources. Resources include issues and causes as well as money, time, effort, and names.*

**Rapid Growth of Young Bureaus**

Few bureaus ever achieve such perfect autonomy that they are immune from threats to their survival. However, a bureau can attain a certain initial degree of security as noted above. This presupposes that it has become large enough to render useful services, and old enough to have established routinized relationships with its major clients. We will refer to these minimal size and age levels as the bureau's initial survival threshold.

There is always a certain time interval between the beginnings of a bureau and its attaining the initial survival threshold. Sometimes this period occurs before its formal "birth" as a separate organization. In other cases, a bureau's fight to reach the threshold begins with its formal establishment.

As a general rule, a bureau arrives at this threshold after a period of rapid growth in both size and the relative social significance of its functions. This usually occurs in response to external environmental conditions favorable to the expansion of the bureau's functions. For example, the Army Air Force grew extremely rapidly

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*R. Ibid., p. 158.
during World War II in response to the need for military air power. This experience convinced Congress (stimulated by members of the Army Air Force seeking autonomy) that it should establish a separate Air Force. The formal birth of the Air Force thus marked the end of its critical creation period, which began in the 1920s.

For bureaus that do not develop by splitting off from existing agencies, rapid growth normally occurs right after they have been formally born as separate agencies. The leaders of such a new bureau must quickly serve enough customers to reach their initial survival threshold before their original allocation of resources is exhausted, or its replenishment is blocked.

Bureaus created through entrepreneurship are generally not successful until the zeal of the nucleus group coincides with environmental conditions favorable to the function they are promoting. Then other agents in society bestow enough resources on this nucleus so it can rapidly expand to meet the need its members have long been advocating.

Bureaus formed through the routinization of charisma generally do not experience rapid expansion until after the attraction of the charismatic leader has been transformed into organizational machinery. In most religions, this has not occurred until after the original leader's death.

Whatever its origin, a fledgling bureau is most vulnerable to annihilation by its enemies immediately before it attains its initial survival threshold. Then it has not yet generated enough external support to resist severe attacks.

Since most organizations have both functional and allocational rivals, the possibility that a bureau will be destroyed by its enemies is a real one. Its functional rivals are other agencies whose social functions are competitive with those of the bureau itself. Private power companies are competitive in this way with the Rural Electrification Administration. Its allocational rivals are other agencies who compete
with it for resources, regardless of their functional relationships with it. In government, all bureaus supported by the same fund-raising agency (such as Congress) are allocationally competitive. In the private sector, allocational competition is usually indirect. The Community Fund, for example, competes with all forms of private expenditure for consumers' dollars. Thus the general scarcity of resources makes almost everyone an enemy of a new bureau unless it can demonstrate its usefulness to him. A bureau's infancy therefore nearly always involves a fight to gain resources in spite of this latent hostility.

If the new bureau has strong functional rivals, or if it is designed to regulate or inhibit the activities of powerful social agents, then it will be severely opposed from the start. These antagonists often seek to capture the new bureau's functions themselves, or suppress them altogether. Hence they try to block it from establishing a strong external power base. The bureau may have to fight ferociously during its infancy to avoid being disbanded or swallowed by some larger existing bureau.

Some bureaus never succeed in reaching their initial survival threshold. They may exist for years in a state of continuous jeopardy. An example is the Civilian Defense Agency, which has recently been swallowed by the Army. These agencies have been unable to establish firm autonomy largely because they have no strong clientele with power in the U.S. political system. Their functions do not endow them with a host of well-organized domestic beneficiaries, or a powerful set of suppliers with no alternative markets (such as the suppliers of the Department of Defense). Thus, the single most important determinant of whether a bureau can establish autonomy (and how fast it can do so) is the character of its power setting. If its suppliers or beneficiaries are strong and well-organized in comparison with its rivals and sufferers, then it will probably quickly gain a clearly autonomous position.
THE DYNAMICS OF GROWTH

Once a bureau has come into existence, it is subject to certain definite laws of growth and change. In this section, we will examine these laws and the factors underlying them.

The Cumulative Effects of Growth or Decline

The major causes of both growth and decline in bureaus are rooted in exogenous factors in their environment. As society develops over time, certain social functions grow in prominence and others decline. Bureaus are inevitably affected more strongly by these external developments than by any purely internal changes. However, the interplay between external and internal developments tends to create certain cumulative effects of growth or decline. They occur because bureaus can experience significant changes in the character of their personnel in relatively short periods of time. In spite of the career nature of bureau employment, there is often a considerable turnover of personnel in specific bureaus. Also, growth that doubles or triples the size of a bureau in a short time can swiftly alter its whole structure and character.

Dominance in Bureaus

A shift in only a small proportion of the officials in a bureau can have a profound effect upon its operations. If most of the officials occupying key positions in a bureau are of one type (that is, conservers, climbers, and so on), then the bureau and its behavior will be dominated by the traits typical of that type. This relatively small group of key officials can exercise dominance even if a majority of bureau members are of other types.

The possibility of a few men dominating the activities and "spirit" of a whole bureau arises because its hierarchical structure tends to concentrate power disproportionately at the top. However, dominance is a relative thing. In some situations it is difficult to tell whether a bureau really is dominated by one type, or is staffed by such a mixture of officials that no one type is dominant.
The Growth Accelerator Effect

Let us imagine a bureau in a state of "perfect equilibrium" with a zero growth rate over time. Suddenly its social function becomes much more important relative to others. As a result, the bureau's sovereign and other agents in its environment direct it to expand its activities and staff rapidly, giving it the resources to do so. An example is NACA's experience shortly after Sputnik I.

Any organization experiencing rapid overall growth provides many more opportunities for promotion in any given time period than a static one. New supervisory positions are created, attracting thereby new personnel who are interested in rapid promotion; that is, climbers. At the same time conservers will not be drawn to fast-growing bureaus, or may even be repelled by them. This occurs because rapid growth is normally accompanied by uncertainty, constant shuffling of organizational structure, and hard work.* As a result, fast-growing bureaus will experience a rising proportion of climbers and declining proportion of conservers. Moreover, this proportional increase in climbers will be larger in high-level positions than in the bureau as a whole. Climbers will rise faster because they deliberately pursue promotion more than others. They are much more innovation-prone than conservers, and the bureau needs innovators in order to carry out its newly expanded functions. Hence objective "natural selection" within the bureau, as well as the subjective selection caused by differences in personal motivation, will cause climbers to be selected for promotion faster than conservers. This means that the prominence of climbers (and other innovation-prone officials, such as zealots and advocates) will increase in a fast-growing bureau, even if that bureau is initially dominated by conservers.

The bureau becomes continuously more willing and able to innovate and to expand its assigned social functions by inventing new ones or

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* Of course, if there is a great deal of unemployment, all types of officials who do not have jobs may be drawn to an expanding bureau.
"capturing" those now performed by other less dynamic organizations. Such further expansion tends to open up even more opportunities for promotion. This in turn attracts more climbers, who make the bureau still more willing and able to innovate and expand, and so on. Rapid growth of a bureau's social functions thus leads to a cumulative change in the character of its personnel which tends to accelerate its rate of growth still further.

**Brakes on Acceleration**

This growth acceleration soon runs into serious obstacles. First, even though its original social function expanded greatly in relative importance, that function must still compete allocationally with others for social attention and resources. Therefore, as the accelerating bureau grows larger, it encounters more and more resistance to further relative growth of this function at the expense of other activities in society. This has certainly happened to NASA.

Second, the ever-expanding bureau soon engenders hostility and antagonism from functionally competitive bureaus. Its attempts to grow by taking their functions is a direct threat to their autonomy. Hence the total amount of bureaucratic opposition to the expansion of any one bureau rises the more it tries to take over the functions of existing bureaus.

The third brake on the growth accelerator is the difficulty of continuing to produce impressive results as the organization grows larger and more unwieldy. The bureau cannot generate external support (except among its suppliers) without producing services beneficial to someone outside its own members. Therefore, a bureau must periodically come up with impressive results if it wishes to sustain its growth. NASA's staging of dramatic events at well-spaced intervals illustrates this concept.

But as the bureau grows larger and takes on more functions, it often becomes increasingly difficult to produce such convincing results. Increased size and complexity cause greater difficulties of planning and coordination. Also, a higher proportion of the efforts
of top-echelon officials will be devoted to coordination and planning. This means that the best talent in the bureau will be diverted away from action into administration.

Finally, as the bureau gets larger, the average level of talent therein is likely to decline. This level may initially rise as ambitious and promotion-oriented climbers flow into it during the first phase of its fast growth. This is especially likely because of a certain "critical mass" effect. It is hard for a bureau to recruit one well-known physicist when it has none; but once it has two or three, others are attracted by the chance to work with this distinguished team. Nevertheless, the tendency for average talent to rise with growth eventually reverses itself. Once the bureau has all the high-level talent it can command during its first stages of growth, it must satisfy itself with lesser talent as it grows even larger. True, if the bureau expands into entirely different fields, it can start all over again at the top of the talent list. Hence, this growth-braking effect is less serious if the bureau grows by taking on new or different functions than if it grows by performing one set of functions more intensively.

A fourth internal check to the growth accelerator is provided by conflicts among the climbers who flood into a fast-growing bureau. As the proportion of climbers rises, a higher proportion of their efforts is devoted to internal politics and rivalry rather than performance of their social functions. This also tends to reduce the bureau's ability to provide impressive demonstrations of its efficiency.

The declining ability to produce impressive results as the bureau grows larger may be offset for a time by increasing economies of scale. Such economies may enable the bureau to produce more outputs per unit of input, but they do not reduce the amount of external opposition generated by every attempt to expand the bureau's total inputs. Eventually these factors choke off accelerated (or perhaps all) growth. This prevents the bureau from expanding indefinitely once it has experienced an initial spurt of high-speed growth.
The Decelerator Effect

Whenever the relative growth rate of a bureau declines below the average for all bureaus, its personnel may change in ways almost exactly opposite to those that make up the growth accelerator. This decelerator effect is most likely to occur when the bureau is forced to reduce its total membership because of a sharp drop in the relative significance of its social function. Such a decline, stagnation, or just slower than average growth tends to reduce the opportunity for promotion within the bureau to a level below that prevailing in comparable organizations.

This will usually serve notice for climbers to depart. However, not all climbers have skills that are easily transferable to other organizations. Such transferability is an important factor determining the climber's mobility from bureau to bureau. Still, in most cases, many climbers will respond to a sharp decline in the bureau's growth rate by jumping to other bureaus. Also, those who have reached high positions in the bureau will lose hope of climbing much higher and will tend to become conservers instead of climbers. Such changes reduce the proportion of climbers in the bureau, and increase the proportion of conservers in key positions. As a result, the entire bureau will shift toward greater conservers dominance, thereby reducing its ability to innovate and the desire to expand its functions. Then, whenever opportunities for innovation or function-expansion do present themselves, the bureau will be less able, or willing, to take advantage of them. It may even lose functions to other more aggressive and innovation-prone bureaus. Thus, once a bureau starts to shrink -- or even just experiences an abnormally slow growth rate over an extensive period -- it sets in motion forces that tend to make it shrink even faster, or grow even more slowly.

However, this decelerator effect is not entirely symmetrical with the growth accelerator for the following reasons. First, the climbers who are left in the bureau will still tend to rise faster than non-climbers. Second, the number of top jobs (which are soon occupied by climbers) will go up faster during acceleration periods than it goes
down during deceleration periods. Third, since all types of officials, including conservers, resist shrinkage in their importance or resources, the resistance aroused by reductions in bureau size tends to be stronger than the enthusiasm caused by growth. Therefore, accelerators and decelerators cause more of a ratchet movement in the life of a single bureau than a smooth up-and-down curve.

These factors function as checks on the tendency of the decelerator to reduce the size of a bureau once it has stopped growing. Another check is the fact that reduction of a bureau's services below some minimal level will create strong protests from its direct beneficiaries.

"Qualitative Growth" Without Expansion*

A logical deduction from our accelerator and decelerator principles is that slow-growing or stable organizations of a certain type will generally be staffed by less talented personnel (in terms of innovation ability) than fast-growing organizations of the same type. However, this conclusion seems at variance with the experience of U.S. university faculties. In recent years, the fastest expansion in total faculty size has occurred at state-financed schools. Yet nearly all measures of faculty quality show that the major private universities have managed to maintain a higher caliber than their faster-growing state rivals. The reason for this is that these private universities have experienced rapid qualitative growth without quantitative expansion.

What really attracts climbers is not promotion per se, but increased power, income, and prestige. Normally, bureaus offer their members these perquisites primarily through promotion. They can usually promote many people rapidly only if fast growth creates more high-level positions. However, if the organization in essence promotes everyone simultaneously by increasing the power, income, and prestige of nearly all its members without growing larger, it can achieve the same effects. This is precisely what top-level private universities

*I am indebted to Professor George Stigler of the University of Chicago for raising the problem of university faculties, and thereby stimulating the development of this section.
have accomplished. They have continued to offer both new recruits and existing faculty members higher salaries, more freedom from bureaucratic interference, and greater time for research than their state-financed rivals. Moreover, the extremely high turnover in most university faculties has made it possible to offer low-level members relatively rapid increases in rank without either expanding, forcibly ejecting present high-ranking members, or drastically increasing the ratio of high-ranking to low-ranking positions.

An organization can maintain high-quality personnel (in terms of innovation ability) even if it does not experience relatively rapid growth in size, so long as it experiences such growth in the incentives it offers its members. But this implies that it receives ever more resources from its environment for performing tasks requiring no more man-hours of input. This can happen only if the value of the members' outputs per man-hour of input rises sharply. Normally such increased productivity occurs only when there is a dramatic increase in the relative social value of the organization's function. Again, this is precisely what has been going on at top-level private universities. As the total number of students seeking higher education has shot upward, the demand for education at the best-rated schools has zoomed even faster. Moreover, an increased emphasis on basic research occurred at the same time, thanks to the impact of Sputnik I. Therefore, top-level private universities have been able both to raise their tuitions and to attract larger research grants. These added funds have made it possible for them to up-grade the incentives offered to their faculties without experiencing rapid growth in size.

Some Effects of Rapid Growth in a Fragmentalized Bureaucracy Carrying Out a Single Function

The above discussion of universities illustrates the operation of fragmentalized systems of bureaus all carrying out the same function. Some bureaus enjoy a relative monopoly of responsibility for social functions in a given area. Examples are the U.S. Post Office Department and the Soviet Army. Other bureaus are individual units in much
larger fragmentalized systems of organizations serving a single major social function. Relatively pure examples are universities and churches. Less pure examples are elementary and high schools and local governments in metropolitan areas. They have a monopoly in a given area, but their clients can and do move in order to be within the jurisdiction of the particular bureau whose services they desire.

When there is a rapid growth in the relative social importance of the function served by such a system, the system as a whole normally expands to meet this increased demand. This can involve the addition of new bureaus to the system, the expansion of existing bureaus, or both. Under such conditions, the "laws" of acceleration and deceleration we have set forth above apply to the system as a whole rather than just to individual units therein. Thus, the great relative increase in demand for university faculty members has resulted in the attraction of many climbers into this field whose counterparts in former years went into business or other fields.

The "top" of the system, to which climbers rise rapidly, consists of those positions that provide the highest levels of income, prestige, power, and other perquisites. It is at least conceivable that these top positions may be disproportionately concentrated within a few bureaus. This is particularly likely if the demand for the highest quality service provided by the system has risen even faster than the demand for its service as a whole. In such a case, the particular bureaus providing the highest quality of service may be able to increase their incomes (by getting more appropriations, more donations, and higher prices) faster than the system as a whole. Then they can offer their members a more rapid up-grading of incentives than the rest of the system. As a result, the most ambitious climbers will gravitate to these top-ranking bureaus, even if they do not individually expand in size. In fact, by deliberately refusing to expand, these bureaus can avoid the dilution of these top-quality personnel with the less-talented people necessary to staff rapid quantitative growth. This will reinforce their reputations for high quality, and thereby attract even higher demand for their services.
This is approximately what has happened among universities. The situation is complicated by the fact that universities depend significantly upon voluntary quid pro quo transactions for their incomes, and are therefore only quasi-bureaucratic in terms of our definition. However, the foregoing analysis illustrates that the basic conclusions made here about bureaus apply to those in fragmentalized systems too, but must sometimes be considered applicable to the system as a whole rather than individual bureaus therein.

Why Bureaus Seek to Expand

C. Northcote Parkinson's famous first law states, "Work expands so as to fill the time available for its completion."* Its major corollary further adds, "In any public administrative department not actually at war, the staff increase ... will invariably prove to be between 5.17 per cent and 6.56 per cent (per year), irrespective of any variation in the amount of work (if any) to be done."** These humorous views express a widely prevalent notion that bureaus have an inherent tendency to expand, regardless of whether or not there is any genuine need for more of their services. In fact, all organizations have inherent tendencies to expand. What sets bureaus apart is that they do not have as many restraints upon expansion, nor do their restraints function as automatically.

The major reasons why bureaus inherently seek to expand are as follows:

Any organization that is rapidly expanding can attract more capable personnel, and retain more easily its most capable existing personnel, than can one that is either expanding very slowly, stagnating, or shrinking. This principle was examined in the preceding section.


**Ibid., p. 12.
The expansion of any organization normally provides its leaders with increased power, income, and prestige; hence they encourage its growth. Thus, conservers are the only exception, for they place little value on gaining more status for themselves.* This principle does not imply that larger organizations necessarily have more power or prestige than smaller ones. Rather, it implies that the leaders of any given organization can normally increase their power, income, and prestige by causing their organization to grow larger.

Growth tends to reduce internal conflicts in an organization by allowing some (or all) of its members to increase their personal status without lowering that of others. Therefore, organizational leaders encourage expansion to maximize morale and minimize internal conflicts. Every bureau's environment changes constantly, thereby shifting the relative importance of the social functions performed by its various parts, and the resources appropriate to each part. Such shifts will be resisted by the sections losing resources. But these dissensions can be reduced if some sections are given more resources without any losses being experienced by others.

Increasing the size of an organization may also improve the quality of its performance (per unit of output) and its chances for survival. Hence both loyalty and self-interest can encourage officials to promote organizational growth. As William H. Starbuck has pointed out in his analysis of organizational growth, there may be significant operational advantages to being a very large organization.**

- The organization may achieve economies of scale through greater specialization, ability to use up excess capacities, and reduction of stochastic errors through increasing sample sizes.

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Large organizations have a better chance of survival than small ones.

Large organizations are harder to change than small ones (because they embody greater sunk costs); so they tend to be more resistant to external pressures. They also spend more on research and development (both in total and per employee), hence they can better develop new techniques useful in augmenting their power.

Very large organizations can impose a certain degree of stability upon their external environment, whereas smaller ones cannot. Increased environmental stability reduces uncertainty and anxiety and solidifies the control of high-ranking officials.

Finally, because there is no inherent quid pro quo in bureau activity enabling officials to weigh the marginal return from further spending against its marginal cost, the incentive structure facing most officials provides much greater rewards for increasing expenditures than for reducing them. Hence officials are encouraged to expand their organizations through greater spending. Unlike the other sources of growth-pressure described above, this one is not found in most market-oriented organizations.

The Effects of Age upon Bureaus

Bureaus, like men, change in predictable ways as they grow older. Following are the most important such changes, and their effects.

Bureaus learn to perform given tasks better the more experience they have in performing them. Given the initial level of resources allocated to the bureau, this increased efficiency in effect allows the bureau to generate additional productive capacity just by growing older -- without any added input of resources (other than experience). The added capacity can be utilized by producing more of the same services, by absorbing the new capacity as organizational slack, or by devoting it to creating new functions or seeking to "capture" existing ones from other bureaus. Another possibility -- cutting inputs -- is unlikely, since all officials avoid reducing the resources under their
control. It must be remembered, however, that when a new process is undertaken, learning at first produces great economies, but the "learning curve" soon tends to flatten out.

As bureaus grow older, they tend to develop more formalized rule systems covering more and more of the possible situations they are likely to encounter. The passage of time exposes the bureau to a wide variety of situations, and it learns how to deal with most of them more effectively than it did in its youth. The desire for organizational memory of this experience causes the bureau's officials to develop more and more elaborate rules. These rules have three main effects. First, they markedly improve the performance of the bureau regarding situations previously encountered, and make the behavior of each of its parts both more stable and more predictable to its other parts. Second, they tend to divert the attention of officials from achieving the social functions of the bureau to conforming to its rules -- the "goal displacement" described by sociologists. Third, they increase the bureau's structural complexity, which in turn strengthens its inertia because of greater sunk costs in current procedures. The resulting resistance to change further reduces the bureau's ability to adjust to new circumstances. Consequently, older bureaus tend to be more stable and less flexible than young ones.

As a bureau grows older, the officials therein tend to shift the emphasis of their goals from carrying out the bureau's social functions to insuring its survival and growth as an autonomous institution. When a bureau is first created, it is usually dominated by zealots or strong advocates who focus their attention upon accomplishing its social functions. As it grows older, its rules and administrative machinery become more complex and more extensive, demanding more attention from top officials. The conservers in the bureau tend to become more important because they are oriented toward preserving rules; zealots become less important because they are uninterested in administration and poor at allocating resources impartially.
Thus, as a bureau ages, its officials become more willing to modify the bureau's original formal goals in order to further the survival and growth of its administrative machinery. This shift of emphasis is encouraged by the creation of career commitments among a bureau's more senior officials (in terms of service). The longer they have worked for the bureau, the more they wish to avoid the costs of finding a new job, losing rank and seniority, and fitting themselves into a new informal structure. Hence they would rather alter the bureau's formal goals than admit that their jobs should be abolished because the original goals have been attained or are no longer important.

As a bureau grows older, the number and proportion of administrative officials therein tends to rise. This tendency has been emphasized by Starbuck in his analysis of the effects of longevity upon bureaus, and he marshalls some empirical evidence confirming it. The main reasons why this shift to administration occurs as a function of age rather than size are as follows. First, administrators tend to have more job security and stability than production workers, partly because administrators are usually more senior in rank. Therefore, whenever attrition in personnel occurs, nonadministrative officials are normally discharged first. The longer a bureau has survived, the more likely it is to have lived through a number of such shrinkages in the past. Second, the older a bureau is, the more different types of functions it is likely to carry out. As a result, a higher proportion of the bureau's personnel must be engaged in coordination. Third, until recent developments in the technology of business machines, production jobs were historically subject to a greater mechanization than administrative jobs. The older a bureau is, the more time it has been exposed to these effects of technical change.

Whenever a bureau experiences a period of relative stability in total size following a period of rapid growth, the average age of its members tends to rise as the bureau grows older. This tends to increase the influence of conservers in the bureau, for many officials of other types are likely to become conservers as they grow older. This is discussed below.

These effects of age upon a bureau lead to the Law of Increasing Conservatism: All organizations tend to become more conservative as they get older, unless they experience periods of very rapid growth or internal turnover. This principle is especially applicable to bureaus because they are relatively (but not fully) insulated from competition.

From this Law and the other effects of age examined, we can draw the following additional conclusions:

The older a bureau is, the less likely it is to die. This is true because its leaders become more willing to shift major purposes in order to keep the bureau alive.

The best time to "kill" a bureau is as soon as possible after it comes into existence.

In general, the older a bureau is, the broader the scope of the social functions it serves. If a bureau is relatively long-lived, it has usually survived sizable fluctuations in the importance of its various social functions. Its initial functions declined in relative importance, pressuring its leaders to take on new functions. However, it probably did not relinquish its original ones. Therefore, as time passes, bureaus, like private firms, tend to diversify to protect themselves from fluctuations in demand.

The "Age Lump" Phenomenon and Its Effects

One of the effects of increasing age upon a bureau is the tendency of the average age of the bureau's members to rise. Earlier, this section showed that almost every bureau goes through a period of
rapid growth right before it reaches its initial survival threshold. During this period, it usually contains a high proportion of zealots (because they established it) and climbers (because they are attracted by fast growth). These people, moreover, tend to be relatively young, for youthful officials are more optimistic and full of initiative than older ones.

Soon after this initial spurt, the growth rate slows down, and the bureau is likely to enter a "growth plateau." This means that a high proportion of its total membership consists of the persons who joined it during the fast-growth period (unless it has a very high turnover). This group constitutes a "lump" of personnel, all about the same age. As they grow older, the average age of the bureau's members rises too, since they form such a large fraction of its total membership. This creates the following significant effects:

There is a squeeze on the members of the age lump regarding promotions because so many of them attain the necessary qualifications all at once. Hence not all who are objectively suitable for promotion to the few high-level posts can be shifted upwards. So relatively low-level jobs continue to be occupied by very senior people.

A high proportion of the bureau's membership tends to be converted into conservers because of increasing age and the frustration of ambitions for promotion. In any organization, officials tend to become conservers as they get older if they are not in the mainstream of promotion to the top. Hence the whole bureau tends to become more conservers-dominated as members of this lump become older.

The squeeze on promotions tends to drive many climbers out of the organization into faster-growing organizations (if any alternatives are available). Thus the proportion of conservers in the bureau tends to rise for this reason too. The most talented officials are the most likely to leave, since they naturally have more opportunities elsewhere. The bureau, therefore, becomes ever more dominated by mediocrity, unless there are really no alternative
organizations to join (for example, the Russian Communist Party has no competitors within Russia).

Up to the period just before most members of the age lump retire, it will be very difficult to attract able young people into the bureau. Climbers will be discouraged from joining because they see that the road upward is already clogged. Zealots will be discouraged by the conserver-domination of the bureau. However, when the main portions of the age lump are about to retire, the prospects of so many top-level jobs being suddenly vacated may attract both climbers and zealots.

The bureau will experience a crisis of continuity when the age lump arrives at the normal retirement age. Almost all of the upper echelons will suddenly be vacated by members of the group that will have dominated the bureau's policies for many years. As a result, the bureau will go through a time of troubles as its remaining members struggle for control over its policies and resources.

Many of these rather unfavorable consequences of age lumps can be offset by the following events:

- Additional spurts of rapid growth, which produce multiple age lumps within the bureau.
- Speeded-up retirement of bureau members who are not promoted. The U.S. Armed Forces used some versions of this up-or-out system to counteract the humps in their age structures resulting from World War II.
- Purges of upper-level officials.
- Survival of the bureau over such a long period that the original age lump tends to be replaced by a more even age distribution.

Because growth in many bureaus normally occurs in uneven spurts rather than at a steady pace, age lumps and their consequences are widespread phenomena.
THE DEATH OF BUREAUS

The ability of bureaus to outlive their real usefulness is part of the mythology of bureaucracy. Our theory supplies several reasons why bureaus -- particularly government bureaus -- rarely disappear once they have passed their initial survival thresholds.

Normally, organizations die because they fail to perform social functions of enough importance to make their members or clientele willing to sacrifice the resources necessary to maintain those functions. Such an inability can occur for three reasons: the specific functions performed by the organization decline in relative importance; the functions remain important but the organization is unable to perform them efficiently; or the functions remain important but some other organization performs them better. When the demise of a bureau is caused by the first two of these conditions, the bureau tends to disappear altogether. However, when its death is caused by the capture of its functions by another organization, the bureau's members are sometimes transferred to the other organization. In such cases, the bureau is swallowed and continues to live after a fashion.

There are several reasons why bureaus are unlikely to die once they have become firmly established:

Bureaus are often willing to shift functions in order to survive; hence the relative decline of their initial social functions will not kill them if they are agile enough to undertake new and more viable functions before it is too late.

The nature of bureaus leads their clients to create pressure to maintain them after their usefulness no longer justifies their costs. A bureau's clients normally receive its services without making full (or any) direct payments for them. These clients, therefore, pressure the central allocation agency to continue the bureau's services, even if they would be unwilling to pay for those services directly if they had to bear their full costs.
A few of the clients or suppliers of nearly every bureau receive such large and irreplaceable net benefits from the bureau's services that they will continue to demand those services even if the marginal benefits thereof have decline below the marginal cost for most clients. Government bureaus are especially likely to have such zealous clients, since they usually perform services that cannot be duplicated by private agents acting alone. Defense contractors, for example, are unlikely to find any private buyers for missiles or space vehicles.

The absence of any explicit *quid pro quo* relationship between bureau costs and benefits tends to conceal situations in which the costs of maintaining the bureau outweigh its benefits. This often allows the natural proclivity of any organization's members to keep the organization alive to function successfully even when the bureau really "ought" to die.

Bureaus tend to be less willing to engage in all-out conflicts with each other than private profit-making firms; hence they are less likely to kill each other. Private firms are more willing to engage in struggles to the death than bureaus for two main reasons. First in freely competitive markets containing a large number of small firms, intense competition is relatively impersonal and is a prerequisite to survival. In contrast, when one bureau "invades" the territory of another, this is a deliberate act aimed at a specific opponent. In essence, bureaus resemble large oligopolistic firms. Like such firms, they try to avoid all-out wars because they are too costly to all involved.

Second, if two or more bureaus engage in a "war" concerning control over certain social functions, they inevitably attract the attention of the government's central allocation agencies (both executive and legislative). This is extremely hazardous because the bureau's opponents are sure to call attention to some of its major shortcomings. Moreover, top officials in every bureau fear
any detailed investigation, since it is almost certain to uncover embarrassing actions.

Experience shows that the "death rate" among both bureaus and large oligopolistic firms is extremely low. This demonstrates that the single most important reason why bureaus so rarely die is that they are large, and all large organizations have high survival rates (within the time spans of their cultures). Large organizations can withstand greater absolute fluctuations in available resources than small ones. They also enjoy certain other advantages noted above. Hence size, rather than type or function, is the number one determinant of survival. Since all bureaus are large by definition, and the vast majority of business firms are small, direct comparisons of the overall death rates among bureaus and private firms are bound to be misleading.

Even if a bureau cannot muster sufficient external support to continue as an autonomous agency, it might survive by getting some other aggrandizing bureau to swallow it.

Despite the low death rates of bureaus within their own cultures, very few bureaus -- or organizations of any kind -- have managed to survive for really long periods of time -- that is, hundreds of years. Most government bureaus disappear when the particular government that has created them is replaced, as did Roman bureaus. Similarly, private bureaus do not usually outlive the cultures that spawn them. Churches and universities seem to be the hardiest species, as the Roman Catholic Church and Oxford University illustrate.
III. INTERNAL CHARACTERISTICS COMMON TO ALL BUREAUS

INTRODUCTION

Even though all bureaus, by definition, exhibit the four primary characteristics set forth in Section I they differ widely in many other respects. Some are privately owned, others are publicly owned, and others still are quasi-public. Their functions vary over an almost incredible spectrum, from trying to deter nuclear war to investigating heredity, from conducting religious services to planning the national economy.

Nevertheless, all bureaus have the following internal characteristics in common:

1. A hierarchical structure of formal authority.
2. Extensive systems of formal rules.
3. An informal structure of authority.
4. Informal and personal communications networks.
5. Formal impersonality of operations.
6. Intensive personal loyalty and personal involvement among officials, particularly in the highest ranks of the hierarchy.

This section will briefly describe these common characteristics, and show why they are necessary results of our four primary traits.

Much of the present analysis fits large, nonbureaucratic organizations as well as bureaus. For example, all large business firms have hierarchical authority structures for exactly the same reasons as bureaus. Whenever we believe our reasoning applies to nonbureaucratic organizations as well, we will use the word organization instead of the word bureau.
HIERARCHICAL FORMAL STRUCTURES IN BUREAUS

The Sources of Inconsistent Behavior in Large Organizations

Every organization is originally formed to achieve some purpose that cannot be attained without the coordinated efforts of a number of persons working on different tasks. This implies that each member of the organization must be willing to modify his own behavior so that it fits in with the behavior of the other members. If such mutual adaptation occurred spontaneously, there would be no need for an explicit hierarchy of authority. However, the very nature of large organizations creates a number of obstacles that prevent efficient spontaneous coordination. These obstacles fall into two major categories: conflicts of interest and technical limitations. Both give rise to inconsistent behavior patterns, which we will refer to as conflicts, here using that word in an emotionally neutral sense, that is, not necessarily connoting any clash of wills. The need to reduce such conflicts to an acceptable level gives rise to hierarchical authority structures.

Conflicts of interest spring from differences in the explicit goals officials pursue, and in their modes of perceiving reality. In any organization, no two members have exactly the same explicit goals. As a result, they may disagree about what the organization ought to be doing, even if they possess the same information and face no uncertainty. Conflicts of interest, therefore, cannot be eliminated by improving the technical capabilities of the organization.

Differences in modes of perceiving reality spring from the value structures implicit in the trained outlooks associated with various technical specialities. For example, engineers do not look at problems in the same way that economists or artists do. All three types might agree on explicit goals and even possess the same information, yet disagree on what the organization ought to do because their modes of perceiving that information emphasized different aspects of the problem. This subtle source of conflict could be considered a technical limitation
rather than a conflict of interest. However, since it involves values rather than facts, we have included it in the latter category.

Technical limitations on spontaneous coordination occur because ineradicable uncertainties exist, and each person has limited capacity for knowledge and information. The specialization of tasks common to every large organization inevitably leads to specialization of information, resulting in every official's (or set of officials performing the same task) possessing a different "bundle" of information from every other official. Therefore, even if all officials had identical goals and identical modes of perception, they might arrive at divergent conclusions about what the organization ought to do.

Similarly, uncertainty allows the coexistence of varying views about the likely outcome of a given action, because none of them are logically refutable from the known facts. Some of these views might be proved incorrect by further information. However, the existence of ineradicable ex ante uncertainty means there is almost always some room for disagreement among reasonable men who have identical goals, identical modes of perception, and the same information.

Conflicts based upon these technical limitations may not even involve disagreements at all -- merely the inability of each official to know what all the other officials in his own bureau are doing, have done, or propose to do. For example, a diplomat in the foreign service may decide to increase the number of social affairs he holds, at the same time that the man in charge of diplomatic budgets in his home office is reducing his allowance for entertainment. Perhaps these two men would agree completely on what should be done about this matter if they conferred, but each of them is not yet aware that his action is inconsistent with that of the other. In a highly specialized organization, this type of inconsistency through ignorance is probably the single most common source of conflict.
Use of a Hierarchical Authority Structure for Settling Conflicts

If all the inconsistencies arising from the above sources were allowed to flourish unchecked, the overall impact of any large organization's efforts would be seriously diminished -- if not destroyed -- because the actions of some members would offset those of others. To avoid this outcome, some mechanism must be created for settling conflicts, that is, adjusting inconsistent behavior patterns among the organization's members to an acceptable level of complementarity.

This mechanism can take the form of (1) entrusting conflict-settling authority to certain persons in the organization; (2) use of some rule based upon the assumption that everyone involved has equal authority (such as majority rule); or (3) reference to some traditional set of behavioral rules considered by all to be binding (such as the writings of Karl Marx). However, use of traditional rules implies that one of the first two mechanisms must also exist to settle disputes about current application of these rules. Therefore, one of the first two mechanisms is necessary in any large organization.

These two mechanisms are vastly different in efficiency. The settling of conflicts by voting requires a great deal of time, particularly if the organization is large, its members are physically scattered in the process of performing their tasks, and its functions are such that conflicts arise frequently. By definition, bureaus are large and undertake specialized tasks requiring a great deal of coordination. Hence, the potential for conflicts about whose behavior should be modified is very great indeed. If all such controversies had to be settled by voting, so much time would be consumed by the conflict-settling process that the bureau would be extremely ineffective in accomplishing its purposes. Therefore, no large organization ever

* Also, majority vote does not allow for variations in the intensity of feelings about particular issues among those voting, unless logrolling is permitted. However, majority voting is not the only equal-authority choice mechanism that could be employed. See James Buchanan and Gordon Tullock, The Calculus of Consent, (Ann Arbor: University of Michigan Press, 1962), pp. 131-145.
uses universal suffrage as the sole means of settling internal conflicts. Instead, at least a certain amount of authority for conflict-settling is entrusted to specific persons within the organization who specialize in this function.

The very concept of authority implies a certain degree of hierarchy. If A has authority over B regarding certain aspects of B's behavior, then A is of a "higher" rank than B insofar as those aspects are concerned. Therefore, the settlement of conflicts by means of differential authority necessarily creates a hierarchy.

Only two ranks need be involved in this hierarchy -- the disputants and the dispute settlers -- and their roles might be reversed for different types of conflicts. This hardly resembles the complex rank structures of modern bureaus. The factors that give rise to such complex structures are the size and interdependence of the operations involved. To illustrate, let us visualize an organization that is small enough to have one coordinator who has authority over all workers. If the organization increases in size, he soon becomes overloaded settling conflicts arising from the interdependence of the workers' activities. A second conflict settler is appointed to handle the inconsistencies that arise in a certain part of the organization. However, there is bound to be some interdependence among activities that are under the separate jurisdictions of the two conflict settlers. Therefore, they must themselves agree on coordinating such activities. If the organization continues to grow, the number of conflict settlers multiplies, and there inevitably comes a time when they must resort to differential authority to resolve conflicts among themselves, just as the first-level officials eventually created a second level of conflict settlers. Similar transformations to ever greater numbers of levels will inevitably occur as the organization gets larger and its existing top level again and again becomes overloaded.

This relatively simple exercise in logic leads to the Law of Hierarchy: **Coordination of large-scale activities without markets requires a hierarchical authority structure.** This Law results directly
from the limited capacity of each individual, plus the existence of ineradicable sources of conflict among individuals.

However, the argument presented does not resemble the historical process by which most hierarchical structures are actually established. Normally, a bureau starts growing from the top downward rather than from the bottom up. A person or group is given the authority to perform a certain set of functions. The task involved is too large for this man or group to perform alone, and over-loading of the top level causes the organization to add subordinates, to subdivide tasks at the top into those performed at lower levels. In such cases a hierarchy of authority also arises through growth, but the growth occurs in all parts of the bureau and in all directions as it adapts itself to meet changing conditions and expanded demands for its services.

The development of the argument from the bottom up proves that a hierarchy of authority is necessary in every large organization, even if none exists initially therein. Some form of hierarchy is a functional requirement of effective operation.

Another deduction from the example is that bureau hierarchies do not necessarily have a single man at the top. For instance, most universities are run by a Board of Trustees which governs by majority vote (although it also has a chairman who is "more equal" than the other members). However, day-to-day operating authority is almost always delegated to a single official who has power over the remainder of the bureau. When a great many minor decisions must be made in a short time, it is almost always less expensive to give one person the authority to make them instead of arriving at a group decision through voting. Thus, most bureaus operate their hierarchy of authority through a single official near the top, but many have a group as the topmost authority.*

* As Oliver Williamson and James Schlesinger have pointed out to me, the members of this topmost group almost always have differential authority, since one is usually the chairman or president. Hence equal authority mechanisms are really quite rare in small groups.
The Distinction Between Functional and Allocational Conflicts

The conflicts that generate hierarchical authority structures arise because of interdependencies of behavior among officials in different parts of an organization. These interdependencies can be of three basic types: purely functional, purely allocational, and combined functional-allocational. The behavior of two or more officials is functionally interdependent whenever the actions of one have repercussions upon the effectiveness of the others' actions, regardless of the type or amount of resources used. For example, the airframe, engine, and payload of a missile are functionally interdependent.

In contrast, purely allocational interdependence arises when two or more behavior patterns are completely unrelated in terms of function, but must be supported out of a single pool of scarce resources, so that an increase in the money allotted to one reduces the funds available to support the other.

Normally, governments separate the raising of bureau funds from their expenditure. They create a specialized set of fund-raising bureaus that dispense money to other bureaus engaging in widely disparate functions. These diverse activities are thus financed out of a single pool of resources. It is true that the total size of the pool can be expanded or contracted to meet varying needs. Nevertheless, the use of central financing creates a degree of purely allocational interdependence among functionally unrelated activities and among different bureaus.

Within each bureau, all activities are also allocationally interdependent to some degree, since they are all financed out of the bureau's single budget. This means that every part of a bureau is at least partly competitive with every other part. Therefore, it is quite possible for purely allocational conflicts to arise within a bureau as well as among different bureaus.

Normally, all of the activities carried out by a single bureau are functionally related to at least some extent. Consequently, most internal interdependencies involve both functional and allocational
aspects simultaneously. This is true because a change in the functional nature of behavior normally changes the amount and nature of resources employed in that behavior and vice versa.

Purely allocational interdependence, like functional conflict, also generates a need for hierarchy within the bureau. If each member of a bureau could make his own decisions about how much money he ought to spend carrying out his assigned functions, there would be no need for a hierarchy concerned with allocating resources. In fact, something quite analogous to this situation exists in some large business firms. Groups of individuals can be given the power to spend money almost autonomously -- assuming they can also autonomously generate enough income to cover their spending. But in a bureau the generation of income is completely separated from the spending of money, and the need for allocational coordination gives rise to a hierarchy in exactly the same manner as the need for functional coordination. Hence, the need for a hierarchy is totally independent of any functional relationships among the activities carried out by a bureau, so long as those activities are all financed from a single and limited pool of funds controlled by the bureau.

Some Characteristics of Formal Hierarchies

Bureau hierarchies can be classified along a spectrum that varies from extreme "tallness" at one end to extreme "flatness" at the other. A "tall" hierarchy contains a relatively large number of levels in relation to its total membership; and therefore has a high ratio of conflict settlers to members engaged in direct production. This implies that each higher-level official supervises only a small number of subordinates (that is, he has a narrow span of control). In contrast, a "flat" hierarchy contains only a few levels in relation to its total membership. Hence it has a low proportion of conflict settlers, and the average higher-level official has many subordinates.

* The term "flat" has been generally accepted in the literature, but the term "tall" was first suggested to me by James Q. Wilson.
The taller a hierarchy, the more emphasis on coordination by means of vertical communications (that is, those involving different levels). This is true because relatively few officials on any level are grouped under the same supervisor; hence horizontal coordination involving any large number of people on the same level must flow through several higher-level officials. But vertical coordination is more time-consuming and distortion-prone (per message, not per task) than horizontal coordination, primarily because the former must flow through intermediaries.

The flatter a hierarchy, the greater the decentralization of authority therein, other things being equal. Since each superior in a flat hierarchy has many subordinates, he has less time to supervise each one than does his counterpart in a tall hierarchy. This results in greater delegation of authority to each subordinate.

Given the two relationships described above, the "tallness" or "flatness" of a bureau's hierarchy will depend on the interaction of three principles. First, the more complex and detailed the interdependencies among activities within the bureau, the taller its hierarchy is likely to be, if the relationships among these activities are sufficiently predictable to allow intensive specialization. The need for detailed coordination of myriad specialized activities normally generates a high ratio of coordinators to direct producers.

Second, the greater the degree of uncertainty regarding the bureau's activities, the flatter its hierarchy is likely to be. When uncertainty prevails, potential relationships among the possible components of a task cannot be foreseen accurately. Hence the task cannot be divided into many parts assigned to specialists unless the specialists are in constant communication with each other and can continually redefine their relationships as they gain more knowledge. This requirement is best served by a flat hierarchy, since it provides greater authority to each official and allows greater emphasis upon direct horizontal relationships. These factors are essential because:
1. Each official must be free to coordinate directly with a great many others in unpredictable ways, so formal channels cannot be set up in advance.

2. The need for dialogues among officials and for constant redefining of tasks makes working through intermediaries inefficient.

3. Communications among officials who have about the same status are less likely to be inhibited than those among officials on different levels.

4. Coping with highly uncertain tasks requires very talented specialists who can be retained in the organization only if they are given relatively high status and responsible positions incompatible with a many-level hierarchy.

5. Talented specialists working under novel conditions often know much more than their supervisors about how to coordinate their activities.

In most instances, uncertainty is dominant over complexity of function in determining the nature of a bureau's hierarchy. Therefore, a bureau with a very complex task involving great uncertainty will normally have a flat hierarchy even though its task involves detailed interdependencies among specialized activities.

The third principle is the greater the homogeneity among an organization's members, the flatter its hierarchy can be. Similarities of self-interest, cultural backgrounds, technical training, and moral values among bureau members are likely to reduce the incidence of conflicts among them. This will allow greater delegation of authority to individual officials without loss of effective coordination, thereby encouraging a flat hierarchy. This principle, however, is subordinate to the other two stated above.

The Implications of Hierarchy Regarding the Distribution of Information, Power, Income and Prestige in the Bureau

A hierarchy results in a specific distribution of information,
power, income and prestige among bureau members. This distribution leads to the following conclusions:

1. Officials near the top of the hierarchy have a greater breadth of information about affairs in the bureau than officials near the bottom, but the latter have more detailed knowledge about activities in their particular portions of the bureau. This implies that no one ever knows everything about what is going on in any large organization.

2. Power, income and prestige are concentrated at the top of the hierarchy. This reinforces the authority of officials holding those positions, and provides incentives for lower-ranking officials to make significant efforts to reach the higher positions. It also means that bureaus are oligarchic in nature.*

3. Inequalities of power, income, and prestige are greater in tall hierarchies than in flat ones, since the former have more ranks and the latter have greater delegation of authority.

4. Persons assigned authority over minor and noncontroversial administrative matters in a bureau do not necessarily enjoy higher prestige or power than those subject to their rulings in these limited spheres. For example, a university Registrar's rulings about where classes will be held are binding upon full professors. Still, the former may actually possess much lower status than the latter. On the other hand, the Dean whose decisions affect the rank, salaries, and work-loads of those professors normally enjoys considerably higher status than they do. Hence there may be several parallel hierarchies concerning different functions within a bureau, but usually one is clearly identifiable as the major source of power and prestige.

THE EXTENSIVE USE OF FORMAL RULES BY BUREAUS

The popular stereotype of a bureaucrat pictures a pompous and

arrogant pedant who rigidly sticks to the "letter of the law" in applying the myriad rules and regulations of his bureau. In fact, extensive use of formalized rules is one of the major characteristics of bureaucracy cited by Weber, and has become widely accepted as an inherent trait.*

The Need for Formal Rules

There are four main reasons why extensive formal rules are necessary in bureaus. First, bureaus have no direct measures of the value of their outputs, since they cannot engage in voluntary quid pro quo transactions. In many cases, members of private firms can shape their behavior on an ad hoc basis because they do not need rules to indicate how they can make profits. Similarly, consumers can make spending decisions without elaborate rules, since their own satisfaction provides an immediate guide to the efficacy of their behavior. But whenever there is no clear linkage between the nature of an action and its value or ultimate end, then pressure arises for the development of formal rules to help individuals decide their behavior. This is true in many sections of large private firms as well as in bureaus. But bureaus have no market guidelines whatever; hence they normally place much more emphasis upon rules than do private firms.

Second, formalized rules are efficient means of coordinating complex activities. If no such rules existed, each bureau member could respond to any given situation in whatever manner appeared appropriate to him at that time. Such freedom of initial response would make the task of coordinating behavior in the organization extremely difficult and expensive. Vast numbers of messages would have to be sent between initiators and coordinators describing the former's proposed behavior, and receiving modifications that would make that behavior acceptably consistent with actions being taken elsewhere in the organization. Thus, reducing the costs of coordination -- especially the communications costs -- to manageable levels requires

the establishment of formal rules governing behavior in recurrent situations.

Third, many of the decisions of bureaus covered by formalized rules involve interactions with people outside the bureau. If no formalized rules governed such decisions, the bureau's responses to similar conditions might be quite different for different clients. Such "personally discriminatory" behavior might cause consternation among the clients of public or quasi-public agencies, who expect to receive "equal treatment under the law." Therefore, strong pressure exists in such agencies for the establishment of rules governing decisions concerning clients, so that reasonably consistent responses will arise and no charges of discrimination or favoritism will be made.

Fourth, the need to coordinate resource allocation forms a strong pressure upon every bureau to draw up formal rules governing the expenditure of money. If no such rules existed, it would be up to each official to decide how much money he ought to spend in performing his own function. But every function could be performed better if more money were spent on it, and the expenditure of more funds would enhance the power, income, and prestige of the official concerned. Therefore, he is strongly motivated to spend more and more.

To avoid this outcome, each official must be required to obtain approval from a central coordinator before he can actually spend money. This means that the resource coordinator is faced with exactly the same coordination problem as the behavior coordinator. Therefore, he too is driven to establishing formal rules as a means of reducing the

* However, no bureaus ever achieve perfect impersonality in their behavior. Moreover, in democracies, officials are caught between the conflicting instructions to be impersonal in their applications of the rules and to give warm and friendly service with a personal touch to each client. It takes some fast footwork to accomplish these goals simultaneously.

communications costs involved in coordinating expenditures. These rules are usually set forth in a budget with specific allocations to each bureau section, and detailed rules concerning expenditures and procedures to be followed by the sections actually purchasing or selling goods and services.

The Characteristics of Formal Rules Under Various Circumstances

The following paragraphs set forth relationships that can be derived from the functions of rules.

The more often a bureau encounters the same circumstances in its decisionmaking, the more likely it is to develop formal rules governing behavior in those circumstances. This principle has the following corollaries:

1. The more repetitive or routine is the nature of the bureau's function, the more likely the bureau is to operate under elaborate, extensive, and inclusive rules. Conversely, the more unpredictable and variable are the situations faced by a bureau in carrying out its functions, the less likely it is to be governed by such rules.

2. The longer a bureau has been carrying out a given function, the more likely it is that elaborate rules governing that function have been created. There is an old saying that every safety rule was caused by an accident. The longer a bureau exists, the more accidents it encounters; hence the more rules it creates.

The less the importance of the decisions involved, the more likely they are to be handled by rules rather than by explicit review of high authorities. This follows from the desire of higher authorities to reduce their workload by eliminating low payoff communications. Decisions of an extremely trivial nature, however, may be left up to the discretion of individual officials. Thus three ranges of importance can be discerned: decisions too trivial to cover with rules; decisions covered by rules; and decisions too important to make without prior review by high authorities.

The greater the interdependence of activities within a bureau, the more likely they are to be covered by rules instead of left to
individual discretion, other things being equal. In highly inter-
dependent situations, the use of rules greatly increases the
predictability of behavior in each part of the bureau.

The more obscure the relationship between a bureau's activities
and their ultimate objective, the more likely those activities are to
be governed by formal rules. A battlefield medic is free to take
whatever action he believes is appropriate to take care of wounded
soldiers, since his objective is clear. But a customs inspector
must follow elaborate rules, since the true purpose of his activities
may be extremely difficult to discern.

THE INFORMAL STRUCTURE OF BUREAUS

How Informal Structures Arise in Reaction Against the Formal Structure

From the standpoint of organization as a formal system,
persons are viewed functionally, in respect to their
roles, as participants in assigned segments of the co-
operative system. But in fact individuals have a pro-
pensity to resist depersonalization, to spill over the
boundaries of their segmentary roles, to participate
as wholes. The formal systems (at an extreme, the dis-
position of "rifles" at a military perimeter) cannot
take account of the deviations thus introduced.*

This observation by sociologist Philip Selznick establishes a
foundation for our assumption that individual officials are motivated
by self-interest as well as by the organizational interests assigned
to them in their formal roles. Moreover, it confirms that officials
acting informally tend to emphasize their interests as whole persons
rather than as impersonalized role-players. The formal authority
structure of every bureau stresses the office, the official role, and
the written rules encompassing them rather than the particular person
occupying that office. However, the reactive informal relationships
that spring up in the bureau place a countervailing emphasis on the
persons involved as unique individuals distinct from their official

roles. True, a great deal of the informal structure in a bureau remains connected with the powers adhering to offices. Nevertheless, the persons in each office attempt to make use of those official powers so as to establish some personal significance and power of their own that will stay with them even if they shift offices.

Some organization theorists (notably Herbert Simon) postulate that the organization "buys off" each official's self-interest and his desire for personal significance during working hours by operating mostly within his "zone of indifference" or "zone of participation."* Selznick, however, establishes an opposite premise, which we have followed:

The needs of individuals do not permit a single-minded attention to the stated goals of the system within which they have been assigned.... As a consequence, individual personalities may offer resistance to the demands made upon them by the official conditions of delegation. These resistances are not accounted for within the [organization's formal] categories of co-ordination and delegation, so that when they occur they must be considered as unpredictable and accidental.**

But the existence of unpredictable and accidental elements in any large organization can cause anxiety, frustration, and inconvenience for the members personally as well as for the organization officially. Therefore, as Selznick observes:

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*The following quotations from Herbert A. Simon, Administrative Behavior, Second Ed. (New York: The Macmillan Co., 1961), Illustrate this view: "The members of the organization are expected to orient their behavior with respect to certain goals that are taken as 'organization objectives,'" p. 73; "Personal considerations determine whether a person will participate in an organization; but, if he decides to participate, they will not determine the content of his organizational behavior," p. 203; "The most striking characteristic of the 'subordinate' role is that it establishes an area of acceptance in behavior within which the subordinate is willing to accept decisions made for him by his superior," p. 133; "From the viewpoint of the employee, the precise activities with which his time of employment is occupied may, within certain limits, be a matter of relative indifference to him. If the orders transmitted to him by the organization remain within these limits of acceptance, he will permit his behavior to be guided by them," p. 116.

In large organizations, deviations from the formal system tend to become institutionalized, so that "unwritten laws" and informal associations are established. Institutionalization removes such deviations from the realm of personality differences, transforming them into a persistent structural aspect of formal organizations. These institutionalized rules and modes of informal cooperation are normally attempts by participants in the formal organization [that is, its members] to control the group relations which form the environment of organizational decisions.*

Since these informal structures are created to serve the personal needs of the organization's members, they tend to modify the organization's overall behavior pattern. The members decide how they will behave within the organization on the basis of a complex set of goals including their own personal objectives as well as the formal purposes of the organization. As a result, as Selznick observes:

> It is of the essence of [bureaucratic behavior] that action formally undertaken for substantive goals be weighed and transformed in terms of its consequences for the position of the officialdom.**

Thus the major effect of reaction-generated informal structures within a bureau is to divert a great deal of its members' activities from achieving the formal purposes of the bureau to manipulating conditions of power, income, and prestige inside the bureau.

**How Informal Structures Arise as Extensions or Adaptations of the Formal Structure**

Not all informal structures and procedures arise because the members have different goals from the organization as a formal system. Some informal devices spring up as means of implementing the organization's goals by filling "gaps" in the formal rules, or adapting those rules to fit peculiar situations.

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No set of rules can specify in advance every situation an organization encounters. Hence members of every bureau are called upon to implement the formal purposes of the organization in ways above and beyond those set forth in the formal rules. When such implementations are frequently required, officials tend to routinize them so as to eliminate the cost of thinking out what to do each time the same situation recurs. Moreover, such unwritten "rules of the road" make each official's behavior more predictable for other officials who must interact with him.

Thus, the need to economize on time by extending the formal rules to fit one's particular situation is an important cause of informal structure.

Since job descriptions are really part of a bureau's rules, they also cannot be designed in advance to fit every situation that actually occurs. In any organization with formal job descriptions, the particular abilities and personality of the individual assigned to each job will never mesh perfectly with the tasks he is supposed to carry out. As a result, several types of adaptation occur.

First, tasks formally assigned to one person are in fact performed by one or more others. These others may have superior capabilities, or their personalities may be better suited to the tasks, they may be more willing to do the work, or they just cannot escape it as easily. For example, experienced enlisted men frequently do a great deal of the work actually assigned to their superior officers. As a result, it may be difficult for an outsider to know just who is doing what. Yet such uncertainty is intolerably inefficient within each bureau. Hence the word soon gets around about just who is really carrying out each task, and communications regarding that task are directed to him instead of to the person formally assigned to it. Moreover, a long-term discrepancy between who is assigned to perform a task and who is actually performing it may lead to a change in formal assignments so that they match the actual situation.*

*This point has been stressed in William M. Jones, On Decisionmaking in Large Organizations (Santa Monica: The RAND Corporation, March 1964), RM-3968-PR.
Second, some formally assigned tasks may not be done at all, or may be done very poorly. Sometimes none of the personnel in a given section have the talent or interest to perform a certain task assigned to the section. If the task is of marginal importance to the survival of the bureau, it may simply be left undone.

Third, some activities carried out in pursuit of the bureau's formal goals will not yet be part of the formal assignment structure. For example, every time an official is developing something new, he will necessarily be acting outside of the existing formal structure of assigned tasks. Therefore, whenever an organization's environment is changing rapidly in an unpredictable fashion, its formal rules of behavior normally lag behind the conditions in which it finds itself. As a result, it must extend and adapt those formal rules so as to make practical and efficient responses to actual conditions. This means that organizations operating in rapidly changing and highly uncertain environments tend to rely heavily on informal structures and procedures.

The Interaction of Both Types of Informal Structures

The creation of informal procedures always involves a certain amount of discretion, precisely because the formal rules do not cover such creation. According to our hypothesis, whenever officials have any discretion, they will use at least some of it to advance their own interests rather than the formal interests of the organization. As a result, all informal structures and procedures in bureaus, whether primarily reactive or adaptive in nature, will be designed and used partly to serve the self-interests of the officials concerned.

This conclusion implies that informal structures create a drag on the organization's efficiency in achieving its formal goals. Yet informal structures also perform several vital positive functions. First, they provide the members of the organization with those personal rewards (such as friendly relations with others, personal significance,
and a degree of stability of interpersonal relationships) that are absolutely essential to the efficient operation of the organization. Second, they provide extensions and adaptations of the formal rules when the latter are inadequate. Third, they sometimes provide the organization's members with personal motives for good performance unrelated to its formal goals or even to their own direct self-interest. For example, the Army's studies of combat effectiveness showed that soldiers were more strongly motivated by loyalty to the individuals in their own squads than by any identification with the nation's war objectives. Similar studies in industrial firms indicate that desire to conform to the standards of the primary work group plays an important role in determining the organizational performance of individual workers. This desire does not always maximize attainment of the organization's formal objectives, but it often furthers such attainment to a significant degree.

Therefore, the informal structures inherent in every bureau often contribute significantly to its ability to perform its formal functions. This is true even though (1) they spring up spontaneously within the bureau; (2) they are not controlled by the bureau's top leaders, and are difficult for them to influence; and (3) they are motivated primarily by the self-interest of the bureau's members. Informal elements in the bureau are actually inevitable, since they are inherent results of employing human beings. Consequently, this analysis will place significant emphasis on the nature and operation of informal structures.

PERSONAL INVOLVEMENT, PERSONAL LOYALTY, AND IMPERSONALITY OF PROCEDURE IN BUREAUS

Weber's View of Bureau Impersonality

Max Weber regarded impersonality of procedure as one of the identifying characteristics of bureaus. In his analysis such impersonality was closely linked both to the use of rules and to the selection
of personnel on the basis of technical qualifications. Whenever
decisions are made by the application of formal rules to individual
cases, there is relatively little room for shaping each decision in
response to the social rank, wealth, kinship status, or other personal
characteristics of the individual doing business with the bureau.
Similarly, the hiring, retention, and promotion of personnel on the
basis of their technical qualifications, rather than their personal
or ascribed traits, imparts a degree of internal impersonality to
bureaus.

Weber believed both types of impersonality marked a great
departure from prebureaucratic forms of behavior. As he points out,
"This stands in extreme contrast to the regulation of all relation-
ships through individual privileges and bestowals of favor, which is
absolutely dominant in patrimonialism, at least insofar as such
relationships are not fixed by sacred tradition."* Weber's analysis
of impersonality is thus founded upon examination of the historical
conditions that led to its creation.

However, Weber did not take into account certain very powerful
forces that tend to reduce the degree of impersonality in most large
organizations. To understand the balance between impersonal and
personal forces within a bureau we will examine the basic quality of
personal relationships among officials, why this quality varies at
different hierarchical levels, the functions impersonal relations
serve, why personal loyalty is important, and the likely net outcome.

The Quality of Personal Relationships Among Officials

Sociologists and anthropologists distinguish between primary or
total relationships on one hand, and secondary or segmental relation-
ships on the other, as in this statement by Robert K. Merton:

At one extreme are groups which involve and regulate
the sentiments and behavior of members in almost all of
their selves and roles; these can be described, in non-
invidious terms, as "totalitarian groups." At the other

extreme, groups involve and regulate only a limited segment of members' selves and roles; these are described as "segmental groups."

Lewis Coser introduces the idea of intensity of relations too:

The intense interaction which is characteristic of primary groups and of relations approaching the primary group tends to involve the total personality and hence to strengthen intimacy of feelings...[and] bring about an increase of hostility as well as liking.**

Most sociologists classify bureaus as secondary groups that develop segmental relationships among their members at all levels. Members are thus expected to participate merely as performers of their official roles, involving only limited portions of their personalities. Hence their relationships within the bureau do not normally involve their deepest emotions, their personal lives, or their fundamental beliefs about the meaning of life.

Still, members of every secondary institution tend to participate more fully in the organization than their official roles require. That is why informal structures and relationships play such important parts in every organization.

Organizations that utilize mainly secondary or segmental relationships among their members require a different degree of goal consensus from those based upon more primary or total relationships. People whose basic philosophic outlooks are completely contradictory can nevertheless cooperate quite successfully in segmental relationships so long as they agree upon the specific rules of procedure required. Thus the sources of goal divergence in bureaus spring mainly from differences of opinion or beliefs about segmental relationships rather than about basic philosophic, religious, ethical, or emotional orientation. Consequently, "perfect concord" within a given bureau would not


require that its members have completely identical views on all matters, but only on those affecting their relationships with and within the bureau.

**Difference in the Quality of Personal Relationships at Various Hierarchical Levels**

Although most sociologists believe bureaus are dominated by secondary relationships, we believe officials tend to become more intensely and more deeply involved as they approach or enter the uppermost levels of a bureau's hierarchy. This shift occurs for the following reasons.

First, the closer an official is to the top of the hierarchy, the greater and more visible is his direct influence upon important policies. The desire to influence such policies is a strong motivating force to many officials. Hence, the possibility of gaining increased rewards of this type will evoke increased intensity of effort from them, and will tend to make their entire involvement with the bureau more significant in their lives.

Second, officials already at the top of the hierarchy usually regard the bureau's affairs as extremely important in the great scheme of things. As a result of their own loyalty to the bureau, these leaders will usually entrust responsibility for policies of crucial importance only to others whom they believe to be loyal too. This means they will promote into the upper echelons only those subordinates (or outsiders) who seem likely to take an intense personal interest in the bureau's affairs.

Third, the decisions that must be made at the highest levels of a bureau are not of the type covered by existing rules. Rather, these decisions concern broad policies, changes in rules, top-level personnel problems, and alterations in the bureau's major goals. Therefore, greater personal judgment, personal experience, and use of bargaining power with other bureaus and external agents are required at high levels. Moreover, these decisions are often immensely significant for
the operations and the future of the bureau. Hence they tend to evoke broader and deeper participation of individual officials than lower-level decisions.

Fourth, top-level officials tend to become loaded with more work than lower-level officials. This occurs because the scope of each top-level office includes a greater variety and number of activities. So holders of such offices find themselves targets of attempts by lower-level officials to influence important decisions. Even though top-level officials naturally delegate a great deal of authority to their subordinates, there is always an upward pressure which tends to counteract such delegation unless vigorously resisted. When the work-pressure in any job mounts in this fashion, that job tends to take on a very important role in the life of the man who holds it.

Fifth, officials normally demand a certain amount of personal loyalty from their immediate subordinates. This demand is likely to be most intense at the bureau's highest levels. The ability of decisionmakers to work closely together in personal harmony is more important at top levels because the jobs there are relatively unstructured, as noted above. These factors place a greater emphasis at the highest levels on personal relationships as functional elements in carrying out official roles.

There is a certain amount of casual empirical evidence for these contentions. It is well-known that the highest level officials or executives in both bureaus and firms tend to work extremely hard. In fact, men responsible for large organizations often find their entire lives dominated by those organizations.

These observations are important to our theory for two reasons. First, they imply that not all procedures within a bureau are strictly impersonal, particularly at the highest levels. Second, they indicate that the degree of goal consensus among top-level officials may have to be both more profound (that is, extending through more layers of goals) and stronger (on any given layer) than among lower-level officials. This means that special recruitment, indoctrination, and
even ideological procedures will often be required for top-level officials. Admittedly, we do not know exactly where in the hierarchy the line between "top" and "lower" levels should be drawn, but we believe our observations are nonetheless significant.

Functional Causes of Impersonality

Two types of impersonality in procedures are necessary for the proper performance of many bureau functions. The first follows from our definitional axiom that bureaus select and promote personnel at least partly on the basis of their role performance. This criterion is relatively impersonal compared with such personal criteria as social status, ethnic background, age, political influence, or wealth.

However, this conclusion merely shifts the question to, "Why must bureaus hire and promote people on the basis of their actual or potential role performance?" Bureaus perform a wide variety of functions in society, most of which are technical in nature. Continued failure by the bureau to perform its functions with at least a minimum degree of technical competence will cause its customers to become sorely dissatisfied with its behavior. As a result, they will either subject the bureau to a drastic purge of leadership, or give it much smaller amounts of resources. To avoid both outcomes, every bureau must make actual or potential role performance a major factor in its personnel policies.

The second type of impersonality concerns the relationships between the bureau and its clientele. It is generally assumed that such impersonality means similar treatment of all persons whose situations involve objectively similar conditions, regardless of their personal characteristics. Bureaus adopt this type of impersonality in dealing with their clients for two reasons.

First, every public or quasi-public bureau is normally instructed to give all citizens equal treatment before the law. Second, bureaus must use formal rules or procedure, but formal rules are incompatible with personal treatment of clientele. A truly personal relationship implies a unique and spontaneous emotional response by the official to the personality or problems of his client, not to a rule book.
The Importance of Personal Relationships to Officials

Officials are motivated by both self-interest and altruism to create informal networks of friends, favor recipients, contacts, and communications links based upon primarily personal, rather than official, relationships with others. This type of network has two important functions. First, it enables officials to build up reputations and status independent of the particular positions they hold. The desire to attain such personal status arises because every official is partly motivated by his own self-interest, and because officials are often moved from one position to another. It is clearly rational for an official who believes he will probably shift jobs to invest at least some of his time and effort in developing relationships that will benefit him when he holds a different position. Since he is not certain what his future jobs will be, and since he cannot now exercise the powers of those jobs anyway, he must develop these relationships as a person rather than as the official holder of a particular position.

It is true that he makes use of the powers of his current office in order to develop such relationships. Those powers give him the means of doing favors for others so as to create future obligations which he can cash in later. Nevertheless, he will attempt to take credit for these favors personally rather than as an official. This is especially likely if the favors he grants violate the official rules of the bureau. Credit for violating official rules can hardly be vested in the official person who is supposed to be upholding those rules.

* This analysis has benefited greatly from the ideas of W. M. Jones, On Decisionmaking in Large Organizations.

** Especially ambitious officials may even attempt to take personal credit for merely carrying out the official rules in the prescribed manner. For example, in some underdeveloped countries, bureaucrats will not even perform the functions they are required to carry out by law unless they receive bribes for doing so, as mentioned in Fred W. Riggs, "Bureaucrats and Political Development: A Paradoxical View," Bureaucracy and Political Development (Princeton: Princeton University Press, 1963), p. 151. This is an extreme case of using the powers of one's office to build up personal interests that will outlast one's tenure in that office, though Riggs also shows that unrealistic laws make such bribery a rather rational resource-allocation system under certain circumstances.
An informal network of personal obligations also has another role -- it enables each official to perform his social functions with much greater efficiency than would strict adherence to formally prescribed procedures. For example, whenever his bureau is under pressure to act quickly, the ability to short-cut formal procedures may be vital. If he knows the right man, he can quickly bypass several official chains of command and get the job done. This is especially important when a task involves complex relationships among several bureaus. Similarly, efficient performance of his function may be expedited by minor violations of the rules of other parts of his own bureau or of other bureaus. If he has established "credit" with the other officials concerned by allowing them to violate the rules of his section, he can get away with violating their rules -- up to a point.

Without such personalized networks bureaus would operate with a rigid formality that would seriously weaken their flexibility and overall efficiency. In essence, informal networks allow officials to recognize varying intensities among the many requests for their services. The formal rules and regulations of every bureau are usually blind to differences in the urgency of such requests. But on a personal level, officials can shift priorities in response to perceived urgencies that cannot be given official status. Each official cannot directly measure how urgent a given matter is to the persons requesting his cooperation. However, he can indirectly measure such urgency by the amount and nature of the favors they are willing to perform in return. Hence the trading of personal favors back and forth sets up a crude, market-like mechanism by which relative intensities can be gauged, similar to logrolling among legislators. *

This bargaining process had definite limitations. First, officials can go only so far in granting permission to perform illegal acts, or in shifting priorities for action. Otherwise they may incur the wrath of their superiors or of those outside agents whom the regulations or the normal priority schedules were designed to benefit. Second, it is

easy for the parties concerned to develop inconsistent notions about
the value of specific favors, since no explicit currency is involved.
Normally, the person granting a favor tends to value it higher than
the person receiving it. Third, the use of personal networks gives
disproportionate power to individuals who are in a position to grant
many or large favors to others. For example, wealthy favor seekers
can offer more favors in return than poor ones. Hence the more an
official relies on his personal network instead of the formal rules
of his bureau to make decisions, the more his functioning departs
from the social norm of impartiality among bureau clients.

To limit such inroads on impartiality, bureaus normally have
strict rules about what types of favors can be accepted from clients.
However, it is difficult to design rules governing the types of favors
officials can receive from each other in terms of fast service, over-
looking minor rule violations, and the like. Hence officials are more
likely to engage in personal bargaining with other officials than with
bureau clients.

The Functions of Personal Loyalty

Personal loyalty to one's superior, and from one's subordinates,
plays vital functional roles within a bureau. Its first role stems
from the rarely discussed fact that all top-level officials (and many
others) are frequently in danger of being embarrassed by revelations
of their illegal acts, failures, lack of control over their sub-
ordinates, and sheer incompetence. If their subordinates are personally
loyal to them, they can rely upon those subordinates to be discreet in
the handling of information dealing with these potentially scandalous
matters. Therefore, in order to protect themselves, they tend to select
subordinates who exhibit such loyalty.

Even the most brilliant and impeccably ethical leader of any
large organization will eventually develop some skeletons in the closet
because of the nature of large organizations. This is particularly
likely if his organization's functions involve great uncertainty,
rapidly changing environments, large expenditures, and heavy pressures
from external agents. For the following reasons, every bureau leader is almost certain to become embroiled in potentially scandalous acts.

- He cannot fully control or be fully informed about the behavior of his subordinates and they are very likely to be doing things that would prove embarrassing if made public.

- His desire to build up a network of personal influence will lead him to break the rules of his own bureau or other bureaus occasionally, as noted above.

- He and his subordinates will sometimes make avoidable mistakes that must be covered up if he is not to appear grossly incompetent.

- Uncertainty will inevitably cause unavoidable errors, since policies that appear optimal today may look foolish tomorrow when more facts are known. Yet explaining why those errors were truly unavoidable may be almost impossible.

- The pressure to produce results quickly will sooner or later cause him to use short-cut methods of dubious quality. In many cases, such methods are entirely appropriate to the situation, but they would be difficult to justify in public later when the exigencies of the moment are no longer visible.

It is worth emphasizing again that these outcomes are inescapable. True, a highly competent and conscientious bureau leader will accumulate fewer potential scandals than someone less competent or with looser ethics. Nevertheless, no leader of any large organization can avoid undertaking acts he does not want made public. Therefore, the desire for personal loyalty among subordinates is a universal phenomenon among such leaders.

Moreover, this desire is not entirely dysfunctional from the point of view of the organization as a whole. If a bureau were constantly embroiled in scandals and public embarrassments, it would lose the confidence of the public and its clientele. Hence the cultivation of personal loyalty as a means of suppressing embarrassing revelations helps the bureau achieve its formal goals efficiently. Of course, such concealment can also be used to maintain grossly inefficient practices. Like most benefits, its misuse can turn it into a severe disadvantage.
Because superiors value personal loyalty in their subordinates, such loyalty is one of the qualities they look for when deciding whom to promote. As a result, subordinates seek to exhibit personal loyalty so as to increase their chances of promotion. But which superiors should subordinates be loyal to? Normally, their primary loyalty will be to their immediate superiors. Those superiors have the greatest influence on their next promotion, and officials are in a position to know more of their immediate superiors’ secrets than those of any other officials. In some cases, however, the subordinates will also exhibit loyalty to a superior several levels above themselves. Thus it is possible for conflicts of loyalty to arise and confront individual officials with very difficult choices.

This ambivalence of loyalty means that officials in charge of promotion often take account of the general loyalty capability of each official rather than his specific current allegiances. What counts is how loyal an official has been to each of his immediate superiors while he served under them. Thus, personal loyalty becomes partly transmuted back into an office-oriented trait.

Another function of personal loyalty is more purely person-oriented. Often the most effective way to promote certain policies within a bureau is to support a particular official who espouses those policies and is likely to be in a good position to carry them out. This means that officials motivated to support certain policies may develop strong personal loyalty to a highly placed official who is trying to promote those policies. As a result, high-level officials sometimes engender "cliques" of lower-level supporters who back them as a means of attaining goals they value. Although the backers may not agree with every policy position taken by their higher-level "hero," they nevertheless loyally support him because they believe he will produce a better constellation of policies (if his views prevail) than anyone else available.*

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* Certain types of officials are more likely to choose sides than others. Zealots are likely to do so because they seek to promote certain issues, and climbers because they are promotion oriented. However,
The Balance Between Personal and Impersonal Elements in the Bureau

We earlier pointed out that the formal features of bureaus create an impersonality of relationships within each bureau and between the bureau and its clients. We have also shown how informal forces create a strong tendency for officials to develop certain personal relationships with each other and with clients. These two assertions are not necessarily contradictory. No matter how extensive a bureau's formal rules, or how important the technical qualifications of its members, there will always be areas of discretion open to officials in applying the rules, and in making decisions about whom to hire, retain, or promote. Within these areas of discretion, personal factors can enter into decisions without altering the basically impersonal nature of many bureaucratic operations. However, personal factors are not restricted to these interstices between the impersonal rules. Officials can also use personal criteria to make decisions that are supposed to be made impersonally. Hence tension can -- and always does -- arise between the personal and impersonal elements within a bureau's operations.

Because bureaus must rely so heavily upon formal rules, their internal relations and their dealings with clients will tend to be more impersonal than those of comparable nonbureaucratic organizations. In addition, we can make the following observations about the relative emphasis that will be placed upon these elements:

Bureaus in which personnel are frequently rotated from job to job will tend to stress impersonal factors in normal operations.

Bureaus in which personal loyalty to a single leader becomes a dominant force will tend to incur the following disadvantages:

- Removal of the leader through death, retirement, or replacement will cause a serious discontinuity throughout the bureau. The new leader will usually conserve...
want to replace all the major subordinates of the old leader with men loyal to himself.

- The leader often becomes surrounded by relatively second-rate subordinates who constitute no threat to his position and who are willing to submerge their own interests to his.

- Loyalty can be proved only through experience. Hence a leader whose subordinates have demonstrated their loyalty to him over the years will be reluctant to replace them. As a result, the incumbents are to a certain degree insulated from competition, and need not perform their official duties as efficiently as they would if personal loyalty were irrelevant.
IV. COMMUNICATIONS IN BUREAUS

TYPES OF COMMUNICATION COSTS

Communication requires definite costs.* Every message involves the expenditure of time to decide what to send, time to compose the message, the resource-cost of transmitting the message (which may consist of time, or money, or both), and time spent in receiving the message. Also, if the message passes over a channel operating near its capacity, it may cancel or delay other messages.

Since the time of each official is limited, the more he spends in searching or communicating, the less he has for other types of activity. His capacity for absorbing and using information is also limited. Hence every individual has a saturation point regarding the amount of information he can usefully handle in a given time period.

To achieve reasonable efficiency, the communications network in any organization must not normally load any individual beyond his saturation point. If he becomes overloaded, he will be unable to comprehend the information given to him well enough to screen it efficiently, or to use it.

The number of persons from whom any official can effectively receive messages in a given period is inversely related to the average length of the messages. This limitation does not apply to his transmitting information so long as the messages sent to all concerned are identical (such as a command to all troops not to fraternize). However, if he must transmit different messages to each recipient, then the inverse relationship between number of recipients and size of message also holds true.

Because messages are costly, only a limited amount of all available information is either collected or used by any organization. This

means that the particular methods used by the organization to collect, select, and transmit information are critically important determinants of its behavior.

FORMAL, SUBFORMAL, AND PERSONAL COMMUNICATIONS NETWORKS

Following the classification set forth by William M. Jones in *Decisionmaking in Large Organizations*, we distinguish among three types of communications networks within a bureau (and among different bureaus).

Formal Communications

The formal communications network transmits messages explicitly recognized as "official" by the bureau. At this level, one finds published organization charts, standing operating procedures, formal orders and directives, periodic reports, official correspondence, and so on. Formal messages make certain actions, decisions, or policies "legal" within the framework of the bureau's powers. Therefore, in almost all large organizations, the formal channels of communication substantially coincide with the formal authority structure.

Subformal Communications

Subformal channels transmit those messages arising from the informal authority structure existing in every organization. Every member of the bureau must know and observe informal rules and procedures about what to communicate to whom. Such rules are rarely written down, and must be learned by experience and example. This creates frequent difficulties for newcomers and outsiders -- including bureau customers. In fact, the classic feeling of "getting the run-around" from bureau officials often arises from the average citizen's ignorance of how a bureau's informal communications channels are structured.

Subformal communications are of two kinds: those that flow along formal channels, but not as formal communications and those that flow along purely informal channels. Both types have the great advantage

*W. M. Jones, *Decisionmaking in Large Organizations*. 
of not being official; hence they can be withdrawn, altered, adjusted, magnified, or canceled without any official record being made. As a result, almost all new ideas are first proposed and tested as subformal communications. In fact, the vast majority of all communications in large organizations are subformal.

As a rule, subformal channels of communication spring up whenever there is a functional need for officials to communicate, but no formal channel exists. Formal channels are normally vertical, following the lines of the formal authority structure. Consequently, most of the gap-filling subformal lines of communication are horizontal, connecting peers rather than subordinates and superiors. Even when subformal channels link officials of different ranks, the informality of the messages exchanged plays down variations in status. This is important because men are more prone to speak freely and openly to their equals than to their superiors.* Thus, subformal communications normally evoke much more forthright and candid responses than formal communications.

The prevalence of subformal channels means that formal networks do not fully describe the important communications channels in a bureau. Therefore, it is futile for persons designing an organization to set up the formal channels they want and assume that those channels will in fact carry most of the messages. On the contrary, the more stringently restricted the formal channels, the richer will be the flowering of subformal ones. Thus, within every organization there is a straining toward completeness in the overall communications system. "Completeness" here implies the ability of each member of the organization to communicate directly with those other members who are naturally linked to him by his functions. A "complete" network need not be an all-channel network.

Even though the subformal system strains toward filling the gaps in the formal one, the leaders of an organization can severely restrict the development of the former. This can be done by ordering subordinates

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*This point is discussed at length in Blau and Scott, Formal Organizations, pp. 116-139.
under severe penalties not to communicate with each other, by physically
separating people, by requiring prior clearance for any communication
outside a certain bureau section, or by hiring only reticent sub-
ordinates. Thus a wide variety of subformal networks might exist
under identical formal circumstances.

An even more important determinant of a bureau's subformal
network is the nature of the bureau's functions, as shown by the
following relationships:

- The greater the degree of interdependence among
  activities within the bureau, the greater will
  be the proliferation of subformal channels and
  messages therein.

- The higher the degree of uncertainty inherent in
  a bureau's function, the greater will be its pro-
  liferation of subformal channels and messages.
  When the environment is relatively unpredictable,
  men cannot logically deduce what they should be
doing simply by referring to that environment.
  Hence they talk to each other more to resolve
  ambiguities.

- If a bureau is operating under great time-pressure,
it will tend to use subformal channels and messages
extensively, since there is often no time to check
out formal ones and put them in shape for the record.
Thus, in a crisis, top-level decisionmakers will reach
out for information whenever they can get it, whatever
the channel structure involved. They will also tend
to rely on other officials in whom they have great
confidence, even if those other officials are not
formally connected with the subject of the crisis
(for example, Robert Kennedy's role in the Cuban
missile crisis).*

- Sections of a bureau or different bureaus in strong
conflict will tend to eschew subformal channels and
communicate only formally; whereas closely cooperating
sections will rely primarily upon subformal communi-
cations. Thus strong rivalry has important communications
drawbacks.

- Subformal communications networks will be more effec-
tive if bureau members have stable relationships with
each other and with other persons outside the bureau
than if these relationships are constantly changing.
This means that newly established, fast growing bureaus
are likely to have less effective subformal networks
than well established, slower growing ones.

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* W. M. Jones, Decisionmaking in Large Organizations, pp. 17-20.
Personal Communications

According to Jones, a personal communication is one in which "an organization functionary, in communicating with an insider or an outsider, deliberately reveals something of his own attitude toward the activities of his own organization."* Jones sets forth the following points about personal communications:

- Personal channels are almost always used for reports rather than directives.
- Since personal messages are transmitted by officials acting as persons rather than as office-holders, they do not bear the responsible weight of the office emitting them. In this respect, they differ from subformal messages, which are transmitted by individuals acting in their official capacity -- but not for the record.
- The personal network can transmit messages with amazing speed because there is no verification mechanism to slow down their dissemination. In his investigation of "Rumors in War," Theodore Caplow also found a very high degree of accuracy in the rumor network, even for messages that had passed through hundreds of persons.**
- Before an official takes action on the basis of information received through personal channels, he will usually verify that information organizationally through either subformal or formal channels.

The Impact of Subformal Communications on Inter-Bureau Relations

In many instances, formal communications between bureaus are inappropriate for several reasons. First, it takes a long time for a formal message from a low-level official in one bureau to pass to a similar official in another. Second, formal messages are on the record; but the officials concerned may want to discuss things tentatively. This is especially important in the generation of new ideas. Third, low-level officials may not want to expose their ideas to their

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*Ibid., p. 5

**Rubenstein and Haberstroh, Some Theories of Organization, pp. 280-287.
superiors for the time being, even in rough form, yet any formal
communication is immediately routed through the originator's superior.

Thus subformal communications play important roles in the rela-
tionships between bureaus. But an official in one bureau is rarely
familiar with the subformal communications networks or authority
structures in other bureaus. This often makes it difficult for
officials of different bureaus to communicate subformally.

The difficulty can be easily overcome, however, if the official
concerned can establish some type of subformal or personal relation-
ship with just one official in the other bureau, who can quickly steer
him to the right man to talk to. This explains why smart officials
eat as many lunches with counterparts in other bureaus as they do with
colleagues in their own bureaus.

Inter-bureau obstacles to communication are not so easily by-passed
when two bureaus are in strong conflict. Then the informal networks
of one may be substantially closed to members of the other by orders
of top-echelon officials, a feeling of mutual hostility at all levels,
or a tactical need to keep procedures and ideas concealed so as not
to yield any competitive advantage in the conflict. Jones contends
that all large, interacting organizations are in partial conflict with
one another; hence these obstacles to informal communications always
exist to some degree.* However, substantial closure of informal
communications channels probably occurs only when two bureaus (or two
parts of one bureau) are in an unusually strong direct conflict.
The buyer-seller relationship is an example of this.

TULLOCK’S MODEL OF HIERARCHICAL DISTORTION

The self-interest axiom, plus everyday observation of large
organizations, indicates that individual officials tend to distort
information passing through them. But how does this affect the
bureau's communication system as a whole? A first step toward

* W. M. Jones, Decisionmaking in Large Organizations, p. 6.
answering this question has been set forth by Gordon Tullock.* His argument focuses on upward flows of formal messages in a bureau hierarchy, but it is also relevant to the primarily horizontal flows of subformal and personal messages described above. True, the average distortion per message is probably greater in vertical flows than horizontal ones. The former involve superior-subordinate relations, whereas the latter usually involve relations among equals. Nevertheless, the following analysis concerning aggregate message distortion and anti-distortion devices applies in an important sense to all messages in a bureau.

To illustrate Tullock's argument, let us postulate a hierarchy of authority containing seven levels. A part of this hierarchy is shown in Fig. 1. We will assume that the officials on the lowest (G) level are actually out in the field. Officials on all other levels depend upon secondary sources and information forwarded by G-level officials. All the information so forwarded is sent to their F-level superiors who then screen it and relay the most salient parts to their superiors on the E-level, who in turn screen that information and forward it to D-level officials, and on up the line. Eventually, the information reaches the top man in the hierarchy after having been screened six times in the process.

There are two major features of this winnowing process worth examining in detail. First, condensation of information is an essential part of the bureau's communications process. Otherwise the top man would be buried alive under tons of facts and opinions. Let us assume that the information gathered by each official on the G-level in a single time period can be set equal to 1.0 units of data. If we further assume that the average span of control in the bureau is four then there are 4,096 officials at the G-level. This means that 4,096 units of data are gathered during each time period. The quantity that actually reaches the A-level depends upon the percentage omitted at each screening. For example, if the average official screens out only

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Fig. 1 -- Model hierarchy
half the data given to him by his subordinates, then A will receive a total of 1/64 of all the information, or 64 units per time period. The winnowing process will have omitted 98.4 per cent of the data originally gathered.

Second, the quality of information finally received by A -- that is, its substantive content -- will probably be very different from that originally put into the communications system at the lowest level. The selection principles used by officials below A to determine which data to pass on and which to omit will always differ from those of A himself. Their self-interest gives them goals different from A's, their specialized modes of perceiving reality vary from his, their stocks of current information are not the same as his, and they may altruistically identify themselves with a certain part of the bureau rather than the whole structure under A. In fact, the selection principles used by officials at each level are likely to be different from those used by other levels for the same reasons. Hence, the information that finally reaches A has passed through six filters of different quality, and the "facts" reported to A will be quite different in content and implication from the "facts" gathered at the lowest level.

To illustrate the potential magnitude of the resulting distortion, we will use an admittedly oversimplified and ambiguous mathematical analogy. In spite of its serious limitations, it is useful as a means of providing at least some quantification to our analysis of the quality of information reported to A. Let us assume that each screening destroys a certain fraction of the true meaning of the information from A's point of view. If this fraction is 10 per cent, then by the time the information passes through all six filters, only about 53 per cent of it will express the true state of the environment as A would have observed it himself. If we assume another 5 per cent distortion due to errors of transmission and poorer quality of personnel at lower levels, then the fraction of truth reaching A will be only about 38 per cent. Under such conditions, the leakage of information caused by frictions in the communications system is enormous. It may be so large
that the majority of information A receives is not really information at all from his point of view, but noise -- error introduced into the signals he receives by the operation of the signalling apparatus.

This process will tend to distort information in such a manner that A receives reports that tell him primarily what his subordinates believe he wants to hear, and indicate that his bureau should probably be expanded, but certainly not contracted. The first of these conclusions stems from distortions originated by the climbers in the network. They tend to tell their superiors what would please them most, so that the climbers themselves can win fast promotions. The second conclusion is derived from our hypothesis that many officials in the bureaus are likely to be advocates. Both advocates and climbers will seek to expand the power of the bureau; hence they will tend to distort information so as to show that the bureau needs more resources.

ANTI-DISTORTION FACTORS IN THE COMMUNICATION SYSTEM

The above observations are based upon a useful but grossly oversimplified model of hierarchical communications. This model neglects many important forces that limit the amount of distortion the bureau's communications system will produce. Tullock himself pointed out some of these anti-distortion forces, and we will add a few more. Altogether, they tend to reduce the degree of information distortion likely to occur in a bureau considerably below that indicated above, but they do not eliminate it.

Redundancy: The Duplication of Reports for Verification

Whenever A receives information he believes is distorted (from his point of view), his desires as a consumer of data are being ignored by his monopolistic supplier -- his own bureau. The classic antidote for monopoly is competition. Therefore A will try to establish more than one channel of communication reporting to him about the same events and topics.
From one point of view, this approach is wasteful, since he must maintain duplicate (or sometimes triplicate or quadruplicate) communications facilities covering the same area of activity. Yet only in this way can he check up on the accuracy of his own bureau and, by using the threat of such checks, force the bureau to give him information selected by principles close to his own.

There are several methods by which an official can produce such redundancy. Among them are the following:

**Use of Information Sources External to All Bureaus**

Merely by reading several good newspapers each day, and letting all his subordinates know he does, a top official can produce a marked reduction in the distortion practiced by his own bureau. The absence of a free press in dictatorial countries undoubtedly makes this verification process for top-level officials much more difficult than in democratic societies.

However, no successful top-level official ever relies on the press as his sole external source of information. Rather, he develops a whole informal network of outside sources which he can use as listening posts to verify the things conveyed by his subordinates -- or to give him new data. These sources include friends in other bureaus, members of his bureau's clientele, social acquaintances, politicians, official reports of other agencies, and even gossip.

**Creation of Overlapping Areas of Responsibility Within a Bureau**

If A has three subordinates on the B level and he makes each of them partly responsible for a certain function, he introduces an element of competition among them that may improve the accuracy of their reports to him. Each knows that any distortions in his own reports may be exposed by the others. Even if A were unable to tell which of three conflicting reports was wrong, their disagreement would rouse his suspicions and perhaps lead him to investigate all reports more fully. As we pointed out in Section III, all officials dislike investigations of their own departments. Thus the threat of investigation
forms part of the overall pressure upon each subordinate not to
distort information.*

It is clear that the three B-level subordinates have much to
gain from collusion. If they can read one another's reports before-
hand and reconcile any differences before exposing them to A, they
can avoid the possibility of investigation and retain their freedom
to distort information. True, this freedom will be limited by the
need to reach agreement on their reports to A. Hence the accuracy
of A's information may improve somewhat even if collusion exists.
Nevertheless, such collusion will destroy most of the advantages A
hopes to gain from establishing redundant channels; therefore, he
must insure that no collusion exists if he wants this device to work.
He can do this through the following available mechanisms:

- Use many other overlapping channels both inside
  and outside the bureau, and be sure that everyone
  knows it.
- Use physically separated channels. However, informal
  communications and telephones usually make physical
  separation ineffective.
- Reduce the penalty for conflicting reports by
  encouraging a variety of viewpoints and minimizing
  the threat of investigation. Leaders who really do
  not like "yes-men" usually do not get them.
- Structure the interests of the subordinates involved
  so they are in direct conflict. This may be the only
  device available if there are no alternative channels
  for receiving information (as in some covert activities
  or specialized fields of research).

Creation of Overlapping Areas of Responsibility in Different
Bureaus

This tactic has the same objective as creating overlapping
responsibility within a single bureau. However, it is better designed
to prevent collusion because men in different bureaus are generally

*However, subordinates know that their superiors also fear
investigation by outsiders; hence they can sometimes get away with
a great deal because they know their superiors will not want to reveal
misbehavior in their own organization to possible outside observers.
in different promotional hierarchies too. Colleagues within a single promotional hierarchy usually avoid making enemies of each other through excessive conflict. Each knows that he might someday be in a position where the other's decisions could seriously affect his own welfare. But men in different bureaus are under no such restraints; so each is more likely to vigorously defend the interests of his own bureau against possible inroads by the others. Moreover, it is harder for men in different bureaus to communicate with each other informally than it is for men in the same bureau.

Counter-Biases: Their Benefits and Costs

A second major anti-distortion technique that most officials apply almost automatically is the use of counter-biases. The recipients of information at each level in the hierarchy are well aware that the data they get is distorted. Every general was once a lieutenant, and remembers the type of distortion he used when he forwarded information to his own superiors. Therefore, he develops a counter-biased attitude toward most reports received from his subordinates. He adjusts these reports to counteract the distortions contained therein. Insofar as he is correctly able to estimate these distortions, he can restore the information to its original form. If such counter-biases are used at every level of the hierarchy, then much of the cumulative distortion effect described in Tullock's analysis will be eliminated. The principal remaining distortion will be that caused by errors made by each superior in estimating the nature of his subordinates' biases.

Experiments conducted in small groups tend to show that people do use counter-bias strategies to offset distorted information.* However, they do so only when they have some knowledge of the type of distortion originally used, and when it is in their own interest to reduce this distortion. Both these qualifying conditions have important implications for bureau communication systems.

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If an official does not know what type of distortion has been incorporated into information he has received, he cannot accurately restore the data to its pure form. The only counter-bias strategy he can then use is to reduce his reliance upon such information in making decisions. In essence, he responds to it in the same way that he responds to most highly uncertain information.

Distortion is related to uncertainty in still another way: the more inherently uncertain any information is, the more scope there is for distortion in reporting it. Inherent uncertainty means that the range of values variables may assume cannot be reduced below a certain significant size. The greater the uncertainty, the wider this range, and the more latitude officials have in emphasizing one part of it without being proven wrong. They tend to designate one part as most probable not because it really is, but because the occurrence of that value would benefit them more than other possible outcomes. This amounts to uncertainty-absorption based upon self-interest or advocacy rather than objective estimates of real probabilities.

Officials using counter-bias strategies are also aware of this propensity for their subordinates to resolve uncertainty questions in their own favor. The problem for a counter-biaser is to recognize whether the estimates of his subordinates are really based on relatively certain information, or whether they embody false resolutions of uncertainty. Again, counter-biasers tend to shift their decisions away from dependence on uncertain data. These shifts may be of the following specific types:

- Away from information about the future toward information about the present or past.
- Away from qualitative and immeasurable factors toward quantitative and measurable factors.
- Away from those quantitative factors that cannot easily be verified toward those that can.

Thus the use of counter-biasing to counteract distortion has certain costs in terms of the quality of the resultant decisionmaking.

* See James G. March and Herbert A. Simon, Organizations, pp. 164-166.
The uncertainties involved force the counter-biasing officials to increase some distortions in order to decrease others.

Such reliance upon counter-biasing can be reduced in organizations where stable personal relationships have sprung up between officials. Men who work closely together eventually learn the types of distortions they can expect from each other. Officials can then accurately judge the nature of each other's distortions instead of reducing their reliance upon distortion-prone information. Insofar as such information contains inherent uncertainty, they may still disregard it in making decisions. However, this tendency will then be a reaction to uncertainty itself, not to distortion.

This conclusion implies that relatively stable organizations develop better internal communications systems than those that are constantly changing personnel. Therefore, bureaus undergoing rapid growth tend to exhibit more distortion of information, and more excessive avoidance of uncertainty due to counter-biasing strategies than those that are growing more slowly or not growing at all. In communications, unfamiliarity with one's communicants is a form of cost.*

Another major qualification must be attached to the use of counter-biasing. Even if an official knows he is receiving distorted information from his subordinates, he may believe it is in his own interest to retain that distortion in his decisionmaking. He may even find it desirable to add to this distortion in forwarding the information to his own superiors.

Such cumulative distortion is likely whenever advocates, climbers, zealots, or even conservers are dealing with certain kinds of information. These officials all have a tendency to exaggerate the capabilities of their own sections of a bureau, as well as any information favorable to themselves or their sections. Conversely, they try to minimize any unfavorable information, especially if it might reduce

the resources available to that section. Consider the case of the combat capabilities of certain aircraft used several years ago. These capabilities involved, among other things, radar bombing scores. Naturally, each bombardier was motivated to get as good scores as possible, and some even cheated to do so. Squadron commanders were motivated by competition to report the scores of their squadrons as favorably as they could; hence they did not inform their superiors that many of their most impressive scores were run on sunny days with no strong winds and lots of optical assistance. Similarly, the wing commander knew that he was competing for money with other types of weapons (such as submarines); hence he summarized the scores reported to him as optimistically as possible before forwarding the summary to his superiors, minimizing such qualifying facts as the percentage of air aborts. Cumulative distortion resulted, and the top men in the hierarchy received a report of capabilities grossly exaggerating the real situation. Such exaggeration need not result from any overt falsehoods, but simply from selective suppression of qualifying information. Moreover, the officials involved are quite aware that their subordinates are feeding them biased data, but they are all strongly motivated to increase or at least accept that distortion rather than to eliminate it through counter-biasing.*

Thus the fact that counter-biasing could counteract much of the distortion in bureau hierarchies does not mean that it will do so. In fact, cumulative distortion will tend to be increased by the structure of incentives facing officials regarding certain types of information. Moreover, it is extremely difficult for top officials to check up on such distortions through redundancy whenever they involve highly technical matters. Only if the bureau serves a clientele capable of judging the quality of its performance will top officials have any alternative information channels with which to

*In some cases, top-level officials deliberately remain officially ignorant of cheating and distortions going on below them so that they can pass on more glowing reports to their own superiors.
verify the performance reports of their own subordinates. In the case of the military services, this is very unlikely.

Eliminating the Middle Men

The third major way in which top officials can reduce distortion is by eliminating the middle men between themselves and the data gatherers. This can be done either by maintaining flat organizations, or by various by-pass devices.

Keeping the Hierarchy Flat

This method of keeping the degree of distortion low reduces the number of screenings by having only a few levels in the hierarchy. However, in order for such a flat organization to have many members (as all bureaus do), officials must have a relatively wide average span of control. Thus flatness has important control ramifications.

Flat hierarchies are often associated with decentralized control because officials who have wide spans of control cannot spend much time supervising each of their subordinates, and these consequently have a great deal of discretion. But when authority is decentralized, the number of messages passing between lower and upper levels per unit of output is relatively low since superiors need to approve a low percentage of all actions taken. Thus, paradoxically, many organizations with low vertical message distortion tend to use vertical communications channels less intensively than those with high vertical distortion.

Flat hierarchies are also appropriate for functions involving highly routinized activities which can be reported by objective indexes. Centralized control can be maintained in spite of wide spans of control because of the relative ease of checking performance through these indexes. Flatness is desirable in such organizations not because it minimizes vertical distortion, but because it increases efficiency by allowing each supervisor to have a large number of subordinates.
It is apparent that whether or not an organization should have a flat hierarchy depends mainly upon the implications of flatness for its internal control processes.

The Nature of By-Passing Devices

Every bureau contains a number of ways in which officials can bypass the normal chain of command and communicate directly with other officials two or more levels (or nodes) away in the hierarchy. One of the main motives for such by-passing is avoiding the distortion that normally occurs when any message is filtered through a number of levels. However, officials also use by-passes for other reasons, as explained below. The major types of by-passes are as follows:

(1) The straight-scoop by-pass is designed to eliminate distortion. It is usually carried out by high-level officials, who directly contact officials far below them in their own hierarchy. They do so either to obtain information directly "from the horse's mouth" or to transmit complex orders directly to those who have to carry them out. The following forms of straight-scoop by-pass are common:

- Recurrent informational or personal contacts with officials two or more levels below in the hierarchy.
- Use of a single briefing team to inform all levels of the hierarchy about a new policy decision.
- Direct confrontations with very low-level officials whose function is critical in some crisis situation (as when President Kennedy talked directly to Navy radar operators in the Cuban quarantine operation).
- Inspections at lower levels by top-level officials.
- Outside contacts with bureau clients or others who deal directly with its lower echelons.
- Mechanized means of communication that channel reports directly from the lowest to the highest level without passing through intermediate filters. An example is the information panels at SAC headquarters which automatically display data received direct from surveillance radars.

*W. H. Jones, Decisionmaking in Large Organizations, pp. 19-20.*
High-level officials normally initiate straight-scoop by-passes. However, if an official maintains well-established contacts far below him, they too may alert him to things he ought to know that are being suppressed by formal channels.

(2) Check-out by-passes are designed to test ideas before putting them on the record through formal communications channels. These by-passes are usually horizontal because officials want to check their proposals with other bureaus likely to be affected.

(3) End-run by-passes are designed to get around an immediate superior who refuses to communicate certain ideas up formal channels.

(4) Speed-up by-passes accomplish things in a hurry by avoiding slow-moving formal channels.

(5) Co-option by-passes are used by higher-level officials to give lower-level officials a feeling of belonging to the inner councils of the bureau. Oral briefings for a whole command or a group of mixed rank are a form of co-option by-pass, as Morris Janowitz points out.*

The Use of By-Passing Devices

We can make some significant observations about how the use of by-pass mechanisms varies in relation to bureau functions. First, the flatter an organization, the less straight-scoop by-passing will arise in it. However, if the organization is kept flat by extreme centralization of authority at the top, then it may generate just as much speed-up and check-out by-passing as a tall organization. This will occur because the long delay in obtaining decisions from the

*Morris Janowitz, *The Professional Soldier* (Glencoe, Illinois: The Free Press, 1960), p. 71. Janowitz stresses the upward flow of information in oral briefings rather than their co-optation aspects. However, in our opinion, he exaggerates the effectiveness of such briefings (when conducted in the presence of high-level officers) as decisionmaking devices. Many examples show that lower-ranking officers are unwilling to argue forcefully against their superiors in open meetings, even if they strongly believe they are correct in their dissenting views.
overworked top man will have the same drag effect as long chains of
command in a tall organization.

Second, organizations with functions that involve many crises
will tend to use straight-scoop by-passing more frequently than those
with routine functions. Such organizations cannot afford to be pre-
pared at all times to cope with peak-load conditions; hence they resort
to this mechanism when such conditions arise. They include those
engaged in repressing or responding to violence (such as police depart-
ments and military organizations), those in a power setting marked by
extreme controversy, and any others that must quickly respond to an
environment that undergoes rapid, wide-amplitude changes.

Third, the more knowledge top leaders in an organization have
about the type of distortions their subordinates are likely to use,
the less those leaders will use straight-scoop by-passing to check up
on them. Hence stable organizations will use by-passing less than
dynamic ones.

Fourth, the more finely specialized an organization is, the more
its leaders will resort to by-passing to discover what is really
going on. In highly specialized organizations, a man's immediate
superior often knows less about that man's job and specialty than the
man himself. This will cause higher-level superiors to call upon the
specialist himself when his talents become relevant to some problem.

Finally, frequent use of by-passing by high-level officials may
cause serious disaffection among the intermediate-level officials
who are by-passed. Straight-scoop by-passes in which top officials
reach right past their immediate subordinates are especially irritat-
ing to the latter. This tactic indicates that top-level officials do
not have confidence in the reports of their subordinates. It also
deprives these subordinates of the opportunity to modify the percep-
tions of lower-level officials. Furthermore, if such by-passes are
well-publicized, intermediate officials may lose stature with the
public and with their own subordinates. Hence there are definite
limits upon the frequency with which such by-passing can be used without
causing severe injuries to subordinates' morale.
Developing Distortion-proof Messages

One way for officials to avoid distortion is to use messages that cannot be altered in meaning during transmission (except through outright falsification). Such messages usually involve both pre-designated definitions or coding and easily quantifiable information. For example, if the head of SAC has precisely defined a number of aircraft readiness conditions and promulgated those definitions to all squadron commanders, he can receive a daily report on the number of aircraft of different types in each readiness condition. Each squadron commander can be required to transmit this daily message in a form that cannot be distorted through selective omission of qualifying facts, shifts in emphasis, use of vague terms, and other devices that plague normal messages.

To be distortion-proof, a message must be transmitted without condensation (or expansion) from its origin to its final destination. However, if any large part of all information sent upward in the hierarchy were transmitted in uncondensed form to the topmost levels, these officials would be swamped with data. This means that only a limited proportion of all the information received by top officials can be of the distortion-proof variety. A similar limitation exists in the use of those forms of straight-scoop by-passing that use mechanized means of transmitting data directly from the lowest to the highest levels in the hierarchy. They are essentially distortion-proof channels.

The amount of such unfiltered data that top-level officials can absorb can be increased somewhat by pre-coding. Thus, the daily status report described above might be submitted in a simple pre-coded form (such as "RED - 10, BLUE - 15") which would be short enough for the top commander to read -- along with many other such reports -- without being overwhelmed with data.

* We do not mean to imply that no outright falsification occurs. Like most human beings, officials will readily make false reports if the rewards for doing so are high and the probability of being caught or severely punished is low. Thus even completely automated reporting systems are vulnerable to cheating if the original input can be manipulated and the incentives for such manipulation are great.
However, the efficiencies of pre-coding are partly offset by the fact that distortion-proof messages underplay the significance of qualitative information. Hence there are stringent limits upon the improvements a top official can achieve in his information stream by shifting his messages from "normal" to "distortion-proof." Nevertheless, officials are likely to make extensive use of the latter in the following situations:

- When precise accuracy is extraordinarily important, as in transmitting attack orders to SAC bombers on airborne alert.
- When the bureau has a very tall hierarchy.
- When rapid transmission of data from the lowest to the highest levels is of crucial importance.
- When the most important variables involved in the bureau's decisionmaking are subject to relatively precise quantification.

Two of these conditions -- high speed and precise accuracy -- are particularly likely in crisis situations. Distortion-proof message channels may therefore be extremely useful in these instances. However, such channels must be set up in advance of the need for them because they involve extensive pre-coding, and because intermediary officials have to be aware that they must pass on these messages in toto.

**SPREADING THE WORD AND THE NOISE PROBLEM**

*The Fragmentalized Perception of Large Organizations*

Since an organization has no personality, only individual members can perceive or search. Therefore, organizational perception and search are inherently fragmentalized. Information is first perceived by one or several members, who must then pass it on to others.

Thanks to the ubiquity and speed of modern communications some information is perceived almost simultaneously by all members of even very large organizations. For example, over 90 per cent of the entire

*Most of the ideas in this section have been developed by William Jones to whom I am greatly indebted.*
population of the United States knew of President Kennedy's assassination within four hours of his death.* Similarly, if members of a bureau all read the same newspapers or watch the same TV programs, they may learn about a wide range of events almost simultaneously. Nevertheless, such high-exposure sources transmit only a small part of the information important to any bureau. A large proportion of the data it needs is initially perceived by only one or a few low-level members, who then transmit it upward through channels.

Yet it is not clear just when the organization has perceived any particular item of information, for a statistical majority does not by any means comprise the substantive decisionmakers. We can say that the organization has been informed when the given information has become known to all those members who need to know it if the organization is to carry out the appropriate response.

The Problem of Assessing the Significance of Data

There is a huge difference between knowing a fact and grasping its true significance. The radar supervisor in Hawaii whose subordinate picked up returns from unidentified aircraft on the morning of December 7, 1941 knew that fact, but he did not grasp its significance. The number of facts gleaned every day by any large organization is immense. In theory, the screening process described earlier transmits only the most significant facts to the men at the top, and places them in their proper context along the way. But, as we have seen, considerable distortion occurs in this process. Each part of the organization tends to exaggerate the importance of some events and to minimize that of others. This naturally produces a healthy skepticism among officials at the top of the hierarchy.

An inescapable result of this situation is a rational insensitivity to signals of alarm at high levels. This may have disastrous consequences when those signals are accurate. It is the responsibility of each low-level official to report on events he believes could be

* National Opinion Research Center Study Memorandum.
dangerous. However, the real danger of the supposed threat is not always clear, and his messages must therefore contain suppositions of his own making.

In organizations always surrounded by potentially threatening situations (such as the Department of Defense, the State Department, and the Central Intelligence Agency), officials at each level continually receive signals of alarm from their subordinates. But they are virtually compelled to adopt a wait and see attitude toward these outcries for three reasons. First, they do not have enough resources to respond to all alleged threats simultaneously. Second, experience has taught them that most potential threats fail to materialize. Third, by the time a potential threat does develop significantly, either the threat itself or the organization's understanding of it has changed greatly. Hence it becomes clear that what initially appeared to be the proper response would really have been ineffective. Therefore, initial signals concerning potential threats usually focus the attention of intermediate-level officials on a given problem area, but do not move them to transmit the alarm upwards.

Only if further events begin to confirm the dire predictions of "alarmists" do their superiors become alarmed too, and send distress signals upward. But higher-level officials also have a wait and see attitude for the same reasons, and it takes even further deterioration of the situation to convince them to transmit the alarm still higher. Therefore, a given situation may have to become very threatening indeed before its significance is grasped at the top levels of the organization.

This is one of the reasons why top-level officials tend to become involved in only the most difficult and ominous situations faced by the organization. Easy problems are solved by lower-level officials, and difficult situations may deteriorate badly by the time they come to the attention of the top-level.

As Roberta Wohlstetter argued in her study of the Pearl Harbor attack, this fragmentalization of perception inevitably produces an
enormous amount of "noise" in the organization's communications networks.* The officials at the bottom must be instructed to report all potentially dangerous situations immediately so the organization can have as much advanced warning as possible. Their preoccupation with their specialties, their desire to insure against the worst possible outcomes, plus other biases, all cause them to transmit signals with a degree of urgency that in most cases proves exaggerated after the fact. These overly urgent signals make it extremely difficult to tell in advance which alarms will prove warranted and which will not.

There are no easy solutions to this problem. With so many "Chicken Littles" running around claiming the sky is about to fall, the men at the top cannot do much until "Henney Penney" and "Foxy Loxy" have also started screaming for help, or there is a convergence of alarm signals from a number of unrelated sources within the organization. Even the use of high-speed, automatic data networks cannot eliminate it. The basic difficulty is not in procuring information, but in assessing its significance in terms of future events -- from which no human being can eliminate all uncertainty.

V. THE PROCESSES OF CHANGE IN BUREAUS

THE DEPTH OF CHANGE

In all organizations, change and innovation are closely related to search (that is, information seeking). Therefore, our analysis of change in bureaus is preceded by an exploration of search processes. However, both search and change involve varying types and rates of activities at different levels. Thus we must begin by examining the basic concept of structural depth as it relates to individuals and organizations.

The Structure of Individual Goals

The specific motives attributed to each official in Section I form only part of his overall goal structure. These motives determine those parts of his behavior connected with his position in the bureau. However, the value system of each person really contains several levels of goals, some of which are intermediate means in relation to more ultimate ends. We make no pretense of knowing enough about psychology to set forth any definitive description of these layers and their interrelationships. Nevertheless, a relatively rough and arbitrary approach to this subject can yield significant insights. Therefore, we shall divide the goals of each individual official into the following categories:

Ultimate goals concern the individual's beliefs about the meaning and purpose of life.

Social conduct goals are those involving the basic rules of conduct and decisionmaking that should be followed in society.

Basic political action goals are those involving the fundamental social, political, and economic policies that the individual believes the government should carry out.

Specifically bureau-oriented goals include the following:
Social function goals comprise the values of officials concerning the broad social functions carried out by the bureau to which they belong. For example, physicists who oppose testing nuclear weapons have goals relevant to the social functions of the Atomic Energy Commission.

Bureau-structure goals comprise the values of officials concerning the "constitutional design" of their bureaus.

Broad bureau policy goals involve the longer-term objectives that the bureau pursues in order to carry out its major social functions.

Specific bureau policy goals involve the particular actions the bureau takes in attempting to achieve its broad policy goals.

The approximate relationships among these various layers of goals are indicated in Fig. 2. The layers at the bottom of the figure are the most profound in the individual's value system; that is, he is most deeply committed to them. The top layers are the most superficial.

The depth of the individual's commitment to a given goal depends upon the total cost to him of adapting his behavior to a change in that goal. If such a change requires a drastic rearrangement of his behavior, this represents a very large cost to him -- both psychic and economic. As each individual moves through life, he involves himself in a complex web of moral, behavioral, psychic, and economic relationships. He invests both economic and psychological resources in creating structured behavior patterns around this web of relationships. Many of these structures are subconscious. This past investment represents a form of "sunk costs" in his life and induces inertia therein.

The "deepest" layer of goals is the most important to the individual partly because his entire pattern of behavior is built upon it. Any significant change in this layer would affect all his other goals, thereby altering his whole life profoundly. Change in
Fig. 2—Layers of goals in an individual official's goal structure (deepest layer at the bottom; shallowest at the top)
the second deepest layer would affect all shallower layers, but not his deepest goals. Similar relationships among layers prevail all the way up through the shallowest layer.

Changing any part of a person's behavior pattern involves both losses in utility now derived from it and costs in setting up a new pattern to replace it. Therefore, it is rational for him to make changes in his deepest layers of goals only if the likely rewards for doing so are great enough to outweigh both the large losses of utility and "reconstruction costs" involved. However, he will change goals on shallow layers for much smaller rewards, since he will have to revise only small portions of his total behavior pattern.

Admittedly, this entire classification scheme is arbitrary, imprecise, overlapping, and non-exhaustive. However, it will suffice for our limited purposes.

**Structural Levels in Organization**

Organizations also have different structural depths. Our analysis recognizes four "organizational layers." The shallowest consists of the specific actions taken by the bureau; the second of the decision-making rules it uses; the third of the organizational structure; and the fourth of institutional purposes.

In organizations as in individuals, change can occur at any depth without affecting layers of greater depth, though it will normally affect all shallower layers. Thus, a bureau can change its everyday actions without changing its rules. But if it adopts new purposes, all the other layers will be significantly affected. This means that change is largely a matter of degree.

**The Basic Model of Search**

Our analysis of change is at first focused upon individual officials rather than upon the bureau as a whole, since individuals

*In economic theory, there is a long-standing debate between theorists who believe that decisions are made (and hence change
are the basic decision-units in our theory. As utility maximizers, they are always willing to adopt a new course of action if it promises to make them better off, even if they are relatively happy at present. However, they cannot search for new courses of action without expending scarce resources. Hence they tend to avoid further search whenever the likely rewards seem small a priori. This is the case whenever their current behavior seems quite satisfactory in light of their recent experience.

Within this framework, our theory posits the following hypotheses:

1. All men are continuously engaged in scanning their immediate environment to some degree. They constantly receive a certain amount of information from newspaper articles, radio and TV programs, conversation with friends, and in the course of their jobs and domestic activities. This amounts to a stream of free information, since it comes to them without specific effort on their part to obtain it. In addition, many officials regularly scan certain data sources (such as The Wall Street Journal or Aviation Week) without any prior idea of exactly what type of information they are seeking or will find. They do this because past experience teaches them that new developments are constantly occurring that might affect their present level of satisfaction. This combination of unprogrammed free information streams and habitually programmed scanning provides a minimum degree of constant, "automatic" search.

2. Each official develops a level of satisfactory performance for his own behavior (or that of other parts of the bureau relevant to him). He may or may not in fact attain this level. The satisfactory level yields enough utility in relation to his recent experience so that when he does attain it, he is not motivated to look for better alternatives. In this sense, the satisfactory level is a dynamic concept embodying not only his current but also his past experience.

initiated) in a process of utility maximizing and those who believe they are made in a process of utility satisficing (such as Herbert Simon) or disjointed incrementalism (such as Charles E. Lindblom). Our own theory combines elements from all of these approaches.
3. Whenever the actual behavior of an official (or of a bureau section relevant to him) yields him less utility than the relevant level of satisfactory performance, he is motivated to undertake more intensive search for new forms of behavior that will provide him with more utility. He will designate the difference in utility he perceives between the actual and the satisfactory level of performance as the performance gap. The larger this gap, the greater his motivation to undertake more intensive search.

His first step is to consider alternatives involving those variables he can most easily control.* He continues broadening his search for alternatives in discrete steps, pausing to evaluate each incremental set as he compiles it. This process continues until he either finds an alternative that restores him to the satisfactory level (or puts him onto some even higher level), or the cost of further search exceeds the cost of accepting a level of performance below his satisfactory level.

4. If intensive search fails to reveal any ways he can return to the originally satisfactory level, he will eventually lower his conception of the satisfactory level down to the highest net level of utility income he can attain.

5. Whenever his constant search process reveals the possibility that a new course of action might yield more utility than offered by his present satisfactory level, he undertakes intensive search of this new course of action and any close substitutes for it that also promise to yield net gains in utility. If this intensified search reveals that he can indeed make a net gain in utility by shifting to a new behavior pattern, he will make the shift that yields the largest net gain he is aware of.

6. Once he has adopted the new course of action and his net utility income therefrom has risen, he regards the new higher utility income level as his satisfactory performance level.

*This sequence of search was suggested by J. G. March and H. A. Simon, Organizations.
7. After he has either moved to a new higher level (which he now regards as the satisfactory level) or discovered he cannot improve upon his prior performance (which therefore remains his satisfactory level), he reduces his search efforts back to their normal "automatic" intensity.

The above hypotheses form a theory of dynamic equilibrium involving (1) a tendency for the official to move toward a satisfactory position of equilibrium; (2) a constant stream of new inputs into the situation (both data and environmental obstacles to performance) displacing him from equilibrium and thereby initiating search; and (3) a process by which he continually redefines the locus of his equilibrium position to reflect his recent experience regarding what is really possible.

SEARCH ASYMMETRY AMONG INDIVIDUAL DECISIONMAKERS

The model of decisionmaking described above involves a certain asymmetry of search behavior. When the decisionmaker is in a state of equilibrium at his satisfactory level of performance, he conducts relatively low-intensity "automatic" search. As soon as his performance drops below this level, he initiates relatively high-intensity search even if he does not initially perceive any specific means of getting back up there. In contrast, he initiates high-intensity search when he is already at the satisfactory level only when he encounters specific reasons to believe that he might be able to go even higher.

Two concepts explain this asymmetry: uncertainty and structured behavior. The utility function that any person perceives and acts upon is really his expected utility function; that is, his perfect certainty utility function discounted for uncertainty. Even if his total utility curve under perfect certainty were continuous and without kinks, his expected utility function would be kinked if there were a sharp discontinuity in his expectations or certainty at some point. The level of satisfaction is usually such a point. It is
normally the highest level of utility that he has actually experienced in the recent past. Therefore, he knows what it is like to have that much utility, whereas he can only conjecture what it is like to receive more utility from the particular variables involved. This represents a sharp discontinuity in the concreteness of his knowledge.

There may be another discontinuity at the same point based upon the structure of his behavior. When a person has experienced a certain utility income from some set of variables for a given amount of time, he begins to structure his behavior regarding those variables around that level of utility income. This idea is very similar to Duesenberry's concept of long-run consumption levels, or Friedman's permanent income hypothesis.

Once a person has structured his behavior -- either as a producer or a consumer -- around a certain utility income derived from a certain pattern of actions, it is initially to his advantage to regard any decline in utility income below this level as a temporary deviation. This allows him to avoid the costs of restructuring his larger behavior patterns in response to every change in his utility income.

However, the decline in utility income he has experienced often results from a permanent change in his situation. An example would be a drastic reduction of the appropriations to his bureau, causing across-the-board salary cuts. In such cases, he cannot avoid altering at least some part of his previous behavior structure. Either he must change jobs to restore his former income or he must change his consumption pattern to retain his former job. But some changes are more costly than others. In particular, changes that involve the deepest layers in his goal structure are more costly than those involving more superficial layers. It is worthwhile for decision-makers who know they must change something in their behavior patterns to conduct intensive search to discover what particular change will be least costly.

Thus, whenever anyone experiences a significant decline in utility income, he will immediately intensify his normal search efforts. If
he discovers the decline is temporary, he knows he will soon be restored to his former level of utility income without any change in his behavior. His search efforts then drop to their previous intensity. If the change causing his lower income is permanent, he will continue his intensified search to discover his optimal response to that change. This response involves the least costs of restructuring his behavior. Once he has carried out this restructuring, his search efforts will return to their normal level of automatic intensity. He will then be at a new position of equilibrium on a level of utility income he has come to regard as satisfactory.

SEARCH ASYMMETRY IN ORGANIZATIONS

The above reasoning can also be applied to organizations. The actions, rules, structure, and purposes of an organization become built around certain customary levels of performance. Deviations from customary events cause repercussions of varying depth and cost, depending upon how large the deviations are and how permanent they are considered to be.

Organizations, like individuals, are reluctant to accept any change in their environments -- whether good or bad -- as permanent if such acceptance would require them to make a significant alteration in their customary behavior patterns. It is usually more rational for them to continue these behavior patterns while conducting an intensive search to see whether the status quo ante will return. Hence the costs of readjusting behavior patterns create a certain discontinuity of behavior at the level to which the organization or individual has become accustomed. This characteristic is commonly known as inertia.

If the organization cannot expect a restoration of the status quo ante without effort on its part, it will maintain intensified search while seeking the most effective response to this change. Other things being equal, it will select the response that involves the least profound change in its structure. Thus, it will prefer responses requiring it to change only its behavior to those requiring alterations
in its rules. Only in the most drastic situations will it alter its fundamental purposes. Whatever adjustments it makes to the original change, it will eventually arrive at a new equilibrium point (assuming no further exogenous shocks occur). At that point, the organization will reduce its search efforts to their normal degree of intensity.

The satisfactory level itself need not be static. It can embody the decisionmaker's expectations of rising or falling utility income. The important fact is that the satisfactory level serves as a link between the individual's (or organization's) past experience, future expectations, and actual present behavior.

**HOW PERFORMANCE GAPS ARISE**

Four major classes of events can cause performance gaps to arise in the eyes of bureau members (who are always the proximate cause of changes in its behavior).

(1) **Inevitable internal turnover.** Every organization is constantly adjusting its allocation of personnel to organizational roles because its members age, change status, or leave. Even though its formal role structure remains unchanged, these adjustments may cause major changes in organizational behavior. As Kenneth Boulding points out:

> The inevitable succession of persons in the top roles brings changes to the character of an organization that are the result of the personality of the occupant rather than that of the role structure itself.*

(2) **Internal technical changes.** New ways of performing the tasks assigned to a bureau may cause profound changes in its behavior, rules, structure, and goals.

(3) **External changes.** We will break down such changes into three categories:

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(a) Shifts in the relative importance of the bureau's social function. A dramatic example is the impact of Pearl Harbor upon the Armed Forces of the United States.

(b) External technical changes. Changes in technology occurring outside a bureau may significantly affect the nature of its functions, and therefore alter its behavior.

(c) Changes in the bureau's power setting. Some changes in power setting are not connected with technical developments or shifts in the importance of the bureau's functions.

Every bureau's external environment is constantly changing in all three ways. Hence the mere passage of time inevitably creates performance gaps in every bureau.

(4) Repercussions of a bureau's performance of its functions. The way in which a bureau performs its functions may generate certain "ricochet effects" that upset its equilibrium. These are:

(a) Completion of a finite task. A classic example is the invention and successful use of polio vaccine by the March of Dimes.

(b) Discovering something unexpected in a developmental or routine process.

(c) Activation of "automatic disequilibrators" built into its function. For example, bureaus in the federal government submit annual budget requests to Congress.

HOW OFFICIALS ARE MOTIVATED TO REJECT, ACCEPT, OR INITIATE CHANGES IN BUREAU BEHAVIOR

The reaction of a bureau to a performance gap depends on the incentives operating upon its individual officials. These incentives
can be conveniently grouped into those favoring retention of the status quo and those favoring change.

The Forces of Inertia

Like most other large organizations, bureaus have a powerful tendency to continue doing today whatever they did yesterday. The main reason for this inertia is that established processes represent an enormous previous investment in time, effort, and money. This investment constitutes a "sunk cost" of tremendous proportions.* Moreover, it took a significant investment to get the bureau's many members and clients to accept and become habituated to its behavior patterns.

If the bureau adopts new behavior patterns, it must incur at least some of these costs all over again. Therefore, it can rationally adopt new patterns only if their benefits exceed both the benefits derived from existing behavior and the costs of shifting to the new patterns. As pointed out earlier, the costs of shifting the "deeper" elements of an organization are greater than the costs of shifting its "shallower" elements. Hence organizations always exhibit greater inertia regarding their more profound components (such as basic goals or organizational structure) than their shallower components (such as rules or day-to-day behavior patterns).

This leads to the proposition that the larger the costs of getting an organization to adopt a new behavior pattern the greater will be the organization's resistance to it, regardless of the benefits it may produce. This proposition has the following corollaries:

a. Each official's resistance to a given change will be greater the more significant the required shift in his behavior, that is, the "deeper" the layers in his goal structure affected by the change.**

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* The "sunk costs" doctrine as applied to organizations was first propounded (so far as we know) by J. G. March and H. A. Simon, Organizations, p. 173.

** We analyze officials' goal structures in Section IX.
b. The more officials affected, the greater will be the resistance to significant change. Hence:

(1) The larger the organization, the more reluctant it is to adopt any given change.

(2) Small bureaus tend to be more flexible and innovation minded than larger ones.

(3) One way to speed the adoption of a given change is to design it so that it affects the smallest possible number of persons.

Another major cause of inertia is that self-interest motivates officials to oppose any changes that cause net reductions in things they personally value. Whereas the sunk costs described previously represent real costs from the point of view of society, loss of these values represent a cost only to the individual officials concerned. Most of the items personally valued by officials are positively correlated with the amount of resources under their control. These items include personal power, prestige, and income (valued by climbers); organizational power, prestige, and income (valued by climbers, advocates, and zealots); and security (valued by conservers). As a result:

- All officials tend to oppose changes that cause a net reduction in the amount of resources under their own control. Hence officials have very little incentive to introduce economizing changes if they cannot retain control over all or some fraction of the resources they save.

- All officials tend to oppose changes that decrease the number, scope, or relative importance of the social functions entrusted to them. This imposes a difficult constraint upon top officials, tending to reduce the frequency with which they make major organizational changes.

- An important ingredient determining organizational inertia is the percentage of conservers in a bureau and degree of
their dominance therein. If conservers occupy the most important posts, the bureau will strongly resist innovations.

Opportunities for change presented by purely internal developments are less likely to be utilized than opportunities presented by external changes, because the latter are visible to external agents and are therefore more likely to generate pressure from them.

It should be emphasized that inertia has many important beneficial effects. Inertia imparts a measure of stability to social organizations and helps them to perform certain vital functions, such as maintaining a pattern of order in social life, and preserving important ethical and cultural values. Such functions are especially significant in modern societies marked by strong pressures toward rapid change.

The Forces of Change

Desire To Do a Good Job

One of the major forces countering inertia is the simple desire of individual officials to do a good job. This motive is especially important in the creation of new bureaus or new sections within an existing bureau. As we stated earlier, zealots and strong advocates play a vital role in bureaus as initiators of change, "idea men" dissatisfied with the status quo and willing to propose new or radical methods.

Some bureaus need more innovations than others. In particular, bureaus with rapidly changing social functions or functions that must be carried out in swiftly shifting environments should strongly encourage zealots.

Desire for Aggrandizement

The second major motive causing change in bureaus is the desire for aggrandizement. Although this desire may be partly altruistic, it always has some roots in the self-interest of the officials who
exhibit it. We have seen that self-interest is a powerful cause of inertia, but it can also motivate change if officials receive greater rewards for altering the status quo than preserving it. The greater of such rewards are gains in power, income, and prestige associated with increases in the resources controlled by a given official or bureau.

Since climbers, advocates, and zealots all seek these rewards, they must somehow propose new functions, new methods, or new research that will shift resources to them. The basically aggrandizing structure of their self-interest compels them both to be innovators and to promote innovations developed by others. This leads to the Law of Progress through Imperialism: The desire to aggrandize breeds innovation.

However, most government bureaus have politicians as their ultimate sovereigns, and politicians (unlike officials) are just as sensitive to the cost side of government activity as to the benefit side. Hence politicians are much more reluctant to expand the total size of the government budget than bureaucrats.* Individual officials have a better chance of getting their own resource expanding innovations approved if those innovations inherently reduce other expenditures elsewhere. This means that the proposed innovation must carry out social functions now performed by some other bureau. Officials thus have a powerful motive to expand their own activities by "capturing" functions now performed by other bureaus.

There is one outstanding disadvantage of expansion by invasion -- it may rouse severe hostility and retaliatory action on the part of the "invaded" bureaus. The injured parties can strike back, since they normally have technical capabilities for trying to capture some of the aggressor's functions, too. The resulting pressure for competition generated by functional overlapping results in high rates

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of innovation concerning the functions involved, as Enthoven and Rowen pointed out.*

Change in Self-defense

The third motive for change in bureaus is self-defense against pressure from external agents. Only certain types of officials seek aggrandizement, but all officials defend themselves when attacked. Self-defense may even force conservers to innovate.

Defensive changes in a bureau's behavior are normally undertaken only in response to direct threats, particularly threats to reduce its resources. A reduction in resources usually implies that some of the bureau's functions will either be transferred to another agency or abolished.

When faced by a threat from functional competitors, a bureau is likely both to invent better ways of performing its functions and to attack its competitors. In contrast, a bureau threatened by abolition because of a decline in the social significance of its functions must either find new functions or reinstate the importance of its present ones.

One important aspect of defensive hunting for new business deserves elaboration. Once a bureau has achieved relative autonomy, it must continue to look busy. This means that bureaus entrusted with functions that fluctuate in significance or intensity tend to "make work" so they will not be reduced in size or importance in interim periods.** A classic example of the resulting waste is the way many bureaus frantically spend their remaining funds in the last few days of the fiscal year so that officials can avoid having to admit that perhaps next year's budget could be reduced.

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**This tendency underlies C. Northcote Parkinson's famous First Law, "Work expands so as to fill the time available for its completion," Parkinson's Law and Other Studies in Administration, p. 2.
How the Forces of Inertia and Change Interact

Every proposed change in an organization's behavior usually has both functional and incentive effects; the former on the way it performs its social functions, the latter on the distribution of benefits and costs among its members. Although each member is likely to argue for or against a change primarily in terms of its functional effects, the particular position he takes will usually be strongly influenced by its incentive effects upon him. As a bureaucratic proverb puts it, "Where you stand depends upon where you sit." Hence, whether or not a given organizational change will actually be carried out depends heavily upon whether its net incentive effects upon key officials are positive or negative, and to what degree. One of the key problems facing any organization member trying to initiate change is designing his proposals to maximize their positive incentive effects (or minimize negative ones). The tremendous inertial forces in bureaus make this particularly difficult, for every change generates negative incentive effects by forcing officials to develop new formal and informal arrangements.

Another complication is that the officials most likely to propose changes are not usually aware of all the incentive effects of their proposals. As James Q. Wilson points out,

To the proponent (of change), the prospective benefits are . . . direct and easily conceived; the costs are remote, something "the organization" will deal with. To organization members who will be affected by the change, the costs to them are likely to be directly and immediately felt; the benefits are something that will accrue remotely to "the organization." *

The disparity between these two views is greatly increased by the bureau's informal structure. It provides each member with personal benefits not perceived by other members located some distance away in the hierarchy. Any suggested change that reduces these benefits will rouse opposition that the originators could not have foreseen, and often cannot understand, since it has no functional basis.

Because the proposers of change rarely perceive all the costs their suggestions entail, they normally fail to "sweeten" their proposals with enough offsetting benefits to assuage all the other officials who would be adversely affected. This has two major effects. First, it generates tension between those officials who propose changes and those who would experience many of the costs but few of the benefits thereof. Second, it forces higher-level officials to cope with this tension. They can do so either by reducing the number of proposals made or by redistributing incentives within the bureau so as to promote acceptance of desirable proposals.

Wilson argues that the more diversified an organization, the more changes its members will suggest, but the fewer will actually be carried out.* Each change will have many "spillovers" that adversely affect members other than those who suggested it; hence its opponents will vastly outnumber its supporters. Therefore, we conclude that getting changes accepted in bureaus is extremely difficult. The strength of incentives supporting inertia is normally much greater than that favoring alteration.

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**Why Creativity Requires Special Incentives**

Creativity can be defined as a deliberate pursuit of change or innovation. All creativity inherently involves experimenting on a trial and error basis. This, however, has some negative connotations. It is potentially wasteful to undertake actions that might prove unsuccessful. Also it is duplicative and time consuming to undertake a repeated series of trials to do something in new and different ways, rather than doing it once and for all with the best known technique. Moreover, uncertain activities introduce risk and therefore anxiety into the operations of bureaus. All of these ramifications contradict the normal tendency of officials to reduce the uncertainty and short-run inefficiency of their operations by routinizing procedures, developing elaborate specialization, and using detailed rules.

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Even more opposed to the nature of normal bureau operations is the inherent commitment to change involved in creativity. For example, the introduction of guided missiles into the Air Force has had -- and will continue to have -- profound impacts upon all aspects of the organization. Therefore, a commitment to carry out creative activities and to use their results is a commitment to accept future change of an unforeseeable nature.

Thus creativity within a bureau inevitably generates tensions and inconsistencies with such natural bureau characteristics as tendencies toward inertia, routinization and inflexibility. Still, many bureaus exhibit a great deal of ingenuity in creating new ideas and methods. Nevertheless, the quasi-alien nature of creativity means that special incentives are required within a bureau to promote important innovations.

THE TIMING OF CHANGE IN BUREAUS

How the Speed of Change Is Related to Its Depth

The timing of change in any large organization involves a complex interplay between different rates of change on different "levels" of the organization. We have identified four such levels: everyday behavior, rules, organizational structure, and fundamental goals. Hence we can visualize the normal time sequence of change as follows:

(1) Continuous environmental changes create performance gaps.

(2) Frequent changes in everyday behavior are made to close those gaps.

(3) Tension arises between behavior and the existing rules, eventually leading to modifications in those rules.

(4) Increasing tension arises between everyday behavior and rules on one hand and the existing organizational structure on the other. This leads to relatively infrequent changes in the organization's formal structure.
(5) Over the very long run, increasing tension arises between everyday behavior, rules, and formal structure on one hand and the bureau's fundamental goals on the other. This eventually leads to very infrequent changes in the organization's basic goals.

Different "levels" of an organization change at different speeds and in different patterns. Moreover, nearly every large bureau can be viewed as a hierarchy of smaller sub-bureaus. Hence change within a large bureau can occur at different rates at various "depths" within each sub-bureau, and at different overall rates from sub-bureau to sub-bureau. Thus, the process of change in a complex organization embodies a whole system of interrelated alterations going on at different rates of speed.

The Normal Time-sequence of Change

Within any subsection, or on any given structural level, the normal time sequence of change consists of extended periods of behavioral drift followed by short periods of reorganizational catch-up. Behavioral drift can be defined as gradual change resulting from an accumulation of relatively small-scale shifts in behavior that are carried out independently rather than deliberately coordinated. The pace of such change is gradual, and the aggregate results are accidental.

Reorganizational catch-up can be defined as a deliberate alteration of the rules, formal structure, or basic goals designed to eliminate an existing or potential performance gap that cannot be removed solely by changes in "shallower" components. The pace of this type of change is relatively swift, and the reorganization is deliberately intended to achieve a certain aggregate result.

Reorganizational catch-ups sometimes take many years. Nevertheless, they are always meant to be swifter than the environment. In contrast, drift seeks merely to keep pace with the environment.

*As is so often the case, I am greatly indebted to William Jones of The RAND Corporation for many of the ideas in this section.
Also, reorganizational catch-ups almost never achieve precisely the aggregate results their designers intend.

This pattern of extended drift followed by intermittent catch-ups occurs at each depth of a bureau's structure. For example, everyday behavior tends to lag slightly behind environmental changes because officials repeat the actions adapted to the environment of the recent past, until they realize those actions are no longer appropriate. Then they revise their behavior to catch up with the real world. Hence officials may institute a reorganizational catch-up at one depth and still be drifting at more profound depths. This further illustrates the complexity of change in large organizations.
VI. THE BASIC NATURE OF CONTROL PROBLEMS IN BUREAUS

THE CONFLICTING CONCEPTS OF "BUREAUCRATIC BUNGLING" AND "MONOLITHIC POWER"

Bureaus are popularly criticized for two opposite traits related to their internal control. On one hand, the typical bureaucrat is often pictured as a bungling, narrow-minded incompetent who makes ludicrous errors because he fails to coordinate his activities with those of other bureaus. Criticism of bungling implies that there is not enough intelligent, centralized coordination of society's many bureaus.

On the other hand, bureaucracy as a whole is often considered a threat to individual liberty. It appears to be a monolithic monster that concentrates control over many diverse activities in the hands of sinister manipulators at the top. This view attributes effective centralized control over many bureaus to a few high-level officials or politicians.

These two conceptions are essentially contradictory; yet they are often held simultaneously by intelligent people. The inconsistency between them is masked by differential distance from the observer. Bureaus with which the observer interacts frequently are considered to be full of incompetents. The observer is close enough to these bureaus to see the mistakes arising from their control problems. But bureaus seen only remotely appear to be vast reservoirs of power centrally controlled to the detriment of the helpless individual. The observer is too far from these bureaus to see their internal inconsistencies. Hence he experiences a net resultant that seems to enmesh him in a web of controls all manipulated by one "master-mind."

An example of such split vision occurs in U.S. urban affairs. Many citizens accuse their fragmentalized local governments of inadequate coordination. However, they also fear that any powers shifted to the federal bureaucracy will be monolithically managed by the President, thereby weakening their individual freedom and encouraging
dictatorship. Thus, they falsely equate remoteness from themselves -- which does indeed weaken their potential influence -- with efficient centralized control. In reality, there is no necessary connection between these conditions.

This section will show that the concept of bureaus as monolithic structures is largely a myth. We also seek to show that most bungling arises from the intrinsic difficulties of running large nonmarket organizations, rather than from any particular incompetence on the part of individual officials.

THE NECESSITY OF DELEGATING DISCRETIONARY POWERS

If bureaus were really monolithic, control over nearly all their activities would be concentrated in the hands of their topmost officials. However, those officials must always delegate some of their power to their subordinates. The first step in analyzing bureau control problems is to examine this delegation in detail. In doing so, we will again make use of the theories advanced by Gordon Tullock.* We will also use the "model" seven-level hierarchy diagramed in Fig. 1.**

The principal social function of all the activity in the hierarchy is to achieve the formal goals of the organization. For purposes of simplicity, we will assume these are identical to A's personal goals. Thus, insofar as A is concerned, controlling the bureau means getting its members to achieve his own goals to the greatest extent possible. Looking at the information available to him, he decides to implement a certain policy. Since he has to consider a great many policies, he must formulate each one in general terms, and has no time to work out the details. These he is compelled to leave to his subordinates, even if he retains the right to review their plans. Therefore, the orders of top-level officials to their subordinates are almost always relatively broad in nature.

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** See Sec. IV.
When $B_1$ receives this order he begins translating it into more specific directions for lower-level officials. But $B_1$ also has limited time for this task; hence he too must delegate the details to his $C$-level subordinates, and so on down the hierarchy. Finally, the general policy issued by $A$ becomes transformed into specific actions performed by $G$-level personnel.*

In this process, orders from the top must be expanded and made more specific as they move downwards. There are a number of different ways in which these orders can be made more specific at each level, and each official has some leeway in selecting the one he will follow. Even if his superior has merely ordered him to propose a set of alternatives an official exercises discretion in designing the choices he will present.

The result is that the policies of any organization are defined at all levels, not just at the top, as Chester Barnard has pointed out.** At every level, there is a certain discretionary gap between the orders an official receives from above and those he issues downward, and every official is forced to exercise discretion in interpreting his superiors' orders. These are a form of information flowing downward through the hierarchy, just as reports are a form of information flowing upward. In passing information upward, intermediary officials must translate data received into more general and more condensed form. In passing orders downward, they must translate commands received into more specific and expanded form. This symmetry occurs simply because there are many more people at the bottom than at the top.

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*In reality, there are many feedbacks from lower levels to upper ones in this process, so that the downward-flowing orders are often modified in response to suggestions from lower levels. Nevertheless, the basic structure of the process is the same as that described in our analysis.

VARIANCE OF GOALS AND ITS IMPACT

Whenever rational officials have the power to make choices, they will use that power to achieve their own goals. However, each official's goals will inevitably diverge to some extent from the organization's formal goals, and from the goals of other officials therein. Such divergencies result from the four basic causes of conflict in bureaus set forth earlier: differential self-interest, differential modes of perceiving reality, differential information, and uncertainty.

When each official uses his discretion in translating orders from above into commands going downward, the purposes his superior had in mind will not be the precise ones his own orders convey to people farther down the hierarchy. The resulting diversion of organizational efforts away from the purposes desired by the superior constitutes a leakage of authority. This is not caused by delegation per se, since delegation without goal variance would not result in leakage of authority (except through unintentional errors). Hence goal-variance among officials is the crucial cause of authority leakage. However, since goal-variance itself is caused by technical factors (such as differential information) as well as conflicts of interest, this conclusion does not mean that authority leakage results solely or even mainly from self-interest.

THE CUMULATIVE EFFECTS OF AUTHORITY LEAKAGE

Since some leakage of authority usually occurs whenever orders pass down through any level of the hierarchy, such leakage tends to become cumulative when many levels are involved. As Tullock points out, this can have a striking impact upon the effectiveness of orders issued by top-level officials in a large bureau. For example, assume that official A issues a general order to B1. B1's own goals indicate that his commands to his subordinates should embody 90 per cent of

what he believes A actually had in mind. Perhaps B₁ believes a slight
distortion of the order can greatly benefit him personally (or his
part of the bureau if he is an advocate). Perhaps 100 per cent execu-
tion of the order would require too much effort (if he is a conserver).
Perhaps he might really like to carry out only 50 per cent of the
order, but believes he cannot do so without causing A to react un-
favorably. B₁ may not even be conscious of causing distortion; rather
he may view his interpretation as clearly the best one for the bureau.

There are very few orders so precise and unequivocal that they
cannot be distorted by a factor of 10 per cent. Consequently B₁'s
orders to his C-level subordinates embody only 90 per cent of what
A originally desired. However, C-level officials have goals slightly
different from either B₁'s or A's. Hence they too will distort the
orders they receive to some degree. Assuming this results in a further
leakage of 10 per cent, by the time A's order reaches D-level officials,
they will receive commands embodying only 81 per cent of what A really
desired.

If similar distortion continues at each level, then only 53 per
cent of what the organization in fact does on the G-level will be aimed
at accomplishing A's original goals. The other 47 per cent will be
aimed at a composite set of goals of A's subordinates. From A's point
of view, or that of the organization's formal purposes, almost one-half
of the activity carried out by the entire organization is wasted motion.*

This conclusion is subject to three major qualifications. First,
the overall leakage may be partly self-canceling rather than cumulative.
For example, if the distortions carried out by C₂ are exactly opposite

*If the average span of control at each level is four, then the
actual percentage of wasted motion at all levels combined will be 45
per cent, although the percentage at the G-level alone is 47 per cent.
The percentage of leakage for the entire organization can be found by
(a) calculating the percentage of wasted motion for each level (for
example, 10 per cent at the B level, 19 per cent at the C level, and
so on); (b) multiplying that percentage times the number of employees
at each level; (c) adding the resulting products to find the total
amount of wasted motion per day in man-days; and (d) computing that
sum as a percentage of the total number of employees at all levels.
to those $B_1$ built into his instructions to $C_2$, the cumulative effect will be to render $C_2$'s efforts similar to what $A$ would have wanted him to do. In other words, $C_2$'s distortions may reduce rather than increase the specific bias (relative to $A$) resulting from $B_1$'s distortions.

Second, the cumulative distortion of $A$'s orders that can occur without his knowledge is limited. He may be unable to intervene effectively at each level, but he can often check up on the final results. Hence lower-level officials may be forced to make those results conform to his desires more closely than our example indicates. The next section will discuss various control devices that $A$ might use.

Third, the leakage factor of 10 per cent used in our example may be inappropriate. Bureaus that have final outputs subject to close objective measurement may have leakage factors less than 10 per cent. Those that have vaguely defined functions, outputs that are difficult to measure, or extremely dynamic environments may have leakage factors far larger than 10 per cent. For example, the following remark of Jonathan Daniels about Franklin Roosevelt's cabinet illustrates a very high leakage factor:

Half of a President's suggestions, which theoretically carry the weight of orders, can be safely forgotten by a Cabinet member. And if the President asks about a suggestion a second time, he can be told that it is being investigated. If he asks a third time, a wise Cabinet officer will give him at least part of what he suggests. But only occasionally, except about the most important matters, do Presidents ever get around to asking three times.

High leakage seems particularly likely when we allow for such factors as misunderstandings by subordinates concerning their superiors' intentions, sheer incompetence, and unintentional errors.

We may conclude then, even after allowing for the above qualifications, that in any large, multi-level bureau, a very significant portion

of all the activity being carried out is completely unrelated to the bureau's formal goals or even to the goals of its topmost officials.

THE CONCEPT OF WASTED MOTION AND ITS IMPLICATIONS

From the viewpoint of people outside the bureau, any of its activities not directed at carrying out its social functions are wasted motion. By this standard, a significant portion of every bureau's activities are wasteful. But this is true of all large organizations, even those producing marketable products, for the same reasons it is true of bureaus. Hence, we must carefully examine the concept of wasted motion before drawing conclusions about it.

Why Some Waste Is Both Unavoidable and Beneficial

A bureau could act without wasted motion only if the goals of all its members were identical with its formal goals. However, some goal divergencies are inevitable in every bureau. Thus at least some wasted motion is unavoidable in every large organization.

Some types of wasted motion have important positive functions. For example, certain actions by every official serve purely personal goals. From the viewpoint of people outside the bureau, these actions seem to be 100 per cent waste. But they provide the official with important personal satisfactions which contribute to his morale. Such satisfactions as socialization and small talk, improving personal comfort, and resisting orders that disrupt pleasant habits form a significant part of every official's incentives for staying in the bureau and performing his official tasks effectively. Hence, in an important sense, actions providing such satisfactions are not wasted motion at all, even from the viewpoint of people outside the bureau. In order to accomplish its formal goals, every organization must undertake many activities that have no direct connection with those goals, but that are aimed at maintaining the coalition of individuals necessary to achieve them.*

*This is a different way of looking at the concept of "bifurcation of purposes" in organizations advanced by Philip Selznick and other
The Difficulties of Deciding How Much Waste Can Be Eliminated

How much waste is necessary for an organization to operate with maximum effectiveness? In fact, is the concept of an "optimum amount of waste" even meaningful?

Unfortunately, it is impossible to define clearly and unequivocally just which activities within a bureau are necessary to achieve its formal goals, and which are not. In theory, we could use two different approaches to such a definition. First, we could try to establish the "perfect" behavior for a given position by describing how the topmost official (A) would perform that role if he occupied it. Any differences between his hypothetical actions and those actually carried out by the official in that position constitute wasted motions from A's viewpoint.

However, this approach is not even theoretically sound. We cannot establish the perfect set of actions for any role unless A actually occupies it, and he cannot occupy any role but his own. Even if he has previously occupied many positions, his past actions therein are not accurate definitions of perfect behavior. Circumstances have changed since he occupied those positions, and he himself has also changed. Moreover, it is wrong to assume that A's goals are identical with the formal goals of the organization.

The second approach requires perfect knowledge of (1) the output necessary to achieve the organization's social functions, and (2) exactly how much additional organization-oriented effort every official would make in return for each increment of waste activity designed to benefit himself. With it we could design the combination of efficient and waste activity that would produce the desired organizational output with the minimum total input of resources (including those wasted to provide incentives). In reality, no one can possible know a priori either what the organization's desired output is, or the shapes of members' utility functions. Defining the former is one of the organization's tasks; hence no definition is given a priori. Members' utility

functions are immeasurable and would be concealed by individuals even if they were measurable.

We are thus forced to conclude that the behavior of every large organization undoubtedly includes some wasteful activities that could be eliminated without reducing its effectiveness in achieving its formal goals, but it is impossible to measure such "true waste" accurately, or to decide unequivocally whether any given act is truly wasteful. The detection of true waste is a matter of judgment and opinion rather than logic or empirical measurement.

There is one exception to this conclusion. Rearrangements of the activities within an organization can be considered unequivocally waste-reducing if both the situation after the rearrangement and the process of rearranging taken together meet all of the following conditions: they reduce the organization's total consumption of scarce resources; they cause one or more members or persons outside it to be better off; and they cause no members or outsiders to be worse off. However, this criterion has limited practical usefulness. Almost every significant rearrangement causes someone to be worse off, even if just by reducing his personal (rather than organizational) benefits.

How Some Avoidable Waste Still Provides Significant Benefits

A bureau carrying out truly wasteful activities uses more resources than are actually required for performing its social functions. These excess resources constitute what Cyert and March call organizational slack.* To militant economizers, organizational slack is an unmitigated evil, since these resources could be used more fruitfully elsewhere. However, such excess resources also perform several useful functions in their seemingly misallocated role.

First, organizational slack allows a bureau to adjust to unexpected increases in its work-load without obtaining added appropriations. It

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can convert slack to useful outputs, thereby expanding them in the short run. Second, slack reduces internal frictions and tensions within the bureau. Short-run variations in its external environment require it to shift resources from one subsection to another. If each subsection has some slack, these shifts can be made without affecting the really significant capabilities of any subsections. Hence officials therein will fight such resource transfers much less vigorously than if they are "running a taut ship."

Third, organizational slack creates de facto decentralization by reducing the need for coordination among subsections, thereby increasing flexibility. This occurs because the excess resources can be used to duplicate facilities in various parts of the bureau (such as calculating machines). Such decentralization also decreases internal friction. Fourth, a bureau with some slack can conduct certain types of non-programmed activities that tend to be eliminated when operations are trimmed to a bare minimum. These include long-range planning, basic research, operational research, and experimental innovation.*

All of these advantages except reduced internal friction are essentially hedges against uncertainty. Therefore, in bureaus that operate in highly uncertain environments, a significant amount of organizational slack may not be waste at all, but a rational response to the need for flexibility. Yet, at any given non-crisis moment, there will be ostensible waste and duplication in the bureau. Hence, much of the perennial conflict between economizers in the legislature (or other central allocation agency) and officials defending their budgets centers on how the advantages of organizational slack are evaluated.

The foregoing conclusions are subject to one important qualification. It may be difficult in practice to shift excess resources around within the bureau to meet changing needs. They may be inextricably

*This is a version of what March and Simon call "Gresham's Law of Planning: Daily routine drives out planning." Organizations, p. 185.
intertwined with necessary resources, and they will certainly come to be regarded as necessary by the officials enjoying the perquisites they provide.*

Some Implications of the Ambiguous Nature of Wasteful Activities

Because it is impossible to measure precisely the amount of wasteful activity carried out by a bureau, no single program of activities can be unequivocally identified as most efficient, that is, the one that would enable the bureau to perform its social functions properly. As a result, every bureau can almost always be plausibly accused of carrying out wasteful practices. Perhaps some activities it performs in order to retain its members or raise their morale will appear too personally beneficial to them when isolated from the entire pattern of bureau behavior. Borderline activities too might be viewed as worthwhile by some observers, and grossly wasteful by others.

A really thorough investigation of any bureau's activities is almost certain to uncover some flagrant examples of true waste which will embarrass its leaders. As stated previously, the topmost officials in every bureau know that at least some reprehensible actions are taking place in their organizations at any given moment. Officials will therefore devote time and effort to modifying their policies to please persons in a position to threaten investigation (such as Congressmen).

Relationships Between the Causes of Waste and Types of Efforts to Reduce It

Top-level officials often seek to reduce waste for two reasons. First, they regard authority leakages below them as detrimental to their own power and control. Second, they are pressured by legislators, central allocation agency members, and other outside forces to economize.

The degree to which a given type of waste can be reduced, and the most effective means of reducing it, are closely related to the type of goal-variation underlying that waste. Waste resulting from differential information flows can be attacked by improving the communications networks and search systems within the bureau. Waste caused by uncertainty is less manageable. However, some anti-uncertainty devices can be developed, such as wider search patterns and greater efforts to control environmental conditions. Both types of waste are thus subject to reduction by purely technical means.

Waste resulting from differential self-interest can be partly counteracted by rearrangements of incentives, to be discussed in the next section. However, some waste caused by differential self-interest, and all waste caused by differential modes of perceiving reality, are rooted in the fundamental value structures and outlooks of the officials involved. Reduction of such waste requires generating greater goal consensus among officials through selective recruitment, indoctrination, or use of ideologies.

The Relationship Between Wasted Motion and Organizational Size

Even though we cannot measure true waste with any precision, we can still draw significant conclusions about the relationship between total wasted motion and total size in nonmarket organizations. To do so, we will borrow once more from Gordon Tullock.* Our analysis will admittedly use arbitrary assumptions about leakage factors and time spent in supervision. Arithmetic calculations will also impart a spurious precision to the results. Nevertheless, we believe that these artificialities do not distort the fundamental relationships that emerge from our analysis. Moreover, since such oversimplifications enable us to reach significant conclusions not easily demonstrated with less arbitrary tools, we feel justified in using them.

Assume that official A is conducting operations without any organization. He can thus devote 100 per cent of his time to

interacting directly with his environment, and he experiences no leakage of authority. He then hires three subordinates and devotes one-fourth of his time to supervising each one -- one-eighth to transmitting orders, and one-eighth to checking results and receiving reports. This reduces A's own direct action time to 25 per cent of what it was before. However, his efforts are now abetted by the efforts of three subordinates, each of whom spends one-fourth of his time being supervised and three-fourths in direct action.

But since each B-level subordinate has unique goals, leakage of authority occurs in relation to A's goals. Let us assume a 10 per cent leakage factor. Although each B spends .75 man days in direct action, only .675 man days are useful to A. Therefore, by hiring three subordinates, A has increased his effective direct action from 1.00 man day to 2.275 man days (per calendar day).

Now let us assume that each B-level subordinate hires three subordinates. Each B now spends 75 per cent of his time supervising his own subordinates, and 25 per cent being supervised by A. Hence B-level officials devote all their time to internal administration. The C-level officials devote 25 per cent of their time to being supervised, and 75 per cent to direct action. Since there are nine C-level officials, total direct action time now amounts to 7.00 man days (6.75 from C-level officials and .25 from A himself). However, the leakage factor applied to C-level action has risen to 19 per cent, assuming the biases of C-level subordinates are cumulative with those of B-level officials. Hence only 81 per cent of C-level direct action is in accordance with A's real intentions. This means that the total effective output of the organization (from A's viewpoint) has risen to 5.47 man days at the C-level plus .25 from himself, or 5.72 man days altogether.

Through similar calculations, we can extend A's organization to any number of levels. For convenience, we have worked out the arithmetic through five levels, as summarized in Table 1.*

*The results in this table can also be generalized algebraically to cover any ratios of time spent supervising and being supervised,
Table 1

VARIATION OF EFFECTIVENESS AND EFFICIENCY WITH ORGANIZATION SIZE

<table>
<thead>
<tr>
<th>Number of Levels</th>
<th>Number of Persons</th>
<th>Total Man Days</th>
<th>Total Direct Output</th>
<th>Total Direct Action as Per Cent of Total Man Days</th>
<th>Direct Action Output Useful to A (in man days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Average per Person</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1.000</td>
<td>1.000</td>
<td>100.0</td>
<td>1.000</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>4.000</td>
<td>2.500</td>
<td>57.5</td>
<td>2.275</td>
</tr>
<tr>
<td>3</td>
<td>13</td>
<td>13.000</td>
<td>7.000</td>
<td>53.9</td>
<td>5.718</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
<td>40.000</td>
<td>20.500</td>
<td>51.3</td>
<td>15.012</td>
</tr>
<tr>
<td>5</td>
<td>121</td>
<td>121.000</td>
<td>61.000</td>
<td>50.5</td>
<td>39.852</td>
</tr>
</tbody>
</table>

Note:

This also represents the percentage of total man days consisting of direct action useful to A. With three levels, it is 43.9 per cent.
The following significant conclusions can be drawn from this table:

- As the organization grows, A's capability for effective direct action expands continuously, but at a declining marginal rate.
- As the organization grows, the proportion of all activity therein devoted to direct action declines, and the proportion devoted to internal administration rises.
- As the organization grows, the proportion of all wasted activity (from A's point of view) rises steadily. Eventually more than half of the activities undertaken are wasteful from A's point of view. This point is not shown on our table, since it requires a hierarchy of more than five levels, given the leakage and supervision factors we have used.
- If the marginal cost of adding more personnel does not decline, and the marginal productivity per man day of additional personnel does not rise, then there is some optimal organizational size from A's point of view. Assuming that A must pay the cost of adding personnel, he will expand the organization to the optimal size but no farther. Exactly how many levels there will then be depends upon how productive each man day is in relation to the cost thereof.
- If A does not have to pay the costs of adding more personnel, he will be motivated to increase the size of the organization indefinitely, since each new member adds somewhat to his total direct-action capabilities. This is usually the case in bureaus.
- Most of the activity in very large, multi-level bureaus probably does not directly further the goals of the topmost officials at all. Hence any attempt to achieve large-scale coordination is bound to appear terribly inefficient.

The above analysis is subject to two opposite qualifications. First, it does not allow for increasing productivity due to economies of scale. If larger size permitted a more intensive division of labor, productivity per effective man day might rise fast enough to offset and any leakage factors. However, the essential implications of the analysis are not changed by such generalization.
the declining proportion of each additional man day devoted to serving A's goals. This omission causes our example to overstate the rate at which the proportion of effective direct action declines as size increases. Second, we have not allowed for time spent by A's subordinates at all levels in directly coordinating their activities with each other. This omission causes our example to understate the rate at which the proportion of effective direct action declines as size increases.

The foregoing analysis underlies our statement of three basic principles of organizational control. The first is the Law of Imperfect Control: No one can fully control the behavior of a large organization. The second is the Law of Diminishing Control: The larger any organization becomes, the weaker is the control over its actions exercised by those at the top. The third is the Law of Decreasing Coordination: The larger any organization becomes, the poorer is the coordination among its actions. These rather obvious Laws are inescapable results of the fact that each person's mental capacity is limited. This limit can be overcome regarding the generation of activity by combining individuals in ever-larger numbers. But the limit cannot be overcome regarding the coordination or control of activity, since they require knowledge of the activities involved.

It is true that certain control devices can significantly increase the data-handling capabilities of the men at the top. Also, certain types of organizational structure provide better coordination than others. Nevertheless, no accounting systems, high-speed computers, or structural reorganizations can ever overcome the basic working of these Laws. The monolithic bureau is a myth.
VII. CONTROL PROCESSES AND DEVICES

THE BASIC CONTROL CYCLE

Control processes in bureaus are dominated by the need for a small group of men (top-level officials) to economize on information in order to appraise and redirect the efforts of a very much larger group of men (lower-level officials). The basic steps in these processes can be stated as follows:

o An official issues a set of orders.

o He allows his subordinates time to put each order into effect.

o He selects certain orders to evaluate his subordinates' performance.

o He seeks to discover what has actually been done at lower levels as a result of the orders he is evaluating.

o He compares the effects of his order with his original intentions.

o He decides whether these results are effective enough to require no more attention, ineffective but unlikely to be improved because of severe obstacles encountered, or partially effective and capable of being improved by further orders.

o In the last case, he issues further orders, starting the cycle again.

This cycle is oversimplified because it does not include intermediate feedbacks from his subordinates that often cause him to redesign his original orders in the middle of the process. However, these feedbacks do not alter the basic factors or conclusions in our analysis.

The remainder of this section discusses ways in which officials use information-economizing devices in carrying out nearly all the above steps.

ISSUING ORDERS THAT REQUIRE MINIMAL REVIEW

Effective control begins with issuing orders. The less ambiguous and general they are, the less discretion is delegated to subordinates.
Hence, officials can use the following tactics to reduce their later review efforts:

- Promulgating elaborate written rules and regulations. Such codes act as written extensions of the bureau's topmost official. Instead of consulting him, lower-level officials can in most cases consult the rules. This radically reduces the number of decisions he must make without sacrificing centralized coordination.

- Developing distortion-proof message codes for instructions. If unambiguous codes can be designed for directives, they can be transmitted through many levels without much authority leakage.

- Developing objective measures of performance, and specific standards stated in terms of those measures. Top-level officials can rapidly scan comparisons of actual results with planned targets to discover where compliance is weak. This presupposes some type of anti-distortion device to insure accurate reporting.

- Checking out proposed directives in advance with subordinates to insure that no extraordinary resistance and opposition will occur.

The first three of these measures are designed to reduce subordinates' discretion. Hence they increase the organization's rigidity of response. Moreover, subordinates may respond in unexpected ways to any increased emphasis upon such devices, for they will resist reductions in their own power and autonomy. For example, greater stress upon formal regulations may cause reduced personal involvement with the organization, a scaling-down of performance to minimal conformity, dysfunctional rigidity in adapting rules to meet special circumstances, or increased frequency of referring decisions to higher authority.* Hence, the new equilibrium may not be at the point originally planned by the officials who emphasized the rules.

* An analysis of these effects as discussed by Robert Merton, Phillip Selznick, and Alvin Gouldner is presented in J. G. March and H. A. Simon, Organizations, pp. 36-47, and amplified by the authors' own theories, pp. 48-52.
CREATING THE INFORMATION NECESSARY TO DISCOVER WHAT SUBORDINATES ARE DOING

Bureaus require written reports of transactions and performance because high-level officials need some means of exerting control over their subordinates.* Some objective measures of performance must be developed to report on activities, even when these measures are in fact quite inaccurate because the performance involved is immeasurable or hard to quantify.

These reports have three major purposes. First, they inform high-level officials about what is happening. Second, the necessity of preparing periodic reports serves to remind each subordinate that he must meet certain standards of performance. Third, the fear of punishment for failure to meet those standards encourages him to carry out the desired performance -- or at least to report having done so.

These compliance-inducing functions explain why bureaus normally require so many more reports than high-level officials can possibly read. Even if 90 per cent of all such reports are never looked at, they may still have a potent effect in causing compliance with the bureau's standards. This will be true so long as low-level officials do not know which 10 per cent will actually be followed up. And even if they know which 10 per cent are normally scrutinized, they will still feel some pressure to comply with all standards because they fear potential scrutiny in case something goes wrong. However, if officials know that performance reports are never verified through independent information channels, the temptation to falsify these reports will become irresistible.

Normally, the older a bureau is, the more reports it requires. As it ages, it encounters more crises, and generates more protective reporting requirements.

SELECTING ONLY SMALL PORTIONS OF ALL ACTIVITY FOR REVIEW

Top-level officials cannot review everything done by subordinates in response to their orders. It might seem, therefore, that they ought to review only the most important responses, or those most likely to be executed badly. However, if their selection for review can easily be forecast, subordinates will have great discretion regarding those orders that will not be reviewed.* This will drastically reduce top officials' control over the organization.

Some alternative ways of selecting specific behavior for review are as follows:

- Reviewing only those matters that create strong feedbacks from external agents. Top-level officials are frequently compelled to devote attention to those actions that stir up the greatest external criticism. Such "fire-fighting" diverts their attention from longer-range actions (for example, advanced planning) and results in an erratic shifting of tight controls from one part of the bureau to another. Noncontroversial matters, on the other hand, remain loosely controlled at all times.

- Reviewing only significant deviations from standard or preplanned performance targets. Unfortunately, such "management by exception" encourages subordinates to feign achievement of standard targets and to press for minimal standards so they can reach their targets easily. Hence it must be accompanied by special devices to insure accurate reporting, and to prevent the sacrifice of important characteristics not noted in the standard.

- Reviewing only those decisions about which subordinates cannot agree. This tactic gives subordinates control over all matters on which they can agree.

- Reviewing only those matters above a certain quantitative level of significance. True, this device does assume that an unequivocal quantitative measure of significance can be formulated. However, it may also take the form of lower-level officials not being able to spend above a certain amount without specific permission.

- Reviewing a certain number of matters selected entirely at random. This tactic encourages maximum compliance in all matters if subordinates are really uncertain

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about which will be reviewed. However, they will carefully study the decisionmaking habits of their superiors to avoid such uncertainty. Moreover, high-level officials are normally more interested in some activities than others; so they dislike randomized review. Hence this tactic is rarely employed, even though generating uncertainty about what will be reviewed is the best way for top-level officials to maximize their control.

**USING ANTI-DISTORTION DEVICES TO OBTAIN COMPLIANCE**

Section IV discussed anti-distortion devices used by top-level officials to discover the true situations from official reports. These devices can also be used to induce compliance.

The Law of Counter Control states: The greater the effort made by a sovereign or top-level official to control the behavior of subordinate officials, the greater the efforts made by those subordinates to evade or counteract such control. Most attempts by high-level officials to discover what is really happening below them involve redundancy, bypassing, or both. The most direct form of bypassing consists of personal inspections, preferably without prior warning. But low-level officials dislike surprise inspections, and will go to great lengths to avoid them. They develop elaborate personal communication networks to tip off the inspectees in advance. Each "tipster" is motivated by the hope of receiving reciprocal service in the future.* Nevertheless, top-level officials can still learn a great deal about the problems and performance of their subordinates by personal visits. The more frequently and irregularly they do, the greater compliance they will encourage.

Another anti-distortion device with control ramifications is use of overlapping jurisdictions requiring coordination among different bureau sections before any can act effectively. Whenever lower-level officials cannot agree upon how to carry out such joint functions, they must refer the matter to their superior, thus in effect shifting power to him. We have designated this principle as the Power-Shift

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*Desire for such reciprocal favors is also what underlies the supposed "criminal code" against informing, and the general human antipathy toward those who rigorously enforce moral or legal rules upon others.
Law: Unrestrained conflict shifts power upward.* If the conflict is restrained through compromise or agreement, then the subordinates can present their superior with a united front, thereby reducing his alternatives. Thus a corollary of this Law is that agreement among subordinates tends to reduce the control of their joint superior over them. However, this corollary is not symmetrical with the Law, since a superior has greater power than his subordinates and can override their agreement if he has enough information from other channels. Both the Law and its corollary show why superiors sometimes deliberately structure conflicts into their own organizations so as to improve their control over key decisions.

SEPARATE MONITORING AGENCIES

One of the most widespread, significant, and complex control devices employed in bureaucracies consists of separate monitoring organizations for inspecting and reporting on performance.

The Basic Nature of Separate Monitoring Organizations

Separate monitoring organizations have three major characteristics: their hierarchies and personnel promotion systems are different from those of the bureaus they monitor; their main function is monitoring although they may also have other functions (especially downward transmission of orders); and at their top levels they are integrated into some larger bureaucratic or political structure. Examples of such agencies are the Army Inspectorate General, the General Accounting Office, and the Communist parties of most Communist nations.

Their Advantages

From the viewpoint of officials or politicians operating complex bureaucracies, separate monitoring agencies have four main advantages.

* Another example of this law involves local and federal government. If the fragmentalized local governments in a single metropolitan area cannot agree upon how to carry out certain interdependent functions, then power over them will probably shift upward in the governmental structure to the federal government.
First, they enormously multiply the direct surveillance capabilities of top-level officials. Only by establishing a giant staff of monitoring assistants can top-level officials extend their powers so that nearly everyone in an operating bureau is under surveillance by persons who are closely allied to the top level. However, this monitoring staff must then be so large that it becomes a separate organization with its own hierarchy. This illustrates the Law of Control Duplication: Any attempt to control one large organization tends to generate another.

Second, separate monitoring agencies form redundant channels of communication outside the official channels of the operating bureaucracy. The hierarchy of each monitoring agency creates its own distortions, but they are different from those of the operating bureaucracy. Third, they permit by-passing in dealing with operating bureaus. Top-level officials can use the monitor's hierarchy to insert messages into or extract data out of almost any level in the operating bureau without going through all the levels above it. Fourth, they create a rival to the operating bureaucracy. They have jurisdictions overlapping those of operating bureaus but differing incentive structures.

The Need for Tension Between Monitoring and Operating Bureaus

There is a fundamental conflict of interest between monitoring and operating bureaus. It arises because monitors are rewarded for finding and reporting "evils" and operators for preventing or concealing them. It is this conflict that makes redundancy and by-passing useful to top-level officials. Multiple reporting channels would not correct distortions if all the officials in them had the same biases. Hence the effectiveness of separate monitoring agencies can be maintained only if a definite tension exists between their members and the members of the operating bureaus they monitor. This is another corollary of the Law that unrestrained conflict shifts power upward.

The need to sustain such tension explains why most effective monitoring agencies have personnel structures entirely separated from those of the bureaus they monitor. If officials were constantly shifted back and forth between the inspectors and the inspected, monitors would
be motivated to ignore many mistakes and deviations in hope of being treated similarly when they were being inspected.

It is difficult to foster two basically contradictory views toward reporting performance within a single hierarchy. Officials who are extremely aggressive about detecting and reporting deviations can expect to win promotions in a monitoring bureau. But in a bureau also responsible for producing outputs, excellent performance must take promotional precedence over zeal in reporting deviations, because production is more important to society than monitoring. Thus, surveillance bureaus that are not staffed by personnel with separate career paths are usually halfhearted about detecting and reporting behavior considered undesirable by top-level officials.

How Aggrandizement by Monitoring Bureaus Multiplies Controls

Once a separate monitoring organization has grown large enough to become a bureau in itself, it exhibits typical bureaucratic behavior. Its officials become advocates of greater control over the operating bureaus they monitor, both because they wish to perform their function better and because this increases their significance.

As a result, the officials in separate monitoring agencies tend to agitate for ever more detailed reports from operating bureaus, and ever greater limitations on the discretion of those bureaus. Maintaining separate career paths for monitoring officials encourages this tendency. Then monitors are not deterred from demanding more controls by the knowledge that they will someday be trying to operate under such controls themselves.

If the monitoring bureau uses a fast rotation system, this further encourages the multiplication of controls. Each ambitious official who takes over a certain monitoring job will attempt to demonstrate his capabilities by inventing better (more thorough) controls or reports than his predecessor. Hence reforms of control processes almost always result in requirements for more information from operating bureaus.
This reasoning leads to the Law of Ever Expanding Control: The quantity and detail of reporting required by monitoring bureaus tends to rise steadily over time, regardless of the amount or nature of the activity being monitored. It might appear that top-level officials would resist such expansion since it absorbs more resources. But they tend to support any devices that seem to promise a lower leakage of authority.

Defensive Reactions to Monitoring by Operating Bureaus

Operating bureaus monitored by separate agencies exhibit certain defensive reactions. They behave in closer conformity to the orders of their superiors than they would if not monitored. They attempt to shift the loyalty of the monitoring officials away from their mutual sovereign. They try to create an appearance of following the orders of their superiors more closely than they really do. This involves generating a great deal of information and analysis justifying whatever behavior they have actually carried out, and concealing other acts through secrecy or false reports.

Finally, operating bureaus will sometimes put pressure upon their sovereign to reduce the amount of monitoring they are subjected to. They can hardly complain about being forced to conform more closely to their sovereign's orders; so they protest against excessive interference with their operations which they consider injurious to efficiency. Since monitors often do interfere excessively with operating bureaus, such protests are frequently quite legitimate.

The Struggle for the Monitors' Loyalty

The inability of supervisory officials operating bureaus to control their subordinates completely always generates some conditions

*This "Law" is strikingly similar in phrasing, and to some extent in content, to Parkinson's First Law. Our indebtedness to Parkinson's general approach to formulating principles and to the specific principles he has formulated is indeed immense. See C. Northcote Parkinson, Parkinson's Law and Other Studies in Administration, pp. 2-13.
that would be embarrassing if fully reported to the sovereign. Hence such officials have a strong incentive to influence monitors' reports. Also, they normally control enough material resources to offer attractive rewards for ameliorating those reports. Such compensation rarely consists of direct monetary bribes. In fact, monitors who would indignantly refuse bribes may succumb to subtler pressures, including personal favors, or merely friendships with those they are supposed to criticize. Therefore, operating officials continually try to reduce their monitors' allegiance to the sovereign by creating at least partial loyalty to themselves.

Monitoring officials are thus the center of a constant struggle between top-level officials and their operating subordinates. Moreover, the subordinates have the advantage of being in close contact with the monitors. Consequently, they can establish more intimate personal relations and make more accurate assessments of what benefits might sway the monitors.

Under these conditions, top-level officials must take extraordinary steps to maintain adequate loyalty among monitoring officials. Such steps include the following:

- Separating the monitoring hierarchy from the operations hierarchies.
- Providing very high rewards to monitoring officials for zealous performance, especially for detecting gross errors or malpractices.
- Reducing close or prolonged contacts between monitors and operators. This can be done via rules against social fraternization, rapid rotation of monitoring officials, physical and social isolation of monitors from the rest of society, and employing monitoring personnel only in groups to prevent private contacts. However, reduction of prolonged contact is partly incompatible with intense specialization. For example, the Bureau of the Budget would be much less effective if it had not developed specialized monitors who have dealt with the same government agencies for years.
- Creating positive hostility between monitors and operators. This can be done by making the monitoring group an "elite corps," using monitoring personnel from ethnic groups traditionally hostile to the operating
officials, and forcing monitoring personnel to use procedures that cause unusual discomfort or inconvenience to operating personnel. Examples of such measures are prohibiting occupation troops from fraternizing with enemy civilians, rigid social segregation from "native populations" by the governors of the British Empire, and deliberate cultivation of hatred between bureaucrats and the secret police under Stalin.

How Reactions to Monitoring Create Significant Real Costs

The number of monitors assigned to a given bureau is almost always much smaller than the number of bureau members. Therefore monitors cannot observe the performance of most bureau members directly. Moreover, many operations in modern life produce written rather than tangible outputs. Therefore, monitors usually cannot appraise a bureau's performance unless they are able to examine extensive written records of its activities. In many cases, such records are not necessary for the proper functioning of the bureau, but only for convincing the monitors that its functioning has indeed been proper. Therefore, the bureau must assign personnel and resources to maintaining these records and preparing special reports in response to monitors' additional inquiries. The resources thus employed in creating operationally superfluous evidence are a real cost of control.

Naturally, officials in operating bureaus tend to prepare these records so that the monitors' scrutiny will result in as favorable judgments as possible. Moreover, in potentially controversial matters, they often devote extra resources to "bumping up the record" to provide ample justification for their behavior. Thus, high-level officials frequently order "scientific studies" that "prove" the wisdom of decisions that have already been made on other grounds.

The magnitude of resources devoted to these tasks is sometimes staggering. To meet all the Air Force and Defense Department specifications in a design competition for a new transport aircraft, one aircraft company prepared a proposal containing 76,000 pages of written material, charts, graphs, and illustrations. Many of
the immense costs of this proposal were incurred in response to both existing demands created by monitoring agencies and anticipated future demands from such agencies. Since two other companies submitted similar proposals, the Air Force Systems Command had to assign several hundred people to evaluate the resulting library of documents generated by its own requirements.

A corollary to the Law of Counter Control is that any increase in the number of persons monitoring a given bureau will normally evoke an even larger increase in the number of bureau members assigned to deal with the monitors. This occurs because records can be read much faster than they can be compiled. Hence to keep an additional monitor busy, the operating bureau must assign two or more people to producing the reports he demands.

Efforts to improve the control exerted over a bureau usually do not lead to directly proportional increases in actual control. In fact, they sometimes decrease it because of unforeseen reactions by operating officials. This does not mean that all attempts to increase top-level control are doomed to failure. However, officials seeking increased control over their subordinates must anticipate counteractions that will reduce the effectiveness of the planned increases.

**Monitoring the Monitors**

Since monitors themselves usually form a distinct bureau, top-level officials must face the problem of controlling the monitors. There are three different tactics at their disposal. First, they can form still another bureau to monitor the monitors. For example, Stalin used the secret police to control the Communist Party, which in turn helped control operational government bureaus. However, this solution merely shifts the problem to "Who controls the bureau controlling the monitors?" It also greatly complicates the power relationships involved.
Second, the top leaders can use redundancy, by-pass, and overlapping jurisdiction devices to both operating and monitoring bureaus. Third, top leaders can use operating bureaus to check on monitoring bureaus. However, operating bureaus can then use the threat of turning in damaging reports as a weapon to influence the monitors' reports on them. Hence top leaders cannot give operating bureaus much leverage in reporting on monitors without greatly reducing the monitors' effectiveness. Admittedly, these tactics are unimpressive, because the problem of "guarding the guardians" has no satisfactory solution.

THE USE OF STAFF PERSONNEL TO AID IN CONTROLLING LINE PERSONNEL

The Real Nature of Large Staffs

One control device widely used by top officials is the development of large staffs of advisors. Theoretically, staff personnel differ from line personnel in three ways: staff members perform purely advisory functions, whereas line personnel have operational responsibilities; each staff reports directly to its top-level boss, whereas most line officials report to their ultimate boss through hierarchical superiors; staff members are technical specialists, whereas line members are generalists.

Using these generalities to form a theory of control, major operational officials gradually develop staffs to give them technically specialized advice. They do so instead of relying upon advice from subordinates (1) when the latter cannot agree or are indecisive, (2) when they wish to receive "unbiased" advice from subordinates who are loyal to themselves rather than advocates of some particular bureau section, (3) when they want technical advice that is more specialized than their line subordinates can provide, or (4) when they wish to coordinate the activities of scattered lower-level officials engaged in similar specialties.

Closer examination of this theory reveals that it only partly corresponds to reality regarding large staffs, which violate all the above tenets to some extent. In huge bureaus, staffs grow so large they
generate complex hierarchies of their own; hence staff members do not report directly to their bosses but operate through superiors just as do line officials. Since line officials often perform extremely specialized functions (such as flying supersonic aircraft) they cannot always be regarded as more generalized in ability than staff officials.

Furthermore, staff members do not always perform purely advisory functions. Though they have no direct operating responsibilities, they often exercise de facto operational authority in two ways. First, if a high-level line official refers all questions concerning certain subjects to his staff specialists or always follows their advice, then his staff members in fact exercise operating authority. Second, high-level staff members often build up vertical organizations of similar specialists on lower-level staffs. For example, a general's intelligence specialist usually develops a close liaison with intelligence officers on the staffs of the general's line subordinates. He may even issue directives to those specialists concerning intelligence matters. As Tullock has shown, this creates a specialized hierarchy of authority parallel to the line hierarchy. Such a "criss-cross" arrangement may subject lower-level intelligence officers to conflicting orders from their line bosses and from the general's intelligence officer. Whenever the latter's orders prevail, he is exercising operational authority.

Finally -- and most significant -- a really large staff develops bureaucratic interests of its own distinct from those of its line boss. Hence its loyalty to him becomes diluted by advocacy of its own causes; so it provides him with "biased" advice in the same way that his line subordinates do.

Even though this analysis shows that a staff is not nearly as different from the line as might first be supposed, a top-level official can still derive great benefits from a separate staff. A large staff

can function as a control mechanism "external" to the line hierarchy, promote change in opposition to the line's inertia, and act as a scapegoat deflecting hostility from its boss.

The control advantages of a staff result from its quasi-redundancy relative to the line. An official served by a large staff really has two line organizations working for him: "the" line hierarchy and the staff hierarchy. In some cases, these two hierarchies are made up of the same personnel (as in the "criss-cross" arrangement described earlier). Because the staff organization parallels the line but works through technically specialized vertical channels, the top-level official can use each organization as a means of by-passing and checking up on the other. The staff thus increases his control over the line because it acts as an external monitor, and its functions partly overlap those of the line.

The innovation advantages of a staff result from two factors. First, its members are usually more technically oriented than line personnel. In many cases staffs are recruited differently from the line; hence staff members may be more technically trained, better educated in general, younger, and more likely to have come directly from outside the bureau rather than up through the ranks. All these factors create a greater propensity to innovate in the staff.

The second innovation-generating factor is inherent in the staff's incentive structure. A major function of every staff is to help its boss improve the line's performance; hence, to justify their own existence, staff members are strongly motivated to criticize the line's behavior and press for changes. Line officials are normally more inertia-prone because they naturally try to justify their existing behavior, they are far more aware of the difficulties of disrupting informal networks, and they must bear the costs of carrying out changes suggested by staff advisors.

These differences between staff and line generate an inherent conflict between them that allows their mutual boss to use each as a scapegoat in dealing with the other. Thus, by getting his staff members
to press the line to make changes he really wants himself, he can deflect most of the resulting resentment to them and retain the loyalty of his chief line subordinates.

The Particular Biases of Large Staffs

Like all bureaus, a staff always seeks to retain its existing power, income, and prestige, and usually seeks to increase them (when it is dominated by climbers, advocates, or zealots). Hence it normally advises expanding those functions that are primarily entrusted to the staff. This creates the following typical biases:

- Staffs advocate increased research into problems before decisions are made.*
- Staffs strongly advocate shifting power from lower-level line officials to the major official whom the staff serves. They do so because that official will delegate most of any increased power he receives to his staff officials. Hence they place great emphasis on increased coordination and control over activities at lower levels, and greater uniformity of procedures in those activities.
- Staffs often promote changes that include relatively esoteric techniques, since their freedom from operating responsibility allows them to keep technically better informed than line officials.

Thus, a major official cannot expect to receive any less biased information from a large staff than from line organizations. Moreover, using such a staff complicates his control and administration problems considerably. Nevertheless, the ability to use another organization with biases different from those of his line subordinates may be a crucial advantage. This is particularly likely if his own values vary widely from those of this major line subordinates. For example, when Robert McNamara became Secretary of Defense, his values and concepts were quite different from those of the heads of each service. In order to impose his ideas upon their operations to at least some extent, he had to create a controlling organization with biases closer to his own

* However, they advocate more research carried out at their own level (or under their own control), rather than more research in general. Hence they might oppose additional research carried out at lower levels or higher ones.
than to theirs. Therefore, he constructed a large staff composed of civilians with technical management orientation. This staff soon began exhibiting typical bureaucratic advocacy. Nevertheless, its orientation was sufficiently different from that of the military services to help Secretary McNamara impose many of his ideas upon the services.

This example illustrates the principle that if the primary purpose of developing a large staff is to increase control over the line, then the personnel in the staff should have career paths separate from those in the line. The reasons for this are the same as those for establishing a distinct career path for external monitoring organizations.
VIII. GOAL CONSENSUS, RECRUITMENT, Indoctrination AND IDEOLOGIES

INTRODUCTION

In many situations, the nature and degree of goal consensus among a bureau's members has a crucial impact upon the way it performs its functions. Conversely, its functions may affect the members' goal consensus. This section will explore these relationships, and then examine three major techniques that bureaus use to influence the degree of goal consensus among their members.

SOME ADVANTAGES OF GOAL CONSENSUS AND GOAL DIVERSITY

Advantages of a High Degree of Goal Consensus

Within any organization, greater goal consensus reduces the number and intensity of conflicts among members, thus improving the organization's overall coordination. Moreover, as the goals of lower-level members become more like those of top-level members, the relative amount of authority leakage declines. This enhances the power of top-level officials, and makes the organization more efficient in achieving the goals those officials select.

Greater goal consensus, therefore, actually means an increase in the productive capacity of the bureau. This can express itself in three ways. First, top-level officials can retain the same quality and quantity of output as before, but reduce the controls, reports, and other performance checks used to maintain it. This results in greater delegation of discretion to subordinates. Thus strong goal consensus is a vital part of any true decentralization of authority.

Alternatively, top-level officials can increase the quantity of output by making the bureau larger while retaining the same quality, that is, the same variance between their intentions and actual behavior at the bureau's lowest levels. Thus the bureau can take on new or broader functions without any loss of control at the top.
Finally, by retaining both the same control mechanisms and the same sized bureau, top-level officials can produce outputs of better quality, that is, which more closely conform to their own desires.

The above analysis assumes that increased goal consensus means greater similarity between the goals of lower-level officials and top-level officials. It is conceivable that the bureau as a whole could experience a gain in goal consensus without any such convergence between goals on its upper and lower levels. However, we will assume that greater goal consensus reduces conflict among officials on different levels, as well as on each level. The resulting improvement in the control of top-level officials normally creates benefits for the bureau's clientele too, for the bureau's social functions will be better accomplished. Thus greater goal consensus benefits society in general, at least to some extent.

Advantages of Goal Diversity

Diversity of goals may also increase a bureau's efficiency, even from the viewpoint of its top officials. The typical bureau must perform a variety of tasks, either because it has multiple functions or because it is uncertain about the best way to perform a given function. This requires persons whose goal structures are dissimilar on at least some levels. Moreover, uncertainty usually occurs in a rapidly changing environment, creating a need for innovation. This is stimulated by encouraging many different approaches to the problems involved undertaken by diversified personnel. Thus any organization's ability to perform varied tasks is improved by a certain diversity of goals among its members.

*For example, consider a bureau consisting of officials from a variety of backgrounds. Suddenly all the lower-level officials are replaced by members of a single fanatical social or religious group (such as Communists), and the few top-level officials are replaced by members of another such group hostile to the first (such as Nazis). Then the goal consensus of the bureau as a whole might actually rise, but the cleavages between top-level and lower-level officials would increase. In this case, none of the benefits to top-level officials described above would occur. However this is extremely unlikely.
The Multi-Dimensional Nature of Goal Consensus

From the above analysis we can derive the Law of Countervailing Goal Pressures: The need for variety and innovation creates a strain toward greater goal diversity in every organization, but the need for control and coordination creates a strain toward greater goal consensus. The balance between these opposite forces determines the actual degree of goal consensus in the organization.

Both conflicting forces can sometimes be accommodated by combining great diversity on some layers of goals with strong consensus on others. Innovation and multiple alternatives will be generated regarding each layer on which the bureau's members exhibit great diversity; whereas close coordination and relatively easy control will result regarding those layers on which they exhibit strong consensus. For example, a bureau might be made up of a number of technical specialists in different fields whose personal philosophies were quite diverse. This could result in low consensus on the ultimate goal level; high consensus on the social conduct, political action, and social function levels; moderate consensus on the broad bureau policy level; and low consensus on the specific bureau policy level. Any analysis of goal consensus in bureaus must consider the depth (that is, the number and nature of levels) on which consensus is relevant to the bureau's operations as well as the degree of consensus on any one level.

RELATIONSHIPS BETWEEN GOAL CONSENSUS AND BUREAU FUNCTIONS

Mutual Interdependence

We have shown that the degree of goal consensus in a bureau affects its ability to carry out its social functions. However, its social functions also affect its degree of goal consensus. For example, the U.S. State Department is supposed to implement relatively consistent policies in over 100 fantastically varying nations. If U.S. officials remain in any given nation for long, their increasing attachment to its culture may cause their goals to shift toward those prevalent in
that nation. If such a centrifugal shift occurred everywhere, there would be an enormous decline in goal consensus within the State Department as a whole. Fear of this outcome is one reason for the State Department's frequent rotation of its overseas personnel. Conversely, all three U.S. military services have made strong efforts to prevent their personnel on the Joint Staff from succumbing to the centripetal goal influences therein. They even coined the name "purple suiters" to describe those who develop a truly "joint" outlook.

We must distinguish between the goal consensus that top officials try to create so they can effectively influence their bureau's external environment; the influence that environment is likely to have upon the bureau's goal consensus; and the actual goal consensus that develops as a result of these two factors.

The Impact of Functional Aspects of a Bureau upon Its Goal Consensus

The major aspects of bureau functions influence the goal consensus in a bureau in predictable ways, as shown in Table 2. The relationships depicted are valid on any level of goals affected by those functional aspects.

These relationships can be summarized succinctly: variety of environments or functions encourages goal diversity among officials, and homogeneity of the same encourages goal consensus. Variety of environments or activities breeds a similar variety of goals, making officials better attuned to the nuances and demands of individual situations. But variety also makes it harder for them to coordinate in a single consistent pattern of behavior. Conversely, great similarity of environments and activities makes coordination and centralized control easier, but reduces the bureau's ability to respond effectively to novel situations.

Situations in Which Adequate Coordination Requires Strong Goal Consensus at Deep Levels

Whenever environmental or functional conditions create strong centrifugal forces upon officials' goals, the bureau needs unusually
Table 2
HOW VARIATIONS IN FUNCTIONAL ASPECTS AFFECT
A BUREAU'S GOAL CONSENSUS

<table>
<thead>
<tr>
<th>Functional Aspects Encouraging Relatively Homogeneous Goals Among Bureau Members</th>
<th>Functional Aspects Encouraging Relatively Heterogeneous Goals Among Bureau Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrow scope, little variety of assigned functions</td>
<td>Broad scope, great variety of assigned functions</td>
</tr>
<tr>
<td>Stable environmental conditions</td>
<td>Rapidly changing environmental conditions</td>
</tr>
<tr>
<td>Clearly defined functions</td>
<td>Vaguely defined functions</td>
</tr>
<tr>
<td>Relatively simple functions</td>
<td>Highly complex functions</td>
</tr>
<tr>
<td>Indivisibility of various functions</td>
<td>Relatively easy separability of various functions</td>
</tr>
<tr>
<td>Strong consensus about functions, policies in external power setting</td>
<td>Diversity and conflict about functions, policies in external power setting</td>
</tr>
<tr>
<td>Simultaneous operation in only one place, or in several very similar places</td>
<td>Simultaneous operation in many places with widely varying environments</td>
</tr>
</tbody>
</table>
strong means of insuring a consistent pattern in their behavior so they will effectively discharge its functions. This can be done by instituting strong external controls and reporting systems, or by creating strong goal consensus at relatively deep goal levels. The first method imposes external control upon the members; the second attempts to internalize the control process by building it into their value systems.

The external checks on behavior essential to all bureaus suffer from important limitations. First, every bureau must delegate a certain amount of uncheckable discretion to its members. Second, certain types of initiative and risk taking are much more effective if based upon internalized desires. Third, only limited external control systems are practical under many conditions. This implies that bureaus must rely heavily upon strong and deep goal consensus under the following conditions:

- When the functions of the bureau require its members to participate in their official roles in a nearly "total" fashion rather than segmentally. For example, members of religious orders are expected to exemplify the precepts of their faiths in all aspects of their lives.

- When the actions lying within the officials' range of discretion are of extraordinarily crucial importance. Examples are SAC officers in charge of firing ICBMs, who have immense power to affect the nation's welfare.

- When the bureau's function requires its members to act in strong opposition to their own interests. For example, police officers are expected to risk their lives and to resist bribes.

- When individual bureau members are under strong external pressure not to discharge the bureau's social function efficiently. This occurs when the bureau's function is injurious to powerful elements in society. For instance, members of an occupation army are often under great pressure to be lax in enforcing occupation rules, especially since they are a minority in relation to the occupied group.

- When bureau members must carry out a relatively consistent set of policies under a very wide variety of circumstances. Either they operate
in many different places simultaneously (as in the State Department), or their environment changes rapidly (as among troops in battle), or their individual actions in a given time and place are of very broad scope (as among Jesuit priests). These circumstances, bring a wide range of officials' goals into play, thus requiring a consistent integration of many goals with the bureau's objectives.

- When the bureau's functions require its members to exercise unusually strong control over their natural impulses, or to act in ways considered abnormal by their society. Examples are the vows of poverty, chastity, and obedience required by some religious orders.

- When the top-level officials in the bureau cannot easily check on the performance of lower-level members. This occurs when communication with low-level officials is difficult, or the results of their activities are hard to measure. Examples are the District Commissioners who governed many remote parts of the British Empire under the old Colonial Office.

RELATIONSHIPS BETWEEN GOAL CONSENSUS AND DOMINANT TYPES OF OFFICIALS

Various types of officials are likely to have different attitudes about the desirability of increasing the goal consensus in their bureaus. Conservers usually prefer to avoid the change, innovation, and conflict likely to result from great diversity of goals. They will therefore normally seek to increase goal consensus. Advocates are likely to encourage goal diversity within their organizations to generate expansionary forces that will add to the power of their bureaus. Climbers are similar to advocates, but more jealous of personal competitors, thereby discouraging other climbers. However, they will nurture zealots in the hope of finding some innovation that will aid them up the promotional ladder. Hence climber-dominated bureaus are likely to exhibit homogeneity of goals at top levels ("yes-men" will be abundant) but variety of goals at lower levels where innovations usually originate. Zealots will press for strong goal consensus in any bureaus they dominate, since they seek men who will help develop their preferred policies. Normally, the relationships between bureau functions and goal consensus act as limits within which dominant officials can express the preferences of their types.
BASIC METHODS OF SECURING STRONG GOAL CONSENSUS IN A BUREAU

Bureaus use three devices to affect the degree of goal consensus among their members. Selective recruitment increases goal consensus if top level officials choose only new members whose goals are very similar to their own, or decreases it if they choose new members with very different goals. Indoctrination increases goal consensus by influencing existing members to shift their goals closer to those of top level officials. Ideologies are useful in both selective recruitment and indoctrination, as well as in influencing members' behavior.

SELECTIVE RECRUITMENT IN BUREAUS

The Importance of Selective Recruitment

The way new members are recruited is of vital importance to every bureau, since its effectiveness depends greatly upon the nature and capabilities of its members. Hence it is rational for every bureau to exercise at least some selectivity in recruitment.

This is particularly important when the bureau's functions require strong goal consensus among its members on relatively deep levels. And it is almost always less expensive to create strong, deep-level goal consensus among bureau members by selective recruitment of people who already have similar deep-level goals than by altering the diverse goals of people already in the organization.

The Process of Selection

The process of personnel selection implicitly involves four steps:

1. Determining the characteristics to be sought in new members.
2. Developing means of identifying those characteristics in potential recruits.
3. Applying those means to the overall population to identify desirable prospects.
4. Persuading prospects to join the bureau.
In practice, it is almost never feasible to screen a society's entire population, therefore, the bureau either advertises to attract persons with the sought for traits, or identifies specific persons who possess those traits and initiates negotiations with them. Advertising is appropriate when the traits are general in nature, hence widely distributed. Direct recruiting is appropriate when very few people have these traits.

Problems of Recruitment

The process of selection is difficult to carry out effectively. First, it is not always clear what traits new members should have. The broader the scope of activities involved in any given position, the more general the talents required and the harder it is to define them.

Second, identifying desired traits in potential members may be almost impossible. As Morris Janowitz points out,

> After forty years of research and development of military personnel selection practices, it is now abundantly clear that there is no satisfactory and reliable technique for locating personnel with leadership potentials. Only the selection of specialists for particular technical jobs... seems feasible.

This means that bureaus requiring extremely broad talents normally train and screen their members extensively after they are in the bureau.

Third, since selectivity in recruiting and intensity of training are partial substitutes for one another, the selectivity required may depend strongly upon the type of training new members are given after joining. This in turn may depend upon the type of training available outside the bureau. For example, U.S. bureaus requiring organic chemists can hire men already well trained in that specialty. But in

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countries where no organic chemistry schools exist, a bureau may have to be less selective in choosing new members and provide more extensive training for them.

Fourth, even if excellent potential members can be identified, they may be offered more attractive opportunities elsewhere. Thus the relative economic, social, and power position of the bureau in society is critical.

Fifth, dynamic officials are attracted to bureaus that offer good chances of promotion or aggrandizement; hence recruiting will be easier and more effective in fast-growing or high-turnover bureaus than in bureaus with opposite characteristics.

Sixth, the effectiveness of recruiting in strengthening goal consensus will depend upon the degree of goal consensus prevalent in the population. In a society with a highly heterogeneous population (such as Nigeria) a bureau will have more difficulty attaining strong internal goal consensus than one in a society with a relatively homogeneous population (such as Denmark). On the other hand, an extremely heterogeneous bureau may perform an important cultural integration function.

Relationships Among Recruitment, Levels of Entry, and Promotion Policies

If recruiting is done only at the lowest levels, all top officials have to work themselves upward through the hierarchy, presumably by repeatedly pleasing their superiors. And superiors usually approve of continuous development of their policies rather than sharp breaks with tradition. True, some types of officials encourage innovations. Nevertheless, the screening process of upward movement tends to reject radicals and elevate a relatively homogeneous group unless the bureau operates in a very volatile environment. In that case, a few zealots may catapult into top positions precisely because of their radical ideas. Still, there is little doubt that 100 per cent promotion from within tends to de-emphasize new ideas and stress continuity.
Recruiting primarily at low levels may be highly efficient for organizations whose functions demand continuity and stability (such as the Roman Catholic Church). However, those whose functions require constant innovation (such as Bell Telephone Laboratories) should recruit at all levels.

Conservers are especially likely to favor pure promotion from within. Zealots, on the other hand, are likely to favor recruiting at any level which helps to promote their policies. Climbers prefer promotion from within in their own bureau, but favor all-level recruitment in other bureaus to which they might jump. Such mixed feelings are shared by advocates and statesmen.

One factor, however, encourages all types to support promotion from within. It takes time for an official to build up knowledge of his bureau's formal and informal structure. If he moves to another bureau he must incur the cost of developing similar knowledge. So the longer an official has served with a given bureau, the larger this cost of transfer becomes. If his own bureau promotes only from within, his chances for moving upward without jumping are increased, since all outside competition is eliminated. As a result, the longer an official has served with a given bureau, the more strongly he will tend to favor exclusive promotion from within. The policy has a self-reinforcing effect: if it has existed for a long time most of the top officials will have risen from the ranks, and will favor continuance of promotion from within.

Bringing in outsiders at high levels also has a self-reinforcing effect, but it is weaker. Top-level newcomers may bring some of their previous associates with them, especially if they need subordinates of unquestionable loyalty. They may also encounter hostility from old-line insiders who resent them, and therefore import more outsiders. Still, every bureau must promote some men from within to provide incentive for lower-level officials to assume responsibilities, take risks, and exhibit initiative. Therefore, even top-level officials from the outside are under pressure to promote from within. In contrast,
there is rarely any pressure to fill high-level vacancies with outside recruits. This asymmetry of pressure tends gradually to increase the proportion of top jobs filled by promotion from within, unless there are specific reasons to the contrary (such as lack of technically qualified personnel in the bureau).

INDOCTRINATION IN BUREAUS

The Nature of Indoctrination

Indoctrination is any attempt to make a permanent alteration in a person's non-superficial goal structure by systematically exposing him to information or ideas selected for this purpose. It can involve either changing his existing goals or adding new ones.* Altering a person's superficial goals (such as what he intends to do in his next leisure hour) is not indoctrination; it is influence or persuasion. Indoctrination concerns relatively deep-level goals but it may affect several levels.

Use of Indoctrination

It is extremely difficult to alter deep-level goals. An enormous investment of time and effort is required, and there is no certainty of producing satisfactory results. Therefore, it is much more economical to produce strong, deep level goal consensus through selective recruitment than through indoctrination. But there are several situations when selective recruitment is ineffective. The first occurs when the actions of the bureau requiring deep-level consensus are very different from the normal actions of persons in society. This situation arises whenever an organization requires:

- Behavior incompatible with dominant social customs.

Behavior involving severe restriction of nearly universal human impulses (such as vows of poverty and chastity).

Behavior involving the application of basic principles in almost all facets of normal existence.

The second situation arises when society contains persons with appropriate deep-level goals, but it is impossible to identify them. This is often the case regarding leadership potential. The third occurs when persons with appropriate deep-level goals can be identified but cannot be induced to join the organization. This implies that organizations with low status will be forced to engage in more indoctrination than those with high status, other things being equal.

Indoctrination is used not only to provide new members with appropriate goal structures, but also to maintain those of existing members. The functions of many bureaus tend to erode their members' goal structures. For example, policemen constantly encounter temptations to accept graft or overlook offenses. If their goals are not frequently reinforced, their behavior will gradually become inefficient at accomplishing the bureau's social functions. Such reindoctrination is not nearly as difficult as initial indoctrination, since the bureau does not have to create wholly new deep-level goals in the minds of its members.

The Economics of Indoctrination

The cost of indoctrinating a given number of persons is greater the deeper the level of goals to be altered, the stronger the consensus desired at any level, and the greater the difference between that consensus and the goals they held before being indoctrinated. Because indoctrination costs can become huge, bureaus often adopt several types of behavior to economize on them.

First, bureaus avoid functions requiring them to indoctrinate their personnel more strongly than their existing organizational
structure will allow. Indoctrination requires specific organizational arrangements. If creating those arrangements would significantly alter a bureau's whole structure, its leaders will usually oppose accepting responsibility for social functions requiring such indoctrination. Thus the ability of a given bureau to perform functions requiring deep-level goal consensus depends in part upon whether it is structured so it can conduct the indoctrination required by those functions.

Second, bureaus try to minimize the need for indoctrination through selective recruitment. Those requiring strong, deep-level consensus will recruit with far greater selectivity than those not requiring such consensus. Third, bureaus require as little consensus as possible on the deepest levels of goals.

Fourth, they conduct indoctrination regarding only those goals that are likely to be extremely stable over time. Indoctrination is an investment in human capital, and it is inefficient to make large investments getting people to accept goals that will shortly be obsolete. This means that expensive indoctrination involving deep-level goals normally concentrates on general principles.

Fifth, bureaus restrict really intensive indoctrination to persons likely to remain members for a long time. They often provide it in stages, and conduct the most expensive stage last so they can weed out unlikely finishers early. The armed forces, for example, send only experienced career officers to advanced military colleges. Conversely, when members' functions require them to receive intensive indoctrination right after joining, the bureau may compel them to remain members for a long time (as the armed forces do with academy graduates).

Sixth, bureaus indoctrinate top-level members more than lower-level members, since the former need stronger and deeper goal consensus than the latter. Such consensus is partially accomplished by promotion of only deeply committed members to high positions.
The Isolation of Indoctrinees

The efficiency of indoctrination is heavily dependent upon the degree to which indoctrinees can be shielded from any influences adverse to the process of shifting their deep-level goals in the desired way. Hence bureaus that frequently use indoctrination develop special arrangements to isolate indoctrinees from other bureau members and outside agents. These arrangements generally involve specialists in conducting indoctrinations, and facilities for physically and mentally isolating indoctrinees. The degree of isolation required depends upon the desired depth and strength of goal consensus. Institutional arrangements for indoctrination range from complete separation from the outside world for life (as in some religious orders) through four years under highly controlled conditions (as with the armed forces academies), to a few days in special classes (as in many orientation courses).

Isolation from conflicting influences is also a potent device for maintaining strong goal consensus among members of an organization, and recreating one after it has been eroded. The traditional spatial segregation of army officers and their families from the rest of society is one example.*

Thus, the need to indoctrinate members may have profound effects upon the operations and even the structure of a bureau. If its function requires an extraordinarily strong goal consensus, it may have to restrict its members' relations with outsiders. It may therefore develop lagged or erroneous conceptions of what is actually going on in its external environment, as do Soviet diplomatic missions. To prevent this outcome, its leaders may have to create special communications and search sections unnecessary in less isolationist bureaus. Furthermore, separate

*As Morris Janowitz says: "Separation between place of work and place of residence, characteristic of urban occupations, is absent. Instead, the military community is a relatively closed community where professional and residential life have been completely intermingled." However, he points out that this situation is being eroded by changes making military careers more like others. The Professional Soldier, pp. 175-195.
indoctrination facilities and special training staffs drain the bureau's resources. Finally, the stringent requirements for membership in such bureaus force them to develop expensive recruiting procedures.

Some bureaus requiring deep-level consensus also practice isolation through saturation. They develop many sub-organizations covering every aspect of life from youth clubs to old age societies. Hence their members can participate in a wide range of activities without ever being exposed to "alien" ideas or persons.

In fact, isolating people in relatively homogeneous groups as a means of reinforcing their goals is an extremely important general phenomenon. It is related to the class structure of suburbs, racial integration in schools, and cold war travel barriers.

BUREAUCRATIC IDEOLOGIES

Why Bureaus Develop Ideologies

In an earlier work, we defined an ideology as a "verbal image of the good society and of the chief means of constructing such a society."* Officials motivated in accordance with our hypotheses usually create ideologies for their bureaus, even if they have no personal desire to implement any particular version of the good society. However, such ideologies concern only those portions of society directly relevant to the social functions of these bureaus. We therefore define a bureaucratic ideology as "a verbal image of that portion of the good society relevant to the functions of the particular bureau concerned, plus the chief means of constructing that portion."

Ideologies are developed by top-level officials because they are efficient means of communicating with certain groups both inside and outside their bureaus. Each bureau can exist only so long as it can persuade external agents with control over resources that it deserves

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continued funds even though it does not provide services directly to those agents.

The most logical way to do this is to show them how the bureau's policies and actions benefit them or others they value. However, such demonstrations usually require detailed examination of environmental conditions, bureau behavior, possible alternative actions, and so on. Yet many people whom a bureau needs to persuade have neither the time nor the interest necessary to absorb such details, especially if their activities involve many bureaus. From their point of view, it is irrational to become well-informed about bureau activities.

Faced by a pressing need to communicate with people who will not listen to details, officials must resort to short-cut methods. They invent and develop bureaucratic ideologies, that is, images of each bureau's aspirations stated in terms of ultimate policy objectives, and images of relevant portions of the good society. Then the other people concerned (such as Congressmen, voters, or low-level members of their own bureaus) can use these ideologies in decision making without paying irrationally high information costs. Thus ideologies increase the probability that key decision makers will actually take account of the bureau's functions in their policy choices.

Some General Characteristics of Bureau Ideologies

Because bureau ideologies are created by top-level officials to serve their own interests, all such ideologies exhibit at least seven common characteristics. First, each emphasizes the positive benefits that can accrue from bureau action and de-emphasizes the costs of achieving them.

Second, any changes indicated by a bureau's ideology will almost invariably involve maintaining or expanding its activities rather than contracting them. These two traits occur because top-level officials wish to justify continuing the bureau at its present size (if it is dominated by conservers) or at a larger size (if it is dominated by advocates, zealots, or climbers).
Third, the precision with which the bureau's ideology defines its proper sphere of activity will depend upon whether its sphere is being invaded by others or extended through functional imperialism by the bureau itself. When other agencies are trying to capture the bureau's functions, its ideology will demarcate the borders of its proper activities quite sharply. This implies that the other agents are beyond the legitimate bounds of their logical functions. Conversely, when the bureau itself seeks to invade the territory of other agencies, its ideology will be quite vague about the location of the borders between its proper functions and those of the other agencies.

Fourth, each bureau's ideology will emphasize the benefits it provides for society as a whole, or for large numbers of citizens, rather than those provided for special interests. This will be true even when the bureau's actual base of support consists mainly of small special interest groups. These groups are well aware of how the bureau benefits them. But its ideology is designed primarily to evoke support from persons who do not have detailed information about its benefits. Moreover, emphasizing special interest benefits would weaken the credibility of the bureau's claim that its activities should be continued or expanded so that the public at large (which pays the bill) can receive worthwhile returns.

Fifth, each bureau's ideology stresses both the desirability and the high present state of its efficiency and centralized coordination. Efficiency is widely accepted as a desirable quality; hence emphasizing it makes the bureau seem more worthy of support. Also, insofar as an ideology actually improves efficiency and centralized control within the bureau, it will increase the relative power of the bureau's top-level officials vis-à-vis lower-level officials. However, organizations designed to encourage innovation (such as research laboratories) require a relatively permissive atmosphere. Hence their ideologies stress the personal freedom of their members rather than centralized control and efficiency.
Sixth, although bureau ideologies are more specific and elaborate than party ideologies, they still must remain rather general. Inclusion of detailed policies would destroy their ability to act as inexpensive means of thinking about the bureau's activities.

Seventh, every bureau's ideology emphasizes its achievements and future capabilities and plays down its failures and inabilities. The resulting overly sanguine view of the bureau's competence is inevitable, since its ideology is designed by officials responsible for its behavior, not by objective observers.

These traits indicate that a bureau's ideology does not accurately reflect what the bureau actually does. It is an idealized version of what the bureau's top leaders would like it do do -- tailored to act as a public relations vehicle for them. However, if a bureau's ideology is completely unrelated to its behavior, then those whom its leaders wish to influence will eventually learn that the ideology is an unreliable input for their decisionmaking. Consequently, the bureau's behavior must demonstrate at least a tendency to move in the directions indicated by its ideology. This can be done either by shaping its behavior to fit its ideology, or by shifting its ideology to be consistent with its behavior, or both. Since an ideology is essentially verbal, it is normally much easier to change a bureau's ideology than to shift its behavior. Still, even changing a verbal concept can be difficult if that concept has been used as a rallying point for bureau support.
IX. INCREASING BUREAUCRATIZATION AND INDIVIDUAL FREEDOM

INTRODUCTION

There is a widespread belief that U.S. society is becoming more and more "bureaucratized" because of the rising prominence of large organizations. This trend is universally regarded as undesirable. Its stronger critics think that the average individual will become enmeshed in a tightening net of rules and regulations formulated by huge "faceless" organizations. They also fear that society will become dominated by empire-building, wasteful spending, egregious blunders, miles of red tape, and other horrors they attribute to bureaucracy.

In this section, we will assume that bureaucratization is indeed increasing, although the evidence to that effect is not fully conclusive. We will focus on what might be causing this trend and what its likely impact will be upon individual freedom and the efficiency of social action.

SOME POSSIBLE CAUSES OF INCREASING BUREAUCRATIZATION

The four most likely causes of increasing bureaucratization are all connected with the tendencies of modern societies to grow larger in total population, more complex in specialization, more sophisticated in technology, more urbanized, and wealthier per capita as time passes.

First, as societies become more complex, they generate more conflicts requiring settlement through nonmarket action, particularly government action. Second, the growing population and wealth of modern societies tends to increase the average size of many organizations therein, and large size is a necessary characteristic of bureaucracy. Third, technological change has encouraged a greater mechanization of market-oriented jobs than nonmarket-oriented ones, thereby increasing the proportion of bureaucrats in the employed labor force. Fourth, as societies grow wealthier, their members prefer a higher proportion of those goods best furnished by nonmarket-oriented organizations.
HAS THERE BEEN AN "EXCESSIVE" EXPANSION OF BUREAUS?

Have these forces underlying the absolute and relative growth of bureaus caused them to grow "excessively" in number, size, or total influence in society? Clearly, before this question can be answered, the concept of "excessiveness" must be defined unequivocally. Yet this is impossible. Since the value of a bureau's output cannot be determined in a free market, it must be determined in some other way. With different values existing in society, bureau outputs worthless to some people may be extremely beneficial to others. This makes it almost impossible to determine their true value. Hence the above question is essentially ethical or political in nature, and cannot be answered scientifically.

This does not mean that no scientific measures of efficiency can ever be applied to the operations of individual bureaus. Certain ways of doing things can definitely be proven superior to others. Furthermore, we can intuitively postulate that the total amount of waste and inefficiency in society is likely to rise as bureaucracy becomes more prominent. This seems probable because true waste is so much harder to define and detect in bureaus than in private firms. Also, there are no automatic mechanisms for limiting it in the former as there are in the latter. This admittedly untestable conclusion implies that society should arrange to have services produced by market-oriented firms rather than bureaus whenever possible, other things being equal. However, it does not imply that recent trends toward bureaucratization of society are "excessive" or will become so in the future.

Bureaus cannot expand without additional resources, which they must obtain either through voluntary contributions or from some government allocation agency. But in a democratic society, these external agents will not give a bureau resources unless it produces outputs of commensurate value to them (assuming the bureau is not a military organization willing to coerce them). Hence, in a gross sense, bureaus do engage in voluntary quid pro quo transactions with the agents that support them. Consequently, we may presume that these institutions do not believe the overall bureaucratization of society has been excessive, or they would not continue to support it.
This conclusion is valid even if every citizen believes that a majority of all government bureaucratic effort is wasteful. Each citizen can easily identify many government bureaus whose costs to him outweigh the benefits they provide him. But the benefits he receives from certain other bureaus far outweigh their costs to him. In most cases, each bureau provides such a consumer surplus to a minority of citizens. These beneficiaries must form coalitions with the supporters of other minority-serving bureaus in order to obtain such large benefits. As long as the total utility received by most citizens in this "log-rolling" process exceeds the total cost they pay, they tacitly support the resulting expansion of bureaucracy -- even though they may overtly complain loudly about waste in those bureaus that do not benefit them directly.

If the bureaucracy as a whole were really excessive in size, then some political party would advocate drastic reductions affecting a whole spectrum of minority-serving bureaus. This party would receive the vote of every citizen who believed he was paying more to support wasteful bureaus than he was receiving from those minority-serving bureaus that benefited him directly. If such citizens were in the majority, the bureau-wrecking party would be elected, and would presumably slash the size of the bureaucracy as a whole.*

This conclusion does not apply in nondemocratic societies. The citizens thereof are never given a chance to vote on whether to engage in wholesale bureau reduction. Moreover, the reigning group controls the government and probably indulges in the inherent tendency of bureaus to expand. Hence it is likely that the government bureaucracy is actually "excessive" in all nondemocratic societies.

INDIVIDUAL FREEDOM AND THE GROWTH OF BUREAUCRACY

Comparing present life in the United States with that of past decades, we can hardly doubt that bureaus exert a growing absolute level of control over individuals. Everyone finds himself forced to fill out more forms, pay more taxes to support bureaus, obey more bureaucratic rules, and otherwise interact with more officials than ever before. Nevertheless, it would be a gross error to conclude from this that bureaus have reduced individual freedom of choice. The word freedom has two very different meanings: power of choice, and absence of restraint. It is true that bureaus place far more restraints on the average man today than they did formerly. However, today's citizen also enjoys a much greater range in choice of possible behavior than his predecessors did. Moreover, the number of behavioral options open to him is growing every year through such changes as supersonic aircraft, new medicines, rising real income, longer vacations, higher pensions, and a host of others.

This analysis suggests four significant conclusions. First, the average individual's overall freedom of choice is actually expanding rapidly.

Second, increased bureaucratic regulations are actually one of the causes of his greater freedom. The forces generating ever-wider options are the same ones that generate the need for more bureaucratic rules. Without increased bureau regulation, such forces as technological change, urbanization, and more intensive division of labor would either be impossible or would lead to greater social disorganization and a narrower range of choice for the individual. Thus, greater bureaucratization is one of the inherent costs of greater freedom of choice, and could not be abolished without reducing that freedom.

Third, it is true that bureaus often place more restraints upon individuals than are necessary to accomplish their social functions. Thus, even though the total effect of increased bureaucratization is an expansion of individual choice, the marginal effect of some regulations is an unnecessary restriction of choice designed mainly to benefit the bureau's members.
Fourth, it is conceivable that bureaucratization might someday become so extensive as to result in an overall reduction of freedom of choice. This could happen in two ways. First, if bureaus took over nearly all economic production and operated it without any market orientation, they might reduce total output significantly below what it would be under private market-oriented management. Or they might alter the composition of final output so that it did not correspond very closely to what consumers really desired (as in the Soviet Union). Second, if government bureaus controlled most of the country's activity and used a centralized personnel-control system, then occupational choices might be severely restricted for individuals considered undesirable by any one bureau. Even if no such system existed, persons with certain technical specialties might find their job choices limited if a single government bureau controlled all positions requiring their skills. Whenever men know their livelihood is permanently dependent upon a single employer, their willingness to voice opinions or undertake acts disapproved by that employer drops sharply. Hence the myriad-firm private economic sector plays a crucial political role as a source of multiple occupational choices as well as a crucial economic role as a source of market-oriented production.

These freedom-reducing results of over-bureaucratization already exist in some nations. However, we do not believe they are very probable in the United States in the near future, except in a few occupations monopolized by individual bureaus. In the foreseeable future then, we believe the growth of bureaus in the United States will continue to represent the interaction of a long-run trend toward increasing individual choice, and short-run maneuvers by individual bureaucrats producing unnecessary restraints and inefficiencies.