Making decision is, om the one hand, one of the most fastinating mamifestations of biological activity and, on the other hand, a matter of terrifying for the whole of the human race. Althought this activity is both fascinating and awesome, it is difficult to find a satisfactory name for it in any of the common languages. In English we use terms as manager, administrator, executive or simple decision maker. Yet each of these terms fails someone to capture the true significance of the human being. Because we need a label to conduct our discussion, I shall risk choosing the term manager and being to say some things that will generalize on this term beyond its ordinary usage in English.

 The manager is the man who decides among alternative choises. He must decide which choise he believes will lead to a certain desired objectives. But his decision is not an abstract one, because it creates a type of reality. The maneger is the man with the magic that enables him to create in the world a state of affairs that would not have occured except for him. We say that the manger is one who has the authority to make such choices. He is also a person who has the responsibility for the choises he has made in the sense that rest of his fellow men may judge wheter he should be rewarded or punished for his choises; he is the person who justifiably is the object of praise or blame.

 So broad a description of the manager makes managers of us all. It is a common failing of the labels that language applies to things that they may be generalized to encompass everything, as philosophers have long recognized in the case of such labels as matter and mind. It takes no great sophomoric talent to see that the world is basically matter and that everything could be reduced thereto. Nor does it take any great astuteness to see that everything a human being recognizes any great astuteness to see that everything a human being recognizes as natural reality os the product of some mind or collection of minds. So, too, the label manager may become appropriately applied to practically everything or at least to every human, once we describe the manager as someone having the authority and responsibility for making choises. I am interested in the broad aspect of desicion making, but for present purposes I want to add one more stipulation that makes the label manager less general. This is the stipulation that managerial activity take place witthin a “system”: The manager must concern himself with interrelated parts of a complex arganization of activities, and he is responsible for the effectiveness of the whole system...

 But even this further stipulation concerning the use of the label manager permits us to discribe many activities as management. It is true that in history of England and United States, the term management has often been narrowed to mean tha managing of mean the managing of industrial activities especially for the purpose of generating profit for an enterprise. In the connection management is contrasted with labor. In government actievities our use of term manager is often labelled administrator, and the term executive is often used to describe people who are given the legal authority to put into practice the law of the land. All these activities, wheter they be at the level of goverment or industry or education or health, or whatever, have a common groind which we wish to explore. The common ground is the burden of making choises about system improvement and the responsibility of responding to the choises made in a human envirovement in which there is bound to be opposition to what the manager has decided. Thus the head of a labor union, the state legislator. The head of a goverment agency, the foreman of a shop are all managers in our sense. So is a man in his own family a manager; so is the captain of a football team. Probably all of us some time or other in our lifes become managers when, because of oppointment to a committee or because of our political activities, we take on the authority and responsibility of making decisions in complex system. Managing is an activity of which we are all aware, and its consequences concern each one of us.

 I said that managers must bear the burden of the burden of the decisison they make. I could have added, in more optimistic tone, that they enjoy the pleasure accompanying to make decisions. And certanly many managers in today`s society do find a great deal of phychic satisfaction in the role they play which society so clearly recognizes as important and which it credits with a great deal of prestige.

 Noe managing is a type of behavior, and since it`s a very important type of behavior, you might expect that we know a great deal about it. But we don`t at all. We could also explore the many ways in which managers often think they manage, but observes of their behavior often from them quite radically. The manager is frequently astonished to hear sociologist`s description of his activities, which he believes he himself knows so well, and he resent the inclination on the part of the “detached” scientist to try to describe the activity that he performs.

 Imagine an observes carefully trained to study such activities as bees in a hive, or fish in a school, or birds in a flock, and suppose such a student of nature becomes curious about the behavior of judges during a trial. How might such a scientist describe what the jugde actually does? He might learn a little bit from some of the reflective judges, and perhaps a little bit more from the sociologist and other scientists who have attempted to describe legal behavior, but he would find that most of the activity remains a huge to the whole of humanity-a mystery that no one has ever felt inclined to investigate in detail.

 The whole activity of managing, importrant as it is for the human race, is still largely an unknow aspect of the natural world. When man detaches himself and tries to observe what kind of living animal he is, finds that he knows very little about the things most important to him and precious little about his role as a decision maker Few managers are capable of describing how they reach their decision in a way that someone else can understand; few can tell us how they feel about the decisions once they have been made. Of course, despite our ignorance about managerial phenomena, a great deal is written on the subject in popular magazines and managerial journals. It appears that the less we know about subject, the more we are inclined to write extensively about it with great cinviction. Some writings describe the variuos rituals folowed in organizations proir and posterior to the actual managerial decision. But most of these description pay little attention to the very puzzling question of when a decision actually occured and who made it. A great deal is said about committee deliberations and other aspect of organizational rationality that go into the making of a decision, and the many checks and control that are exerted to determine whether the decisions have been made properly. Much attention is paid to these aspect of organizational decision making, because they show up on the surface, so to speak. But the facts that a committee deliberated for three hours and then a decision emerged do not tell us who made the decision, how it was or when it was made. It might be added that the verbal assertion of the committee often do not tell us what decision is made.

 So there is a great mystery of the natural world: the who, when, how, and what of man`s decision making.

 But even if we were to succeed in discovering a great deal more than we have about management, the result would be at best descriptive. It would be merely the background of the basic problem before us, namely, the question of how the manager should decide.

 Am I right in claiming that we know so little about management? After all, most of us are quite willing, even eager, to prise and complain. We don`t hesitate to say that some men are better managers than others. We are constantly criticizing our political leaders. Biographers are accustomed to choose the most “outstanding” leaders of the age as the subject of their texts. These leaders may be great political leaders, leaders of industry, leaders of social movement, of religion, and so on. What is the quality these men of success have that less successful colleagues lack? Since we believe we can identify “successful” leaders, surely we also believe we know a great deal about what a manager should decide. For example, in the case of the President of the United States, we are told in our school-boy text that we can readily recognize that some of these Presidents were “great” and some of them far from great. What is the quality of greatness that we are led to ascribe to some of these presidents?

 A ready answer is at hand-the succesful and great Presidents were those who made decisions that today we clearly recognize to be correct, and those who made these decions in the face of severe opposition. We are led to believe that the activity of great presidents is a marvelous example of succesful decisin making in large complex systems.

 But the skeptics among us will find this answer quite unsatisfactory as an explanation of what constites greatness in a Pesident. In the first place, history has no record of what would have happened had the opposition`s point of view succeeded or if serious modifications had been made in the choises of the so-called great Presidents. What if the Union had not been saved, or or our independence declared? History seems only to have recorded the episodes that followed upon the particular decision that was made and does vot provide us with an analysis of event that might have occured if an alternative had been adopted.

 More curios still is the implict that assumption that a successful President made his great decision on the basis of his own particular abilities. Since evidence is so often lacking that great Presidents of the past had these abilities, there is a natural inclination on the part of many of us to ascribe either determinism or randomness to the activities of so-called successful managers. In the case of determinism, we might argue that the events of the world occur by the accidental conglomeration of many forces unknown to man these forces produce “decision” that man in his innocence believes that he himself makes. The decision of independence in 1776 was, according to this view, simply the outgrowth of many complex human and physical interrelationships. Those who adopt the idea of randomness simply add to the physical determinism of events a random fluctuation of the sort occuring in a roulette wheel or in the shuffling of cards. The would then be willing to admit that other decision might have been made in 1776 or later, but that these decision would be very much like the outcome of another spin of the roulette wheel. In either event, wheter we choose to describe the world of decision making as determinism or as randomness, we conclude that ascribing greatness to the decision makers in Independence Hall would be a mistake unless one meant by greatness some recognizable features of the determined or randomevents occuring in the world. By analogy one might say that the man who spins the roulette wheel is its “manager” who decides nothing about the outcome of spins; a multitude of hidden physical forces determine where the wheel will stop. Calling a President great is like calling the spinner of a roulette wheel that happens to have a satisfactory result a great spinner.

 This is certainly a crass and impolite way to describe the great managerial minds of the past. Surely we can do more for their memories than describe them as irrelevant aspects of the history of society. We might try ro look into the story og their lives to find evidence that they really had superior methods of deliberation. We might try to show that they had the sort of brilliance and courage that creates an ability to handle confusing pieces of information and to reach approprite decisions. Perphaps the great manager is an extremely adept information processor who can act so rapidly that he himself is not even aware of the comparisons and computations he has made.

 Indeed, this last is more or less the the popular image of the great manager. For example, many scientists who advice politicians, corporate msnsgers, and other decision makers often state that they cannot possibly attempt to tell such men what decision should be made. At best they can merely tell the decision maker about certain outcomes if the decision are adopted. Thus the more among the advisers believe that they have mo intent of ‘replacing’ the managers they advise. And yet if these scientific advisers are capable of discering at least some aspects of the managerial decision, what is it they luck? What are they incapable of doing that the politician and corporate manager are so succesful in accomplishning? What is this secret ingredient of the great president of vorporations, universities, and countries that no scientiat or ordinary man could ever hope to acquire?

 The answer usually given is that the president has information about many different aspects of the world and has ability to put these aspect together in a way that no analysis could possibly do. In other words, he has a vision of the whole system and can relate the effectiveness of the parts to the parts effectiveness of the whole. The hidden secret of the great manger, so goes the myth, is the ability to solve the puzzling problems of whole systems that we have been discussing so far.

 This answer is myth, because it is totally unsatisfactory to reasoning of intellectually curious person. Are ‘great’ managers fantastically high speed-data processors? Do great managerial minds outstrip any machinery now on the market or contemplated for decades to come? From what we know of the brain and its capabilities, the answer seems to be no. Indeed, it is doubtful whweter the great manager in reaching decisions uses very much of the information he has received from various sources. It is also doubtful wheter the manager scans many of the alternatives open to him.... We describe how the scientist, when he comes to grips with the problems of decision making, discovers that they can only be reperesented by fairly complicated mathematical models. Even in fairly simple decision-making situations we have come to learn how complicated is the problem of developing a sensible way of using available information. It seems incredible that the so-called succesful managers really have inbuilt models that are rich and complicated enough to include the subtleties of large-scale systems.

 Suppose for the moment we descend from the lofty heights of the decision makers in Independence Hall and the White House and begin to describe a very mundane and easily recognized managerial problem cencerning the nember of tellers that should be available to customers in a bank. All of us have experienced the annoyance of going into a bank in a hurry and spending a leisurely but frustrating half hour behind the wrong line. How should the manager decide on the allocation of tellers at various times of the day?

 This is fairly simple managerial problem amd its like is encountered by thousands of middle managers every day. Furthermore, this problem has been studied quite extensively in operation research and its “solution” is often found in the elementary texts. The texts say that the scientist should try to answer the managerial question by considering both the inconvenience of the customers who wait in the lines and the possible idle time of the tellers who wait at their stations when no customers. Thus the “succesful” manager can be identified in an objective way, and we need not take a poll of greatness or lack thereof to ascertain wheter the manager has performed well. The succesful manager will be someone who has properly balanced the two costs of the operation of servicing customers in a bank: the cost of waiting customers and the cost of idle tellers. He will insist that the cost of a nimute`s waiting of a customer in a line must be compared to a minute`s idle time of the teller. On the basis of this comparison, together with suitable evidence conserning the arrival rate of customers and the time service each customer, the succesful manager will determine the policy concerning allocation of tellers to varios stations during the day. Perhaps no one will feel inclined to write the biography of so ordinary a man as the manager of a branch of a local bank, but in any case if this manager decides according to the rational methods just outlined, his biographer may at least be honest about his “greatness”.

 Nevertheless, the analysis just outlined leaves much unanswered. For example, an idle teller need not be idle while waiting at a station where are no customers. Instead he may be occupied with other routine matters requiring attention in the administration of the bank. Consequently, if the manager can design the entire operation of his bank’s many function properly, he may be able to decrease the cost of idle time of professional who are servicing customers. If we look on the othwer side of the picture, that is, the inconvenience to a customer, we may find that in fact waiting in line is not an inconvience at all if the customer happens to meet an acquaintance there. Perhaps the manager should serve coffe and doughnuts to waiting customers. Furthermore, if the manager could somehow or other hope to control the behavior of his customers, he might be able to recognize their arrivals in such a way that inconvenience costs are vastly reduced. Add to these considerations other innovations that might be introduced: For example, in many cases banks set up Express Windows to handle customers who would normally have very low servoce times. Hence, an overall average waiting time may not make senese if there are different types of service tailored to the various needs of the customers.

 But then another, broader consideration occurs to us: Handling the public’s financial matters by branch banking methods may be completely wrong. Modern technology may of developing financial servicing methods far cheaper for both bank and customer. After all, handling cash and checks is an extremly awkward way for a person to acquire goods at a price. With adequately designed information centers, the retail markets need only input information about a customer purchase, and the customer’s employers need only inputinformation about his income. Thus every purchase would become simply a matter of centralized information processing as woulod a man’s weekly or monthly paycheck. There would therefore be no real need for any of us to carry money about and no need to go to a bank and stand patintly in line. But this idea of automated purchasing and income recording is followed by another thought. We realize that any such automated finacial sysytem would probably end in eliminating a number of clearical and managerial jobs. Consequently we must examine the social problems of displaced personnel and the need for retraining, otherwise total social costs of automated banking might be far greater than the convenience gained by introducing new technology.

 Before we can decide whweter the manager of the branch bank is performing “satisfactorily”, we must decide a much broader issue-wheter the particular system that the manger operates is an appropriate one. This question leads to deeper consideration concerning the potential of modern technology and their inplications with respect to automation, job training, and the future economics of many lives.