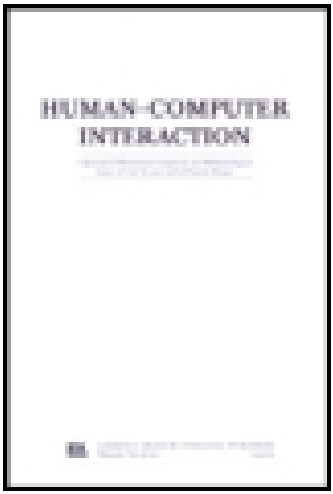

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How Decisions Happen in Organizations

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ABSTRACT

This essay is a story about how we might think about decisions and decision making in organizations. The story is divided into three major parts. The first part is based on a vision of decisions as resulting from intendedly rational choice. Such a vision is the dominant portrayal of decisions in social science. This vision of decisions is elaborated by considering developments associated with problems of uncertainty, ambiguity, risk preference, and conflict. The second part of the story is based on a vision of decisions as driven by a logic of appropriateness implemented through a structure of organizational rules and practices, not by a logic of consequence. The discussion of rules and rule following is extended by considering the ways in which rules of behavior evolve through experience, selection, and diffusion. The third part of the story examines ideas about decision making that challenge standard ideas of decision altogether, visions that picture the outcomes of decisions as artifactual rather than as central to understanding decision making. These visions are exemplified by discussions of networks, temporal orders, symbols, and the development of meaning.

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CONTENTS

1. INTRODUCTION

This is an essay on decision-making behavior in organizations. A large part of contemporary research on organizational decision making is concerned with how decisions should be made. Researchers seek techniques for improving the rationality of actions by organizational decision makers. However, this essay is just incidentally concerned with how decisions should be made. I focus on how decisions actually happen in organizations and how we might talk about decision processes.

The story begins wtih the observation that research on organizations has identified numerous limits to rationality in decision making. Insofar as decision making can be understood as stemming from prior preferences and expectations about consequences, it is bounded by significant individual and organizational constraints on finding and implementing an optimal solution.

The story continues by considering some ways in the idea of consequential, preference-driven choice as an explanation of decision making may be more deeply flawed. Recent studies of organizations indicate that decisions often stem from a logic of appropriateness rather than a logic of consequentiality and that decision-making processes may often be better understood in terms

of other consequences than their outcomes. To say that decisions "happen" instead of "are made" is to suggest that the organizational processes that result in decisions may be poorly comprehended by a conception of intentional, future-oriented choice.

2. DECISIONS AS INTENDEDLY RATIONAL CHOICES

2.1. Decision Making as Intentional, Consequential Action

Virtually all of modern economics and large parts of the rest of social science, as well as the applied fields that build on them, embrace the idea that human action is the result of human choice. Standard theories of choice view decision making as intentional, consequential action based on four things:

- A knowledge of alternatives. Decision makers have a set of alternatives for action.
- A knowledge of consequences. Decision makers know the consequences of alternative actions, at least up to a probability distribution.
- A consistent preference ordering. Decision makers have consistent values by which alternative consequences of action can be compared in terms of their subjective value.
- A decision rule. Decision makers have rules by which they select a single alternative of action on the basis of its consequences for the preferences.

In the most familiar form of the model, we assume that all alternatives, the probability distribution of consequences conditional on each alternative, and the subjective value of each possible consequence are known; we assume a choice is made by selecting the alternative with the highest expected value. This emphasis on expected value may be moderated by a risk preference (i.e., some value associated with the variability of the outcome distribution).

The durability of this structure is impressive; it is also understandable. Simple rational-choice models capture some truth. Demand curves for consumer products generally have negative slopes, and labor unions usually are more resistant to wage cuts than to wage increases. Moreover, the core ideas are flexible. When the model does not fit, it is often possible to reinterpret preferences or knowledge and preserve the axioms. Finally, choice is a faith as well as a theory: It is linked to the ideologies of the Enlightenment. Ideas of willful, rational choice are the standard terms of discourse for answering the generic questions: Why did it happen? Why did you do it?

These basic ideas of anticipatory, consequential choice have been considerably elaborated over the past 30 years, primarily through the discovery of numerous ways in which actual decision making deviates from such a framework.

2.2. Uncertainty and Ambiguity

The earliest challenge to the simple story of rational choice questioned the information assumptions of the theory. Theories of rational choice presume two guesses about the future: a guess about the future consequences of current actions and a guess about future sentiments with respect to those consequences. Classical versions of theories of rational choice assumed that both guesses were improbably precise. Actual decision situations often seem to make each of them problematic.

The first guess—the uncertain future consequences of current action—has long attracted attention from both students of decision making and choice theorists. Even if decisions are made in ways that are generally consistent with choice theories (i.e., even if estimates of the consequences of alternative actions are formed and action is intendedly rational), there are informational and computational limits on human choice. There are limits on (a) the number of alternatives considered and (b) the amount and accuracy of information that is available.

The core ideas are elementary and familiar by now. Rather than all alternatives and all information about consequences being known, information has to be discovered through search. Attention is a scarce resource; theories of limited rationality are, for the most part, theories of the allocation of attention. Search is stimulated by a failure to achieve a goal, and it continues until it reveals an alternative that is good enough to satisfy existing, evoked goals. New alternatives are sought in the neighborhood of old ones. Failure focuses search on the problem of attaining goals that have been violated; success allows search resources to move to other domains.

Theories of limited rationality are also theories of slack (i.e., unexploited opportunities, undiscovered economies, waste, etc.). As long as performance exceeds the goal, search for new alternatives is modest, slack accumulates, and aspirations increase. When performance falls below the goal, search is stimulated, slack is decreased, and aspirations decrease.

This classic-control system does two things to keep performance and goals close. First, it adapts goals to performance: Decision makers learn what they should expect. At the same time, it adapts performance to goals by increasing search and decreasing slack in the face of failure and by decreasing search and increasing slack when faced with success. Such a description provides a partial understanding of the resilience of human institutions in the face of adversity.

Partly as a result of such observations by students of organizational decision making, theories of choice have placed considerable emphasis on ideas of search and attention, and these efforts—in combination with concern for the problems of incomplete information and transaction costs—have turned substantial parts of recent theories of choice into theories of information and attention, that is, into theories of the first guess.

The second guess—the uncertain future preferences for the consequences of current actions—has been less considered, yet poses, if anything, greater difficulties. Consider the following properties of preferences as they appear in standard theories of choice:

- Preferences are subjectively absolute. Theories of choice assume that decisions are made in terms of preferences, but they recognize neither discriminations among alternative preferences nor the possibility that a decision maker might come to view his or her own preferences and actions based on them as morally distressing.
- Preferences are stable. In rational theories of decision making, current action is normally assumed to be taken in terms of current preferences. The implicit assumption is that preferences will be unchanged when the future outcomes of current actions are realized.
- Preferences are consistent and precise. Theories of choice allow inconsistency or ambiguity in preferences only insofar as they do not affect choice (i.e., only insofar as they are made irrelevant by scarcity or the specification of tradeoffs).
- Preferences are exogenous. Theories of choice presume that preferences, by whatever process they may be created, are not affected by the choices they control.

Not always, but often enough to be troublesome, each of these features of preferences seems inconsistent with observations of decision making by individuals and organizations. Individuals commonly find it possible to express both a preference for something and a recognition that the preference is repugnant to moral standards they accept. Choices are often made without much regard for preferences. Human decision makers routinely ignore their own, fully conscious preferences in making decisions. They follow rules, traditions, hunches, cultural norms, and the advice or action of others. Preferences are inconsistent and change over time in such a way that predicting future preferences is often difficult. Individuals and organizations are aware of the extent to which some of their preferences conflict with others; yet they do little to resolve those inconsistencies. Many preferences are stated in forms that lack precision. Although preferences are used to choose among

actions, it is also often true that actions and experience with their consequences affect preferences concurrently.

Such differences between preferences as they are portrayed in theories of choice and preferences as they appear in actual decision making can be interpreted as reflecting some ordinary behavioral wisdom that is not always accommodated within the theory. Human beings seem to believe that the theory of choice exaggerates the relative power of a choice based on two guesses compared with a choice that is itself a guess. They seem to recognize the extent to which preferences are constructed, or developed, through a confrontation between preferences and actions that are inconsistent with them and among conflicting preferences. Though they seek some consistency, they appear to see inconsistency as normal and necessary aspects of the development and clarification of preferences. They sometimes do something for no better reason than that they must or that someone else is doing it or that they "feel" like doing it.

Human beings act as though they recognize the many ways in which talk and action are different domains and the ways in which they serve each other by their inconsistencies. They accept a degree of personal and social wisdom in simple hypocrisy; they also seem to recognize the political nature of argumentation more clearly and more personally than the theory of choice does. They are unwilling to gamble that God made those people who are skilled at rational argumentation uniquely virtuous. They protect themselves and others from cleverness by obscuring their preferences.

Uncertainty about future consequences (the first guess) and human limitations in dealing with them lead decision makers, intelligently, to techniques of limited rationality. But what can a sensible decision maker using a sensible theory of decision making learn from observations of preference ambiguity, beyond a reiteration of the importance of clarifying goals and an appreciation of possible human limits in achieving preference orderliness?

To begin with, we probably need to reexamine the function of decision. One of the primary ways in which individuals and organizations develop goals is by interpreting the actions they take, and one feature of good action is that it leads to the development of new preferences. As a result, a manager might well view decision making somewhat less as a process of deduction and somewhat more as a process of gently upsetting preconceptions of what is going on. In these terms, management requires tolerance of the idea that the meaning of yesterday's action will be discovered in the experiences and interpretations of today. Along the way, we need to accept the notion that decisions require elements of playfulness. Intelligent choice needs a dialectic between reason and foolishness, between doing things for no "good" reason and discovering the reasons. Because the theory and ideology of choice are

primarily concerned with strengthening reason, a decision maker is likely to overlook the importance of play.

2.3. Risk Taking

Such ideas are closely connected to the idea of risk taking in organizations, and understanding risk taking is a major concern of recent studies of decision making. It is clear that some organizations suffer because they (or other similar organizations) take too few risks: They try to avoid alternatives with high variability in their payoffs. It is also clear that some organizations suffer from taking too great risks.

In classical theories of choice, risk preference is normally treated as a fixed trait of a decision maker or organization. In this tradition, some individuals and organizations are usually described as risk averse and others as risk seeking. A risk-averse individual or organization prefers low-variance alternatives. A risk-seeking individual or organization prefers high-variance alternatives. Empirical research on risk taking indicates that such individual and organizational differences exist, but they account for much less of the variation in risk taking than do situational factors. Preferences for variability are not constant but are responsive to changing fortune.

The mechanisms influencing risk taking are familiar to empirical students of decision making, but they yield a somewhat complicated picture:[1]

- Risk taking and danger. Risk taking appears to be affected by threats to survival. Reported effects appear, however, to be contradictory. On the one hand, increasing threats to survival have been observed to stimulate greater and greater risk taking, presumably in an effort to escape the threats. On the other hand, danger has been portrayed as leading to rigidity, to extreme forms of risk aversion.
- Risk taking and slack. Risk taking appears to be affected by the presence of resources in excess of current aspirations. When slack is plentiful, it tends to lead to relaxation of controls, reduced fears of failure, institutionalized innovation, and increased experimentation, thus to relatively high levels of risk taking. When slack is small (or negative), tight controls and efforts to improve productive efficiency at known technologies and procedures are seen as producing relatively low levels of risk taking.

[1] This summary is taken from a paper by James G. March and Zur Shapira entitled "Variable Risk Preferences and the Focus of Attention," forthcoming in *Psychological Review*.

- Risk taking in the neighborhood of an aspiration level. The idea of an aspiration level reference point is central to modern theories of individual and organizational choice. When they orient to a target and are close to it, individuals, organizations, societies, and graniverous birds all appear to be risk seeking below the target and risk averse above it.

- Risk taking and the assimilation of resources. Risk takers seem to be sensitive to whether they interpret resources that they risk as "their resources." Greater risks are taken with new resources than with resources held for a longer time. Among successful managers, those who are older and have longer tenure take fewer risks than do those who are younger and have shorter tenure. Managers appear to be more inclined to take risks with what they define as an organization's resources than with their own. Experimental subjects appear to be more inclined to take risks with what they define as the "house's" money than with their own.

- Risk taking and self-confidence. Successful risk takers seem to accept some mixture of a belief that their past successes are attributable to their special abilities, a belief that nature is favorable to them, and a belief that they can beat the odds. This tendency to attribute favorable outcomes to enduring features of the situation rather than good luck has been observed in experimental subjects, in athletes, and in organizations; this tendency leads to a positive bias in anticipations (i.e., to overly bold forecasts).

These results suggest that variable risk-taking behavior can be understood. They have become the basis of several models of variable risk preferences in individuals and organizations, as well as of risk-taking populations in competitive situations. At the same time, however, the determination of an optimal level of risk taking remains elusive.

2.4. Conflict Among Rational Actors

Although they have been influenced by studies of organizations, the theories of rational choice just described, including theories of limited rationality, rationality under conditions of ambiguity, and risk taking, were all basically developed as theories of decision making by individuals or by organizations acting as though they were individuals. As numerous observers have noted, the primary difficulty with describing organizational decision making by a theory of individual decision making is that organizations are not individuals, but collections of individuals. In fact, as one of my colleagues

pointed out, describing individuals as *individuals* is often a mistake if we wish to understand their choice behavior. That is, individuals—like organizations—are filled with unreconciled objectives.

In standard choice theory, conflict among objectives is treated as a problem of assessing tradeoffs, establishing marginal rates of substitution among goods. The process within individuals is mediated by an explicit or implicit price system. In classical theories of the firm, for example, an organization is transformed into an individual by assuming that markets (particularly markets for labor, capital, and products) convert conflicting demands into prices. In this perspective, entrepreneurs are imagined to impose their goals on an organization in exchange for mutually satisfactory wages paid to workers, rent paid to capital, and product characteristics paid to customers.

Such a process can be treated as yielding a series of contracts by which participants divide decision making into two stages. In the first stage, each individual negotiates the best possible terms for agreeing to pursue another's preferences or securing such an agreement from another. In the second stage, individuals execute the contracts. In more sophisticated versions, of course, the contracts are designed so that the terms negotiated at the first stage are self-enforcing at the second. This two-stage vision is characteristic of much of the modern work in agency theory and applications of game theory to economic behavior, as well as classical administrative theory.

Seeing participants as having conflicting objectives is also a basic feature of political visions of decision making. In political treatments, however, the emphasis is less on designing a system of contracts between principals and agents, or partners, than it is on understanding a political process that allows decisions to happen without necessarily resolving conflicts among the parties. The usual metaphors are those of force or power, negotiation, exchange, and alliance. Although political models for choice under conflict are not as precisely specified as game-theoretic models, they suggest a few elementary rules for operating rationally in a political system. For example, in an exchange process, power comes either from having things that others want or from wanting things that others do not. Thus, it comes from the possession of resources and from the idiosyncrasy of desires. In a preference pooling process, power comes from having resources and from having preferences near the center of society's preferences.

Such features of organizational decision making arise from one very simple modification of classical theories of choice: seeing decisions as being based on unreconciled conflict in preferences. It is hard to avoid the obvious fact that such a description comes closer to the truth in many situations than does one in which we assume a single, consistent preference function.

Somewhat more problematic is the second feature of much of the behavioral study of decision making under conflict—the tendency for the political aspects of decision making to be interminable. If it were possible to imagine

a two-step process in which first we establish (through side-payments and formation of coalitions) a set of joint preferences acceptable to a winning coalition and then we act, we could treat the first stage as politics and the second stage as economics. Such a division has often been tempting (e.g., the distinction between policymakers and administration), but it rarely has been satisfactory as a description of decision making. The decision processes we observe seem to be infused with strategic actions and politics at every level and every point.

The process can be illustrated by the pervasive ways strategic action affects the uses of information in organizations. Because information may be a basis of decision, it becomes an instrument of strategic actors. Information is managed, and communication is shaped by an awareness of its consequences for decisions and the consequences of decisions for self-interest. For example, any system of controls or evaluation involves a system of accounts, and any system of accounts is a road map to cheating on the system. As a result, things like accounting can be seen as an infinite game between accountants and those being accounted in which advantage lies with relatively full-time players having direct personal interest in the outcomes.

In general, the machinations of strategic actors seem likely to produce a complicated concatenation of maneuver in which information has considerably less value than might be expected if strategic considerations were not so pervasive. That this process does not completely destroy meaning in organizational communication is a considerable testimony to the importance of trust in understanding organizational relations. In a conflict system, alliances involve trades across time. Rarely can the terms of trade be specified with precision. It is not a world of precise contracts but of informal, loose understandings and expectations. As a result, decision making often emphasizes trust and loyalty, in parallel with a widespread belief that trust and loyalty are hard to find and sustain, and power comes from being thought to be trustworthy. Modern research on games of repeated interaction and iterated calculation among rational actors has called into question some of the most often-repeated recommendations for cleverness in bargaining and has moved trust and reputation to a central position in theories of rational bargaining.

3. DECISIONS AS RULE-BASED ACTION

3.1. Rules and the Logic of Appropriateness

The story thus far has been primarily a story of decision making that is consequential and—within the limits imposed by information constraints and conflict—intendedly rational. Theories of limited rationality are, for the most

part, theories of rational decision making by organizations with consistent preferences. Theories of conflict in organizational decision making are, for the most part, also rational theories. They add the complication of multiple actors, each rationally pursuing self-interested objectives and constrained or facilitated by the similar rational pursuit of self-interested objectives by others.

The next part of the story is based on the observation that such theories of rational, anticipatory, calculated, consequential action underestimate both the pervasiveness and intelligence of an alternative decision logic—the logic of appropriateness, obligation, duty, and rules. Much of the decision-making behavior we observe reflects the routine way in which people do what they are supposed to do. For example, most of the time, the majority of people in organizations follow rules, even when it is not obviously in their self-interest to do so. Much of the behavior in an organization is specified by standard operating procedures, professional standards, cultural norms, and institutional structures. The terminology is one of duties and roles rather than anticipatory, consequential choice.

Thus, actual decisions in organizations, as in individuals, often involve finding "appropriate" rules to follow. The logic of appropriateness differs from the logic of consequence. Rather than evaluating alternatives in terms of the values of their consequences, rules of appropriateness match situations and identities. Thus, they ask:

- Situation. How do I define what kind of a situation this is?
- Identity. What kind of a person am I?
- Matching. What is appropriate for a person like me in a situation such as this?

Such rule following is not willful in the normal sense. It does not stem from the pursuit of interests and the future calculation of future consequences of current choices. Rather, it comes from matching a changing (and often ambiguous) set of contingent rules to a changing (and often ambiguous) set of situations.

3.2. The Development of Rules

Rule following can be viewed as an implicit agreement to act appropriately in return for being treated appropriately. The existence and persistence of rules, combined with their relative independence of idiosyncratic concerns of individuals, make it possible for societies and organizations to function reasonably reliably. Such a contractual view has led game theorists to an

interest in interpreting norms and institutions as meta-game agreements. To some extent there certainly appear to be such implicit "contracts," but socialization into rules and their appropriateness is ordinarily not a case of willful entering into an explicit contract. It is a set of understandings of the nature of things, of self-conceptions, and of images of proper behavior.

Those understandings evolve over time, and current rules store information generated by previous experience and analysis in a form not easily retrieved for systematic current evaluation. Seeing rules as coded information has led several recent studies of organizational decision making to research on the ways in which rules change and develop and to questions of the long-run intelligence of rule following, thus to some classical puzzles of culture, history, and population biology.

Three major processes by which rules develop are commonly considered. First, we can imagine an organization or society learning from its experience, modifying the rules for action incrementally on the basis of feedback from the environment. Such experiential learning is often adaptively rational. That is, it allows organizations to find good, even optimal, rules for many choices they are likely to face. However, learning from experience can produce surprises. Learning can be superstitious, and it can lead to local optima that are quite distant from the global optimum. If goals adapt rapidly to experience, outcomes that are good may be interpreted as failures, and outcomes that are poor may be interpreted as successes. If technological strategies are learned quickly relative to the development of competence, an organization can easily adopt technologies that are intelligent given the existing levels of competence, but may fail to invest in enough experience with a suboptimal technology to discover that it would become the dominant choice with additional competence. Such anomalies are frequent and important.

Second, we can see action as driven by an evolving collection of invariant rules. As in the case of experiential learning, choice is dependent on history, but the mechanism is different. Individual rules are invariant, but the population of rules changes over time through differential survival and extension. Evolutionary arguments about the development of decision rules were originally made to justify assuming that decision makers maximize expected utility. The argument was simple: Competition for scarce resources resulted in differential survival of decision makers, depending on whether the rules produced decisions that were, in fact, optimal. Thus, we could assume that surviving rules (whatever their apparent character) were optimal. Although the argument has a certain charm to it, most knowledgeable students of selection models have suggested that selection will not reliably guarantee a population of rules that is optimal at any arbitrary point in time.

Third, decision making can be seen as reflecting rules that spread through a group of organizations like fads or measles. Decision makers copy each other. Imitation is a common feature of ordinary organizational adaptation.

If we want to account for the adoption of accounting conventions, for example, we normally would look to ways in which standard accounting procedures diffuse through a population of accountants. We would observe that individual accountants rather quickly adopt those rules of good practice that are certified by professional associations and implemented by opinion leaders. Like learning and selection, imitation often makes sense but not always. The processes by which knowledge diffuses and the processes by which fads diffuse are remarkably similar.

The intelligence of rules depends on a fairly subtle intermeshing of rates of change, consistency, and foolishness. Intelligence is not guaranteed. At the least, it seems to require occasional deviation from the rules, some general consistency between adaptation rates and environmental rates of change, and a reasonable likelihood that networks of imitation are organized in a manner that allows intelligent action to be diffused somewhat more rapidly and more extensively than silliness.

4. DECISIONS AS ARTIFACTS

4.1. Reconsidering the Centrality of Choice

In the story thus far, it is imagined that decisions are made and decision making is concerned with making decisions. Theories that see action as intendedly rational or as rule based tend to treat the outcomes of decision processes as central to their organization and interpretation. They see the processes as orderly exercises of organizational coherence. Classic ideas of order in organizations involve two closely related concepts. The first is that events and activities can be arranged in chains of means and ends, causes and effects. We associate action with its consequences; we participate in making decisions in order to produce intended outcomes. Thus, consequential relevance arranges the relation between solutions and problems, as well as the participation of decision makers. The second concept is that organizations are hierarchies in which higher levels control lower levels, and policies control implementation.

Such portrayals seem, however, to underestimate the confusion and complexity surrounding actual decision making. The observations are familiar. Many things are happening at once; technologies are changing and poorly understood; alliances, preferences, and perceptions are changing; problems, solutions, opportunities, ideas, people, and outcomes are mixed together in ways that make their interpretation uncertain and their connections unclear; actions in one part of an organization appear to be only loosely coupled to actions in another; solutions seem to have only modest connection to problems; policies are not implemented; decision makers seem to wander in

and out of decision arenas. On the basis of such observations, Pierre Romelaer and I (see March & Romelaer, 1976, p. 276) once described organizational decision processes as funny soccer games:

> Consider a round, sloped, multi-goal field on which individuals play soccer. Many different people [but not everyone] can join the game [or leave it] at different times. Some people can throw balls into the game or remove them. While they are in the game, individuals try to kick whatever ball comes near them in the direction of goals they like and away from goals they wish to avoid.

Thus, the story moves to a conception of decisions as artifacts, as being not as central to an understanding of decision making (and vice versa) as might be expected. Decision making is a ritual activity closely linked to central Western ideologies of rationality. Symbolic and ritual aspects are often major factors. In this spirit, recent research on organizations has emphasized concepts of decisions and decision making that emphasize overlapping networks of linkages within and among organizations rather than coherent hierarchies, temporal orders rather than causal orders, loose coupling rather than tight coupling between decisions and decision making, and the role of decisions and decision making in the development of meaning and interpretations.

4.2. Networks

One of the oldest observations about organizations is that we tend to describe them as hierarchies, but they tend to function as less hierarchical networks of relations. Recent research on decision making in organizations has considered both sides of this anomaly. On the one hand, students of organizational networks, particularly feminist scholars, have asked why the hierarchical description persists in the face of persistent discomfirmation. Their general answer is that the hierarchies fit a mostly male world view of human order as organized around relations of domination and subordination, that such a world view tends to create real and imagined hierarchies in order to provide opportunities for defining domination and subordination.

At the same time, students of organizational networks have tried to develop more powerful instruments for analyzing the network structure of complex decision systems. These techniques, which marry traditional technologies of sociometric diagrams to modern computational capabilities of computers, have reinforced earlier observations that standard organization charts are inadequate and misleading representations of organizations, but they have not, as yet, yielded an alternative conception of the basis for network

structures. The techniques suggest, however, that a simple rationalization of organizational decisions is unlikely to be possible. Decisions arise from a complex interaction within a relatively elaborate ecological structure.

4.3. Temporal Orders

Observations of the disorderliness in organizational decision making have led some people to argue that there is very little order to it; it is best described as bedlam. A more common position, however, is that the ways in which organizations bring order to disorder is less hierarchical and less means-ends chains than is anticipated by conventional theories. There is order, but it is not conventional order. In particular, it is argued that any decision process involves a collection of individuals and groups that is simultaneously involved in other things. Understanding decisions in one arena requires an understanding of how those decisions fit into the lives of participants.

From this point of view, the loose coupling that we observe in a specific decision situation is a consequence of our theories. The apparent confusion results from a shifting and intermeshing of the demands on the attention and lives of the whole array of actors. It is possible to see any particular decision as the consequence of combining different moments of different lives. A more limited version of the same fundamental idea focuses on the allocation of attention. The idea is simple. Individuals attend to some things and, thus, do not attend to others. The attention devoted to a particular decision by a particular potential participant depends on alternative claims on attention.

Because those alternative claims are not homogeneous across participants and change over time, the attention any particular decision receives can be both quite unstable and remarkably independent of the properties of the decision. The same decision will attract much attention or little attention, depending on the other things that possible participants might be doing. The apparently erratic character of decision making is made somewhat more explicable by placing it in this context of multiple, changing claims on attention.

Such ideas have been generalized to deal with flows of solutions and problems, as well as participants in what has come to be called a *garbage-can* decision process. In a garbage-can process, it is assumed that there are exogenous, time-dependent arrivals of choice opportunities, problems, solutions, and decision makers. Problems and solutions are attached to choices, and thus to each other, not because of their means-ends linkage but because of their temporal proximity. The logic of the ordering is temporal rather than hierarchical or consequential. At the limit, for example, almost any solution can be associated with almost any problem—provided they are contemporaries.

4.4. Symbols and the Construction of Meaning

Those who work with theories of choice usually assume that a decision process is to be understood in terms of its outcome, that decision makers enter the process in order to affect outcomes, and that the point of life is choice. The emphasis is instrumental; the central conceit is the notion of decision significance. Descriptions of decision arenas often seem to make little sense in such terms. Information that is ostensibly gathered for decisions is often ignored. Contentiousness of the policies of an organization is often followed by apparent indifference about their implementation. Individuals fight for the right to participate in decision processes, but then do not exercise the right. Studies of managers consistently indicate that very little time is spent making decisions. Rather, managers seem to spend time meeting people and executing managerial performances.

These anomalous observations appear to reflect, at least in part, the extent to which decision processes are only partly—and often almost incidentally—concerned with making decisions. A choice process provides:

- An occasion for defining virtue and truth and for discovering or interpreting what is happening, what decision makers have been doing, and what justifies their actions.
- An occasion for distributing glory and blame for what has happened and for exercising, challenging, or reaffirming friendship or trust relationships, antagonisms, or power or status relationships.
- An occasion for socialization and for educating the young.
- An occasion for having a good time and for enjoying the pleasures connected with taking part in a choice situation.

In short, decision making is an arena for symbolic action and for developing and enjoying an interpretation of life and one's position in it. The rituals of choice tie routine events to beliefs about the nature of things. They give meaning. The meanings involved may be as global as the central ideology of a society committed to reason and participation. They may be as local as the ego needs of specific individuals and groups.

Some researchers treat symbols in decision making as perversions of the decision process. Symbols are presented as ways in which the gullible are misled into acquiescence. Although there is no question that symbols are often used strategically, it is hard to imagine a society with modern ideology that would not exhibit a well-elaborated and reinforced myth of choice, both to sustain social orderliness and meaning and to facilitate change.

The processes of choice reassure those involved (a) that the choice has been

made intelligently; (b) that it reflects planning, thinking, analysis, and the systematic use of information; (c) that the choice is sensitive to the concerns of relevant people; and (d) that the right people are involved. At the same time, the processes of choice reassure those involved of their own significance. In particular, the symbols are used to reinforce the idea that managers (and managerial decisions) affect the performance of organizations and do so properly. Such a belief is, in fact, difficult to confirm using the kinds of data routinely generated in a confusing world. But the belief is important to the functioning of a hierarchical, decision-making system.

Thus, we are led to a perspective that challenges the first premise of many theories of choice—the premise that life is choice. It is possible to argue that life is not primarily a choice; it is interpretation. Outcomes are generally less significant—both behaviorally and ethically—than process. It is the process that gives meaning to life, and meaning is the core of life. The reason people involved in decision making devote so much time to symbols, myths, and rituals is that they care more about them.

5. ELEPHANTS AND OTHER STORIES

This story of how decisions happen in organizations consists of three parts, but it is mostly a story without a conclusion. A theory of decision making in organizations is possible within any one of the visions outlined here. Each has pretensions of comprehensiveness; each can claim to subsume the others. As a result, the contemporary literatures on organizations and decision making are filled with preemptive tales by would-be imperialists.

The stories are lovely, and they deserve not only the critical praise they receive within their own salons but also a certain amount of tolerance. There is beauty in simplicity. However, claims of primacy are implausible except within segregated audiences of true believers. The elephant is an elephant, after all.

Decisions in organizations involve an ecology of actors trying to act rationally with limited knowledge and preference coherence; trying to discover and execute proper behavior in ambiguous situations; and trying to discover, construct, and communicate interpretations of a confusing world. A complete description of the elephant will probably elude us in any event, but we already know that the description cannot be as simple minded as we are.

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March, J. G., & Romelaer, P. J. (1976). Position and presence in the drift of decisions. In J. G. March & J. P. Olsen (Eds.), *Ambiguity and choice in organizations* (pp. 251-276). Bergen, Norway: Universitetsforlaget.

APPENDIX A. SOME IMPLICATIONS FOR INFORMATION ENGINEERING

The observations on decision making and theories of choice that are made in this essay are not surprising to experienced decision makers. Though decision makers often speak in the language of decision theory, most are familiar with the real world. The observations do, however, have some implications for thinking about the role of computers in organizations.

First, a notable feature of investments in information and information sources that we observe in organizations is the extent to which they deviate from conventional canons of information management. Decision makers and organizations (a) gather information but do not use it, (b) ask for more and ignore it, (c) make decisions first and look for relevant information afterwards, and (d) gather and process a great deal of information that has little or no relevance to decisions. The generality of such phenomena suggests that perhaps it is not the decision makers who are inadequate, but our conceptions of the role of information in organizations. I identify four conspicuous things that might help us understand what is going on and (perhaps) improve our engineering efforts to make things better:

- Decision makers often operate in a surveillance mode rather than a problem-solving mode. In contrast to a theory of information that assumes that information is gathered to resolve a choice among alternatives, decision makers scan their environments for surprises and solutions. They monitor what is going on. They characteristically do not "solve" problems; they apply rules and copy solutions from others. Indeed, they often do not recognize a "problem" until they have a solution.

- Information in an organization, particularly decision-related information, is rarely innocent, thus rarely as reliable as an innocent person would expect. Most information is subject to strategic misrepresentation or unconscious bias. Our theories of information-based decision making (e.g., statistical decision theory) are, for the most part, theories of decision making with innocent information. As a consequence, information engineers tend to ignore the extent to which information is tainted by the process by which it is generated and the context in which it is presented.

- Any technology is an instrument of power that favors those who are competent at it at the expense of those who are not. Decision makers are sensitive to their vulnerability to the technology of decision and changes in it. Because the correlation between virtue and new technological knowledge is rarely perfect, decision makers are wary of changes in decision technology.
- Information is a signal and a symbol of competence in decision making. Gathering and presenting information symbolizes (and demonstrates) the ability and legitimacy of decision makers. A good decision maker is one who makes decisions properly, exhibits expertise, and uses generally accepted information. The competition for reputations among decision makers stimulates an overproduction of information.

The considerations just outlined suggest that information plays both a smaller and a larger role than is anticipated in decision theory-related theories of information. The role is smaller in the sense that the information used in decision making is less reliable and more strategic than is conventionally assumed, and it is treated as being less important for decision making. The role is larger in the sense that information contributes not only to the making of decisions but to the execution of other organizational tasks and to the broad symbolic activities of the individual and organization.

Second, a major feature of organizational adaptiveness is maintaining a proper balance between the exploration of new ideas and the exploitation of old ones. The relation is too complicated for simple statements, but strategies or technologies that improve the sharing of knowledge, information, and experience (e.g., education, data bases) are very likely to do more for exploitation than for exploration. They often reduce experimentation and increase reliability. Any technology or procedure that improves the reliability of behavior greatly while improving its average intelligence only slightly is likely to be disadvantageous in a highly competitive situation where relative position matters. This suggests that designers of information and communication technology might want to consider ways in which the technology can be used to increase rather than reduce variability (i.e., decrease rather than increase reliability).

Third, the management of life and organizations is probably as much a matter of managing ambiguity and interpretations as it is a matter of managing choices. We require some notion of the value of alternative information and information sources that are:

- Less oriented to anticipating uncertain futures than to interpreting ambiguous pasts.

- Less tied to a prior specification of a decision (or class of decisions) than to a wide spectrum of possible actions impossible to anticipate.
- Less likely to show the consequences of known alternatives for existing goals than to suggest new alternatives and new objectives.
- Less likely to improve old ideas than to provoke new ones.

Such a view of information is associated classically with literature, art, and education; if there are appropriate models for a system of this sort, perhaps they lie in discussions of art and education rather than in theories of choice.

Generally, research on how decisions happen in organizations leads us to perspectives that:

- Embrace the axioms of choice but acknowledge their limitations.
- Combine a passion for the ideology of choice with an appreciation of its complexities and the beauties of its confusions.
- See the technology of reason as requiring a technology of foolishness.
- Imagine an organizational participant as often constrained by intelligence, rationality, and rules, but sometimes bouncing around a soccer field.

It is possible that such a perspective might have some minor usefulness in the design of computer-supported cooperative work; but, as an academician who treasures his irrelevance, I do not guarantee anything.

APPENDIX B. BIBLIOGRAPHIC NOTES

This essay is based on a presentation and was originally prepared without references. This appendix is an alternative to trying to insert such scholarship after the fact.

B1. General References

More extended sets of relevant references can be found in the following three books:

March, J. G. (1988). *Decisions and organizations.* Oxford: Basil Blackwell.

March, J. G., & Olsen, J. P. (1989). *Rediscovering institutions: The organizational basis of politics.* New York: Free Press/Macmillan.

Scott, W. R. (1987). *Organizations: Rational, natural, and open systems* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

B2. Intendedly Rational Action

The classic references for theories of limited rationality are two articles by Herbert A. Simon:

Simon, H. A. (1955). A behavioral model of rational choice. *Quarterly Journal of Economics, 69,* 99–118.

Simon, H. A. (1956). Rational choice and the structure of the environment. *Psychological Review, 63,* 129–138.

Early elaborations of the ideas can be found in:

Cyert, R. M., & March, J. G. (1963). *A behavioral theory of the firm.* Englewood Cliffs, NJ: Prentice-Hall.

Lindblom, C. E. (1959). The 'science' of muddling through. *Public Administration Review, 19,* 79–88.

March, J. G., & Simon, H. A. (1958). *Organizations.* New York: Wiley.

Thompson, J. D. (1967). *Organizations in action.* New York: McGraw-Hill.

More recent variations on the theme (in economics, political science, sociology, and philosophy) include:

Allison, G. T. (1971). *Essence of decision.* Boston: Little, Brown.

Elster, J. (1983). *Sour grapes.* Cambridge, England: Cambridge University Press.

Kahneman, D., Slovic, P., & Tversky, A. (Eds.). (1982). *Judgment under uncertainty: Heuristics and biases.* Cambridge, England: Cambridge University Press.

Marschak, J., & Radner, R. (1972). *Economic theory of teams.* New Haven, CT: Yale University Press.

Stinchcombe, A. L. (1990). *Information and organizations.* Berkeley: University of California Press.

Williamson, O. (1975). *Markets and hierarchies.* New York: Free Press.

B3. Rule-Based Action

The classic texts on rules as the basis for organizational actions are:

Hayek, F. A. von. (1973). *Rules and order.* London: Routledge & Kegan Paul.

Weber, M. (1947). *The theory of social and economic organization.* Oxford, England: Oxford University Press.

The ideas build on notions of rules and roles more generally in sociology and economics. They found early voice in several books on organizations, including:

Merton, R. K. (1957). *Social theory and social action.* Glencoe, IL: Free Press.

Selznick, P. (1949). *TVA and the grass roots.* Berkeley: University of California Press.

More recent discussions can be found in:

Burns, T. R., & Flam, H. (1987). *The shaping of social organization.* London: Sage.

March, J. G., & Olsen, J. P. (1989). *Rediscovering institutions: The organizational basis of politics* (chap. 2). New York: Free Press.

Stinchcombe, A. L. (1974). *Creating efficient industrial administration.* New York: Academic.

There are numerous discussions of processes by which rules change, but those that focus particularly on the issues outlined here include:

DiMaggio, P., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48,* 147-160.

Hannan, M. T., & Freeman, J. (1989). *Organizational ecology.* Cambridge, MA: Harvard University Press.

Levitt, B., & March, J. G. (1988). Organizational learning. *Annual Review of Sociology, 14,* 319-340.

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology, 83,* 340-363.

Nelson, R. R., & Winter, S. G. (1982). *An evolutionary theory of economic change.* Cambridge, MA: Harvard University Press.

B4. Artifactual Decisions

General works in the analysis of loose coupling and the development of meaning include:

Brunsson, N. (1985). *The irrational organization.* Chichester, England: Wiley.

Brunsson, N. (1989). *The organization of hypocrisy.* Chichester, England: Wiley.

Weick, K. (1979). *The social psychology of organizing* (2nd ed.). Reading, MA: Addison-Wesley.

For an introduction to the analysis of networks in organizations, see:

Marsden, P. V. (1982). *Social structure and network analysis.* Beverly Hills, CA: Sage.

Discussions of temporal orders and research on them can be found in:

Kingdon, J. W. (1984). *Agendas, alternatives, and public policies.* Boston: Little, Brown.

March, J. G., & Olsen, J. P. (1976). *Ambiguity and choice in organizations.* Bergen, Norway: Universitetsforlaget.

March, J. G., & Olsen, J. P. (1986). Garbage can models of decision making in organizations. In J. G. March & R. Weissinger-Baylon (Eds.), *Ambiguity and command* (pp. 11-35). Cambridge, MA: Ballinger.

For discussions of the role of symbolic action in organizations context, see:

Edelman, M. (1964). *The symbolic uses of politics.* Urbana: University of Illinois Press.

Feldman, M. S., & March, J. G. (1986). Information in organizations as signal and symbol. *Administrative Science Quarterly, 26,* 171-186.

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