PLEDGING FOR NEW CONCEPTUAL PERSPECTIVES IN DECISION-MAKING PROCESS

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Abstract:
This paper works is a pledge for inclusion of alternative conceptual perspectives in decision making theory and practice. Actual decision science tools and leadership style do have applicability. However, their relevance and applicability are very much subjugated by the complexity, uncertainty and near unknowability of the decision-making context. New conceptual perspectives are required. We highlights the relevance of complex, chaotic environments and asymmetric information to decision processes. It is necessary to adopt new theoretical approaches and to help practitioners understand the reasons for decision failures.

Introduction

Decision making is the cognitive process of selecting a course of action from among multiple alternatives. Every decision-making process produces a final choice. It can be an action or an opinion. It begins when we need to do something but we do not know what. Therefore decision-making is a reasoning process which can be rational or irrational, and can be based on explicit assumptions or tacit assumptions.

Decision making is said to be a psychological construct. This means that although we can never "see" a decision, we can infer from observable behavior that a decision has been made. Therefore we conclude that a psychological event that it call "decision making" has occurred. It is a construction that imputes commitment to action. That is, based on observable actions, we assume that people have made a commitment to effect the action.

Classical and behavioral models of decision making are set in a mostly stable and consequently linear environment reflecting the simpler more stable environments typical of the nineteenth and early twentieth centuries. Decisions were made at the highest levels within organizations by managers who were actively involved in the running of the organization. This is no longer the case: the growth of organizations and the move to globalization has increased the levels of complexity and uncertainty with which strategic decision makers have to deal. This is further complicated by the devolution of power and decision making within organizations. There is a fundamental shift in the corporate environment [2].

The conventional models see decisions comprising clear sequential steps: identify the problem, generate alternative solutions, evaluate and choose, implement. Thompson and Tuden identified four approaches for this process based on the knowability of the situation [13]:

1. analysis;
2. judgement;
3. bargaining; and
4. inspiration.

During the 1970s, Mintzberg identified that the simple linear model is inadequate for most important organizational decisions, identifying cycling back and time lags as important elements in the process [9]. Researchers at Bradford University

developed a new approach from the Thompson and Tuden model during the 1970s and 1980s, identifying complexity and politicality as key issues in decision making [10]. Whilst both the Mintzberg and Bradford approaches improved the reality of the model, linear organizational strategy remains incapable of meeting these challenges – it lacks the ability to promote the new conceptions.

Mitroff suggests perceiving every issue from at least two of four possible perspectives, Stacey identifies three stages in a strategic decision cycle, Mintzberg and Westley [9] identify three approaches to making decisions, and Johnson and Scholes apply three lenses. These theories are summarized in Figure 1. Each stage/approach/lens may be perceived through any one of Mitroff's perspectives, preferably with two or more.

Perspectives Mitroff	Approaches, Cyclical stages and Lenses		
Technical	Stacy		
	Action	Discovery	Choice
Systemic	Mintzberg and Westley		
Interpersonal	Doing first/craft	Seeing first/art	Thinking first/science
Existential	Johnson		
	Experience	Ideas	Design

Figure 1. Perspectives, approaches and stages in decision making
Source: McKenna, R. J., Martin-Smith, B., *Decision making as a simplification process: new conceptual perspectives,* Management Decision, Volume 43, Number 6, 2005, p. 833.

Chaos and complexity

Recent applications of chaos theory and complexity theory in organizational and management studies further enhance understanding both the world as an integrated whole and the decision-making tool kit.

Chaos theory is concerned with the irregular, unpredictable behavior of non-linear dynamic systems, suggesting that simple events can generate behaviors so complex they appear random, yet they are entirely deterministic [7]. This applies in social and biological systems equally as well as in physical or mechanical systems.

Chaotic behavior motion gives rise to what are known as strange attractors, attractors that can have great detail and complexity. For instance, a simple three-dimensional model of the Lorenz weather system gives rise to the famous Lorenz attractor. The Lorenz attractor is perhaps one of the best-known chaotic system diagrams, probably because not only was it one of the first, but it is one of the most complex and as such gives rise to a very interesting pattern which looks like the wings of a butterfly. Also sensitivity to initial conditions is popularly known as the "butterfly effect", suggesting that the flapping of a

butterfly's wings might create tiny changes in the atmosphere, which could over time cause a tornado to occur. The flapping wing represents a small change in the initial condition of the system, which causes a chain of events leading to large-scale phenomena. Had the butterfly not flapped its wings, the trajectory of the system might have been vastly different. Social behaviors are (or can be) analogued as chaotic (or strange) attractors: It is stable but its trajectory never repeats itself.

Chaos theory is an extension of systems dynamics and is primarily about deterministic non-linear systems that are mostly mechanical by nature. Most biological systems are complex systems in the sense outlined above, while traditionally, most humanly engineered systems are not. Complex systems research overlaps substantially with nonlinear dynamics research, but complex systems specifically consist of a large number of mutually interacting dynamical parts. As a human, each member has individual identity and is capable of choice. Because of this, chaos theory is seen to be limited but still valid in dealing with aspects of social systems and human behavior.

Other areas of decision theory are concerned with decisions that are difficult simply because of their complexity, or the complexity of the organization that has to make them. In such cases the issue is not the deviation between real and optimal behavior, but the difficulty of determining the optimal behavior in the first place.

Complexity theory is receiving increasing attention in both academic and popular literature as a potential management tool. As momentum gathers surrounding its popularity in practical management, complexity theory is poised to become a management 'fad', and potentially an influential paradigm for the future. However, much of the literature concerning complexity theory contains inconsistent terminology and a lack of operationally empirical definitions. This has made it difficult for researchers to specify empirical questions in order to frame complexity research, and for practitioners to acquire the key principles for implementation. It has also opened a Pandora's Box of commentaries which proclaim that complexity theory is a new management panacea.

“Complexity theory is useful for describing biological phenomena and even social processes”[7]. What defines the edge of complexity as a critical juncture is that it is the environment from which emergent behavior of the most powerful nature is gestated. Therefore the “edge of chaos” provides that rich environment from which new behaviors emerge. Emergence is defined as “an overall system behavior that comes out of the interaction of many participants – behavior that cannot be predicted or ‘even envisioned’ from a knowledge of what each component of a system does in isolation” [5].

Synthesizing the understanding of chaos theory with complexity theory enriches our understanding of decision-making contexts. Complexity and chaos provide an underlay that helps explain why, despite Thompson's approaches and Vroom's styles, half of the decisions we make are wrong.

Uncertainty and asymmetric information

Long-term decisions of the firm are fraught with uncertainty. This uncertainty can be regarded as a fundamental business parameter with an impact on preferences, factor allocation and production possibilities. Alternatively, it may refer to competitors

and other economic agents. Uncertainty in the context of decision-making is interpreted to be everything that represents non-perfect observability and non-perfect forecasting in the selection and evaluation of strategies.

The approach of uncertainty tends to go beyond the narrow issue of what decision criteria are appropriate for modeling or coping with uncertainty. The basic question as to how an enterprise copes rationally with uncertainty led to the development of the theory of risk management. Recognition of risk and the various methods of coping with it form the foundation of the theory. Amongst other things, this has led quite logically to the point of view that less intensive use of scarce resources today creates greater economic viability over time in an uncertain future.

Game theory facilitated an early methodical handing of uncertainty as found in the work of John Nash, Harold Kuhn, Robert Aumann, James Friedman. However, in the 1960s and 1970s, game theory failed to establish a wide acceptance within the theory of the firm. This changed radically in the 1980s.

Recent theories have indicated that the enterprise itself is an institution that serves to minimize risk, as will be elaborated on in due course.

In the traditional theory of the firm, it is assumed that information is freely and ubiquitously available. This factor is therefore not an explicit part of the production or cost functions which deal with planning, organization and control. In the latest management theory, information is taken into account explicitly.

Currently, game-theory approaches are being developed which deal with the question of precisely what information should be exchanged amongst competitors and under what conditions, if the process is to be beneficial to society. The results of this revaluation show that the effects on society depend not only on the type of information exchanged, but also on the market structure and the type of products being traded.

Recent developments in the theory of making decision have been closely related to developments in examining the economic implications of imperfect information. Asymmetrically distributed information between a firm, as employer, and its workers has replaced the traditional view of a firm that hired labor at fixed wages in well-defined labor markets.

Network approach

Decision-processes take place in networks of actors, which are tied by interdependencies in a society where resources and knowledge is spread among a variety of actors. Besides these societal groups increasingly try to get involved in decision-making, which also makes the decision-making process more complex. The network perspective assumes that policy is developed and implemented in networks of organizations. These policy networks can be defined as “changing patterns of social relationships between interdependent actors which take shape around policy problems and/or clusters of resources and that are formed, maintained and changed by ecology of games”. One could also say that these networks are complex systems of organizations.

Networks come into being and remain in existence because actors are dependent on each other. Actors cannot achieve their objectives without resources, and other actors possess these. Networks are thus characterized by a limited substitutability of resources, which ensures that sustainable social relations between actors are created.

The interactions around decisions, which it we call a game, not only take place within networks of organizations but that separate decisions are often situated in separate arenas. These arenas can be situated in one network but sometimes more arenas in different networks are involved which enhances complexity considerably.

Conclusions

The complexity of today's business operations, aggressive competition, and government controls have made the job of the manager increasingly difficult. It is no longer possible for one individual to be aware of the details of every characteristic of the firm or to make all decisions regarding its operation. Even within a manager's relatively small span of control the factors affecting his decisions are often so numerous and their effects so pervasive that "seat of the pants" decisions are no longer acceptable. As a result, effective decision-making often requires the availability of information analyzed and summarized in a timely fashion.

Classical and behavioral decision-making models position leaders as decision makers who use rational, analytical and dispassionate processes and may include moral and ethical standards in their decision making process. Viewing the world from these perspectives, as linear and deterministic, is a comfortable process. However, the real world is not defined by linear and deterministic processes but by non-linearity and unpredictability, as described by theories that acknowledge complexity and chaos.

Although leaders have significant resources at their disposal to develop valid decision-making outcomes, in many cases the decision is compromised by the influence of factors relating to the personality, motivations and position of the decision makers. Personal resources such as time and attention are scarce in such positions, so it is understandable that managers use innate techniques such as simplification to improve their productivity. The reasons for devolving a complex wicked situation into a pseudo-tame situation can result from organizational, personal, ethical or societal factors relating to the specific context of the situation event. Another reason for the process of simplification can be the result of the moderation by one or many influences acting within that decision event and being considered by the decision maker.

With pressure from increasingly complex contexts decision-making has developed from a simple cause and effect relationship to a complex process that is as much a function of the complex environment and individual and group behavior as it is a function of design. It is clear from this that the attitude and position of the individual in the organization and group dynamics are as important as the decision-making process itself in decision outcomes.

Decisions become more dynamic as they enter the region of managing at the edge of uncertainty. The results, however, are vastly different. Psychoanalysis treats this region as uncertain and threatening and positions defensive mechanisms to protect the individual's comfort; a relationship perspective responds positively cultivating creativity and innovation within the same region.

Organizational decision making is not a simple, certain process with clear stages of problem identification, search for alternatives, evaluation, choice and implementation. Technological, economic and social developments and the globalization phenomenon have guaranteed that a chaos approach is now more relevant than the assumptions of technical rationality.

The tools of decision science do have applicability, especially in the choice stage of the dynamic cycle of the decision-making process, and leadership style can be matched to perceived situations. However, as is shown in our examples, their relevance and applicability are very much subjugated by the complexity, uncertainty and near unknowability of the decision-making context. New conceptual perspectives are required.

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